






## Bus cable | PVC | chainflex® CFBUS.PVC







CAT7 Ethernet  
for the e-chain®

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



### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 12.5 x d
		<b>flexible</b>	minimum 10 x d
	<b>Temperature</b>	<b>fixed</b>	minimum 7 x d
		<b>e-chain® linear</b>	+5 °C to +70 °C
		<b>flexible</b>	-5 °C to +70 °C (following DIN EN 60811-504)
	<b>v max.</b>	<b>unsupported</b>	3 m/s
		<b>gliding</b>	2 m/s
	<b>a max.</b>		30 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 20 m for gliding applications, Class 3	

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant design consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ▶ Product range table
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % inear, approx. 80 % optical
	<b>Outer jacket</b>	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

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	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

	<b>UV resistance</b>	Medium.
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2.
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 1598 and 2571, 30 V, 80 °C
	<b>NFPA</b>	Following NFPA 79-2012 chapter 12.9.
	<b>EAC</b>	Certificate no. RU C-DE.ME77.B.01218 (TR ZU)
	<b>CTP</b>	Certificate no. C-DE.PB49.B.00416 (Fire safety)
	<b>CEI</b>	Following CEI 20-35.
	<b>Lead-free</b>	Following 2011/65/EU (RoHS-II).
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240.02.24, tested by IPA according to standard 14644-1.
	<b>CE</b>	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](http://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



Example image

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]		
<b>Profibus</b>								
CFBUS.PVC.001	(2x0.25)C	8.5	27	77	CFBUS.PVC.001	150	(2x0.25)C	red, green
<b>CAN-Bus</b>								
CFBUS.PVC.021	(2x0.5)C	8.5	33	87	CFBUS.PVC.021	120	(2x0.5)C	white, brown
CFBUS.PVC.022 <sup>2)</sup>	(4x0.5)C	8.5	46	97	CFBUS.PVC.022 <sup>2)</sup>	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)
<b>CC-Link</b>								
CFBUS.PVC.035	(3x0.5)C	8.0	42	84	CFBUS.PVC.035	110	(3x0.5)C	white, blue, yellow
<b>Ethernet/CAT5</b>								
CFBUS.PVC.040 <sup>2)</sup>	(4x0.25)C	6.5	30	69	CFBUS.PVC.040 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
<b>Ethernet/CAT5e</b>								
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
<b>Ethernet/CAT6</b>								
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
<b>Ethernet/CAT6A</b>								
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
<b>Ethernet/CAT7</b>								
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
<b>FireWire IEEE 1394b</b>								
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
<b>Profinet</b>								
CFBUS.PVC.060 <sup>2) 16)</sup>	(4x0.38)C	7.0	35	69	CFBUS.PVC.060 <sup>2) 16)</sup>	100	(4x0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB 3.0</b>								
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 <sup>2)</sup> are cables designed as a star-quad.

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6013)

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.

