

# Bus cables



## chainflex® types



chainflex® cable	Jacket	Shield	Bending radius min., e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Approvals and standards	oil-resistant	torsion resistant	v max. [m/s] unsupported	v max. [m/s] gliding	a max. [m/s²]	Page
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### Bus cables

**Exclusive!** chainflex® guarantee – guaranteed lifetime

► Selection table page 176

Selection chart for chainflex® bus cables											178			
CF888	PVC	✓	15	+5/ +70	UL US	ERL	CE				3	20	182	
CFBUS.PVC	PVC	✓	12.5	-5/ +70	UL US	ERL	CE	✓			3	2	30	184
CF898	iguPUR	✓	15	-20/ +80	UL US	ERL	CE	✓			3	20	188	
CFBUS.PUR	PUR	✓	12.5	-20/ +70	UL US	ERL	CE	✓			3	2	30	190
CFBUS	TPE	✓	10-12.5	-35/ +70	UL US	ERL	CE	✓			10	6	100	194
CF11.LC	TPE	✓	10	-35/ +70	UL US	ERL	CE	✓			10	6	100	200
CF11.LC.D	TPE	✓	10	-35/ +70	UL US	ERL	CE	✓			10	6	100	204
CF14.CAT5	TPE	✓	10	-35/ +70	UL US	ERL	CE	✓			10	6	100	208



chainflex® cable	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Bending radius min. [factor x d]		Bending radius min. [factor x d]		Bending radius min. [factor x d]		Page
		unsupported	gliding			5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million (5 million) double strokes *				
<b>Bus cable</b>												
 CF888 <b>chainflex® M</b>	+5 / +15 +15 / +60 +70 / +70	3		20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		182
 CFBUS.PVC	+5 / +15 +15 / +60 +60 / +70	3	2	30	≤ 20	15 12.5 15		16 13.5 16		17 14.5 17		184
 CF898 <b>chainflex® M</b>	-20 / -10 -10 / +70 +70 / +80	3		20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		188
 CFBUS.PUR	-20 / -10 -10 / +60 +60 / +70	3	2	30	≤ 20	15 12.5 15		16 13.5 16		17 14.5 17		190
 CFBUS.001-.045	-35 / -25 -25 / +60 +60 / +70	10	6	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		194
 CFBUS.050-.070	-35 / -25 -25 / +60 +60 / +70	10	6	100	≤ 400	15 12.5 15		16 13.5 16		17 14.5 17		194
 CF11.LC	-35 / -25 -25 / +60 +60 / +70	10	6	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		200
 CF11.LC.D	-35 / -25 -25 / +60 +60 / +70	10	6	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		204
 CF14.CAT5	-35 / -25 -25 / +60 +60 / +70	10	6	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		208

<sup>(1)</sup> **Exclusive!** Guaranteed lifetime for this series according to the guarantee conditions ► Page 22-25

\* Guaranteed lifetime, higher number of double strokes possible.  
Figures in brackets refer to chainflex® M cables

Bus system/ chainflex® type	Number of cores and conductor nominal cross section [mm²]	Minimum bending radius, moved	Jacket	Temperature, moved from/to [°C]	Class	UV-resistant	halogen-free	unsupported	gliding	Approvals and standards	Page
<b>Profibus (1x2x0,64 mm) 150 Ohm</b>											
CF888.001	(2x0.25)C	15 x d	PVC	+ 5 °C / +70 °C*	Class 3.1.1			✓		CE, TÜV, UL, ATEX, IECEx, EAC	183
CF898.001	(2x0.25)C	15 x d	iguPUR	- 20 °C / +80 °C	Class 3.1.3	✓		✓		CE, TÜV, UL, ATEX, IECEx, EAC	189
CFBUS.PVC.001	(2x0.25)C	12.5 x d	PVC	+ 5 °C / +70 °C*	Class 4.3.2	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	186
CFBUS.PUR.001	(2x0.25)C	12.5 x d	PUR	- 20 °C / +70 °C	Class 4.3.3	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	192
CFBUS.001	(2x0.25)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.01.02.PBA.LC.D	(2x0.25)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	206
CFROBOT8.001	(2x0.35)C	10 x d	PUR	- 25 °C / +70 °C	Class 6.7.3	✓		twisted		CE, TÜV, UL, ATEX, IECEx, EAC	379
CFBUS.002	(2x0.25)C+4x1.5	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.02.15.04.PBA.LC.D	(2x0.25)C+4x1.5	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	206
CFBUS.003	(2x0.25)C+3x0.75	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.02.07.03.PBA.LC.D	(2x0.25)C+3x0.75	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	206
CF11.02.02.02.PBA.LC	(4x0.25)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	202
<b>Interbus 100 Ohm</b>											
CFBUS.010	(3x(2x0.25))C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.03.02.IB-S	(3x(2x0.25))C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	202
CFBUS.011	(3x(2x0.25)+(3x1.0))C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.03.02.10.03.IB-S	(3x(2x0.25)+(3x1.0))C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	202
<b>CAN-Bus 120 Ohm</b>											
CF888.021	(2x0.5)C	15 x d	PVC	+ 5 °C / +70 °C*	Class 3.1.1			✓		CE, TÜV, UL, ATEX, IECEx, EAC	183
CF898.021	(2x0.5)C	15 x d	iguPUR	- 20 °C / +80 °C	Class 3.1.3	✓		✓		CE, TÜV, UL, ATEX, IECEx, EAC	189
CFBUS.020	(4x0.25)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.02.02.02.LC.D	(4x0.25)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	206
CFBUS.PVC.021	(2x0.5)C	12.5 x d	PVC	+ 5 °C / +70 °C*	Class 4.3.2	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	186
CFBUS.PUR.021	(2x0.5)C	12.5 x d	PUR	- 20 °C / +70 °C	Class 4.3.3	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	192
CFBUS.021	(2x0.5)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.05.01.02.LC	(2x0.5)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	202
CF11.05.01.02.LC.D	(2x0.5)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	206
CFBUS.PVC.022	(4x0.5)C	12.5 x d	PVC	+ 5 °C / +70 °C*	Class 4.3.2	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	186
CFBUS.PUR.022	(4x0.5)C	12.5 x d	PUR	- 20 °C / +70 °C	Class 4.3.3	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	192
CFBUS.022	(4x0.5)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CF11.05.02.02.LC	(4x0.5)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓	✓	✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	202
CFROBOT8.022	(4x0.5)C	10 x d	PUR	- 25 °C / +70 °C	Class 6.7.3	✓		twisted		CE, TÜV, UL, ATEX, IECEx, EAC	379
<b>Device-Net 120 Ohm</b>											
CFBUS.030	((2xAWG 24)C+2xAWG 22)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
CFBUS.031	((2xAWG 18)C+2xAWG 15)C	10 x d	TPE	- 35 °C / +70 °C	Class 6.6.4	✓		✓	✓	CE, TÜV, UL, ATEX, IECEx, EAC	196
<b>ASI BUS</b>											
CF898.080 (gelb)	2 x 1.5	15 x d	iguPUR	- 20 °C / +80 °C	Class 3.1.3	✓		✓		CE, TÜV, UL, ATEX, IECEx, EAC	189
CF898.081 (schwarz)	2 x 1.5	15 x d	iguPUR	- 20 °C / +80 °C	Class 3.1.3	✓		✓		CE, TÜV, UL, ATEX, IECEx, EAC	189

\* -5 °C to +70 °C according to DIN EN 60811, part 1-4 chapter 8.2, +5 °C to +70 °C for use in e-chains® with > 50.000 cycles

More bus systems ► Page 180

1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

... no minimum order quantity ...

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# PVC Bus cable | CF888

- For flexing applications
- PVC outer jacket
- Shielded
- Flame-retardant

**chainflex® M -  
5 million double  
strokes. Guaranteed.**

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 15 x d
		<b>flexible</b>	minimum 12 x d
		<b>fixed</b>	minimum 8 x d
	<b>Temperature</b>	<b>e-chain®</b>	+5 °C to +70 °C
		<b>flexible</b>	-5 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-15 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	3 m/s
	<b>a max.</b>	<b>gliding</b>	20m/s²
	<b>Travel distance</b>	Unsupported travel distances.	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ▶ Schedule delivery programm
	<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in e-chains®. Colour: red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

### Properties and approvals

	<b>Flame retardant</b>	CF888.001-CF888.020: According to IEC 60332-1-2, CEI 20-35, FT-2 CF888.021-CF888.060: According to IEC 60332-1-2, CEI 20-35, VW-1, FT-1
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	CF888.001-CF888.020: Style 1589 and 2560, 30V, 60°C CF888.021-CF888.060: Style 1598 and 2571, 30V, 80°C
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to No. C-DE.PB49.B.00449

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## Class 3.1.1

3 low duty applications

1 unsupported travels

1 not oil-resistant



**Lead free** Following 2011/65/EC (RoHS-II)

**CE** Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				1 million	3 million	5 million
Temperature, v max. [m/s]	a max. [m/s²]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5 / +15			17.5	18.5	19.5	
+15 / +60	3	20	15	16	17	
+70 / +70			17.5	18.5	19.5	

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For flexing applications
- Without influence of oil
- Preferably indoor applications
- Especially for unsupported travel distances
- Wood/stone processing, packaging industry, supply systems, handling, adjusting equipment

Delivery program Part No. Profibus	Number of cores and conductor nominal cross section [mm²]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF888.001	(2x0.25)C	8.0	19	62
<b>NEW</b> CF888.021	(2x0.5)C	8.5	26	82
<b>NEW</b> CF888.045	(4x(2x0.14))C	7.0	27	68
<b>NEW</b> CF888.060 <sup>16)</sup>	(4x0.38)C	7.0	27	58

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)  
**Other types available on request.**  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core= without earth core

Delivery program Part No. Profibus	Characteristic wave impedance approx. [Ω]	Core group	Colour code
CF888.001	150	(2x0.25)C	red, green
<b>NEW</b> CF888.021	120	(2x0.5)C	
<b>NEW</b> CF888.045	100	(4x(2x0.14))C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>NEW</b> CF888.060	100	(4x0.38)C	

**EPLAN download, configurators ▶ [www.igus.eu/CF888](http://www.igus.eu/CF888)**

**... no minimum order quantity ...**

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# PVC Bus cable | CFBUS.PVC

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

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 12.5 x d
		<b>flexible</b>	minimum 10 x d
		<b>fixed</b>	minimum 7 x d
	<b>Temperature</b>	<b>e-chain®</b>	+5 °C to +70 °C
		<b>flexible</b>	-5 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-15 °C to +70 °C (following DIN EN 50305)
	<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 version consisting of bare copper wires (following EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ▶ Schedule Delivery Program
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55% linear, approx. 80% optical.
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in e-chains® (following DIN VDE 0281 Part 13). Colour: red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V



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(up to 10 cuts of the same types)

## Class 4.3.2 4 medium duty applications 3 Travel distance up to 20 m 2 oil-resistant

### Properties and approvals

	<b>UV-resistance</b>	Medium
	<b>Oil</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, WW-1
	<b>Silicon-free</b>	Free from silicon 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>NFFPA</b>	Following NFFPA 79-2012 chapter 12.9
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to No. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</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 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		Travel distance [m]	5 million			7.5 million			10 million		
		unsupported	gliding		a max. [m/s <sup>2</sup> ]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]		
+5 / +15				≤ 20	15	16	17						
+15 / +60		3	2		12.5	13.5	14.5						
+60 / +70					15	16	17						

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical 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
- Bus connection cable for machining units/machine tools, handling, indoor cranes

**... no minimum order quantity ...**

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IGUS® CHAINFLEX® CFBUS.PVC

Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0,64 mm)</b>					<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>					<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	
<b>Ethernet/CAT5/GigE</b>					<b>Ethernet/CAT5/GigE</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)
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<sub>A</sub></b>					<b>Ethernet/CAT6<sub>A</sub></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>FireWire IEEE 1394b</b>					<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>					<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>					<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

EtherCAT

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)  
The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

-  **Order example: CFBUS.PVC.001 – in your desired length (0.5 m steps)**  
CFBUS.PVC chainflex® series .001 Code Bus-type
-  Online order ► [www.chainflex.eu/CFBUSPVC](http://www.chainflex.eu/CFBUSPVC)
-  Delivery time 24h or today  
Delivery time means time until shipping of goods.

 EPLAN download, configurators ► [www.igus.eu/CFBUSPVC](http://www.igus.eu/CFBUSPVC)

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(up to 10 cuts of the same types)

**... no minimum order quantity ...**

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# iguPUR Bus cable | CF898







- For flexing applications
- iguPUR outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

**chainflex® M -  
5 million double  
strokes. Guaranteed.**



### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 15 x d
		<b>flexible</b>	minimum 12 x d
		<b>fixed</b>	minimum 8 x d
	<b>Temperature</b>	<b>e-chain®</b>	-20 °C to +80 °C
		<b>flexible</b>	-40 °C to +80 °C (following EN 60811-504)
		<b>fixed</b>	-50 °C to +80 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	3 m/s
	<b>a max.</b>	<b>gliding</b>	20m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances.	







### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ► Schedule delivery programm
	<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

### Properties and approvals

	<b>UV-resistance</b>	Medium
	<b>Flame retardant</b>	<b>CF898.001-CF898.020:</b> According to IEC 60332-1-2, CEI 20-35, FT-1 <b>CF898.021-CF898.060:</b> According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1 <b>CF898.080-CF898.081:</b> According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Oil</b>	Oil-resistant (following DIN EN 50363-10-2)
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	<b>CF898.001-CF898.060:</b> Style 1589 and 20236, 30V, 80°C <b>CF898.080-CF898.081:</b> Style 10493 and 20549, 300V, 80°C
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01559

**1,040 types from stock no cutting costs ...**





(up to 10 cuts of the same types)

## Class 3.1.3

3 low duty applications

1 unsupported travels

3 oil-resistant

	<b>CTP</b>	Certified according to No. C-DE.PB49.B.00449
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				1 million	3 million	5 million
Temperature, from/to [°C]	v max. [m/s] unsupported	a max. [m/s <sup>2</sup> ]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20 / -10				17.5	18.5	19.5
-10 / +70	3	20	≤ 10	15	16	17
+70 / +80				17.5	18.5	19.5

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For flexing applications
- With influence of oil
- Indoor and outdoor applications without direct sun radiation
- Especially for unsupported travel distances
- Machining units/machine tools, low temperature applications

Delivery program Part No. Profibus	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>CF898.001</b>	(2x0.25)C	8.0	19	58
<b>CAN-Bus</b>				
<b>CF898.021</b>	(2x0.5)C	8.5	26	82
<b>Ethernet CAT5e</b>				
<b>CF898.045</b>	(4x(2x0.14))C	7.5	27	64
<b>Profinet</b>				
<b>CF898.060<sup>16)</sup></b>	(4x0.38)C	7.0	27	60
<b>ASI BUS</b>				
<b>CF898.080 (yellow)</b>	2 x 1.5	according to ASI	32	6 4
<b>CF898.081 (black)</b>	2 x 1.5	according to ASI	32	6 4

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)

Other types available on request.

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

Delivery program Part No. Profibus	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>CF898,001</b>	150	(2x0.25)C	red, green
<b>CAN-Bus</b>			
<b>CF898,001</b>	120	(2x0.5)C	
<b>Ethernet CAT5e</b>			
<b>CF898,045</b>	100	(4x(2x0.14))C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Profinet</b>			
<b>CF898,060</b>	100	(4x0.38)C	
<b>ASI BUS</b>			
<b>CF898.080 (yellow)</b>	-	2x1.5	blue, brown
<b>CF898.081 (black)</b>	-	2x1.5	blue, brown





- For medium duty applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 12.5 x d
		<b>flexible</b>	minimum 10 x d
		<b>fixed</b>	minimum 7 x d
	<b>Temperature</b>	<b>e-chain®</b>	-20 °C to +70 °C
		<b>flexible</b>	-40 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-50 °C to +70 °C (following DIN EN 50305)
	<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 version consisting of bare copper wires (following EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ▶ Schedule Delivery Program
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55% linear, approx. 80% optical.
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in e-chains® (following DIN VDE 0282 Part 10). Colour: Red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

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**1,040 types from stock no cutting costs ...**

(up to 10 cuts of the same types)

## Class 4.3.3

4 medium duty applications 3 Travel distance up to 20 m 3 oil-resistant

### Properties and approvals

	<b>UV-resistance</b>	Medium
	<b>Oil</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2009
	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>UL/CSA</b>	Style 1598 and 20236, 30 V, 80 °C
	<b>NFFPA</b>	Following NFFPA 79-2012 chapter 12.9
	<b>GL</b>	Certified according to GL Type Testing – Certificate No.: 61 937-14 HH
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to No. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF77.UL.05.12.D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		Travel distance [m]	5 million 7.5 million 7.5 million		
		unsupported	gliding		R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20 / -10				≤ 20	15	16	17
-10 / +60		3	2		12.5	13.5	14.5
+60 / +70					15	16	17

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For medium duty applications
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and up to 20 m for gliding applications
- Bus connection cable for machining units/machine tools, low-temperature applications

**... no minimum order quantity ...**

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Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0,64 mm)</b>					<b>Profibus</b>			
CFBUS.PUR.001	(2x0.25)C	8.5	27	74	CFBUS.PUR.001	150	(2x0.25)C	red, green
<b>CAN-Bus</b>					<b>CAN-Bus</b>			
CFBUS.PUR.021	(2x0.5)C	8.5	33	83	CFBUS.PUR.021	120	(2x0.5)C	white, brown
CFBUS.PUR.022 <sup>2)</sup>	(4x0.5)C	8.5	46	93	CFBUS.PUR.022 <sup>2)</sup>	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)
<b>Ethernet/CAT5/GigE</b>					<b>Ethernet/CAT5/GigE</b>			
EtherCAT <sup>®</sup> CFBUS.PUR.040 <sup>2)</sup>	(4x0.25)C	6.5	30	68	CFBUS.PUR.040 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS.PUR.045	(4x(2x0.15))C	7.5	35	68	CFBUS.PUR.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6<sub>A</sub></b>					<b>Ethernet/CAT6<sub>A</sub></b>			
CFBUS.PUR.050	4x(2x0.20)C	9.5	69	122	CFBUS.PUR.050	100	4x(2x0.20)C	white/blue, white/orange, white/green, white/brown
<b>FireWire IEEE 1394b</b>					<b>FireWire IEEE 1394b</b>			
CFBUS.PUR.056	(2x(2x0.15)C)+2x0.38)C	9.0	62	94	CFBUS.PUR.056	100	(2x(2x0.15)C) 2x0.38	orange/blue, blue/red black, white
<b>Profinet</b>					<b>Profinet</b>			
CFBUS.PUR.060 <sup>2/16)</sup>	(4x0.38)C	7.0	35	66	CFBUS.PUR.060 <sup>2/16)</sup>	100	(4x0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB 3.0</b>					<b>USB 3.0</b>			
CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	41	64	CFBUS.PUR.068	90	2x(2xAWG28) 2x(2xAWG28)C	red/black, green/white-green blue/yellow, orange/violet

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018)  
The chainflex<sup>®</sup> types marked with <sup>2)</sup> are cables designed as a star-quad.  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

 **Order example: CFBUS.PUR.001 – in your desired length (0.5 m steps)**  
CFBUS.PUR chainflex<sup>®</sup> series .001 Code Bus-type

 Online order ► [www.chainflex.eu/CFBUSPUR](http://www.chainflex.eu/CFBUSPUR)

 Delivery time 24h or today  
Delivery time means time until shipping of goods.

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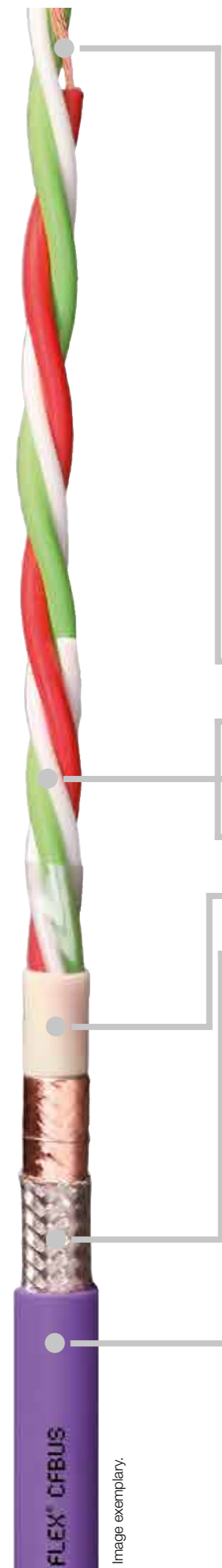
**1,040 types from stock no cutting costs ...**

(up to 10 cuts of the same types)

**... no minimum order quantity ...**

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- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- oil-resistant
- Bio-oil-resistant
- Flame-retardant
- Hydrolysis-/microbe-resistant

**New!**  
**CAT7-Ethernet**  
**for the e-chain®**

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	► Schedule Delivery Program
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain®</b>	-35 °C to +70 °C
		<b>flexible</b>	-45 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-50 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
	<b>a max.</b>	<b>gliding</b>	6 m/s
	<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ► Schedule Delivery Program
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

### Properties and approvals

	<b>UV-resistance</b>	Medium
	<b>Oil</b>	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4

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(up to 10 cuts of the same types)

## Class 6.6.4 6 extremely heavy duty applications 6 travel distance up to 400 m and more 4 oil-resistant

	<b>Flame retardant</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992) ► Schedule Delivery Program
	<b>UL/CSA</b>	
	<b>NFFPA</b>	Following NFFPA 79-2012 chapter 12.9
	<b>GL</b>	Certified according to GL Type Testing – Certificate No.: 61 937-14 HH
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to No. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF34.UL.25.04.D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*	v max. [m/s]		a max. [m/s²]	Travel distance [m]	5 million 7.5 million 10 million		
	unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
<b>Part No. CFBUS.001-.045</b>							
-35 / -25			100	≤ 400	12.5	13.5	14.5
-25 / +60	10	6			10	11	12
+60 / +70					12.5	13.5	14.5
<b>Part No. CFBUS.050-.070</b>							
-35 / -25			100	≤ 400	15	16	17
-25 / +60	10	6			12.5	13.5	14.5
+60 / +70					15	16	17

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and up to 400 m for gliding applications
- Bus connection cable for storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, semiconductor insertion, indoor cranes, low-temperature applications

Test data ► page 36

**... no minimum order quantity ...**

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IGUS® CHAINFLEX® CFBUS

Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0,64 mm) (minimum bending radius 10 x d) Style 1589/21371, 30 V, 80°C</b>					<b>Profibus</b>			
CFBUS.001	(2x0.25)C	8.5	34	83	CFBUS.001	150	(2x0.25)C	red, green
CFBUS.002	(2x0.25)C+4x1.5	12.5	99	203	CFBUS.002	150	(2x0.25)C 4x1.5	red/green black with white numerals 1-4
CFBUS.003	(2x0.25)C+3G0.75	11.0	58	141	CFBUS.003	150	(2x0.25)C 3G0.75	red/green black, blue, green-yellow
<b>Interbus (minimum bending radius 10 x d) Style 1589/21371, 30 V, 80°C</b>					<b>Interbus</b>			
CFBUS.010	(3x(2x0.25))C	9.0	50	90	CFBUS.010	100	3x(2x0.25)	white/brown, green/yellow, grey/pink
CFBUS.011	(3x(2x0.25)+(3G1.0))C	10.5	88	142	CFBUS.011	100	3x(2x0.25) 3G1.0	white/brown, green/yellow, grey/pink red, blue, green-yellow
<b>CAN-BUS/Fieldbus (minimum bending radius 10 x d) Style 1589/21371, 30 V, 80°C</b>					<b>CAN-BUS/Fieldbus</b>			
CFBUS.020 <sup>2)</sup>	(4x0.25)C	6.5	40	77	CFBUS.020 <sup>2)</sup>	120	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS.021	(2x0.5)C	8.0	41	88	CFBUS.021	120	(2x0.5)C	white, brown
CFBUS.022 <sup>2)</sup>	(4x0.5)C	8.0	46	90	CFBUS.022 <sup>2)</sup>	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)
<b>DeviceNet (minimum bending radius 10 x d) Style 1589/21371, 30 V, 80°C</b>					<b>DeviceNet</b>			
CFBUS.030 <sup>4)</sup> Drop	((2xAWG24)C+2xAWG22)C	7.0	36	65	CFBUS.030 <sup>4)</sup> Drop	120	(2xAWG24)C 2xAWG22	white/blue red, black
CFBUS.031 Trunk	((2xAWG18)C+2xAWG15)C	11.5	110	200	CFBUS.031 Trunk	120	(2xAWG18)C 2xAWG15	white/blue red, black
<b>CC-Link (minimum bending radius 10 x d) Style 1589/21371, 30 V, 80°C</b>					<b>CC-Link</b>			
CFBUS.035	(3xAWG20)C	8.5	46	94	CFBUS.035	110	(3xAWG20)C	white, blue, yellow
<b>Ethernet/CAT5/GigE (minimum bending radius 10 x d) Style 10138/21235, 300 V, 80 °C</b>					<b>Ethernet/CAT5/GigE</b>			
EtherCAT <sup>→</sup> CFBUS.040 <sup>2)</sup>	(4x0.25)C	7.0	35	66	CFBUS.040 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS.041	(4x(2x0.25))C	10.0	52	113	CFBUS.041	100	(4x(2x0.25))C	white/brown, green/yellow, grey/pink, blue/red
CFBUS.044	(4x(2x0.15))C	8.5	44	88	CFBUS.044	100	(4x(2x0.15))C	white/brown, green/yellow, grey/pink, blue/red
CFBUS.045	(4x(2x0.15))C	8.5	44	88	CFBUS.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6<sub>A</sub> (minimum bending radius 12.5 x d) Style 1589/21371, 30 V, 80°C</b>					<b>Ethernet/CAT6<sub>A</sub></b>			
CFBUS.050	(4x(2x0.15)C)C	10.5	76	139	CFBUS.050	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
<b>Ethernet/CAT7 (minimum bending radius 12.5 x d) Style 1589/21371, 30 V, 80°C</b>					<b>Ethernet/CAT7 (minimum bending radius 12.5 x d) Style 1589/21371, 30 V, 80°C</b>			
New CFBUS.052	(4x(2x0.15)C)C	10.5	94	142	CFBUS.052	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown

<sup>4)</sup> manufactured without inner jacket  
The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
Other types available on request.  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

Other types ► page 198

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1,040 types from stock no cutting costs ...

(up to 10 cuts of the same types)

### Technical note

The USB, FireWire and GigE-cables shown on these pages were developed for the ambitious industrial usage in e-chains®. High proofness to oil and lubricants is as secured as protection against electromagnetic interferences. This high mechanical service life was reached with the usage of high quality materials which even care for the electrical safeness. In single cases communication errors can occur, if very different hardware and software is combined. We recommend tests with all components and the cables before starting serial production, to get the proove for a perfect running system. Of course we support you with the details of these electrical tests. Just give us a call!

... no minimum order quantity ...

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IGUS® CHAINFLEX® CFBUS

Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>FireWire IEEE 1394a (minimum bending radius 12.5 x d) Style 1589/21371, 30 V, 80 °C</b>					<b>FireWire IEEE 1394b</b>			
CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	41	84	CFBUS.055	100	2x(2x0.15)C 2x(0.34)C	orange/blue, green/red white, black
<b>Profinet (minimum bending radius 12.5 x d) Style 10138/21235, 300 V, 80 °C</b>					<b>Profinet</b>			
CFBUS.060 <sup>2/16)</sup>	(4x0.38)C	7.5	41	75	CFBUS.060 <sup>2/16)</sup>	100	(4x0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB (minimum bending radius 12.5 x d) Style 1589/21371, 30 V, 80 °C</b>					<b>USB</b>			
CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	29	48	CFBUS.065	90	(2xAWG28) 2xAWG20	white/green red, black
CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	33	56	CFBUS.066	90	(2xAWG24) 2xAWG20	white/green red, black
<b>DVI (minimum bending radius 12.5 x d) without cULus</b>					<b>DVI</b>			
CFBUS.070	(4x(2xAWG28)C+(2xAWG28)+3xAWG28)C	9.0	37	94	CFBUS.070	100	4x(2xAWG28)C (2xAWG28) 3xAWG28	4 x white/yellow with element-shield in blue, black, white, red white/brown green, yellow, grey

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

<sup>16)</sup> Colour outer jacket: yellow-green (similar RAL 6018)

Other types available on request.

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.

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



Order example: **CFBUS.060** – in your desired length (0.5 m steps)  
CFBUS chainflex® series .060 Code Bus-type



Online order ► [www.chainflex.eu/CFBUS](http://www.chainflex.eu/CFBUS)



Delivery time 24h or today  
Delivery time means time until shipping of goods.

### Technical note

The USB, FireWire and GigE-cables shown on these pages were developed for the ambitious industrial usage in e-chains®. High proofness to oil and lubricants is as secured as protection against electromagnetic interferences. This high mechanical service life was reached with the usage of high quality materials which even care for the electrical safeness. In single cases communication errors can occur, if very different hardware and software is combined. We recommend tests with all components and the cables before starting serial production, to get the proove for a perfect running system. Of course we support you with the details of these electrical tests. Just give us a call!

Other types ► page 196



EPLAN download, configurators ► [www.igus.eu/CFBUS](http://www.igus.eu/CFBUS)

**1,040 types from stock no cutting costs ...**

(up to 10 cuts of the same types)

**... no minimum order quantity ...**

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# TPE Bus cable | CF11.LC (low capacitance)

- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain®</b>	-35 °C to +70 °C
		<b>flexible</b>	-50 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-55 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>Core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ▶ Schedule Delivery Program
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: Steel blue (similar to RAL 5011)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

EPLAN download, configurators ▶ [www.igus.eu/CF11LC](http://www.igus.eu/CF11LC)

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# Class 6.6.4 6 extremely heavy duty applications 6 travel distance up to 400 m and more 4 oil-resistant

### Properties and approvals

	<b>UV-resistance</b>	High
	<b>Oil</b>	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				5 million			7.5 million			10 million		
Temperature, from/to [°C]	v max. [m/s]	a max. [m/s <sup>2</sup> ]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
-35 / -25				12.5	13.5	14.5						
-25 / +60	10	6	100	≤ 400	10	11	12					
+60 / +70				12.5	13.5	14.5						

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and up to 400 m for gliding applications
- Bus connection cable for storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, semiconductor insertion, outdoor cranes, low-temperature applications

**... no minimum order quantity ...**

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Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0,64 mm)</b>					<b>Profibus</b>			
CF11.02.02.02.PBA.LC <sup>2)</sup>	(4x0.25)C	8.5	37	79	CF11.02.02.02.PBA.LC	150	(4x0.25)C	green, yellow, red, brown (star-quad stranding)
<b>Interbus</b>					<b>Interbus</b>			
CF11.02.03.02.IB-S	(3x(2x0.25))C	9.0	51	84	CF11.02.03.02.IB-S	100	(3x(2x0.25))C	white/brown, green/yellow, grey/pink
CF11.02.03.02.10.03.IB-S	(3x(2x0.25)+(3G1.0))C	10.5	88	134	CF11.02.03.02.10.03.IB-S	100	3x(2x0.25) (3G1.0)	white/brown, green/yellow, grey/pink red, blue, green-yellow
<b>CAN-Bus</b>					<b>CAN-Bus</b>			
CF11.05.01.02.LC	(2x0.5)C	8.0	41	82	CF11.05.01.02.LC	120	(2x0.5)C	white, brown
CF11.05.02.02.LC <sup>2)</sup>	(4x0.5)C	8.5	46	87	CF11.05.02.02.LC	120	(4x0.5)C	white, green, brown, yellow (star-quad stranding)

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

 **Order example: CF11.02.03.02.IB-S – in your desired length (0.5 m steps)**  
CF11.LC chainflex® series .02 Code nominal cross section .03 Number of pairs  
.02 Identification pairs .IB-S Special identification

 Online order ► [www.chainflex.eu/CF11LC](http://www.chainflex.eu/CF11LC)

 Delivery time 24h or today  
Delivery time means time until shipping of goods.

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- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- PVC-free/halogen-free
- Oil-resistant
- Bio-oil-resistant
- Hydrolysis-/microbe-resistant

**Dynamic information**

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain®</b>	-35 °C to +70 °C
		<b>flexible</b>	-50 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-55 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

**Cable structure**

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>core insulation</b>	According to bus specification
	<b>Core stranding</b>	According to bus specification
	<b>Core identification</b>	According to bus specification ▶ Schedule Delivery Program
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: red lilac (similar to RAL 4001)

**Electrical information**

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

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**Class 6.6.4** 6 extremely heavy duty applications 6 travel distance up to 400 m and more 4 oil-resistant

**Properties and approvals**

	<b>UV-resistance</b>	Medium
	<b>Oil</b>	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1.
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2006/95/EC

**Guaranteed lifetime according to guarantee conditions (Page 22-25)**

Double strokes*	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s <sup>2</sup> ]	Travel distance [m]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35 / -25					≤ 400	12.5	13.5	14.5
-25 / +60		10	6	100		10	11	12
+60 / +70						12.5	13.5	14.5

\* Higher number of double strokes possible - please ask for your individual calculation.

**Typical application areas**

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and up to 400 m for gliding applications
- Bus connection cable for storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, semiconductor insertion, indoor cranes, low-temperature applications

**... no minimum order quantity ...**

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Image exemplary.

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0,64 mm)</b>					<b>Profibus</b>			
CF11.02.01.02.PBA.LC.D	(2x0.25)C	8.5	34	77	CF11.02.01.02.PBA.LC.D	150	(2x0.25)C	red, green
CF11.02.02.07.03.PBA.LC.D	(2x0.25)C+3G0.75	11.0	58	130	CF11.02.02.07.03.PBA.LC.D	150	(2x0.25)C 3G0.75	red/green black, blue, green-yellow
CF11.02.02.15.04.PBA.LC.D	(2x0.25)C+4x1.5	12.5	94	179	CF11.02.02.15.04.PBA.LC.D	150	(2x0.25)C 4x1.5	red/green black with white numerals 1-4
<b>CAN-Bus</b>					<b>CAN-Bus</b>			
CF11.02.02.02.LC.D <sup>2)</sup>	(4x0.25)C	6.5	40	54	CF11.02.02.02.LC.D <sup>2)</sup>	120	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CF11.05.01.02.LC.D	(2x0.5)C	8.0	41	82	CF11.05.01.02.LC.D	120	(2x0.5)C	white, brown

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

Other types available on request.

Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core



**Order example: CF11.02.01.02.PBA.LC.D – in your desired length (0.5 m steps)**  
CF11.LC.D chainflex® series .02 Code nominal cross section .01 Number of pairs  
.02 Identification pairs .PBA.LC.D Special identification



Online order ► [www.chainflex.eu/CF11LCD](http://www.chainflex.eu/CF11LCD)



Delivery time 24h or today  
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# TPE Bus cable | CF14.CAT5

- Ethernet special cable for extremely heavy duty use
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bending radius</b>	<b>e-chain®</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain®</b>	-35 °C to +70 °C
		<b>flexible</b>	-50 °C to +70 °C (following EN 60811-504)
		<b>fixed</b>	-55 °C to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

### Cable structure

	<b>Conductor</b>	19-wire conductor consisting of bare copper wires in especially bending-resistant braiding quality.
	<b>core insulation</b>	Special PP-isolation mixture.
	<b>Core stranding</b>	2 cores each stranded in pairs with short pitch lengths, core pairs also stranded with short pitch lengths.
	<b>Core identification</b>	Colour code in accordance with DIN 47100
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90% optical.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in e-chains®. Colour: red lilac (similar to RAL 4001)

### Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

### Properties and approvals

	<b>UV-resistance</b>	Medium
	<b>Oil</b>	Oil-resistant (following DIN EN 60811-2-1), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4

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(up to 10 cuts of the same types)

## Class 6.6.4 6 extremely heavy duty applications 6 travel distance up to 400 m and more 4 oil-resistant

	<b>Silicon-free</b>	Free from silicon which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to No. TC RU C-DE.ME77.B.01218
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF9.15.07, tested by IPA according to standard 14644-1.
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2006/95/EC

### Guaranteed lifetime according to guarantee conditions (Page 22-25)

Double strokes*				5 million	7.5 million	10 million
Temperature, from/to [°C]	v max. [m/s] unsupported	a max. [m/s <sup>2</sup> ]	Travel distance [m]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35 / -25				12.5	13.5	14.5
-25 / +60	10	6	≤ 400	10	11	12
+60 / +70				12.5	13.5	14.5

\* Higher number of double strokes possible - please ask for your individual calculation.

### Typical application areas

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and up to 400 m for gliding applications
- Ethernet cable for storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, semiconductor insertion, indoor cranes, low-temperature applications

Delivery program Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	External diameter max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>Ethernet/CAT5/GigE</b>				
CF14.01.04.02.CAT5	(4x(2x0.15))C	8.5	44	82
CF14.02.02.02.CAT5 <sup>2)</sup>	(4x0.25)C	7.5	35	60
CF14.02.04.02.CAT5	(4x(2x0.25))C	10.0	53	95
CF14.02.05.02.CAT5	(5x(2x0.25))C	10.5	59	113

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
Note: The mentioned external diameters are maximum values and may tend toward lower tolerance limits.  
G= with green-yellow earth core x= without earth core

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5/GigE</b>			
CF14.01.04.02.CAT5	100	(4x(2x0.15))C	white/brown, green/yellow, grey/pink, blue/red
CF14.02.02.02.CAT5 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (star-quad stranding)
CF14.02.04.02.CAT5	100	(4x(2x0.25))C	white/brown, green/yellow, grey/pink, blue/red
CF14.02.05.02.CAT5	100	(5x(2x0.25))C	white/brown, green/yellow, grey/pink, blue/red, black/violet

More CAT5/CAT6 cables ► Page 194, CFBUS

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