

Bus cable | PVC | chainflex® CFBUS.PVC

- For medium duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame retardant

CAT7 Ethernet
for the e-chain®

Dynamic information

	Bend radius	e-chain® linear	minimum 12.5 x d
		flexible	minimum 10 x d
		fixed	minimum 7 x d
	Temperature	e-chain® linear	+5 °C to +70 °C
		flexible	-5 °C to +70 °C (following DIN EN 60811-504)
		fixed	-15 °C to +70 °C (following DIN EN 50305)
	v max.	unsupported	3 m/s
	a max.	gliding	2 m/s
	Travel distance	Unsupported travel distances and up to 20 m for gliding applications, Class 3	

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	
	Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % inear, approx. 80 % optical	
	Outer jacket	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). 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	7	≥ 400 m
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Class 4.3.2.1

Properties and approvals

	UV resistance	Medium.
	Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2.
	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 1598 and 2571, 30 V, 80 °C
	NFPA	Following NFPA 79-2012 chapter 12.9.
	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 CF240.02.24, tested by IPA according to standard 14644-1.
	CE	Following 2014/35/EU.

Guaranteed lifetime according to guarantee conditions (Page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	15	16	17
+15/+60	12.5	13.5	14.5
+60/+70	15	16	17

* Higher number of double strokes? Online lifetime calculation: www.igus.eu/chainflexlife

Typical mechanical application areas

- For medium duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Unsupported travel distances and up to 20 m for gliding applications
- Machining units/packaging machines, Handling, indoor cranes



igus® chainflex® CFBUS.PVC.045

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.PVC.001	(2x0.25)C	8.5	27	77	CFBUS.PVC.001	150	(2x0.25)C	red, green
CAN-Bus								
CFBUS.PVC.021	(2x0.5)C	8.5	33	87	CFBUS.PVC.021	120	(2x0.5)C	white, brown
CFBUS.PVC.022 ²⁾	(4x0.5)C	8.5	46	97	CFBUS.PVC.022 ²⁾	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)
CC-Link								
CFBUS.PVC.035	(3x0.5)C	8.0	42	84	CFBUS.PVC.035	110	(3x0.5)C	white, blue, yellow
Ethernet/CAT5								
CFBUS.PVC.040 ²⁾	(4x0.25)C	6.5	30	69	CFBUS.PVC.040 ²⁾	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
Ethernet/CAT5e								
CFBUS.PVC.045	(4x(2x0.15))C	7.5	35	69	CFBUS.PVC.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6								
CFBUS.PVC.049	(4x(2x0.15))C	7.5	36	69	CFBUS.PVC.049	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6A								
CFBUS.PVC.050	4x(2x0.20)C	9.5	69	124	CFBUS.PVC.050	100	4x(2x0.20)C	white/blue, white/orange, white/green, white/brown
Ethernet/CAT7								
CFBUS.PVC.052	(4x(2x0.15)C)C	9.5	89	136	CFBUS.PVC.052	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
FireWire IEEE 1394b								
CFBUS.PVC.056	(2x(2x0.15)C+2x0.38)C	9.0	62	99	CFBUS.PVC.056	100	(2x(2x0.15)C 2x0.38	orange/blue, blue/red black, white
Profinet								
CFBUS.PVC.060 ^{2) 16)}	(4x0.38)C	7.0	35	69	CFBUS.PVC.060 ^{2) 16)}	100	(4x0.38)C	white, orange, blue, yellow (star-quad stranding)
USB 3.0								
CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	41	69	CFBUS.PVC.068	90	2x(2xAWG28) 2x(2xAWG28)C	red/black, green/white-green blue/yellow, orange/violet

The chainflex® types marked with ²⁾ are cables designed as a star-quad.¹⁶⁾ 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

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.



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