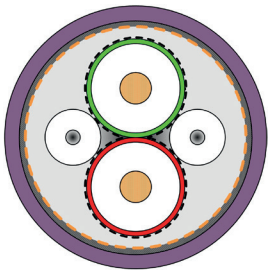
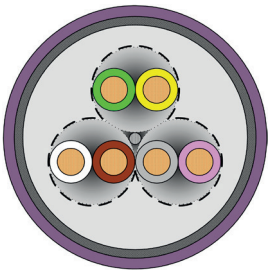
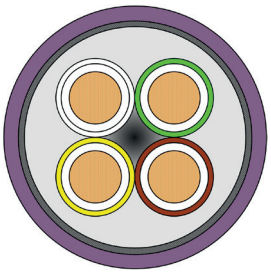
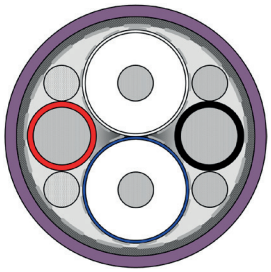
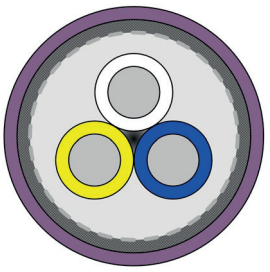
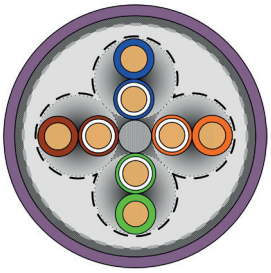
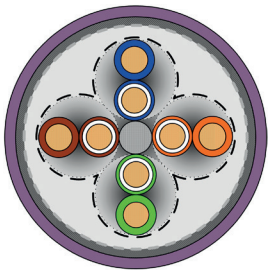
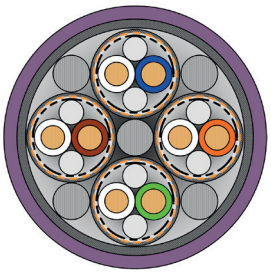
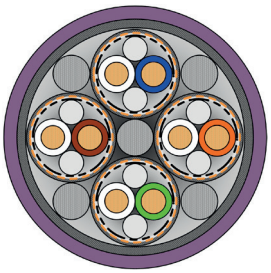
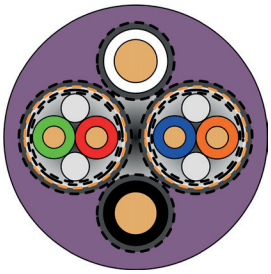
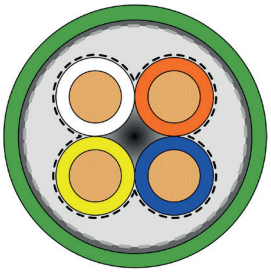
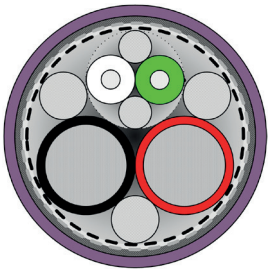
Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Profibus	Interbus	CAN-Bus/Feldbus
CFBUS.001-CFBUS.003	CFBUS.010-CFBUS.011	CFBUS.020-CFBUS.022
		
DeviceNet	CC-Link	Ethernet (CAT5/CAT5e/GigE/PoE)
CFBUS.030-CFBUS.031	CFBUS.035	CFBUS.040-CFBUS.045
		
Ethernet (CAT6/GigE/PoE)	Ethernet (CAT6$_A$/PoE)	Ethernet (CAT7/PoE)
CFBUS.049	CFBUS.050	CFBUS.052
		
FireWire 400 (IEEE 1394a)	Profinet (Type C)	USB 2.0
CFBUS.055	CFBUS.060	CFBUS.065-CFBUS.066
		

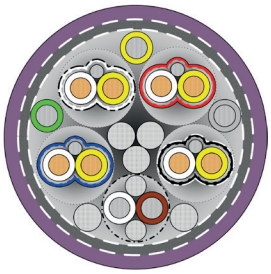
Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

DVI

CFBUS.070



Data sheet
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Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

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
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001), Variants ▶ Product range table Printing: black

„00000 m“* igus chainflex CFBUS.---① -----② E310776 cЯUus AWM

Style -----③ VW-1 AWM I/II A/B 80°C ---V④ FT1 DNV-GL ⑤ CE

---⑥ ---⑦ conform RoHS-II conform www.igus.de+++ chainflex cable works +++

* **Length printing:** Not calibrated. Only intended as an orientation aid.
① / ② Cable identification according to Part No. (see technical table).
③ / ④ Printing of UL Style and UL Voltage rating (see related chapter).
⑤ Printing DNV-GL Type Approval Certificate.
⑥ Printing: DESINA (only if DESINA is fulfilled).
⑦ Printing according to bus specification (inclusive wave resistance).
Example: chainflex **CFBUS.001 (2x0.25)C**

Guaranteed service life according to guarantee conditions

Double strokes	5 million		7.5 million		10 million	
Temperature, from/to [°C]	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070
	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]	R min. [x d]
-35/-25	12.5	15	13.5	16	14.5	17
-25/+60	10	12.5	11	13.5	12	14.5
+60/+70	12.5	15	13.5	16	14.5	17

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

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chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Flame retardant	According to IEC 60332-1-2, FT1, VW-1 **CFBUS.030/CFBUS.065/CFBUS.066:** According to IEC 60332-1-2, FT2
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
PFAS-free	Use of PFAS-free materials according to the content of the REACH directive and its rules for the production and processing of chemical substances
UL verified	Certificate No. V293560: „igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
UL/CSA AWM	See data sheet for details ▶ www.igus.eu/CFBUS
NFPA	Following NFPA 79-2018, chapter 12.9
CLPA	**CFBUS.045:** CC-Link IE Field, Reference no. 130 **CFBUS.049:** CC-Link IE Field, Reference no. 137
DNV-GL	Type approval certificate No. TAE00003X5 **CFBUS.040-CFBUS.052:** Type approval certificate No. TAE00003X7
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 CF34. UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU

Guarantee igus chainflex 4 YEARS up to 4 years guarantee

igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Properties and approvals

UL/CSA AWM Details

Part No.	UL style core insulation	UL style outer jacket	UL Voltage Rating	UL Temperature Rating
			V	°C
CFBUS.001	11807	21218	600	80
CFBUS.002	11807 (0.25 mm²) 11551 (1.5 mm²)	21218	600	80
CFBUS.003	11807 (0.25 mm²) 11551 (0.75 mm²)	21218	600	80
CFBUS.010	11551	21218	600	80
CFBUS.011	11551	21218	600	80
CFBUS.020	11807	21218	600	80
CFBUS.021	11807	21218	600	80
CFBUS.022	11807	21218	600	80
CFBUS.030	11807 (AWG24) 11551 (AWG22)	21187	600	80
CFBUS.031	11807 (AWG24) 11551 (AWG22)	21218	600	80
CFBUS.035	11807	21218	600	80
CFBUS.040	11632	21218	600	80
CFBUS.045	11632	21218	600	80
CFBUS.049	11632	21218	600	80
CFBUS.050	11632	21218	600	80
CFBUS.052	11632	21218	600	80
CFBUS.055	11632 (0.15 mm²) 11551 (0.34 mm²)	21218	600	80
CFBUS.060	11632	21218	600	80
CFBUS.065	1589	22186	30	80
CFBUS.066	1589	22186	30	80

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chainflex® CFBUS

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Example image

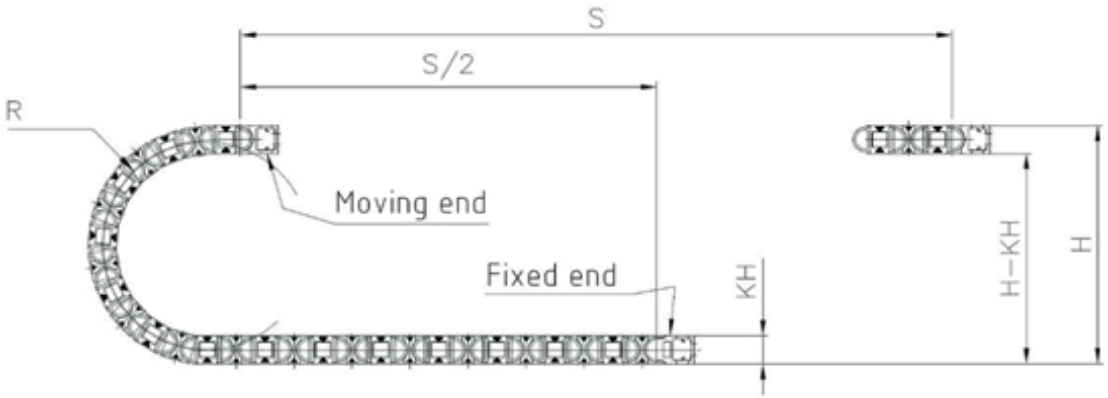
Dynamic information

Bend radius	**e-chain® linear**	min. 10 x d (CFBUS.001-.049 and CFBUS.060) min. 12.5 x d (CFBUS.050-.055 and CFBUS.070)
	flexible	min. 8 x d
	fixed	min. 5 x d
Temperature	**e-chain® linear**	-35 °C up to +70 °C
	flexible	-45 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	**unsupported**	10 m/s
	gliding	6 m/s
a max.		100 m/s²
Travel distance		Unsupported travel distances and up to 400 m for gliding applications, Class 6

These values are based on specific applications or tests. They do not represent the limit of what is technically feasible.

Typical lab test setup for this cable series

Test bend radius R	approx. 75 - 100 mm
Test travel S/S$_2$	approx. 1 - 15 m
Test duration	minimum 2 - 4 million double strokes
Test speed	approx. 0,5 - 2 m / s
Test acceleration	approx. 0.5 - 1.5 m / s²



Typical application areas

- For extremely heavy duty applications, Class 6
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications without direct solar radiation
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications

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Example image

Technical tables:

Mechanical information

Part No.		Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
Profibus (1x2x0,64 mm)					
CFBUS.001		(2x0.25)C	9.0	33	92
CFBUS.002		(2x0.25)C+4x1.5	12.5	94	191
CFBUS.003		(2x0.25)C+3G0.75	11.5	55	145
Interbus					
CFBUS.010		(3x(2x0.25))C	9.0	47	91
CFBUS.011		(3x(2x0.25)+(3G1.0))C	10.5	87	152
CAN-Bus/Feldbus					
CFBUS.020 [2]		(4x0.25)C	6.5	28	58
CFBUS.021		(2x0.5)C	8.0	39	81
CFBUS.022 [2]		(4x0.5)C	8.0	43	87
DeviceNet					
CFBUS.030 [4]		((2xAWG24)C+2xAWG22)C	7.0	36	57
CFBUS.031 [4]		((2xAWG18)C+2xAWG15)C	11.5	103	174
CC-Link					
CFBUS.035	CC-Link	(3xAWG20)C	8.5	43	96
Ethernet/CAT5/PoE					
CFBUS.040	EtherCAT	(4x0.25)C	7.0	33	59
Ethernet/CAT5e/PoE					
CFBUS.045	CC-Link IE Field	(4x(2x0.15))C	8.5	42	84
Ethernet/CAT6/PoE					
CFBUS.049	CC-Link IE Field	(4x(2x0.15))C	8.5	42	84
Ethernet/CAT6$_A$/PoE					
CFBUS.050 [4] [xx]		(4x(2x0.15)C)C	10.5	83	134
Ethernet/CAT7/PoE					
CFBUS.052 [4]		(4x(2x0.15)C)C	10.5	89	133
FireWire 1394a					
CFBUS.055 [xx]		2x(2x0.15)C+2x(0.34)C	8.0	39	76
Profinet					
CFBUS.060 [2] [13]	PROFINET EtherCAT	(4x0.38)C	7.5	39	74
USB					
CFBUS.065 [xx]		((2xAWG28)+2xAWG20)C	5.5	28	45
CFBUS.066		((2xAWG24)+2xAWG20)C	6.5	32	51
DVI					
CFBUS.070 [4] [6] [xx]		(4x(2xAWG28)C +(2xAWG28)+3xAWG28)C	9.0	35	95

[2] The chainflex® types marked with 2) are cables designed as a star-quad.
[4] Manufactured without inner jacket
[6] without cULus
[13] Colour outer jacket: Yellow-green (RAL 6018)
[xx] nicht PFAS-frei
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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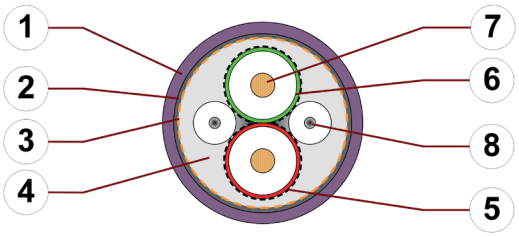
Example image

Profibus

CFBUS.001-CFBUS.003

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Copper clad plastic foil
4. Inner jacket: Pressure extruded, gusset-filling TPE mixture
5. Banding: Plastic foil
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
8. Filler: Plastic dummy

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.001	2x0.25	red, green	
CFBUS.002	(2x0.25)	red/green	
	4x1.5	black with white numbers 1-4	
CFBUS.003	(2x0.25)	red/green	
	3G0.75	black, blue, green-yellow	

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Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Profibus

CFBUS.001-CFBUS.003

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.001	CFBUS.002	CFBUS.003
Nominal voltage	50 V 600 V (following UL)		
Testing voltage (following DIN EN 50289-1-3)	500 V		
Characteristic wave impedance (following DIN EN 50289-1-11)	150 ± 15 Ω (20 MHz)		

Line attenuation approx. [dB/100m]

Part No.	9.6 kHz	38.4 kHz	4 MHz	16 MHz
CFBUS.001	0.3	0.4	2.6	5.5
CFBUS.002	0.3	0.4	2.6	5.5
CFBUS.003	0.3	0.4	2.6	5.5

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	68	5
0.75	28.6	14
1.5	14.6	21

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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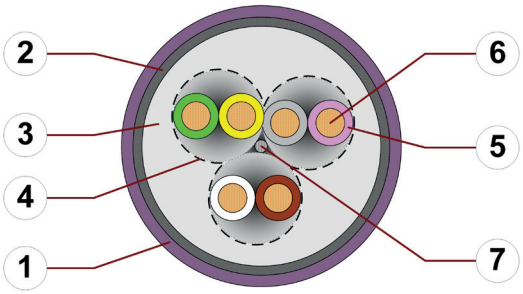
Example image

Interbus

CFBUS.010-CFBUS.011

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. Banding: Plastic fleece
5. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
6. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
7. Strain relief: Tensile stress-resistant centre element

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.010	3x(3x0.25)	white/brown, green/yellow, grey/pink	
CFBUS.011	3x(2x0.25)	white/brown, green/yellow, grey/pink	
	3G1.0	red, blue, green-yellow	

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Example image

Interbus

CFBUS.010-CFBUS.011

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.010	CFBUS.011
Nominal voltage	50 V 600 V (following UL)	
Testing voltage (following DIN EN 50289-1-3)	500 V	
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω (at 20 MHz)	

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	81	5
1	21.5	17

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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Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

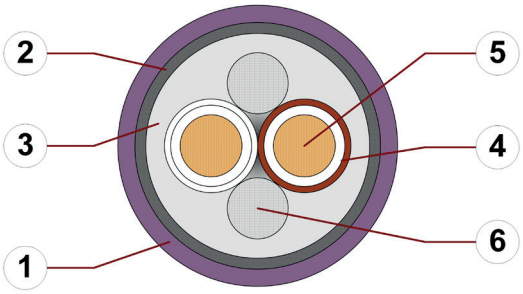
Example image

CAN-Bus/Feldbus

CFBUS.020-CFBUS.022

Cable structure

(Electrical information please see next page)



Example image
For detailed overview please see design table

1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Inner jacket: Pressure extruded, gusset-filling TPE mixture
4. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
5. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
6. Filler: Plastic yarns

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.020	4x0.25	white, green, brown, yellow (Star-quad)	
CFBUS.021	2x0.5	white, brown	
CFBUS.022	4x0.5	white, green, brown, yellow (Star-quad)	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

CAN-Bus/Feldbus

CFBUS.020-CFBUS.022

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.020	CFBUS.021	CFBUS.022
Nominal voltage	50 V 600 V (following UL)		
Testing voltage (following DIN EN 50289-1-3)	500 V		
Characteristic wave impedance (following DIN EN 50289-1-11)	120 ± 12 Ω (at 1 MHz)		

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	79	5
0.5	41	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.

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

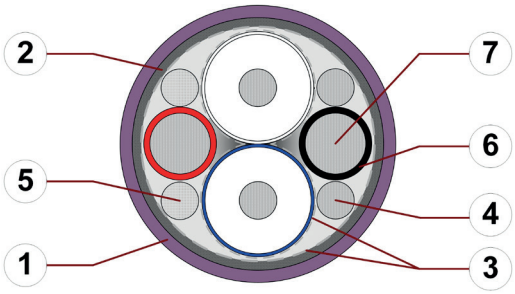
Example image

DeviceNet

CFBUS.030-CFBUS.031

Cable structure

(Electrical information please see next page)



Example image
For detailed overview please see design table

1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Drain wire: Tinned copper wires
5. Filler: Plastic yarns
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of tinned copper wires

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.030	(2xAWG24)C	white/blue	
	2xAWG22	red, black	
CFBUS.031	(2xAWG18)C	white/blue	
	2xAWG15	red, black	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

DeviceNet

CFBUS.030-CFBUS.031

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.030	CFBUS.031
Nominal voltage	50 V 600 V (following UL)	
Testing voltage (following DIN EN 50289-1-3)	500 V	
Characteristic wave impedance (following DIN EN 50289-1-11)	120 ± 12 Ω (at 1 MHz)	

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]
AWG24	86	5
AWG22	54,5	7
AWG18	21	14
AWG15	15	21

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

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

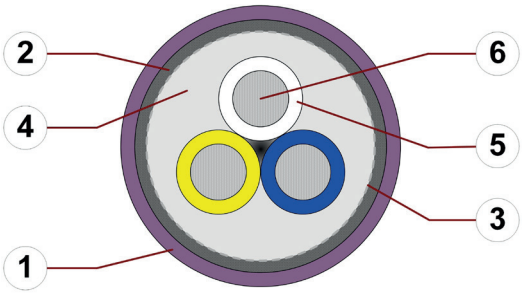
Example image

CC-Link

CFBUS.035

Cable structure

(Electrical information please see next page)



Example image
For detailed overview please see design table

1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Inner jacket: Pressure extruded, gusset-filling TPE mixture
5. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
6. Conductor: Fine-wire strand in especially bending-stable version consisting of tinned copper wires

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.035	3xAWG20	white, blue, yellow	

Guarantee igus chainflex 4 YEARS up to 4 years guarantee

igus 4-year chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

CC-Link

CFBUS.035

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.035
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	110 ± 11 Ω (1-100 MHz)

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]
AWG20	41	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.

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

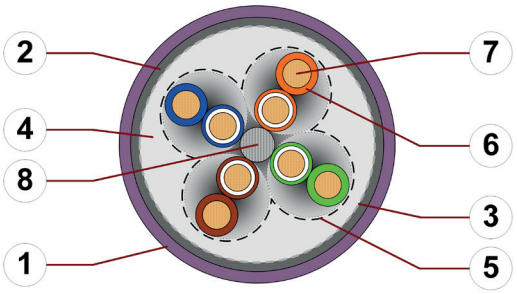
Example image

Ethernet (CAT5/CAT5e/GigE/PoE)

CFBUS.040-CFBUS.045

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Inner jacket: Pressure extruded, gusset-filling TPE mixture
5. Banding: Plastic fleece
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
8. Strain relief: Tensile stress-resistant centre element

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.040	(4x0.25)C	white, green, brown, yellow (Star-quad)	
CFBUS.045	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Ethernet (CAT5/CAT5e/GigE/PoE)

CFBUS.040-CFBUS.045

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.040	CFBUS.045
Nominal voltage	50 V 600 V (following UL)	
Testing voltage (following DIN EN 50289-1-3)	500 V	
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 25 Ω	
Operating capacity (following DIN EN 50289-1-5)	50 pF/m	60 pF/m
Nominal Velocity of Propagation (NVP)	66 %	67 %

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.040	3.2	6.0	9.5	12.1	13.6	17.1	24.8	32.0
CFBUS.045	3.2	6.0	9.5	12.1	13.6	17.1	24.8	32.0

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	111	2.5
0.25	70	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 transmission length
CFBUS.040	Ethernet/CAT5	Class D - (Data applications up to 100 MHz)	60 m
CFBUS.045	Ethernet/CAT5e	Class D - (Data applications up to 100 MHz)	60 m

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

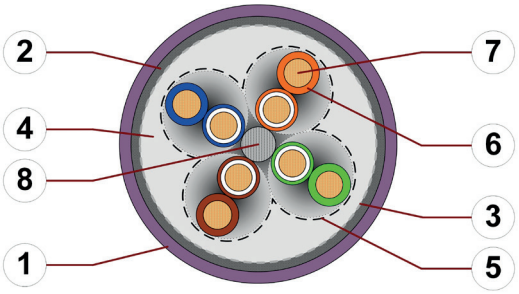
Example image

Ethernet (CAT6/GigE/PoE)

CFBUS.049

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Inner jacket: Pressure extruded, gusset-filling TPE mixture
5. Banding: Plastic fleece
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
8. Strain relief: Tensile stress-resistant centre element

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.049	4x(2x0.15)	white-blue/blue, white-orange/ orange, white-green/green, white-brown/brown	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Ethernet (CAT6/GigE/PoE)

CFBUS.049

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.049
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 25 Ω
Operating capacity (following DIN EN 50289-1-5)	60 pF/m
Nominal Velocity of Propagation (NVP)	67 %

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	150 MHz	200 MHz	250 MHz
CFBUS.049	3.2	6.0	9.5	12.1	13.6	17.1	24.8	32.0	40.0	47.5	55.0

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	111	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 transmission length
CFBUS.049	Ethernet/CAT6	Class E - (Data applications up to 250 MHz)	60 m

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

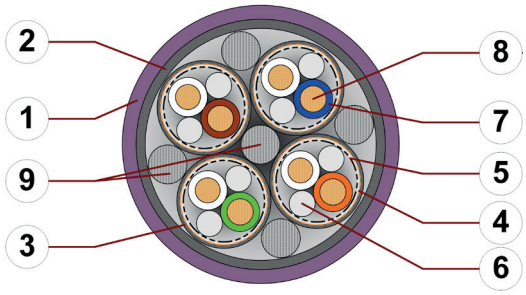
Example image

Ethernet (CAT6$_A$/PoE)

CFBUS.050

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Element shield: Extremely bending-resistant braiding made of tinned copper wires
4. Element banding: Several layer of fleece, wrapped in different directions
5. Element shield foil: Copper clad plastic foil
6. Filler: Plastic dummy
7. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
8. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
9. Strain relief: Tensile stress-resistant centre element

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.050	4x(2x0.15)C	white/blue, white/orange, white/green, white/brown	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Ethernet (CAT6$_A$/PoE)

CFBUS.050

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.050
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 25 Ω
Operating capacity (following DIN EN 50289-1-5)	50 pF/m
Nominal Velocity of Propagation (NVP)	64 %

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	150 MHz	200 MHz	250 MHz	350 MHz	500 MHz
CFBUS.050	3.2	5.7	8.9	11.2	12.6	15.8	22.5	28.7	35.5	41.4	46.6	55.9	67.9

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]
0.15	133	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 transmission length
CFBUS.050	Ethernet/CAT6$_A$	Class EA - (Data applications up to 500 MHz)	45 m

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

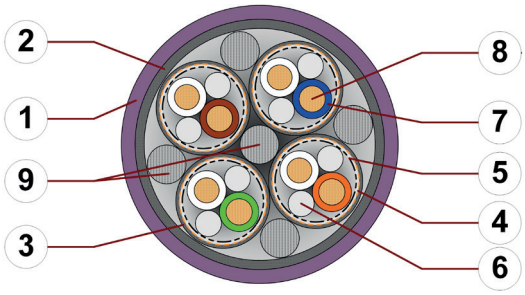
Example image

Ethernet (CAT7/PoE)

CFBUS.052

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Element shield: Extremely bending-resistant braiding made of tinned copper wires
4. Element banding: Several layer of fleece, wrapped in different directions
5. Element shield foil: Copper clad plastic foil
6. Filler: Plastic dummy
7. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
8. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
9. Strain relief: Tensile stress-resistant centre element

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.052	4x(2x0.15)C	white/blue, white/orange, white/green, white/brown	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Ethernet (CAT7/PoE)

CFBUS.052

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.052
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 25 Ω
Operating capacity (following DIN EN 50289-1-5)	50 pF/m
Nominal Velocity of Propagation (NVP)	64 %

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	200 MHz	300 MHz	400 MHz	500 MHz	600 MHz
CFBUS.052	3.0	5.7	8.9	11.2	12.6	15.8	22.5	28.7	41.4	51.4	60.1	67.9	75.2

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	133	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 transmission length
CFBUS.052	Ethernet/CAT7	Class F - (Data applications up to 600 MHz)	45 m

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

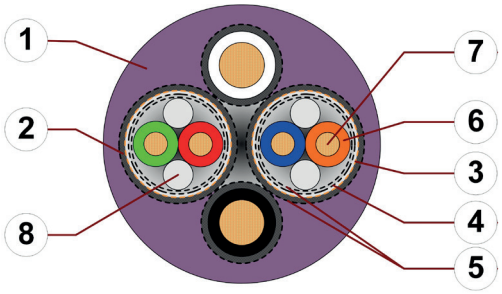
Example image

FireWire 400 (IEEE 1394a)

CFBUS.055

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, gusset-filling, flame-retardant TPE mixture
2. Element shield: Extremely bending-resistant braiding made of tinned copper wires
3. Element shield foil: Copper clad plastic foil
4. Element banding: Two layer of gliding PTFE foil, wrapped in different directions
5. Element banding: Plastic foil
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires
8. Filler: Plastic dummy

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.055	2x(2x0.15)C	orange/blue, green/red	
	2x(0.34)C	white, black	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

FireWire 400 (IEEE 1394a)

CFBUS.055

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.055
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 15 Ω (1-250 MHz)
Operating capacity (following DIN EN 50289-1-5)	50 pF/m

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	155 MHz	200 MHz	250 MHz
CFBUS.055	3.4	6.4	9.9	12.5	14.1	17.7	25.5	32.9	41.8	48.1	54.5

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]
0.15	132	2.5
0.34	58	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.

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

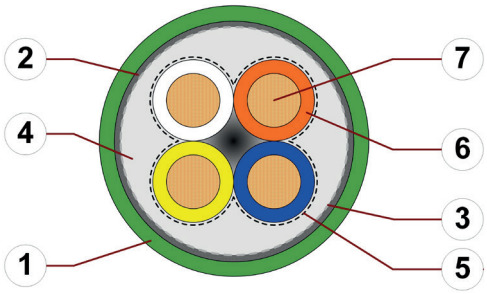
Example image

Profinet (Type C)

CFBUS.060

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Inner jacket: Pressure extruded, gusset-filling TPE mixture
5. Banding: Plastic foil
6. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
7. Conductor: Fine-wire strand in especially bending-stable version consisting of bare copper wires

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.060	4x0.38	white, orange, blue, yellow (Star-quad)	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

Profinet (Type C)
CFBUS.060

Electrical information
(Cable structure please see previous page)

Part No.	CFBUS.060
Nominal voltage	50 V 600 V (following UL)
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 10 Ω
Operating capacity (following DIN EN 50289-1-5)	50 pF/m
Nominal Velocity of Propagation (NVP)	66 %

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.060	2.4	4.8	7.6	9.6	10.7	13.4	19.0	24.0

Conductor nominal cross section [mm²]	Maximum conductor resistance at 20 °C (following DIN EN 50289-1-2) [Ω/km]	Maximum current rating at 30 °C (following DIN VDE 0298-4) [A]
0.38	51	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.

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

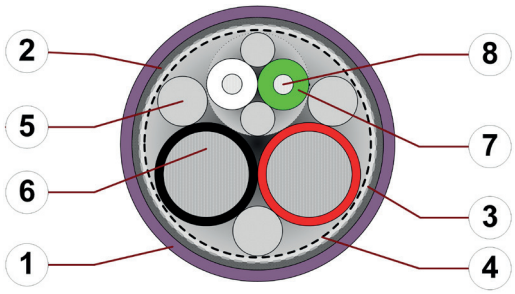
Example image

USB 2.0

CFBUS.065-CFBUS.066

Cable structure

(Electrical information please see next page)



1. Outer jacket: Pressure extruded, flame-retardant TPE mixture
2. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
3. Shield foil: Aluminium clad plastic foil
4. Banding: Plastic foil
5. Filler: Plastic yarns
6. Conductor: Fine-wire strand in especially bending-stable version consisting of tinned copper wires
7. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
8. Conductor: Fine-wire hybrid strand in especially bending-stable version consisting of silver-plated (.065.) or bare (.066) copper wires

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.065	(2xAWG28)	white/green	
	2xAWG20	red, black	
CFBUS.066	(2xAWG24)	white/green	
	2xAWG20	red, black	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

USB 2.0

CFBUS.065-CFBUS.066

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.065	CFBUS.066
Nominal voltage	50 V 30 V (following UL)	
Testing voltage (following DIN EN 50289-1-3)	500 V	
Characteristic wave impedance (following DIN EN 50289-1-11)	90 ± 15 Ω (at 100 MHz)	
Operating capacity (following DIN EN 50289-1-5)	50 pF/m	60 pF/m

Line attenuation approx. [dB/100m]

Part No.	1 MHz	4 MHz	8 MHz	12 MHz	24 MHz	48 MHz	96 MHz	200 MHz	400 MHz
CFBUS.065	5.0	9.0	12.5	14.5	22.0	32.0	50.0	75.0	116.0
CFBUS.066	5.0	9.0	12.5	14.5	22.0	32.0	50.0	75.0	116.0

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]
AWG28	232	1
AWG24	81	5
AWG20	43	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.

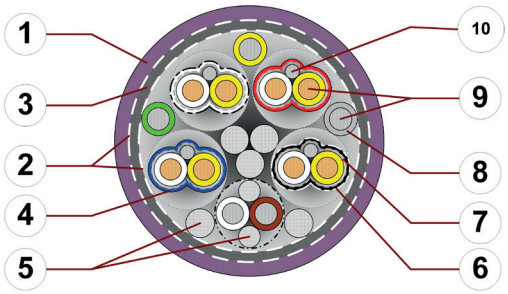
Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

DVI
CFBUS.070

Cable structure
(Electrical information please see next page)



1. Outer jacket: Pressure extruded, halogen-free TPE mixture
2. Banding: Plastic fleece
3. Overall shield: Extremely bending-resistant braiding made of tinned copper wires
4. Element jacket: Tube extruded TPE mixture
5. Filler: Cotton yarn
6. Element banding: Gliding special foil
7. Element shield foil: Aluminium clad plastic foil
8. Core insulation: Mechanically high quality TPE mixture (according to bus specification)
9. Conductor: Fine-wire strand in especially bending-stable version consisting of tinned or bare copper wires
10. Drain wire: Fine-wire strand consisting of tinned copper wires

Example image
For detailed overview please see design table

Design table

Part No.	Core group	Colour code	Drawing
CFBUS.070	4x(2xAWG28)C	4 x white/yellow with element-shield in blue, black, red, white	
	(2xAWG28)	white/brown	
	3xAWG28	green, yellow, grey	

Data sheet
chainflex® CFBUS

Bus cable (Class 6.6.4.1) ● For extremely heavy duty applications ● TPE outer jacket ● Shielded ● Oil and bio-oil resistant ● Flame retardant ● Hydrolysis and microbe-resistant

Example image

DVI

CFBUS.070

Electrical information

(Cable structure please see previous page)

Part No.	CFBUS.070
Nominal voltage	50 V
Testing voltage (following DIN EN 50289-1-3)	500 V
Characteristic wave impedance (following DIN EN 50289-1-11)	100 ± 10 Ω (at 100 MHz)
Operating capacity (following DIN EN 50289-1-5)	40 pF/m

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]
AWG28	230	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.

Mouser Electronics

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