



chainflex <sup>®</sup> cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain <sup>®</sup> from/to [°C]		Approvals and	standards							Oil-resistant	Torsion-resistant	v max. [m/s]	unsupported	v max. [m/s] gliding	a max.	Page	
Bus cables																					
Selection cha	art for o	cha	inflex	x® bus	cab	les														176	-
Selection cha	art for o	cha	inflex	x <sup>®</sup> Ethe	erne	t ca	bles													179	
CF888	PVC	√	15	+5/+70	C UL US	<b>RL</b> us			EAC	REACH R	o <mark>HS</mark> dest	<b>-/</b> _8	Cer	Ś		;	3		20	180	
CFBUS.PVC	PVC	√	12.5	+5/+70		c <b>FLL</b> us		CÜA	EAC	REACH R	HS clean-	<b>-/</b> _8	CER	<b>≦</b> √		;	3	2	30	184	
CF898	iguPUR	√	15	-20/+70	C UL US	<b>FL</b> us		CUA (	EAC	REACH R	o <mark>HS</mark> disar	<b>-/</b> _8	CER	≦ √		;	3		20	188	New
CFBUS.PUR	PUR	√	12.5	-20/+70	CUL US	c <b>Al</b> us		C D A	) EAC	REACH R	HS clean-		Cer	<b>≦</b> √		ţ	3	2	30	192	
CFBUS	TPE	✓	10- 12.5	-35/+70	c (UL) us LISTED	<b>FL</b> us		C (DA	) EAC	REACH R	HS clean-		CER	<b>≦</b> √		10	0	6	100	196	
CFBUS.LB	TPE	√	7.5	-35/+70	C UL US	<b>F1</b>		CÛA	EAC	REACH R	HS clean-		Cer	<b>≦</b> √		10	0	6	100	202	New
Twistable bu	s cable	es (	twist	able c	able	es cl	hapte	r ▶ P	age	370	)										
CFROBOT8	PUR	✓	10	-25/+70	C UL US	c <b>Al</b> us	nec) NFPA	CUA (	EAC	REACH R	Clean-	-19	CER	≦ √	✓					398	
CFROBOT8. PLUS	PUR	✓	10	-25/+70	c UL LISTED	<b>. FIL</b> us			EAC	REACH R	Clean-	-10	CER	<b>≦</b> √	✓					402	

36-month chainflex<sup>®</sup> guarantee

Guaranteed service life for predictable reliability ► Selection table page 174

With the help of the chainflex<sup>®</sup> service life calculator, you can quickly and easily calculate the expected service life of chainflex<sup>®</sup> cables specifically for your application:



www.igus.eu/chainflexlife



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year (Ur)

UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

# chainflex<sup>®</sup> guarantee



# Guaranteed se

	chainflex®	Temperature,	v max.	[m/s]	a max.	Travel	radius [factor x d]	radius [factor x d]	radius [factor x d]	Page
	cables	from/to [°C]	unsupported	gliding	[m/s²]	distance [m]				
Bus cables							5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million <mark>(6 million)</mark> double strokes *	
		+5/+15					17.5	18.5	19.5	
SALA DETEN	CF888	+15 / +60	3	-	20	≤ 10	15	16	17	180
		+60 / +70					17.5	18.5	19.5	
		+5 / +15					15	16	17	
	CFBUS.PVC	+15 / +60	3	2	30	≤ 20	12.5	13.5	14.5	184
		+60 / +70					15	16	17	
		-20 / -10					17.5	18.5	19.5	
10000 - 124Lan	CF898 New!	-10 / +60	3	-	20	≤ 10	15	16	17	188
		+60 / +70					17.5	18.5	19.5	
		-20 / -10					15	16	17	
	CFBUS.PUR	-10 / +60	3	2	30	≤ 20	12.5	13.5	14.5	192
		+60 / +70					15	16	17	
		-35 / -25					12.5	13.5	14.5	
	CFBUS.001049 CFBUS 060	-25 / +60	10	6	100	≤ 400	10	11	12	196
MAX MICH	01 000.000	+60 / +70					12.5	13.5	14.5	
		-35 / -25					15	16	17	
	CFBUS.050055 CEBUS 065- 070	-25 / +60	10	6	100	≤ 400	12.5	13.5	14.5	196
	01 003.003070	+60 / +70					15	16	17	
							5 million	7.5 million	12.5 million	
		-35 / -25					12.5	13.5	14.5	
		-25 / +60	10	6	100	≤ 400	10	11	12	202
March (MITC)	.001022	+60 / +70					12.5	13.5	14.5	
		-35 / -25					10	11	12	
		-25 / +60	10	6	100	≤ 400	7.5	8.5	9.5	202
	.040000	+60 / +70					10	11	12	

<sup>(1)</sup> Guaranteed service life for these series (details > see page 28-29)

\* Higher number of double strokes? Calculate service life online: > www.igus.eu/chainflexlife Figures in brackets refer to series CF888 and CF898







ervi	ce	life	(1)
1	Mi	nimum bend	
d]	radi	us [factor x d]	



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year (Ur

### The right cable for every bus system ... The chainflex<sup>®</sup> bus cables product range at a glance



	Bus system/ chainflex <sup>®</sup> type	Jacket	Number of cores and conductor nominal cross section[mm <sup>2</sup> ]	Page		Bus system/ chainflex <sup>®</sup> type	Jacket	Number of cores and conductor nominal cross section[mm <sup>2</sup> ]	Page
	Profibus (1x2x0.64mm)		150Ohm			Ethernet/CAT5e		1000hm	
	CF888.001	PVC	(2x0.25)C	182		CFBUS.PUR.045	PUR	(4x(2x0.15))C	194
	CFBUS.PVC.001	PVC	(2x0.25)C	186		CFBUS.045	TPE	(4x(2x0.15))C	200
	CF898.001	iguPUR	(2x0.25)C	190	New	CFBUS.LB.045	TPE	(4x(2x0.15))C	204
	CFBUS.PUR.001	PUR	(2x0.25)C	194		CFROBOT8.045	PUR	4x(2x0.14)C	400
	CFBUS.001	TPE	(2x0.25)C	198		CFROBOT8.PLUS.045	PUR	(4x(2x0.15))C	404
	CFBUS.002	TPE	(2x0.25)C+4x1.5	198		CFSPECIAL.182.045	PUR	(4x(2x0.15))C	416
	CFBUS.003	TPE	(2x0.25)C+3G0.75	198		Ethernet/CAT6		100Ohm	
New	CFBUS.LB.001	TPE	(2x0.25)C	204		CFBUS.PVC.049	PVC	(4x(2x0.15))C	186
	CFROBOT8.001	PUR	(2x0.35)C	400		CFBUS.PUR.049	PUR	(4x(2x0.15))C	194
	CFROBOT8.PLUS.001	PUR	(2x0.25)C	404		CFBUS.PUR.H01.049	PUR	(4x(2x0.15))C+4x1.5	194
	CFSPECIAL.182.001	PUR	(2x0.25)C	416		CFBUS.049	TPE	(4x(2x0.15))C	200
	Interbus		100Ohm		New	CFBUS.LB.049	TPE	(4x(2x0.15))C	204
	CFBUS.010	TPE	(3x(2x0.25))C	198		CFROBOT8.049	PUR	4x(2x0.14)C	400
	CFBUS.011	TPE	(3x(2x0.25)+(3G1.0))C	198		CFSPECIAL.484.049	-	(4x(2x0.15))C	420
	CAN-Bus		1200hm			Ethernet/CAT6A		100Ohm	
	CF888.021	PVC	(2x0.5)C	182		CFBUS.PVC.050	PVC	4x(2x0.20)C	186
	CFBUS.PVC.020	PVC	(4x0.25)C	186		CFBUS.PUR.050	PUR	4x(2x0.20)C	194
	CFBUS.PVC.021	PVC	(2x0.5)C	186		CFBUS.050	TPE	(4x(2x0.15)C)C	200
	CFBUS.PVC.022	PVC	(4x0.5)C	186		Ethernet/CAT7		100Ohm	
	CF898.021	iguPUR	(2x0.5)C	186		CFBUS.PVC.052	PVC	(4x(2x0.15)C)C	186
	CFBUS.PUR.020	PUR	(4x0.25)C	194		CFBUS.PUR.052	PUR	(4x(2x0.15)C)C	194
	CFBUS.PUR.021	PUR	(2x0.5)C	194		CFBUS.052	TPE	(4x(2x0.15)C)C	200
	CFBUS.PUR.022	PUR	(4x0.5)C	194		FireWire IEEE 1394a/b		100Ohm	
	CFBUS.020	TPE	(4x0.25)C	198		CFBUS.PVC.056	PVC	(2x(2x0.15)C+2x0.38)C	186
	CFBUS.021	TPE	(2x0.5)C	198		CFBUS.PUR.056	PUR	(2x(2x0.15)C+2x0.38)C	194
	CFBUS.022	TPE	(4x0.5)C	198		CFBUS.055	TPE	2x(2x0.15)C+2x(0.34)C	200
New	CFBUS.LB.020	TPE	(4x0.25)C	204		Profinet		100Ohm	
New	CFBUS.LB.021	TPE	(2x0.5)C	204		CF888.060	PVC	(4x0.38)C	182
New	CFBUS.LB.022	TPE	(4x0.5)C	204		CFBUS.PVC.060	PVC	(4x0.38)C	186
	CFROBOT8.022	PUR	(4x0.5)C	400		CF898.060	iguPUR	(4x0.34)C	190
	Device Net		1200hm		New	CF898.061.FC	iguPUR	(4x0.34)C	190
	CFBUS.030	TPE	((2xAWG24)C+2xAWG22)C	198		CFBUS.PUR.060	PUR	(4x0.38)C	194
	CFBUS.031	TPE	((2xAWG18)C+2xAWG15)C	198		CFBUS.PUR.H01.060	PUR	(4x0.38)C+4x1.5	194
	CC-Link		110Ohm			CFBUS.060	TPE	(4x0.38)C	200
	CFBUS.PVC.035	PVC	(3x0.5)C	186	New	CFBUS.LB.060	TPE	(4x0.38)C	204
	CFBUS.PUR.035	PUR	(3x0.5)C	196		CFROBOT8.060	PUR	(2x(2x0.34))C	198
	CFBUS.035	TPE	(3xAWG20)C	198		CFROBOT8.PLUS.060	PUR	(4x0.38)C	404
	Ethernet/CAT5		100Ohm			USB		90Ohm	
	CFBUS.PVC.040	PVC	(4x0.25)C	186		CFBUS.065	TPE	((2xAWG28)+2xAWG20)C	200
	CFBUS.PUR.040	PUR	(4x0.25)C	194		CFBUS.066	TPE	((2xAWG24)+2xAWG20)C	200
	CFBUS.040	TPE	(4x0.25)C	200		USB 3.0		90Ohm	
	CFBUS.044	TPE	(4x(2x0.15))C	200		CFBUS.PVC.068	PVC	(2x(2xAWG28)+2x(2xAWG28)C)C	186
New	CFBUS.LB.040	TPE	(4x(0.25)C	204		CFBUS.PUR.068	PUR	(2x(2xAWG28)+2x(2xAWG28)C)C	194
	Single Pair Ethernet		100Ohm			DVI		100Ohm	
	CFBUS.PUR.042	PUR	(2x0.15)C	194				(4x(2xAWG28)C	
	Ethernet/CAT5e		100Ohm			CFBUS.070	TPE	+(2xAWG28)+3xAWG28)C	200
	CF888.045	PVC	(4x(2x0.14))C	182		ASI BUS (flat cables)			
	CFBUS.PVC.045	PVC	(4x(2x0.15))C	186		CF898.082 (yellow)	iguPUR	2x2.5	190
	CF898.045	iguPUR	(4x(2x0.14))C	190		CF898.083 (black)	iguPUR	2x2.5	190
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### For all data rates and types of movement ... Networking your machine with chainflex<sup>®</sup> Ethernet cables

In our catalogue range you will find the right Ethernet solution for every type of motion. We have prepared a wide range of products both sold by the metre and also a wide variety of ready-to-connect cables with connectors. All chainflex<sup>®</sup> cables come with a **36-month guarantee** and up to 10 million double strokes as standard, giving you peace-of-mind and confidence.

We support you in three aspects of machine networking with Ethernet cables for moving applications that have been developed, manufactured and tested for high quality:

For your system, we offer Ethernet cables from **CAT5 to CAT7** so that you have the right solution for all data volumes. With that you can safely use Bus systems such as Ethernet/IP, Profinet, EtherCAT, Sercos and many other derivatives. The different quality levels of cable mean that there are opportunities for very large savings or future-proofing.

With the new **Single Pair Ethernet (SPE)** bus technology, it is now possible to create Ethernet connections all the way from the control cabinet to each machine element and thus connect the entire machine with one single bus system. Due to the construction using only one pair of wires, the cable can be manufactured with a considerable weight decrease and a 25% smaller outer diameter. For this pioneering development, we are a member in the Industrial Partner Network for SPE.

By taking into account the individual mechanical requirements in your application, we can offer more customised solutions. There are cables for large and small bend radii for linear movements in energy chains or torsional movements on robots. We can offer you a reasonably priced PVC solution, an oil-resistant PUR cable or a solution with highly abrasion-resistant TPE. Also, **special solutions** for long travels or high tensile strength versions for hanging applications or rolling solutions are standard products for us.

Our **online tools** also enable you to reduce process costs and help you to find the right cable with just a few clicks.

Also visit our Ethernet website:

### **O** •

### www.chainflex.eu/ethernet

All common Bus types in different cable quality levels for your diverse applications. From stock. Tested. With a guarantee.





### Always find the Ethernet cable that works, for less. Selection table for the largest range of flexible Ethernet cables

Electrical performance

<b>CAT7</b> 10GBit 600MHz		chainflex <sup>®</sup> CFBUS.PVC.052 Page 186		chainflex <sup>®</sup> CFBUS.PUR.052 Page 194	chainflex® CFBUS.052 Page 200		chainflex® CFROBOT8.052 Page 400		
<b>CAT6</b> A 10GBit 500MHz		chainflex <sup>®</sup> CFBUS.PVC.050 Page 186		chainflex <sup>®</sup> CFBUS.PUR.050 Page 194	chainflex® CFBUS.050 Page 200		chainflex® CFROBOT8.050 Page 400		
<b>CAT6</b> 1GBit 250MHz		chainflex <sup>®</sup> CFBUS.PVC.049 Page 186		chainflex® CFBUS.PUR.049 Page 194	chainflex® CFBUS.049 Page 200	chainflex® CFBUS.LB.049 Page 204	chainflex® CFROBOT8.049 Page 400		chainflex <sup>®</sup> CFSPECIAL. 484.049 Page 420
<b>CAT5e</b> 1GBit 100MHz	chainflex <sup>®</sup> CF888.045 Page 182	chainflex <sup>®</sup> CFBUS.PVC.045 Page 186	chainflex® CF898.045 Page 190	chainflex <sup>®</sup> CFBUS.PUR.045 Page 194	chainflex <sup>®</sup> CFBUS.045 Page 200	chainflex® CFBUS.LB.045 Page 204	chainflex® CFROBOT8.045 Page 400	chainflex® CFROBOT8. PLUS.045 Page 404	CFSPECIAL. 182.045 P. 416 CFCLEAN8.045 Page 450 NEW
<b>SPE</b> 1GBit 600MHz				chainflex <sup>®</sup> CFBUS.PUR.042 Page 194					
Profinet 100MBit 100MHz	chainflex <sup>®</sup> CF888.060 Page 182	chainflex <sup>®</sup> CFBUS.PVC.060 Page 186	CF898.060 Page 190 CF898.061.FC Page 190	chainflex <sup>®</sup> CFBUS.PUR.060 , Page 194	chainflex <sup>®</sup> CFBUS.060 Page 200	chainflex <sup>®</sup> CFBUS.LB.060 Page 204	chainflex® CFROBOT8.060 Page 400	chainflex <sup>®</sup> CFROBOT8. PLUS.060 Page 404	
<b>CAT5</b> 100MBit 100MHz		chainflex® CFBUS.PVC.040 Page 186		chainflex <sup>®</sup> CFBUS.PUR.040 Page 194	chainflex® CFBUS.040 Page 200	chainflex <sup>®</sup> CFBUS.LB.040 Page 204			
	<b>CF888</b> PVC 15 x d	CFBUS.PVC PVC, oil-resistant 12.5 x d	CF898 iguPUR 15 x d	CFBUS.PUR PUR 12.5 x d	CFBUS TPE UL 10 x d	<b>CFBUS.LB</b> TPE Hal 7.5 x d	CFROBOT8 PUR ± 180%m	CFROBOT8.PLUS PUR ± 360°/m	Special cables
								Mechanica	l performance

### SPE Single Pair Ethernet (SPE) ... ... the key to smart industrial automation

In the area of mechanical engineering, a strong trend in recent years has been a continuous increase in the need for more and faster data. Fieldbuses such as Profibus and CC-Link in Ethernet derivates such as Profinet and CC-Link IE have been developed further in order to enable improved performance in machines. The situation is similar in the case of the Ethernet types. Whereas CAT5 used to be the standard and a quantum leap was achieved with CAT5e, everyone is now talking about CAT6<sub>A</sub> and CAT7 for the future. This is not only true with regard to building infrastructure but is also in the case of machine and robot cabling.

However, all products end at the last "intelligent" component of the machine. Due to the sheer size of the cable and the connector solutions, connections extending as far as the smallest sensor had not yet been possible. This is where we and our partners of the Industrial Partner Network e.V. are now breaking new ground with the Single Pair Ethernet (SPE). The idea is to reduce to one data pair in order to keep connector and cable small.

This is most evident in the case of the connector. It is now the size of an M8 round connector and is therefore considerably smaller than the normal RJ45. As regards the cable, we have reduced the diameter by 25% and have now also arrived in the range of a proximity switch cable. This allows smaller installation spaces and energy chains, which will be welcome in the field of machine design.

As a clear service life together with a guarantee is always given for all cables in the igus<sup>®</sup> catalogue; thorough testing is what allows us to do it. This also applies to the new member of the family, of course: CFBUS.PUR.042 is guaranteed to last for 10 million double strokes or 36 months.



**ICUS** 

chainflex<sup>®</sup> Ethernet cables PVC

36 5 million

• PVC outer jacket

Flame-retardant

**Dynamic information** Bend radius

Carteria Temperature

v max.

a max.

Cable structure

6

Travel distance

Conductor

Core insulation

Core structure

Overall shield

Outer jacket

**Electrical information** 

Core identification

Shielded

Double strokes guaranteed

• For flexing applications

### Bus cable | PVC | chainflex® CF888

膏 15 x d

According to bus specification.

According to bus specification.

According to bus specification. Product range table

Coverage approx. 60% optical

Variants <a>Product range table</a>

Braiding made of tinned copper wires.

Colour: Red lilac (similar to RAL 4001)

Bend radius, e-chain®

10m

Travel distance, e-chain®



**Basic requirements** Travel distance Torsion

ns		Silicone-free	Free from silicone whicl 1992)
		UL verified	Certificate No. B1296 service life calculator b
		CRUUS UL/CSA AWM	See data sheet for deta
		NFPA NFPA	Following NFPA 79-20
e-chain <sup>®</sup> linear	minimum 15 x d	FAT EAC	Certificate No. RU C-D
flexible	minimum 12 x d	LIIL	
fixed	minimum 8 x d	REACH	In accordance with reg
e-chain® linear	+5°C up to +70°C		
flexible	-5°C up to +70°C (following DIN EN 60811-504)	Bous Lead-free	Following 2011/65/EC
fixed	-15°C up to +70°C (following DIN EN 50305)		
unsupported	3m/s	CECE	Following 2014/35/EU
20m/s <sup>2</sup>			In accordance with the
Unsupported trav	rels up to 10m, Class 1		
		Guaranteed service life (	details see page 28-29)
		Double strokes*	1 million
Conductor consis	sting of bare copper wires (according to DIN EN 60228).	Temperature,	R min.

Class 3.1.1.1

Properties and approvals

Flame-retardant

	Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	
	+5/+15	17.5	18.5	
+1	+15/+60	15	16	
	+60/+70	17.5	18.5	
	* Higher number of double strol	kes? Service life calculation o	nline  www.igus.eu/chainflex	life

#### Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

4u	Nominal voltage
	Testing voltage

/4

50V 300V (following UL), except CF888.001: 30V (following UL) 500V

Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®.

#### EPLAN download, configurators ► www.igus.eu/CF888



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low		3	5			highest
rted	1				$\geq 4$	100m
ione	1		hig	hest		
ione	1		±3(	60°		

According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame

ne which can affect paint adhesion (following PV 3.10.7 – status

B129699: "igus 36-month chainflex cable guarantee and lator based on 2 billion test cycles per year" for details www.igus.eu/CF888

79-2018, chapter 12.9

unsuppo

RU C-DE.ME77.B.00295/19

vith regulation (EC) No. 1907/2006 (REACH)

/65/EC (RoHS-II/RoHS-III)

vith the valid regulations of the United Kingdom (as at 08/2021)

R min. [factor x d] 18.5 16 18.5

[factor x d] 19.5 17 19.5

R min.





UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

















CE UK CA

### Bus cable | PVC | chainflex® CF888

Class 3.1.1.1

### igus" chainflex" CF888.045

#### Example image

	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight	Part No.	Characteristic wave impedance approx.	Core group
		[mm <sup>2</sup> ]	[mm]	[kg/km]	[kg/km]		[Ω]	
	Profibus (1x2x0.64mm)							
	CF888.001	(2x0.25)C	8.0	18	59	CF888.001	150	2x0.25
	CAN-Bus							
	CF888.021	(2x0.5)C	8.5	24	73	CF888.021	120	2x0.5
	Ethernet/CAT5e							
	CF888.045	(4x(2x0.14))C	7.0	25	62	CF888.045	100	4x(2x0.14)
	Profinet							
Ether <b>CAT</b>	CF888.060 <sup>2) 13)</sup>	(4x0.34)C	7.0	25	59	CF888.060 <sup>2) 13)</sup>	100	4x0.34
	_							

The chainflex<sup>®</sup> types marked with <sup>2</sup>) are cables designed as a star-guad. <sup>13)</sup> Colour outer jacket: Yellow-green (RAL 6018)

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



### Cables available in the chainflex<sup>®</sup> CASE

More on this on page 24/25 and online: www.igus.eu/cfcase

the chainflex<sup>®</sup> CASE - ship'n store by igus<sup>®</sup>.



EU202

Simple savings on delivery, storage space and re-ordering with

#### Technical note on bus cables

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability.

It is also ensured that the electrical values remain stable over the long term in spite of permanent movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals.

igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.



chainflex® CF888 bus cables in a handling application

### EPLAN download, configurators ► www.igus.eu/CF888



Colour code

red, green

white, brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white, orange, blue, yellow (star-quad)



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

**183** 

**CF888** 

PVC

15 x d

Guarante

36

igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test

cycles per year

c RLus

NFPA



PVC

### Bus cable | PVC | chainflex<sup>®</sup> CFBUS.PVC

36 Double strokes guara	nteed R Bend	<b>.5 x d</b> d radius, e-chain <sup>®</sup>	<b>20m</b> Travel distance, e	⊱chain®
<ul> <li>For medium duty ap</li> <li>PVC outer jacket</li> <li>Shielded</li> <li>Oil-resistant</li> <li>Flame-retardant</li> </ul>	plications			
Dynamic information Bend radius	e-chain <sup>®</sup> linear flexible	minimum 12.5 x d mininum 10 x d		
Temperature	fixed e-chain <sup>®</sup> linear flexible fixed	minimum / x d +5°C up to +70°C -5°C up to +70°C (folk -15°C up to +70°C (folk	owing DIN EN 60811-504 Ilowing DIN EN 50305)	4)
v max.	unsupported gliding	3m/s 2m/s		
a max.	30m/s <sup>2</sup>			
Travel distance	Unsupported trave	els and up to 20m for glid	ing applications, Class 3	
Cable structure				
Conductor	Stranded conduc copper wires (follo	tor in especially bending owing DIN EN 60228).	g-resistant version consis	sting of bare
Core insulation	According to bus	specification.		
Core structure	According to bus	specification.		
Core identification	According to bus	specification.		
(0)	Product range	e table		
Overall shield	Bending-resistant	braiding made of tinned	d copper wires.	
	Coverage linear a	pprox. 55%, optical app	prox. 80%	
Outer jacket	Low-adhesion, oi	I-resistant PVC mixture,	adapted to suit the requ	uirements in
	e-chains® (following)	ng DIN EN 50363-4-1).		
	Colour: Red lilac (	similar to RAL 4001)		

#### **Electrical information**



300V (following UL), except CFBUS.PVC.020: 30V (following UL) 500V

**Basic requirements Travel distance Oil resistance** Torsion

unsupported

### Class 4.3.2.1

### Properties and approvals Medium UV resistance Oil resistance

1992)

Flame-retardant

Silicone-free

UL verified CUL listed

CLPA CLPA

EHE EAC REACH REACH

RoHS Lead-free

Cleanroom

CECE **UK** UKCA

CA

Following 2014/35/EU

### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	
Temperature, from/to [°C]	R min. [factor x d]	
+5/+15	15	
+15/+60	12.5	
+60/+70	15	

\* Higher number of double strokes? Service life calculation online b www.igus.eu/chainflexlife

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 20m for gliding applications, Class 3
- Light oil influence, Class 2
- No torsion, Class 1

**IQUS** 

- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Machining units/packaging machines, handling, indoor cranes

EPLAN download, configurators ► www.igus.eu/CFBUS.PVC

50V

Variants **Product range table** 



EU202

EU2022



Oil-resistant (following DIN EN 50363-4-1), Class 2

According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame

Free from silicone which can affect paint adhesion (following PV 3.10.7 - status

Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year" CMX, 75°C (except CFBUS.PVC.068)

See data sheet for details > www.igus.eu/CFBUS.PVC

Following NFPA 79-2018, chapter 12.9

CFBUS.PVC.045: CC-Link IE Elield, Reference no. 153 CFBUS.PVC.049: CC-Link IE Elield, Reference no. 154 Certificate No. RU C-DE.ME77.B.00295/19

In accordance with regulation (EC) No. 1907/2006 (REACH)

Following 2011/65/EC (RoHS-II/RoHS-III)

According to ISO Class 1. The outer jacket material of this series complies with CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1

In accordance with the valid regulations of the United Kingdom (as at 08/2021)

R min. [factor x d] 16 13.5 16

R min. [factor x d] 17 14.5 17



CFBUS.PVC

PVC





















RoHS





CE UK CA





CFBUS.PVC PVC 12.5 x d

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

Class 4.3.2.1

### igus° chainflex° CFBUS.PVC.049

Example image

	Example image							
	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [ka/km]	Weight [ka/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group
	Profibus (1x2x0.64mm)				10 1			
	CFBUS.PVC.001	(2x0.25)C	8.5	25	77	CFBUS.PVC.001	150	2x0.25
	CAN-Bus							
	CFBUS.PVC.020 <sup>2)</sup>	(4x0.25)C	7.0	23	57	CFBUS.PVC.020 <sup>2)</sup>	120	4x0.25
	CFBUS.PVC.021	(2x0.5)C	8.5	32	86	CFBUS.PVC.021	120	2x0.5
	CFBUS.PVC.022 <sup>2)</sup>	(4x0.5)C	8.5	43	94	CFBUS.PVC.022 <sup>2)</sup>	120	4x0.5
	CC-Link							
	CFBUS.PVC.035	(3x0.5)C	8.0	40	82	CFBUS.PVC.035	110	3x0.5
_	Ethernet/CAT5							
Ether <b>CAT</b> .	CFBUS.PVC.040 <sup>2)</sup>	(4x0.25)C	6.5	29	70	CFBUS.PVC.040 <sup>2)</sup>	100	4x0.25
	Ethernet/CAT5e							
CC-Línk <mark>IE B</mark> ield	CFBUS.PVC.045	(4x(2x0.15))C	7.5	33	67	CFBUS.PVC.045	100	4x(2x0.15)
	Ethernet/CAT6							
CC-Línk <b>IE B</b> ield	CFBUS.PVC.049	(4x(2x0.15))C	7.5	33	67	CFBUS.PVC.049	100	4x(2x0.15)
	Ethernet/CAT6A							
	CFBUS.PVC.050	4x(2x0.20)C	10.0	65	123	CFBUS.PVC.050	100	4x(2x0.20)C
	Ethernet/CAT7							
	CFBUS.PVC.052	(4x(2x0.15)C)C	9.5	89	136	CFBUS.PVC.052	100	4x(2x0.15)C
	FireWire IEEE 1394b							
	CFBUS.PVC.056 <sup>11)</sup>	(2x(2x0.15)C+2x0.38)C	9.0	59	96	CFBUS.PVC.056 11)	110	2x(2x0.15)C 2x0.38
	Profinet							
EtherCAT.	CFBUS.PVC.060 <sup>2) 13)</sup>	(4x0.38)C	7.0	33	67	CFBUS.PVC.060 <sup>2) 13)</sup>	100	4x0.38
	USB 3.0							
	CFBUS.PVC.068	(2x(2xAWG28) +2x(2xAWG28)C)C	7.0	39	68	CFBUS.PVC.068	90	2x(2xAWG28) 2x(2xAWG28)0

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

<sup>1)</sup> Phase-out model

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

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



#### Cables available in the chainflex<sup>®</sup> CASE

Simple savings on delivery, storage space and re-ordering with the chainflex<sup>®</sup> CASE - ship'n store by igus<sup>®</sup>.

More on this on page 24/25 and online: www.igus.eu/cfcase



#### Technical note on bus cables

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of permanent movement. The overall guality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.





EU2022







igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

























red, green

Colour code

white, green, brown, yellow (star-quad) white, brown white, green, brown, yellow (star-quad)

white, blue, yellow

white, green, brown, yellow (star-quad)

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

orange/blue, blue/red black, white

white, orange, blue, yellow (star-quad)

red/black, green/white-green C blue/yellow, orange/violet

Bus cable   ig	u <b>PUR  </b> ch	ainflex <sup>®</sup> CF898	Clas
5 million Double strokes guar	ranteed Ben	x d d radius, e-chain <sup>®</sup> 10m Travel distance, e-chain <sup>®</sup>	
For flexing applicat	ions	PROFINET	oil
Oil-resistant	÷L	suitable for	E F
Shielded Flame-retardant		FastConnect	s
ynamic information			
Bend radius	e-chain <sup>®</sup> linear flexible fixed	minimum 15 x d minimum 12 x d minimum 8 x d	
C Temperature	e-chain <sup>®</sup> linear flexible	-20°C up to +70°C -40°C up to +70°C (following DIN EN 60811-504)	
v max.	fixed unsupported	-50°C up to +70°C (tollowing DIN EN 50305) 3m/s	REACH F
a max.	20m/s <sup>2</sup>		ROHS L
Travel distance	Unsupported trav	els up to 10m, Class 1	۲¢
able structure	Oraclaster		
Conductor	Conductor consi	sting of bare copper wires (according to DIN EN 60228).	CA
Core insulation	According to bus	specification.	Guarant
Core structure	According to bus	specification.	Double
Core identification	According to bus	specification.	
	Product range Braiding made of	e table i tinned copper wires.	
🚈 Overall shield			*    '-
Overall shield	Coverage approx	x. 60% optical	" Higher r

#### **Electrical information**



300V (following UL), except CF898.001: 30V (following UL) 500V

**Basic requirements Travel distance** Oil resistance Torsion

### 3.1.3.1

and approvals	
resistance	Medium
resistance	Oil-resistant (following DIN EN 50
ne-retardant	According to IEC 60332-1-2, Ca
cone-free	Free from silicone which can affect 1992)
verified	Certificate No. B129699: "igus
CSA AWM	See data sheet for details ► ww
PA	CF898.001-CF898.060: Followin
РА С	CF898.001-CF898.060: Followin Certificate No. RU C-DE.ME77.E
PA CH	CF898.001-CF898.060: Followin Certificate No. RU C-DE.ME77.E
PA CH d-free	CF898.001-CF898.060: Followin Certificate No. RU C-DE.ME77.E In accordance with regulation (EC Following 2011/65/EC (RoHS-II/
PA CH d-free	CF898.001-CF898.060: Followin Certificate No. RU C-DE.ME77.E In accordance with regulation (E0 Following 2011/65/EC (RoHS-II/0 Following 2014/35/EU
PA CH d-free CA	CF898.001-CF898.060: Followin Certificate No. RU C-DE.ME77.E In accordance with regulation (Ed Following 2011/65/EC (RoHS-II/ Following 2014/35/EU In accordance with the valid regu

### ed service life (details see page 28-29)

Oouble strokes*	1 million	
Temperature, from/to [°C]	R min. [factor x d]	
-20/-10	17.5	
-10/+60	15	
+60/+70	17.5	
lighter pumber of double at	al carl Carrian life, an la dation, and inc	•

mber of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

#### plication areas

- ng applications, Class 3
- ally for unsupported travels, Class 1
- With influence of oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

Example image

CF898

iguPUF

15 x d

#### EPLAN download, configurators ► www.igus.eu/CF898

50V

EU2022





CF898 iguPUR 15 x d



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

0363-10-2), Class 3

able Flame, VW-1, FT1, FT2 / Horizontal Flame ding to IEC 60332-1-2, FT2 ect paint adhesion (following PV 3.10.7 – status

s 36-month chainflex cable guarantee and 2 billion test cycles per year" w.igus.eu/CF898

ng NFPA 79-2018, Kapitel 12.9

B.00295/19

C) No. 1907/2006 (REACH)

RoHS-III)

lations of the United Kingdom (as at 08/2021)

R min. [factor x d] 18.5 16 18.5

R min. [factor x d] 19.5 17 19.5



















CE UK CA





RROFO METTE

### Bus cable | iguPUR | chainflex® CF898

## New

**Basic requirements Travel distance Oil resistance** Torsion

Class 3.1.3.1

igus" chainflex" CF898.045

Example image

Part	t No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group
Prof	fibus (1x2x0.64mm)							
CF8	98.001	(2x0.25)C	8.0	18	56	CF898.001	150	2x0.25
CAN	I-Bus							
CF8	98.021	(2x0.5)C	8.5	24	80	CF898.021	120	2x0.5
Ethe	ernet/CAT5e							
CF8	98.045	(4x(2x0.14))C	7.0	25	54	CF898.045	100	4x(2x0.14)
Prof	finet							
<sup>™</sup> CF8	<b>98.060</b> <sup>13)</sup>	(4x0.34)C	7.0	25	58	CF898.060 <sup>13)</sup>	100	4x0.34
W CF8	98.061.FC	(4x0.34)C	7.0	25	72	CF898.061.FC	100	4x0.34
ASI	BUS (flat cables)							
CF8	<b>98.082</b> <sup>14)</sup>	According to ASI	4.0	50	82	CF898.082 <sup>14)</sup>	According to ASI	2x2.5
CF8	<b>98.083</b> <sup>15)</sup>	According to ASI	4.0	50	79	CF898.083 15)	According to ASI	2x2.5

<sup>13)</sup> Colour outer jacket: Yellow-green (RAL 6018)
 <sup>14)</sup> Colour outer jacket: Yellow (RAL 1021)

<sup>15)</sup> Colour outer jacket: Jet black (RAL 9005)

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

hainfle

Cables available in the chainflex<sup>®</sup> CASE

Simple savings on delivery, storage space and re-ordering with the chainflex<sup>®</sup> CASE - ship'n store by igus<sup>®</sup>.



#### Technical note on bus cables

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of permanent movement.

The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other

and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you

to ensure the process reliability of your system from the very beginning.

### EPLAN download, configurators ► www.igus.eu/CF898



EU2022

**IQUS** 

EU202



Colour code

red, green

white, brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white, orange, blue, yellow (star-quad) white, orange, blue, yellow (star-quad)

blue, brown blue, brown

Adjustment device with chainflex® CF898 bus cables



CF898



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



























36 10 million

**Dynamic information** 

Double strokes guaranteed

### Bus cable | PUR | chainflex<sup>®</sup> CFBUS.PUR

膏 12.5 x d

Bend radius, e-chain®



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



Bend radius	e-chain <sup>®</sup> linear	minimum 12.5 x d				
	flexible	mininum 10 x d				
	fixed	minimum 7 x d				
🛌 Temperature	e-chain <sup>®</sup> linear	-20°C up to +70°C				
	flexible	-40°C up to +70°C (following DIN EN 60811-504)				
	fixed	-50°C up to +70°C (following DIN EN 50305)				
v max.	unsupported	3m/s				
	gliding	2m/s				
a max.	30m/s <sup>2</sup>					
Travel distance	Unsupported trave	Unsupported travels and up to 20m for gliding applications, Class 3				
Cable structure						
Conductor	Stranded conduc copper wires (follo	tor in especially bending-resistant version consisting of bare owing DIN EN 60228).				
Core insulation	According to bus	specification.				
Core structure	According to bus	specification.				
Core identificat	ion According to bus	specification.				
1QC	Product range	e table				

#### Product range table

Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80% Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Red lilac (similar to RAL 4001) Variants **Product range table** 

#### **Electrical information**

Overall shield

Outer jacket

4 u	Nominal voltage	
	Testing voltage	

50V 300V (following UL), except CFBUS.PUR.020: 30V (following UL) 500V

### Properties and approvals

UV resistance Medium

### EPLAN download, configurators ► www.igus.eu/CFBUS.PUR

36-month guarantee ... more than 1,350 cable types from stock ... no cutting charges

### Class 4.3.3.1

**Basic requirements Travel distance** unsuppor Oil resistance Torsion

Oil resistance	Oil-resistant (following DIN
Offshore	MUD-resistant following NE
Flame-retardant	According to IEC 60332-1-
Silicone-free	Free from silicone which ca 1992)
Halogen-free	Following DIN EN 60754
UL verified	Certificate No. B129699:
CUL listed	CMX, 75°C (except CFBUS
	See data sheet for details
	Following NFPA 79-2018, (
NFPA	-
	CFBUS.PUR.045: CC-Lini
	CFBUS.PUR.045: CC-Líni CFBUS.PUR.049: CC-Líni Type Approval Certificate T
	CFBUS.PUR.045: CC-Lini CFBUS.PUR.049: CC-Lini Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M
	CFBUS.PUR.045: CC-Lini CFBUS.PUR.049: CC-Lini Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M In accordance with regulat
CLPA CLPA DNV EAC EAC REACH REACH Lead-free	CFBUS.PUR.045: CC-Link CFBUS.PUR.049: CC-Link Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M In accordance with regulat Following 2011/65/EC (Ro
CLPA CLPA DNV EAC EAC REACH REACH Lead-free Cleanroom	CFBUS.PUR.045: CC-Link CFBUS.PUR.049: CC-Link Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M In accordance with regulat Following 2011/65/EC (Ro According to ISO Class 1.
CLPA CLPA DNV EAC EAC REACH Cleanroom Cleanroom DESINA	CFBUS.PUR.045: CC-Link CFBUS.PUR.049: CC-Link Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M In accordance with regulat Following 2011/65/EC (Ro According to ISO Class 1. CF77.UL.05.12.D - tested According to VDW, DESIN.
CLPA DNV EAC EAC REACH Cleanroom Cleanroom DESINA CE CE	CFBUS.PUR.045: CC-Link CFBUS.PUR.049: CC-Link Type Approval Certificate T CFBUS.PUR.040052: Ty Certificate No. RU C-DE.M In accordance with regulat Following 2011/65/EC (Ro According to ISO Class 1. CF77.UL.05.12.D - tested According to VDW, DESIN, Following 2014/35/EU

### Guaranteed service life (details see page 28-29)

uble strokes*	5 million	7.5 million	10 million				
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]				
-20/-10	15	16	17				
-10/+60	12.5	13.5	14.5				
+60/+70	15	16	17				
abor number of double strok	kas? Son <i>i</i> co lifo calculation o		difo				

\* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chaintlexlife

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 20m for gliding applications, Class 3
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1

S

- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

low			4				highest
rted		3				$\geq 4$	100m
one		3		hig	hest		
one	1			±36	60°		

EN 50363-10-2), Class 3

EK 606 - status 2009

-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame

an affect paint adhesion (following PV 3.10.7 – status

"igus 36-month chainflex cable guarantee and ed on 2 billion test cycles per year" S.PUR.068)

www.igus.eu/CFBUS.PUR

chapter 12.9

k IE Eield, Reference no. 151 k IE Eield, Reference no. 152 AE00003X6 pe Approval Certificate TAE00003X8 IE77.B.00295/19

ion (EC) No. 1907/2006 (REACH)

HS-II/RoHS-III)

The outer jacket material of this series complies with by IPA according to standard DIN EN ISO 14644-1 A standardisation

d regulations of the United Kingdom (as at 08/2021)



CFBUS.PUR



CFBUS.PUR PUR 12.5 x d

### Bus cable | PUR | chainflex<sup>®</sup> CFBUS.PUR

Class 4.3.3.1

### igus° chainflex° CFBUS.PUR.049

	Example image							
	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group
	Profibus (1x2x0.64mm)							
	CFBUS.PUR.001	(2x0.25)C	8.5	25	75	CFBUS.PUR.001	150	2x0.25
	CAN-Bus							
	CFBUS.PUR.020 <sup>2)</sup>	(4x0.25)C	7.5	23	64	CFBUS.PUR.020 <sup>2)</sup>	120	4x0.25
	CFBUS.PUR.021	(2x0.5)C	8.5	32	82	CFBUS.PUR.021	120	2x0.5
	CFBUS.PUR.022 <sup>2)</sup> CC-Link	(4x0.5)C	8.5	43	91	CFBUS.PUR.022 <sup>2)</sup>	120	4x0.5
	CFBUS.PUR.035	(3x0.5)C	8.0	40	76	CFBUS.PUR.035	110	3x0.5
	Ethernet/CAT5							
Ether <b>CAT.</b>	CFBUS.PUR.040 <sup>2)</sup>	(4x0.25)C	6.5	29	69	CFBUS.PUR.040 <sup>2)</sup>	100	4x0.25
(CDE	Single Pair Ethernet/CAT	5e						
SPE	CFBUS.PUR.042	(2x0.15)C	5.5	12	33	CFBUS.PUR.042		2x0.15
	Ethernet/CAT5e							
CC-Línk <b>IE B</b> ield	CFBUS.PUR.045	(4x(2x0.15))C	7.5	33	66	CFBUS.PUR.045	100	4x(2x0.15)
	Ethernet/CAT6							
CC-Línk <mark>IE B</mark> ield	CFBUS.PUR.049	(4x(2x0.15))C	7.5	33	66	CFBUS.PUR.049	100	4x(2x0.15)
	CFBUS.PUR.H01.049	((4x(2x0.15))C+4x1.5)C	12.5	125	202	CFBUS.PUR.H01.04	9 100	(4x(2x0.15))C
	Ethernet/CAT6A							4X1.5
	CFBUS.PUR.050	4x(2x0.20)C	10.0	65	120	CFBUS.PUR.050	100	4x(2x0.20)C
	Ethernet/CAT7							
	CFBUS.PUR.052	(4x(2x0.15)C)C	9.5	89	129	CFBUS.PUR.052	110	(4x(2x0.15))C
	FireWire IEEE 1394b							
	CFBUS.PUR.056	(2x(2x0.15)C+2x0.38)C	9.0	59	91	CFBUS.PUR.056	110	2x(2x0.15)C 2x0.38
	Profinet							
Ether <b>CAT</b>	CFBUS.PUR.060 <sup>2) 13)</sup>	(4x0.38)C	7.0	33	64	CFBUS.PUR.060 <sup>2) 13</sup>	100	4x0.38
	CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	11.5	120	196	CFBUS.PUR.H01.06	0 100	(4x0.38)C 4x1.5
	USB 3.0							
	CFBUS.PUR.068	(2x(2xAWG28) +2x(2xAWG28)C)C	7.0	39	64	CFBUS.PUR.068	90	2x(2xAWG28) 2x(2xAWG28)

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JS<sup>\*</sup>

The chainflex  $^{(3)}$  types marked with  $^{(2)}$  are cables designed as a star-quad.  $^{(3)}$  Colour outer jacket: Yellow-green (RAL 6018)

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

EPLAN download, configurators > www.igus.eu/CFBUS.PUR









igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year























red, green

Colour code

white, green, brown, yellow (star-quad) white, brown white, green, brown, yellow (star-quad)

white, blue, yellow

white, green, brown, yellow (star-quad)

white/blue

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown black, brown, grey, blue

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

orange/blue, blue/red black, white

white, orange, blue, yellow (star-quad) white, orange, blue, yellow (star-quad) black, brown, grey, blue

red/black, green/white-green C blue/yellow, orange/violet

### Bus cable | TPE | chainflex® CFBUS





TPE



- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- Flame-retardant
- Hydrolysis and microbe-resistant

### **Dynamic information**

	Bend radius	e-chain <sup>®</sup> linear	minimum 10 x d (CFBUS.001049 and CFBUS.060)
			minimum 12.5 x d (CFBUS.050055 and CFBUS.070)
		flexible	minimum 8 x d
		fixed	minimum 5 x d
c C	Temperature	e-chain <sup>®</sup> linear	-35°C up to +70°C
$\bigcirc$		flexible	-45°C up to +70°C (following DIN EN 60811-504)
		fixed	-50°C up to +70°C (following DIN EN 50305)
v	v max.	unsupported	10m/s
$\bigcirc$		gliding	6m/s
	a max.	100m/s <sup>2</sup>	
$\bigcirc$			
	Travel distance	Unsupported trave	els and up to 400m and more for gliding applications, Class 6
₽ <mark>+ m +</mark>			
able	structure		
6	Conductor	Stranded conduct	tor in especially bending-resistant version consisting of bare
9		copper wires (follo	wing DIN EN 60228).
6	Core insulation	According to bus	specification.
9			
	Core structure	According to bus	specification.
Y			
6	Core identification	According to bus	specification.
190		Product range	table
Q	Inner jacket	TPE mixture adap	ted to suit the requirements in e-chains <sup>®</sup> .
	Overall shield	Extremely bending	g-resistant braiding made of tinned copper wires.
$(\varphi$		Coverage linear ar	pprox. 70%, optical approx. 90%
	Outer jacket	Low-adhesion, ex	tremely abrasion-resistant and highly flexible TPE mixture,
02	-	adapted to quit the	a requirementa in a abaina®

adapted to suit the requirements in e-chains<sup>®</sup> Colour: Red lilac (similar to RAL 4001)

Variants <a>Product range table</a>

500V (following DIN EN 50289-1-3)

### **Electrical information**

4u	Nominal voltage
A	Testing voltage

17 Properties and approvals

UV resistance

Medium





50V

**Basic requirements Travel distance Oil resistance** Torsion

Class 6.6.4.1

🕛 UL verified

CLPA CLPA

EHE EAC

REACH REACH

Rous Lead-free

Cleanroom

DESINA

clean room

CA

CECE

**UK** UKCA

DNV

Oil resistance

UL/CSA AWM

24568 with Plantocut 8 S-MB tested by DEA), Class 4 Flame-retardant Silicone-free 1992)

Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year" See data sheet for details www.igus.eu/CFBUS

Following NFPA 79-2018, chapter 12.9

CFBUS.045: CC-Línk IE Iield, Reference no. 130 CFBUS.049: CC-Línk IE Iield, Reference no. 137 Type Approval Certificate TAE00003X5 CFBUS.040-.052: Type Approval Certificate TAE00003X7 Certificate No. RU C-DE.ME77.B.00295/19

In accordance with regulation (EC) No. 1907/2006 (REACH)

Following 2011/65/EC (RoHS-II/RoHS-III)

According to VDW, DESINA standardisation

Following 2014/35/EU

In accordance with the valid regulations of the United Kingdom (as at 08/2021)

#### Guaranteed service life (details see page 28-29)

Double strokes* 5 million		illion	7.5 n	10 million				
Temperature,	CFBUS .001049	CFBUS .050070	CFBUS .001049	CFBUS .050070	CFBUS .001049	CFBUS .050070		
from/to [°C]	R min. [factor 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		
* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife								

### Typical application areas

- For heavy-duty applications, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1

igus

- Indoor and outdoor applications without direct sun radiation
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications

EU2022

S

600V (following UL), except CFBUS.065/.066: 30V (following UL)

chainflex CFBUS.049

supi



Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame CFBUS.030/CFBUS.065/CFBUS.066: According to IEC 60332-1-2, FT2 Free from silicone which can affect paint adhesion (following PV 3.10.7 - status

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



CFBUS

TPE

10-12.5 x d







UL-verified chainflex® guarantee ... www.igus.eu/ul-verified

### Bus cable | TPE | chainflex<sup>®</sup> CFBUS

igus chainflex CFBUS.049

Example image							
Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. $[\Omega]$	Core group
Profibus (1x2x0.64mm)							
CFBUS.001	(2x0.25)C	9.0	33	92	CFBUS.001	150	2x0.25
CFBUS.002	(2x0.25)C+4x1.5	12.5	94	191	CFBUS.002	150	(2x0.25)C
							4x1.5
CFBUS.003	(2x0.25)C+3G0.75	11.5	55	145	CFBUS.003	150	(2x0.25)C
							3G0.75
Interbus							
CFBUS.010	(3x(2x0.25))C	9.0	47	91	CFBUS.010	100	3x(3x0.25)
CFBUS.011	(3x(2x0.25)+(3G1.0))C	10.5	87	152	CFBUS.011	100	3x(2x0.25)
							(3G1.0)
CAN-Bus							
CFBUS.020 <sup>2)</sup>	(4x0.25)C	6.5	28	58	CFBUS.020 <sup>2)</sup>	120	4x0.25
CFBUS.021	(2x0.5)C	8.0	39	81	CFBUS.021	120	2x0.5
CFBUS.022 <sup>2)</sup>	(4x0.5)C	8.0	43	87	CFBUS.022 2)	120	4x0.5
DeviceNet							
CFBUS.030 <sup>4)</sup>	((2xAWG24)C+2xAWG22)C	7.0	36	57	CFBUS.030 <sup>4)</sup>	120	(2xAWG24)C
	~ / /						2xAWG22
CFBUS.031 4)	((2xAWG18)C+2xAWG15)C	11.5	103	174	CFBUS.031 4)	120	(2xAWG18)C
							2xAWG15
CC-Link							
CFBUS.035	(3xAWG20)C	8.5	43	96	CFBUS.035	110	3xAWG20

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad. <sup>4)</sup> Manufactured without inner jacket

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



Cables available in the chainflex<sup>®</sup> CASE

Simple savings on delivery, storage space and re-ordering with the chainflex<sup>®</sup> CASE - ship'n store by igus<sup>®</sup>.

More on this on page 24/25 and online: www.igus.eu/cfcase



#### Technical note on bus cables

EU2022

EU202

Class 6.6.4.1

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of permanent movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.

EPLAN download, configurators ► www.igus.eu/CFBUS







igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year





















RoHS







red, green
red/green
black with white numbers 1-4
red/green
black, blue, green-yellow

white/brown, green/yellow, grey/pink white/brown, green/yellow, grey/pink red, blue, green-yellow

white, green, brown, yellow (star-quad) white, brown white, green, brown, yellow (star-quad)

white/blue red, black white/blue red, black

white, blue, yellow





**V** 199

### Bus cable | TPE | chainflex<sup>®</sup> CFBUS

igus" chainflex" CFBUS.049

	Example image							
	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group
	Ethernet/CAT5I							
Ether <b>CAT</b> .	CFBUS.040	(4x0.25)C	7.0	33	59	CFBUS.040	100	4x0.25
	Ethernet/CAT5e							
CC-Línk <b>IE E</b> ield	CFBUS.045	(4x(2x0.15))C	8.5	42	84	CFBUS.045	100	4x(2x0.15)
	Ethernet/CAT6							
CC-Línk IE Bield	CFBUS.049	(4x(2x0.15))C	8.5	42	84	CFBUS.049	100	4x(2x0.15)
	Ethernet/CAT6A							
	CFBUS.050 <sup>4)</sup>	(4x(2x0.15)C)C	10.5	83	134	CFBUS.050 <sup>4)</sup>	100	4x(2x0.15)C
	Ethernet/CAT7							
	CFBUS.052 4)	(4x(2x0.15)C)C	10.5	89	133	CFBUS.052 4)	100	4x(2x0.15)C
	FireWire 1394a							
	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	39	76	CFBUS.055	100	2x(2x0.15)C
								2x(0.34)C
nnn <b>en</b> ®	Profinet							
EtherCAT.	CFBUS.060 <sup>2)13)</sup> USB	(4x0.38)C	7.5	39	74	CFBUS.060 <sup>2) 13)</sup>	100	4x0.38
	CFBUS-065	((2xAWG28)+2xAWG20)C	55	28	45	CFBUS.065	90	(2xAWG28)
			010	20	10			2xAWG20
	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	32	51	CFBUS.066	90	(2xAWG24)
								2xAWG20
	DVI							
	CFBUS.070 <sup>4)6)</sup>	(4x(2xAWG28)C +(2xAWG28)+3xAWG28)C	9.0	35	95	CFBUS.070 <sup>(4)(6)</sup>	100	4x(2xAWG28)C
								(2xAWG28)
								3xAWG28)C

The chainflex<sup>®</sup> types marked with <sup>2)</sup> are cables designed as a star-quad. <sup>4)</sup> Manufactured without inner jacket

6) without cULus

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

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

#### Technical note on bus cables

Class 6.6.4.1

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of permanent movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.

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S

**IQUS** 



Colour code

CFBUS	
TPE	
10-12.5 x	d



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year white, green, brown, yellow (star-quad) white-blue/blue, white-orange/orange, white-green/green, white-brown/brown white-blue/blue, white-orange/orange, white-green/green, white-brown/brown white-blue/blue, white-orange/orange, white-green/green, white-brown/brown white-blue/blue, white-orange/orange,

white-green/green, white-brown/brown

orange/blue, green/red white, black

white, orange, blue, yellow (star-quad)

white/green red, black white/green red, black

4 x white/yellow with element-shield in blue, black, red, white white/brown

green, yellow, grey























CFBUS.LB TPE 7.5 x d	PVC iguPUR	PUR TF	ex® CFBUS	S.I B	New	Class 7	.6.4.1	Basic requirem Travel dist Oil resist To	ance unsupp ance rsion	Iow         1         2         3         4           orted         1         2         3         4           none         1         2         3         4           1         2         3         4	5 6 7 highest 5 6 ≥ 400m highest ±360°		
	36 12.5 million	- 7.5	5 x d	400m		Properties and	approvals	Medium					
	Uouble strokes guara	Oil resis	Oil resistance       Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDN)										
	<ul> <li>For heaviest duty ap</li> <li>TPE outer jacket</li> <li>Shielded</li> </ul>	oplications		Now a with UL	available approval	Silicone	-free	24568 with Plai Free from silicor 1992)	ntocut 8 S-MB t ne which can aff	ested by DEA), ect paint adhes	Class 4 ion (following P\	/ 3.10.7 – status	
	<ul> <li>Oil and bio-oil-resis</li> <li>Low-temperature-float</li> </ul>	tant exible		& 25%	6 longer ice life	Haloger	n-free	Following DIN E	EN 60754				
	<ul> <li>PVC and halogen-fr</li> <li>Hydrolysis and micr</li> </ul>	ree robe-resistant				UL verif	ied	Certificate No. service life calc	B129699: "igi ulator based or	us 36-month o n 2 billion test c	hainflex cable; ycles per year"	guarantee and	
			Λ	See data sheet for details > www.igus.eu/CFBUS.LB (from production date 01/2022)									
	Bend radius	e-chain <sup>®</sup> linear	minimum 7.5 x d					CFBUS.LB.045: CC-Línk IE Field, Reference no. 131 CFBUS.LB.049: CC-Línk IE Field, Reference no. 138					
		fixed e-chain <sup>®</sup> linear	minimum 6 x d minimum 4 x d $-35^{\circ}$ C up to $+70^{\circ}$ C						Lertificate No. KU C-DE.ME/7.B.02806 (TR ZU)				
		flexible fixed	-50°C up to +70°C -55°C up to +70°C	(following DIN EN 608 (following DIN EN 503)	11-504) 05)	REACH Lead-free	e	Following 2011/65/EC (RoHS-II/RoHS-III)					
	v max.	unsupported gliding	10m/s 6m/s		clean- Cleanro	om	According to ISO Class 1. The outer jacket material of this series complies wit						
	a max.	100m/s <sup>2</sup>						CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1 According to VDW, DESINA standardisation					
		Cable structure						Following 2014,	/35/EU				
<u>M</u>	Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).				UK UKCA CA	In accordance with the valid regulations of the United Kingdom (as at 08/2021						
13							Guaranteed service life (details see page 28-29)						
	Core structure	ructure According to bus specification.					5 r	million	7.5 r	nillion	12.5	million	
	Core identification	<ul> <li>According to bus specification.</li> <li>▶ Product range table</li> <li>TPE mixture adapted to suit the requirements in e-chains<sup>®</sup>.</li> </ul>				Temperature, from/to [°C]	.001022 R min.	.040060 R min.	.001022 R min.	.040060 R min.	.001022 R min.	.040060 R min.	
	Inner jacket					-35/-25	[factor x d] 12.5	[factor x d] 10	[factor x d] 13.5	[factor x d] 11	[factor x d] 14.5	[factor x d] 12	
	Overall shield	Extremely bendin Coverage linear a	ig-resistant braiding m approx. 70%, optical a	nade of tinned copper approx. 90%	wires.	-25/+60 +60/+70	10 12.5	7.5 10	11 13.5	8.5 11	12 14.5	9.5 12	
	Outer jacket	Low-adhesion, e adapted to suit th	xtremely abrasion-res ne requirements in e-c (cimilar to RAL 4001)	sistant and highly flexil chains <sup>®</sup> .	* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife								
	Colour: Red Illac (similar to RAL 4001) Variants ► Product range table					<ul> <li>Iypical application areas</li> <li>For heavy-duty applications, Class 7</li> </ul>							
349	Electrical information					<ul> <li>Unsupported travels and up to 400m and more for gliding applications, Class 6</li> </ul>							
LB,C	K Nominal voltage	50V				<ul> <li>Almost unlim</li> </ul>	ited resistance	e to oil, also with	bio-oils, Class 4	1			
CIS.		600V (following U				<ul> <li>No torsion, C</li> </ul>	lass 1				e		
ainflex CFE Example image	lesting voltage	sting voltage 500V (following DIN EN 50289-1-3)				<ul> <li>Indoor and outdoor applications without direct sun radiation</li> <li>Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications</li> </ul>							

### EPLAN download, configurators ► www.igus.eu/CFBUS.LB

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igus

igus chainflex





CFBUS.LB

TPE

7.5 x d























### Bus cable | TPE | chainflex<sup>®</sup> CFBUS.LB

## New

**Basic requirements Travel distance** Oil resistance Torsion

igus<sup>®</sup> chainflex<sup>®</sup> CFBUS.LB.049

	Example image							
	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group
	Profibus (1x2x0.64mm)							
New	CFBUS.LB.001	(2x0.25)C	9.0	33	78	CFBUS.LB.001	150	2x0.25
	CAN-Bus/Feldbus							
New	CFBUS.LB.020 <sup>2)</sup>	(4x0.25)C	6.5	28	49	CFBUS.LB.020 <sup>2)</sup>	120	4x0.25
New	CFBUS.LB.021	(2x0.5)C	8.0	39	67	CFBUS.LB.021	120	2x0.5
New	CFBUS.LB.022 <sup>2)</sup>	(4x0.5)C	8.0	43	78	CFBUS.LB.022 <sup>2)</sup>	120	4x0.5
ther <b>CAT</b>	Ethernet/CAT5I							
New	CFBUS.LB.040 <sup>2)</sup>	(4x0.25)C	7.0	33	50	CFBUS.LB.040 <sup>2)</sup>	100	4x0.25
CC-Línk IE Elield	Ethernet/CAT5e							
New	CFBUS.LB.045	(4x(2x0.15))C	8.5	42	71	CFBUS.LB.045	100	4x(2x0.15)
CC-Línk IE Elield	Ethernet/CAT6							
New	CFBUS.LB.049	(4x(2x0.15))C	8.5	42	71	CFBUS.LB.049	100	4x(2x0.15)
EtherCAT.	Profinet							
New	CFBUS.LB.060 <sup>2) 13)</sup>	(4x0.38)C	7.5	39	67	CFBUS.LB.060 <sup>(2) 13)</sup>	100	4x0.38

The chainflex<sup>®</sup> types marked with <sup>2</sup>) are cables designed as a star-quad. <sup>13</sup> Colour outer jacket: Yellow-green (RAL 6018)

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



Cables available in the chainflex<sup>®</sup> CASE

Simple savings on delivery, storage space and re-ordering with the chainflex<sup>®</sup> CASE - ship'n store by igus<sup>®</sup>.





EU202

### cost down...

Class 7.6.4.1



Reduce cost, improve technology, now! Do the chainflex® price check ... www.igus.eu/cf-price-check

... for example: reduce cost with CFBUS.PUR ...

#### Technical note on bus cables

204

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to diverse media.

The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability.

It is also ensured that the electrical values remain stable over the long term in spite of permanent movement.

The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals.

igus® advises you when you are designing your bus system to take all these factors into account and, with extensive tests, helps you to ensure the process reliability of your system from the very beginning.



Colour code

red, green

white, brown

white, green, brown, yellow (star-quad)

white, green, brown, yellow (star-quad)

white, green, brown, yellow (star-quad)

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

white, orange, blue, yellow (star-quad)

CFBUS.LB TPE 7.5 x d



igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test ycles per year





























