Bus cable | PVC | chainflex® CFBUS.PVC

Example image

10 million Double strokes guaranteed

12.5 x d Bend radius, e-chain®

20m Travel distance, e-chain®

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

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 up to +70°C
	flexible	-5°C up to +70°C (following DIN EN 60811-504)
	fixed	-15°C up to +70°C (following DIN EN 50305)
v max.	**unsupported**	3m/s
	gliding	2m/s
a max.		30m/s²
Travel distance		Unsupported travels and up to 20m for gliding applications, Class 3

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
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
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) Variants ▶ Product range table

Electrical information

Nominal voltage	50V 300V (following UL), except **CFBUS.PVC.020:** 30V (following UL)
Testing voltage	500V

EPLAN download, configurators ▶ www.igus.eu/CFBUSPVC

Class 4.3.2.1

Basic requirements	low	1	2	3	**4**	5	6	7	highest
Travel distance	unsupported	1	2	**3**	4	5	6		≥ 400m
Oil resistance	none	1	**2**	3	4				highest
Torsion	none	**1**	2	3	4				±360°

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, 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 listed	CMX, 75°C (except CFBUS.PVC.068)
UL/CSA AWM	See data sheet for details ▶ www.igus.eu/CFBUSPVC
NFPA	Following NFPA 79-2018, chapter 12.9
CLPA	**CFBUS.PVC.045:** CC-Link IE Field, Reference no. 153 **CFBUS.PVC.049:** CC-Link IE Field, Reference no. 154
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 CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Guaranteed service life (details see page 28-29)

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? Service life calculation online ▶ www.igus.eu/chainflexlife

Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 20m for gliding applications, Class 3
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Machining units/packaging machines, handling, indoor cranes

CFBUS.PVC
PVC
12.5 x d

Bus cable | PVC | chainflex® CFBUS.PVC

Class 4.3.2.1

Basic requirements	low	1	2	3	**4**	5	6	7	highest
Travel distance	unsupported	1	2	**3**	4	5	6		≥ 400m
Oil resistance	none	1	**2**	3	4				highest
Torsion	none	**1**	2	3	4				±360°

CFBUS.PVC
PVC
12.5 x d

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)				
CFBUS.PVC.001	(2x0.25)C	8.5	25	77
CAN-Bus				
CFBUS.PVC.020 2)	(4x0.25)C	7.0	23	57
CFBUS.PVC.021	(2x0.5)C	8.5	32	86
CFBUS.PVC.022 2)	(4x0.5)C	8.5	43	94
CC-Link				
CFBUS.PVC.035	(3x0.5)C	8.0	40	82
Ethernet/CAT5I				
CFBUS.PVC.040 2)	(4x0.25)C	6.5	29	70
Ethernet/CAT5e				
CFBUS.PVC.045	(4x(2x0.15))C	7.5	33	67
Ethernet/CAT6				
CFBUS.PVC.049	(4x(2x0.15))C	7.5	33	67
Ethernet/CAT6A				
CFBUS.PVC.050	4x(2x0.20)C	10.0	65	123
Ethernet/CAT7				
CFBUS.PVC.052	(4x(2x0.15)C)C	9.5	89	136
Profinet				
CFBUS.PVC.060 2) 13)	(4x0.38)C	7.0	33	67
USB 3.0				
CFBUS.PVC.068	(2x(2xAWG28) +2x(2xAWG28)C)C	7.0	39	68

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
Profibus (1x2x0.64mm)			
CFBUS.PVC.001	150	2x0.25	red, green
CAN-Bus			
CFBUS.PVC.020 2)	120	4x0.25	white, green, brown, yellow (star-quad)
CFBUS.PVC.021	120	2x0.5	white, brown
CFBUS.PVC.022 2)	120	4x0.5	white, green, brown, yellow (star-quad)
CC-Link			
CFBUS.PVC.035	110	3x0.5	white, blue, yellow
Ethernet/CAT5I			
CFBUS.PVC.040 2)	100	4x0.25	white, green, brown, yellow (star-quad)
Ethernet/CAT5e			
CFBUS.PVC.045	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6			
CFBUS.PVC.049	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6A			
CFBUS.PVC.050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT7			
CFBUS.PVC.052	100	4x(2x0.15)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Profinet			
CFBUS.PVC.060 2) 13)	100	4x0.38	white, orange, blue, yellow (star-quad)
USB 3.0			
CFBUS.PVC.068	90	2x(2xAWG28)	red/black, green/white-green
		2x(2xAWG28)C	blue/yellow, orange/violet

The chainflex® types marked with 2) are cables designed as a star-quad.
13) 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

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.