

Bus cable (Class 4.3.2.1) ● For medium duty applications ● PVC outer jacket ● Shielded ● Oil-resistant ● Flame retardant





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### Guaranteed service life according to guarantee conditions

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

Minimum guaranteed service life of the cable under the specified conditions. The installation of the cable is recommended within the middle temperature range.

chainflex<sup>®</sup> CFBUS.PVC.049

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Example image



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### Properties and approvals

UL/CSA	AWM	Details	

Part No.	UL style core insulation	UL style outer jacket	UL Voltage Rating [V]	UL Temperature Rating [°C]
CFBUS.PVC.001	10578	20601	300	80
CFBUS.PVC.020	10493	2571	30	80
CFBUS.PVC.021	10578	20601	300	80
CFBUS.PVC.022	10578	20601	300	80
CFBUS.PVC.035	10578	20601	300	80
CFBUS.PVC.040	11602	20601	300	80
CFBUS.PVC.045	11635	20601	300	80
CFBUS.PVC.049	11635	20601	300	80
CFBUS.PVC.050	11635	20601	300	80
CFBUS.PVC.052	10493	20601	300	80
CFBUS.PVC.056	10578	20601	300	80
CFBUS.PVC.060	11602	20601	300	80
CFBUS.PVC.068	11602 (AWG28) 11635 (AWG28)	20601	300	80



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Mechanical information					
Part No.		Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
Profibus (1x2x0,64 mm	ı)				
CFBUS.PVC.001		(2x0.25)C	8.5	25	77
CAN-Bus					
CFBUS.PVC.020 <sup>2)</sup>		(4x0.25)C	7.0	23	57
CFBUS.PVC.021		(2x0.5)C	8.5	32	86
CFBUS.PVC.022 <sup>2)</sup>		(4x0.5)C	8.5	43	94
CC-Link					
CFBUS.PVC.035		(3x0.5)C	8.0	40	82
Ethernet/CAT5					
CFBUS.PVC.040 <sup>2)</sup>	Ether CAT.	(4x0.25)C	6.5	29	70
Ethernet/CAT5e					
CFBUS.PVC.045	CC-Línk IE 🖬 seid	(4x(2x0.15))C	7.5	33	67
Ethernet/CAT6					
CFBUS.PVC.049	CC-Línk IE Bield	(4x(2x0.15))C	7.5	33	67
Ethernet/CAT6 <sub>A</sub>					
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
FireWire IEEE 1394b					
CFBUS.PVC.056 <sup>11)</sup>		(2x(2x0.15)C+2x0.38)C	9.0	59	96
Profinet					
CFBUS.PVC.060 <sup>2) 13)</sup>	BOODD <sup>*</sup> BOODD EtherCAT	(4x0.38)C	7.0	33	67
USB 3.0					
CFBUS.PVC.068		(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	39	68

<sup>11)</sup> Phase-out model

<sup>13)</sup> Colour outer jacket: Yellow-green (RAL 6018)

G = with green-yellow earth core

x = without earth core

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

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### Profibus

CFBUS.PVC.001

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.001		
Nominal voltage	50 V 300 V (following UL)		
Testing voltage (following DIN EN 50289-1-3)	500 V		
Operating capacity	30 pF/m		
Characteristic wave impedance (following DIN EN 50289-1-11)	150 ± 15 Ω (≥ 1 MHz)		

### Line attenuation approx. [dB/100m]

Part No.	9.6	38.4	4	16
	kHz	kHz	MHz	MHz
CFBUS.PVC.001	0.3	0.5	2.5	2.9

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)	
[mm²]	[Ω/km]	[A]	
0.25	78.0	5	

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.



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### CAN-Bus/Feldbus

CFBUS.PVC.020-CFBUS.PVC.022

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.020	CFBUS.PVC.021	CFBUS.PVC.022
Nominal voltage	50 V 30 V (following UL)	50 V 300 V (following UL)	
<b>Testing voltage</b> (following DIN EN 50289-1-3)	500 V		
Operating capacity	42 pF/m 41 pF/m 42 pF/m		
Characteristic wave impedance (following DIN EN 50289-1-11)	120 ± 12 Ω (≥ 1 MHz)		

#### Line attenuation approx. [dB/100m]

Part No.	0.1 MHz	1 MHz	5 MHz	10 MHz	20 MHz
CFBUS.PVC.020	1.3	1.9	4.8	6.9	9.5
CFBUS.PVC.021	0.6	1.3	3.3	4.7	6.8
CFBUS.PVC.022	0.8	1.8	4.0	5.8	8.5

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)	
[mm²]	[Ω/km]	[A]	
0.25	84.0	5	
0.5	39.0	10	

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

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### Ethernet (CAT5/CAT5e/GigE/PoE)

CFBUS.PVC.040-CFBUS.PVC.045

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.040 CFBUS.PVC.045		
Nominal voltage	50 V 300 V (following UL)		
<b>Testing voltage</b> (following DIN EN 50289-1-3)	500 V		
Operating capacity	50 pF/m 47 pF/m		
Nominal Velocity of Propagation (NVP)	67 % 72 %		
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω		

### Line attenuation approx. [dB/100m]

Part No.	1 MHz	4 MHz	10 MHz	16 MHz	20 MHz	31.25 MHz	62.5 MHz	100 MHz
CFBUS.PVC.040	1.7	4.2	7.0	9.2	10.4	13.2	19.4	25.3
CFBUS.PVC.045	2.5	5.0	8.3	10.6	11.7	15.0	21.9	28.6

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)
[mm <sup>2</sup> ]	[Ω/km]	[A]
0.15	145.0	2.5
0.25	94.0	5

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

Part No.	Bus type	Link class	Maximum tra Channel	nsmission length Permanent
CFBUS.PVC.040	Ethernet/CAT5	Class D - (Data applications up to 100 MHz)	82 m	70 m
CFBUS.PVC.045	Ethernet/CAT5e	Class D - (Data applications up to 100 MHz)	82 m	70 m

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### Ethernet (CAT6/GigE/PoE)

CFBUS.PVC.049

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.049
Nominal voltage	50 V 300 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Operating capacity	47 pF/m
Nominal Velocity of Propagation (NVP)	72 %
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω



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Part No.	1	4	10	16	20	31.25	62.5	100	155.5	200	250
	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
CFBUS.PVC.049	2.5	5.0	8.3	10.6	11.7	15.0	21.9	28.6	38.6	42.9	47.7

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)
[mm <sup>2</sup> ]	[Ω/km]	[A]
0.15	145.0	2.5

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

Part No.	Bus type	Link class	Maximum tra	nsmission length
			Channel	Permanent
CFBUS.PVC.049	Ethernet/CAT6	Class E - (Data applications up to 250 MHz)	74 m	63 m



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		Ethernet (CA CFBUS.PVC	<b>AT6<sub>A</sub></b> .050	/PoE)					
		Electrical int (Cable structure ple	form ease se	nation ee previo	us page)				
		Part No.							
		Nominal voltage							
		Testing voltage (following DIN EN	50289	-1-3)					
	811	Operating capaci	ity						
		Nominal Velocity	of Pro	pagatio	n (NVP)				
		Characteristic wa (following DIN EN	<b>ave im</b> 50289	<b>pedance</b> -1-11)	)				
	TE	Line attenuation a	pprox	. [dB/10	0m]				
	NG	Part No.	1 MHz	4 MHz	10 MHz	16 MHz	20 MHz	31.25 MHz	62 M
		CFBUS.PVC.050	2.2	4.6	7.2	9.1	10.1	12.6	18
		Conductor nomir cross section [mm <sup>2</sup> ]	nal	Maximu (following [Ω/km]	I <b>m cond</b> g DIN EN	<b>uctor re</b> 1 50289	esistanc -1-2)	e at 20	°C
		0.2				11	13.0		
		The final maximum the number of load	currer ed cor	nt rating c es.	lepends	among	other th	ings on	the
		Part No.		Bus typ	e	Linl	k class		
		CFBUS.PVC.050		Ethernet	/CAT6 <sub>A</sub>	Clas (Dat	ss EA - ta applic	cations u	ıp to
de II lage	gus° chainflex° CFBUS.PUC.049								

CFBUS.PVC.050 50 V 300 V (following UL)

500 V

45 pF/m 76 %

 $100 \pm 15 \Omega$ 

155.52 200

MHz

35.7

Maximum current rating at 30 °C

MHz

30.6

(following DIN VDE 0298-4)

250

MHz

40.8

3.5

350

MHz

49.4

500 MHz

60.9

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mong other things on the ambient conditions, the type of the installation and

31.25 62.5

MHz

18.1

100

MHz

23.4

[A]

Part No.	Bus type	Link class	Maximum transmission lengt	
			Channel	Permanent
CFBUS.PVC.050	Ethernet/CAT6 <sub>A</sub>	Class EA - (Data applications up to 500 MHz)	73 m	62 m



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### Ethernet (CAT7/PoE) CFBUS.PVC.052

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.052
Nominal voltage	50 V 300 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Operating capacity	48 pF/m
Nominal Velocity of Propagation (NVP)	68 %
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω



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### Line attenuation approx. [dB/100m]

Part No.	1	4	10	16	20	31.25	62.5	100	155.52	250	500	600
	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
CFBUS.PVC.052	2.5	5.2	8.3	10.4	11.6	14.7	21.5	27.7	35.5	45.6	67.2	73.0

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)
[mm²]	[Ω/km]	[A]
0.15	149.0	2.5

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

Part No.	Bus type	Link class	Maximum tra Channel	ansmission length Permanent
CFBUS.PVC.052	Ethernet/CAT7	Class F - (Data applications up to 600 MHz)	71 m	60 m



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# FireWire 800 (IEEE1394b)

CFBUS.PVC.056

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.056		
Nominal voltage	50 V 300 V (following UL)		
Testing voltage (following DIN EN 50289-1-3)	500 V		
Operating capacity	Data pairs: 45 pF/m		
Characteristic wave impedance (following DIN EN 50289-1-11)	Data pairs: 110 $\pm$ 16.5 $\Omega$ (1-250 MHz)		

### Line attenuation approx. [dB/100m]

Part No.	250	400	500	800	1000
	MHz	MHz	MHz	MHz	MHz
CFBUS.PVC.056	2.4	3.0	3.6	4.7	5.6

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)
[mm²]	[Ω/km]	[A]
0.15	150.0	2.5
0.38	59.4	7

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

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# Profinet (Type C)

CFBUS.PVC.060

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.060	
Nominal voltage	50 V 300 V (following UL)	
Testing voltage (following DIN EN 50289-1-3)	500 V	
Operating capacity	53 pF/m	
Nominal Velocity of Propagation (NVP)	67 %	
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω	



Part No.	1 MHz	4 MHz	10 MHz	16 MHz	20 MHz	31.25 MHz	62.5 MHz	100 MHz
CFBUS.PVC.060	2.0	4.1	6.2	7.8	8.7	11.0	16.3	21.2
CFBUS.PVC.060	2.0	4.1	6.2	7.8	8.7	11.0	16.3	21.

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)	
[mm²]	[Ω/km]	[A]	
0.38	59.4	7	

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

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### **USB 3.0**

CFBUS.PVC.068

### **Electrical information**

(Cable structure please see previous page)

Part No.	CFBUS.PVC.068		
Nominal voltage	50 300 V (foll	on 2 billion test cycles per year	
<b>Testing voltage</b> (following DIN EN 50289-1-3)	50		
Characteristic wave impedance (following DIN EN 50289-1-11)	STP: 90 ± 18 Ω (1-1200 MHz)	UTP: 105 ± 16 Ω (1-1200 MHz)	
Operating capacity	STP: 60 pF/m	UTP: 52 pF/m	ر الباري
Nominal Velocity of Propagation (NVP)	STP: 70 %	UTP: 67 %	LISTED

### Line attenuation approx. [dB/100m]

Part No.	1 MHz	625 MHz	1200 MHz
CFBUS.PVC.068	0.4	11.5	18.0

Conductor nominal cross section	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2)	Maximum current rating at 30 °C (following DIN VDE 0298-4)	
[mm²]	[Ω/km]	[A]	
0.28	205.0	1	

The final maximum current rating depends among other things on the ambient conditions, the type of the installation and the number of loaded cores.

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