

# Bus cable | PVC | chainflex® CFBUS-PVC

**36** 10,000,000  
Cycles guaranteed

**12.5 x d**  
Bend radius E-Chain®

**65.6 ft**  
Travel distance E-Chain®

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

Now with 300 V  
UL approval

### Dynamic Information

	Bend radius	E-Chain® linear	min. 12.5 x d
		flexible	min. 10 x d
		fixed	min. 7 x d
	Temperature	E-Chain® linear	+41 °F to +158 °F (+5 °C to +70 °C)
		flexible	+23 °F to +158 °F (-5 °C to +70 °C)
		fixed	+5 °F to +158 °F (-15 °C to +70 °C)
	v max.	unsupported	9.84 ft/s (3 m/s)
		gliding	6.56 ft/s (2 m/s)
	a max.	98.4 ft/s² (30 m/s²)	
	Travel distance	Unsupported travel distances and for gliding applications up to 65.6 ft (20 m), Class 3	

### Cable structure

	Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
	Conductor insulation	According to bus specification.
	Conductor construction	According to bus specification.
	Color code	According to bus specification. ▶ See P/N Table
	Overall shield	Bending-resistant tinned copper braid. 80 % optical coverage
	Outer jacket	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN EN 50363-4-1). Color: Violet (similar to RAL 4001) Variants ▶ See P/N Table

### Electrical Information

	Nominal voltage	300 V, except CFBUS-PVC-020: 30 V
	Test voltage	500 V

Configurators ▶ [www.igus.com/CFBUS-PVC](http://www.igus.com/CFBUS-PVC)

36 month guarantee ... 1,354 types from stock ... no cutting charges



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 1312 ft	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.3.2.1

### Properties and approvals

	UV resistance	Medium
	Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
	Flame resistance	According to IEC 60332-1-2, FT1, VW-1
	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	30 V, +80 °C See data sheet for details ▶ <a href="http://www.igus.com/CFBUS-PVC">www.igus.com/CFBUS-PVC</a>
	NFFPA 79	Complies to Electrical Standard for Industrial Machinery NFFPA 79 Section 12.9
	CLPA	<b>CFBUS-PVC-045: CC-Link IE Field</b> , Reference no. 153 <b>CFBUS-PVC-049: CC-Link IE Field</b> , Reference no. 154 Certificate No. RU C-DE.ME77.B.00295/19 (TR ZU)
	EAC	
	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

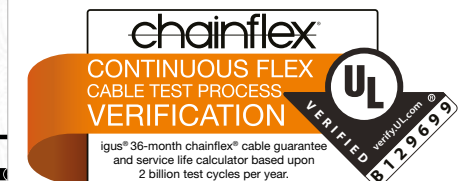
### Guaranteed service life (details see page 26-27)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°F]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41/+59	15	16	17
+59/+140	12.5	13.5	14.5
+140/+158	15	16	17

\* Higher number of cycles? Online lifetime calculation ▶ [www.chainflex.com/chainflexlife](http://www.chainflex.com/chainflexlife)

### Typical application areas

- For medium mechanical load requirements, Class 4
- Unsupported travel distances and for gliding applications up to 66 ft (20 m), Class 3
- Light oil influence, Class 2
- Preferably indoor applications, can be used in outdoor applications with temperatures > 41°F
- machining units/packages machines, Handling, indoor cranes



Example image



Example image

Part No.	AWG	Number of Conductors and rated cross section	Outer diameter max.		Copper index		Weight		Part No.	Characteristic Impedance	Core group	Color code
			[in.]	[mm]	lbs/mft	[kg/km]	lbs/mft	[kg/km]				
<b>Profibus (1x2x0.64 mm)</b>												
<b>CFBUS-PVC-001</b>	<b>24</b>	<b>1 PR x 0.25</b>	0.33	8.5	16.8	25	51.7	77	<b>CFBUS-PVC-001</b>	<b>150</b>	<b>(2x0.25)C</b>	<b>red, green</b>
<b>CAN-Bus</b>												
CFBUS-PVC-020 <sup>2)</sup>	24	2 PR x 0.25	0.28	7.0	15.5	23	38.3	57	CFBUS-PVC-020 <sup>2)</sup>	120	(4x0.25)C	white, green, brown, yellow (Star-quad)
CFBUS-PVC-021	20	1 PR x 0.5	0.33	8.5	21.5	32	57.8	86	CFBUS-PVC-021	120	(2x0.5)C	white, brown
CFBUS-PVC-022 <sup>2)</sup>	20	2 PR x 0.5	0.33	8.5	28.9	43	63.2	94	CFBUS-PVC-022 <sup>2)</sup>	120	(4x0.5)C	white, green, brown, yellow (Star-quad)
<b>CC-Link</b>												
CFBUS-PVC-035	20	3 x 0.5	0.31	8.0	26.9	40	55.1	82	CFBUS-PVC-035	110	(3x0.5)C	white, blue, yellow
<b>Ethernet/CAT5</b>												
<b>CFBUS-PVC-040<sup>2)</sup></b>	24	2 PR x 0.25	0.26	6.5	19.5	29	47.0	70	<b>CFBUS-PVC-040<sup>2)</sup></b>	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
<b>Ethernet/CAT5e</b>												
<b>CFBUS-PVC-045</b>	26	4 PR x 0.15	0.30	7.5	22.2	33	45.0	67	<b>CFBUS-PVC-045</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>												
<b>CFBUS-PVC-049</b>	26	4 PR x 0.15	0.30	7.5	22.2	33	45.0	67	<b>CFBUS-PVC-049</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A</b>												
CFBUS-PVC-050	26	4 STP x 0.15	0.39	10.0	43.7	65	82.7	123	CFBUS-PVC-050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT7</b>												
CFBUS-PVC-052	26	4 STP x 0.15	0.37	9.5	59.8	89	91.4	136	CFBUS-PVC-052	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>FireWire IEEE 1394b</b>												
CFBUS-PVC-056	26	2 STP x 0.15	0.35	9.0	39.6	59	64.5	96	CFBUS-PVC-056	110	2x(2x0.15)C	orange/blue, blue/red
	22	2 x 0.38									2x0.38	black, white
<b>Profinet</b>												
<b>CFBUS-PVC-060<sup>2) 13)</sup></b>	22	2 PR x 0.38	0.28	7.0	22.2	33	45.0	67	<b>CFBUS-PVC-060<sup>2) 13)</sup></b>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)
<b>USB 3.0</b>												
CFBUS-PVC-068	28	2 PR x AWG28	0.28	7.0	26.2	39	45.7	68	CFBUS-PVC-068	90	2x(2xAWG28)	red/black, green/white-green
	28	2 STP x AWG28									2x(2xAWG28)C	blue/yellow, orange/violet

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.

<sup>13)</sup> Color outer jacket: Yellow-green (similar to RAL 6018)

**Note:** The given outer diameters are maximum values.

**G** = with green-yellow earth core **x** = without earth core

**STP** = Individually shielded Twisted Pair

**PR** = Twisted Pair

**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.

**Order example: CFBUS-PVC-052 – To your desired length**  
CFBUS-PVC chainflex® series -052 Code Bus type

Online order ► [www.chainflex.com/CFBUS-PVC](http://www.chainflex.com/CFBUS-PVC)

Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

**Configurators** ► [www.igus.com/CFBUS-PVC](http://www.igus.com/CFBUS-PVC)