













Bus cable | TPE | chainflex® CFBUS

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



Dynamic information

 Bend radius	e-chain® linear flexible	▶ Product range table minimum 8 x d minimum 5 x d
 Temperature	e-chain® linear flexible	-35 °C to +70 °C -45 °C to +70 °C (following DIN EN 60811-504) -50 °C to +70 °C (following DIN EN 50305)
 v max.	unsupported	10 m/s
 a max.	gliding	6 m/s
 Travel distance	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

Cable structure

 Conductor	Stranded conductor in especially bending-resistant design 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 approx. 70 % inear, approx. 90 % optical	
 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)	















Electrical information

 Nominal voltage	50 V
 Testing voltage	500 V

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°				

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	Product range table
 NFPA	Following NFPA 79-2012 chapter 12.9.
 DNV-GL	Certified according to GL type testing – Certificate no.: 61 937-14 HH
 EAC	Certificate no. RU C-DE.ME77.B.01218 (TR ZU)
 CTP	Certificate no. C-DE.PB49.B.00416 (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.
 DESINA	According to VDW, DESINA standardisation.
 CE	Following 2014/35/EU.

Guaranteed lifetime according to guarantee conditions (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
Temperature, from/to [°C]	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? Online lifetime calculation: www.igus.eu/chainflexlife

Typical mechanical application areas

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct solar radiation
- Unsupported travel distances and up to 400 m and more for gliding applications
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling equipment, Clean room, semiconductor handling, indoor cranes, low temperature applications



igus® chainflex® CFBUS.049

Example image


Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Characteristic wave impedance approx.	Core group	Colour code
	[mm²]	[mm]	[kg/km]	[kg/km]		[Ω]		
Profibus								
CFBUS.001	(2x0.25)C	9.0	34	86	CFBUS.001	150	(2x0.25)C	red, green
CFBUS.002	(2x0.25)C+4x1.5	12.5	99	203	CFBUS.002	150	(2x0.25)C 4x1.5	red/green black with white numerals 1-4
CFBUS.003	(2x0.25)C+3G0.75	11.5	58	141	CFBUS.003	150	(2x0.25)C 3G0.75	red/green black, blue, green-yellow
Interbus								
CFBUS.010	(3x(2x0.25))C	9.0	50	90	CFBUS.010	100	3x(3x0.25)	white/brown, green/yellow, grey/pink
CFBUS.011	(3x(2x0.25)+(3G1.0))C	10.5	88	142	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	29	58	CFBUS.020 ²⁾	120	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS.021	(2x0.5)C	8.0	41	85	CFBUS.021	120	(2x0.5)C	white, brown
CFBUS.022 ²⁾	(4x0.5)C	8.0	46	90	CFBUS.022 ²⁾	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)
DeviceNet								
CFBUS.030 ⁴⁾	((2xAWG24)C+2xAWG22)C	7.5	37	65	CFBUS.030 ⁴⁾	120	(2xAWG24)C 2xAWG22	white/blue red, black
CFBUS.031	((2xAWG18)C+2xAWG15)C	11.5	110	200	CFBUS.031	120	(2xAWG18)C 2xAWG15	white/blue red, black
CC-Link								
CFBUS.035	(3xAWG20)C	9.0	46	94	CFBUS.035	110	(3xAWG20)C	white, blue, yellow

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 24h or today.
Delivery time means time until shipping of goods.

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 so that all these factors are taken into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.



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

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	[mm²]	[mm]	[kg/km]	[kg/km]		[Ω]		
Ethernet/CAT5								
EtherCAT [®] CFBUS.040 ²⁾	(4x0.25)C	7.0	35	66	CFBUS.040 ²⁾	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS.044 ¹¹⁾	(4x(2x0.15))C	8.5	44	88	CFBUS.044 ¹¹⁾	100	(4x(2x0.15))C	white/brown, green/yellow, grey/pink, blue/red
Ethernet/CAT5e								
CFBUS.045	(4x(2x0.15))C	8.5	44	88	CFBUS.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6								
CFBUS.049	(4x(2x0.15))C	8.5	44	87	CFBUS.049	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6A								
CFBUS.050 ⁴⁾	(4x(2x0.15)C)C	10.5	87	139	CFBUS.050 ⁴⁾	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
Ethernet/CAT7								
CFBUS.052 ⁴⁾	(4x(2x0.15)C)C	10.5	94	142	CFBUS.052 ⁴⁾	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
FireWire 1394a								
CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	41	84	CFBUS.055	100	2x(2x0.15)C 2x(0.34)C	orange/blue, green/red white, black
Profinet								
EtherCAT [®] CFBUS.060 ^{2) 16)}	(4x0.38)C	7.5	41	75	CFBUS.060 ^{2) 16)}	100	(4x0.38)C	white, orange, blue, yellow (star-quad stranding)
USB								
CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	29	46	CFBUS.065	90	(2xAWG28) 2xAWG20	white/green red, black
CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	33	56	CFBUS.066	90	(2xAWG24) 2xAWG20	white/green red, black
DVI								
CFBUS.070	(4x(2xAWG28)C +(2xAWG28)+3xAWG28)C	9.0	37	94	CFBUS.070	100	4x(2x- AWG28)C (2xAWG28) 3xAWG28	4 x white/yellow with element-shield in blue, black, white, red white, brown green, yellow, grey

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⁴⁾ manufactured without inner jacket

¹¹⁾ Phase-out model


¹⁶⁾ Colour outer jacket: Yellow-green (RAL 6018)

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