

Bus cable | TPE | chainflex® CFBUS



10 million
Guaranteed double strokes



10 x d
Bend radius e-chain®



400 m
Travel distance, e-chain®

- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- Flame retardant
- Hydrolysis and microbe-resistant

Now with 600 V
UL approval

Dynamic information

	Bend radius	e-kette® linear	minimum 10 x d (CFBUS.001-.049 and CFBUS.060) minimum 12.5 x d (CFBUS.050-.055 and CFBUS.070)
		flexible	min. 8 x d
		fixed	min. 5 x d
	Temperature	e-chain® linear	-35 °C up to +70 °C
		flexible	-45 °C up to +70 °C (following DIN EN 60811-504)
		fixed	-50 °C up to +70 °C (following DIN EN 50305)
	v max.	unsupported	10 m/s
		gliding	6 m/s
	a max.		100 m/s²
	Travel distance		Unsupported travels and up to 400 m and more for gliding applications, Class 6

Cable structure

	Conductor	Stranded conductor in especially bending-resistant version consisting of 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
	Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
	Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70 %, optical approx. 90 %
	Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001) Variants ► Product range table

Electrical information

	Nominal voltage	50 V
	Testing voltage	500 V (following DIN EN 50289-1-3)

Basic requirements
Travel distance
Oil resistance
Torsion

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

Class 6.6.4.1

Properties and approvals

	UV resistance	Medium
	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)
	UL/CSA	Style 1589 and 21371, 30 V, 80 °C CFBUS.045/.049: Style 11632 and 21218, 600V, 80 °C CFBUS.040/.050/.052/.060: Style 10138 and 21235, 300 V, 80 °C Following NFPA 79-2018, chapter 12.9
	NFPA	
	CLPA	CFBUS.045: CC-Link IE Field, Reference no. 130 CFBUS.049: CC-Link IE Field, Reference no. 137 Type approval certificate No. 61 937-14 HH
	DNV-GL	
	EAC	Certificate No. RU C-DE.ME77.B.01218 (TR ZU)
	CTP	Certificate No. C-DE.PB49.B.00416 (Fire protection)
	CEI	Following CEI 20-35
	Lead-free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1
	DESINA	According to VDW, DESINA standardisation
	CE	Following 2014/35/EU

Guaranteed service life (details see page 22-23)

Double strokes*	5 million		7.5 million		10 million	
	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070
	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	12.5	15	13.5	16	14.5	17
-25/+60	10	12.5	11	13.5	12	14.5
+60/+70	12.5	15	13.5	16	14.5	17

* Higher number of double strokes? Service life calculation online ► www.igus.eu/chainflexlife



Typical mechanical application areas

- For extremely heavy duty applications, Class 6
- Unsupported travels and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Cleanroom, semiconductor insertion, indoor cranes, low temperature applications








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.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
Profibus (1x2x0,64 mm)								
 CFBUS.001	(2x0.25)C	9.0	32	84	CFBUS.001	150	2x0.25	red, green
CFBUS.002	(2x0.25)C+4x1.5	12.5	93	198	CFBUS.002	150	(2x0.25) 4x1.5	red/green black with white numbers 1-4
CFBUS.003	(2x0.25)C+3G0.75	11.5	55	138	CFBUS.003	150	(2x0.25) 3G0.75	red/green black, blue, green-yellow
Interbus								
CFBUS.010	(3x(2x0.25))C	9.0	47	87	CFBUS.010	100	3x(3x0.25)	white/brown, green/yellow, grey/pink
CFBUS.011	(3x(2x0.25)+(3G1.0))C	10.5	84	138	CFBUS.011	100	3x(2x0.25) 3G1.0	white/brown, green/yellow, grey/pink red, blue, green-yellow
CAN-Bus/Feldbus								
CFBUS.020 ²⁾	(4x0.25)C	6.5	28	57	CFBUS.020 ²⁾	120	4x0.25	white, green, brown, yellow (Star-quad)
CFBUS.021	(2x0.5)C	8.0	38	83	CFBUS.021	120	2x0.5	white, brown
CFBUS.022 ²⁾	(4x0.5)C	8.5	43	87	CFBUS.022 ²⁾	120	4x0.5	white, green, brown, yellow (Star-quad)
DeviceNet								
CFBUS.030 ⁴⁾	((2xAWG24)C+2xAWG22)C	7.5	35	63	CFBUS.030 ⁴⁾	120	(2xAWG24)C 2xAWG22	white/blue red, black
CFBUS.031 ⁴⁾	((2xAWG18)C+2xAWG15)C	11.5	103	193	CFBUS.031 ⁴⁾	120	(2xAWG18)C 2xAWG15	white/blue red, black
CC-Link								
 CFBUS.035	(3xAWG20)C	9.0	43	91	CFBUS.035	110	3xAWG20	white, blue, yellow

²⁾ The chainflex® types marked with 2) are cables designed as a star-quad.
⁴⁾ manufactured without inner jacket

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

- **Order example: CFBUS.035 – to your desired length (0.5 m steps)**
CFBUS chainflex® series .035 Code Bus type
- Online order ► www.chainflex.eu/CFBUS
- Delivery time 24hrs or today.
Delivery time means time until goods are shipped.

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 different 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, there is a high degree of EMC reliability.

It is also ensured that the electrical values remain stable over the long term in spite of constant 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 its extensive tests, helps you to ensure the process reliability of your system from the very beginning.

