

### 36-month chainflex® guarantee

### Guaranteed service life for predictable reliability

► Selection table page 134

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



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



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



o.z. LIN-TECH HENNLICH s.r.o. Českolipská 9. 412 01 Litoměřice

Telefon: +420 416 711 333 E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech



o.z. LIN-TECH HENNLICH s.r.o. Českolipská 9. 412 01 Litoměřice

**Telefon:** +420 416 711 333 E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech

chainflex® quarantee



Guaranteed service life (1)

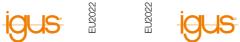
	CHAILIII	CA gue	ai ai i					<b>U</b> U	alai						
Act Cables    Act Cable   Act		chainflex®	Temperature,		[m/s]				r travel distance	[fac	tor x d] for tr	ravel distance		x d] for travel distance	Page
16   16   17   18   18   18   18   18   18   18				unsupported	gliding	[]							< 1	0m ≥ 10 m	
CF8821	Data cables									7					
									-			-			
	IIII	CF8821		3	-	20	≤ 10		-			-			136
Part															
+60 / +70   -25 / 15   -25 / 15   125   15   135   16   14.5   17															
-26/-15	MAN CONTRACTOR OF THE PARTY OF	CF240		3	2	20	≤ 50								138
CF240,PUR															
+70   +80	(MAN)	OF040 DUD		0	0	00	. 50								1.10
Ho   Ho   Ho   Ho   Ho   Ho   Ho   Ho	ALL CONTRACTOR OF THE PARTY OF	CF240.PUR		3	2	20	≤ 50								142
CF211													14		
+80   -70		CE011		5	2	50	< 100								1/6
CF211.PUR		GFZTT		3	3	30	≤ 100								140
CF211.PUR															
+70/+80		CF211 PUR		5	3	50	< 100								150
Smillion   7.5 million   7.		OI ZITIII OIT		ŭ	Ū	00	2 100								100
-36 / 25 / 25   3.5   3							_		-						
+90/+100			-35 / -25												
CF112		CF11 New!		10	6	100	≤ 400		6.8		7.5	i		8.5	154
CF112			+90 / +100						7.5		8.5	•		9.5	
CF112								5 n	nillion		7.5 mi	llion		10 million	
12.5 13.5 14.5 14.5 14.5 14.5 14.5 14.5 14.5 14			-20 / -15					1	12.5		13.	5		14.5	
CF12	55557	CF112	-15 / +70	10	5	80	≤ 100		10		11			12	158
-35/-25			+70 / +80					1	12.5		13.	5		14.5	
CF12 (100) -25/+90 10 6 100 ≤ 400 10 11 11 12 162 162 1405 112.5 13.5 14.5 14.5 162 1406 110 12.5 13.5 14.5 14.5 162 162 162 162 162 162 162 162 162 162														12.5 million	
+90 / +100  -35 / -25								1	12.5		13.	5		14.5	
CF298	and the second	CF12 New!		10	6	100	≤ 400								162
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			+90 / +100												
CF298 $-25/+80$ $10$ $6$ $100$ $\le 100$ $4$ $5$ $6$ $7$ $-35/-25$ $5$ $6$ $7$ $-35/-25$ $6$ $7$ $-25/+80$ $10$ $10$ $10$ $10$ $10$ $10$ $10$ $1$			05 / 05	_			_	20 ו	_	_	_	lion	_		
+80 / +90   5   6   7   -35 / -25   5   6   7   -25 / +80   10   6   100   ≤ 100   4   5   6   7   -26 / +80 / +90   5   6   7   -26 / +80 / +90   7   6   100   ≤ 100   4   5   6   7   -26 / +80 / +90   7   7   -27 / +80 / +90   7   7   -28 / +80 / +90   7   7   -29 / -25 / +90   10   5   100   ≤ 400   10   11   12   168   -36 / -25 / +90   10   5   100   ≤ 400   10   11   12   168   -36 / -25 / +90   10   5   100   ≤ 400   10   11   12   168   -36 / -25 / +60   10   5   100   ≤ 400   10   11   12   168   -40 / +70   12.5   13.5   14.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12.5   13.5   -40 / +70   12		CE000		40	•	400	. 100		5		_			•	404
CF299		CF298		10	ь	100	≤ 100		4		5				164
CF299									5		6			•	
+80 / +90 5 6 7  Coax cables  -35 / -25	133111	CE200		10	6	100	< 100		4		5			6	166
CFKoax1/3		GF299		10	· ·	100	≤ 100		5		6			7	100
CFKoax1/3 $-25/+90$ 10 5 100 $\le 400$ 10 10 11 12 168 $+90/+100$ 12.5 13.5 14.5 CFKoax2 $-25/+60$ 10 5 100 $\le 400$ 10 10 10 11 11 12 168 168 17.5 18.5 18.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19	Coax cables		1007 100				_	5 n			7.5 mi	llion		10 million	
CFKoax1/3 $-25/+90$ 10 5 100 $\le 400$ 10 10 11 12 168 $+90/+100$ 12.5 13.5 14.5 CFKoax2 $-25/+60$ 10 5 100 $\le 400$ 10 10 10 11 11 12 168 168 17.5 18.5 18.5 19.5 19.5 19.5 19.5 19.5 19.5 19.5 19			-35 / 25						12.5		12	5		14.5	
+90 / +100     12.5     13.5     14.5       -35 / -25     12.5     13.5     14.5       CFKoax2     -25 / +60     10     5     10     ≤ 400     10     11     12     168       +60 / +70     12.5     13.5     14.5		CEKoay1/3		10	5	100	< 400								168
-35 / -25 CFKoax2		OI NOAXI/S		10	3	100	≥ <del>4</del> 00								100
CFKoax2     -25 / +60     10     5     100     ≤ 400     10     11     12     168         +60 / +70       12.5       13.5       14.5	A CONTRACT														
+60 / +70 12.5 13.5 14.5		CEK03Y2		10	5	100	<i>-</i> 400								169
		OI NOAXZ		10	3	100	≥ 400								100
" ■DOOT DUMOOT OF DOUGLO PER HIS DIT HOUSE CONTROL IN THE CONTROL		(f) Cupropted comics life f		lotoile 🕨 💴 :-	000 000					kooû Coloulata			o ou/obairdindi		

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



www.hennlich.cz/lin-tech





**HENNLICH-**

**ŽIJEME TECHNIKOU** 



E-mail: lin-tech@hennlich.cz









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

<sup>\*</sup> Higher number of double strokes? Calculate service life online: > www.igus.eu/chainflexlife Values in brackets apply to the CF8821 series

R min.

[factor x d]

17 14.5

17

Copper

index

[kg/km]

13

18

13

16

23

Weight

[kg/km]

35

46

34

40

53

## Data cable | PVC | chainflex® CF8821







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

### **Dynamic information**

Bynamio imormation		
Bend radius	e-chain® linear	minimum 12.5 x d
(CR	flexible	mininum 10 x d
	fixed	minimum 7 x d
Temperature	e-chain <sup>®</sup> linear	+5°C up to +70°C
	flexible	-5°C up to +70°C (

e-chain illieai	+0 0 up t0 +70 0
flexible	-5°C up to +70°C (following DIN EN 60811-504)
fixed	-15°C up to +70°C (following DIN EN 50305)

	fixed	-15°C up
v max.	unsupported	3m/s

a max.	20m/s <sup>2</sup>



### Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
((0)	

Core insulation	Mechanically high-quality TPE mixture.
1199	

Core structure	Cores wound with an optimised pitch length.
Core structure	Coroo Wodina With air optimicoa pitori longui.

Core identification	Colour code in accordance with DIN 47100.

Overall shield	Braiding made of tinned copper wires.
	Coverage optical approx. 60%

Outer jacket	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®.
(9)	Colour: jet black (similar to RAL 9005)

### **Electrical information**

Nominal voltage	300/300V (following DIN VDE 0298-3)
•	300V (following UL)
Testing voltage	1500V (following DIN EN 50395)

### Properties and approvals

UL verified

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

Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status
	1992)

Certificate	No.	B129699:	"igus	36-month	chainflex	cable	guarantee	and	
service life	calci	ulator based	d on 2	billion test	cycles per	vear"			

### EPLAN download, configurators ▶ www.igus.eu/CF8821

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







UL/CSA AWM

NFPA

EAC

( **E**CE

**UK** UKCA

Temperature,

from/to [°C]

+5/+15

+15/+60

+60/+70

Typical application areas

No torsion, Class 1

Part No.

CF8821.01.03 11)

CF8821.01.05 11)

CF8821.02.02 11)

CF8821.02.03 11)

CF8821.02.05 11)

11) Phase-out model

• For flexing applications, Class 3

• Without influence of oil, Class 1

Preferably indoor applications

• Especially for unsupported travels, Class 1

G = with green-yellow earth core <math>x = without earth core

REACH REACH

RoHS Lead-free

Basic requirements

Following 2014/35/EU

R min.

[factor x d]

15

12.5

15

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

• Wood/stone processing, packaging industry, feeding, handling, adjusting devices

Number of cores and conductor

nominal cross section

 $[mm^2]$ 

(3x0.14)C

(5x0.14)C

(2x0.25)C

(3x0.25)C

(5x0.25)C

Cables available in the chainflex® CASE

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

the chainflex® CASE - ship'n store by igus®.

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

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

Guaranteed service life (details see page 26-27)

Travel distance Oil resistance

Torsion

Following NFPA 79-2018, chapter 12.9

Certificate No. RU C-DE.ME77.B.00300/19

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

See data sheet for details ▶ www.igus.eu/CF8821

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

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

R min.

[factor x d]

16

13.5

16

Outer diameter

(d) max.

[mm]

5.5

6.0

5.5

5.5

6.0

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





























igus $^{\circ}$  chainflex $^{\circ}$  CF8821

o.z. LIN-TECH HENNLICH s.r.o. Českolipská 9. 412 01 Litoměřice

Telefon: +420 416 711 333 E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech

**HENNLICH-ŽIJEME TECHNIKOU** 

o.z. LIN-TECH HENNLICH s.r.o. Českolipská 9. 412 01 Litoměřice

**Telefon:** +420 416 711 333 E-mail: lin-tech@hennlich.cz

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

NFPA

# Data cable | PVC | chainflex® CF240







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

### Dynamic information

Bend radius

Temperature

e-chain® linear minimum 10 x d flexible minimum 8 x d

fixed minimum 5 x d +5°C up to +70°C e-chain® linear

flexible -5°C up to +70°C (following DIN EN 60811-504) fixed -15°C up to +70°C (following DIN EN 50305)

3m/s unsupported gliding 2m/s

v max. a max. 20m/s<sup>2</sup>

Travel distance Unsupported travels and up to 50m for gliding applications, Class 4

#### Cable structure

Conductor Very finely stranded special conductors of particularly bending resistant design

made of bare copper wires.

Core insulation Mechanically high-quality TPE mixture.

Core structure The individual cores are wound in layers with a short pitch length.

Core identification Colour code in accordance with DIN 47100.

Intermediate layer Foil taping over the outer layer.

Overall shield Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%

Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in

e-chains® (following DIN EN 50363-4-1). Colour: Silver-grey (similar to RAL 7001)

### **Electrical information**

Outer jacket

300/300V (following DIN VDE 0298-3) Nominal voltage

300V (following UL)

Testing voltage 1500V (following DIN EN 50395)

### Properties and approvals

Class 4.4.2.1

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

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

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

service life calculator based on 2 billion test cycles per year"

UL verified Certificate No. B129699: "igus 36-month chainflex cable guarantee and

UL/CSA AWM See data sheet for details ▶ www.igus.eu/CF240

NFPA NFPA Following NFPA 79-2018, chapter 12.9

EAC Certificate No. RU C-DE.ME77.B.00300/19

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

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

According to ISO Class 1, material/cable tested by IPA according to DIN EN Cleanroom

ISO standard 14644-1 Following 2014/35/EU

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

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

Double strokes*		illion	7.5 n	nillion	10 m	nillion
<b>-</b> .	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]					
+5/+15	12.5	15	13.5	16	14.5	17
+15/+60	10	12.5	11	13.5	12	14.5
+60/+70	12.5	15	13.5	16	14.5	17
* I. Parla and resonant and assessed		0.0		! / - !	!	

<sup>\*</sup> Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 50m for gliding applications, Class 4
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units, machining units/packaging machines, handling, indoor cranes



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

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

EPLAN download, configurators ▶ www.igus.eu/CF240

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









chainflex, CF240

igus 36-month





Data cable | PVC | chainflex® CF240

### igus° chainflex° CF240

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight
	[mm²]	[mm]	[kg/km]	[kg/km]
CF240.01.03	(3x0.14)C	5.0	12	28
CF240.01.04	(4x0.14)C	5.0	17	32
CF240.01.05	(5x0.14)C	5.5	19	37
CF240.01.07	(7x0.14)C	6.0	25	47
CF240.01.14	(14x0.14)C	7.0	41	75
CF240.01.18	(18x0.14)C	7.5	51	90
CF240.01.24	(24x0.14)C	8.5	64	125
CF240.02.03	(3x0.25)C	5.0	19	35
CF240.02.04	(4x0.25)C	5.5	23	45
CF240.02.05	(5x0.25)C	6.0	28	49
CF240.02.07	(7x0.25)C	6.5	35	61
CF240.02.08	(8x0.25)C	7.0	39	68
CF240.02.14	(14x0.25)C	7.5	60	92
CF240.02.18	(18x0.25)C	8.5	71	122
CF240.02.24	(24x0.25)C	10.0	95	161
CF240.03.02	(2x0.34)C	5.5	21	37
CF240.03.03	(3x0.34)C	5.5	29	42
CF240.03.04	(4x0.34)C	6.0	33	51
CF240.03.05	(5x0.34)C	6.5	38	56
CF240.03.07	(7x0.34)C	7.5	50	77
CF240.03.10	(10x0.34)C	8.0	58	97
CF240.03.14	(14x0.34)C	8.0	74	112
CF240.03.18	(18x0.34)C	9.0	91	139
CF240.03.24	(24x0.34)C	10.0	119	177

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



### Cables available in the chainflex® CASE

Simple savings on delivery, storage space and re-ordering with the chainflex  $^{\!8}$  CASE - ship'n store by igus  $^{\!8}.$ 

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





Order example: CF240.01.03 - to your desired length (0.5m steps) CF240 chainflex® series .01 Code nominal cross section .03 Number of cores





Delivery time 24hrs or today.

Delivery time means time until goods are shipped.



chainflex® CF240 data cables in small handling machines



























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

igus 36-month

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

EPLAN download, configurators ► www.igus.eu/CF240









Class 4.4.3.1

DNV

# Data cable | PUR | chainflex® CF240.PUR







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

### **Dynamic information**

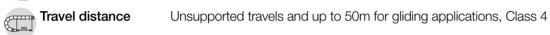
Bend radius	e-chain® linear	minimum 10 x d
R	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	e-chain® linear	-25°C up to +80°
	flexible	-40°C up to +80°

	tixea	minimum 5 x a
erature	e-chain <sup>®</sup> linear	-25°C up to +80°C
	flexible	-40°C up to +80°C

flexible	-40°C up to +80°C (following DIN EN 60811-504)
fixed	-50°C up to +80°C (following DIN EN 50305)

v max.	unsupported	3m/
	gliding	2m/
	00 / 2	





### Cable structure

Conductor	Very finely stranded special conductors of particularly bending resistant design
((0)	made of hare conner wires

Core insulation	Mechanically high-quality TPE mixture.

Core structure	The individual cores are wound in layers with a short pitch length.
----------------	---

Core identification	Colour code in accordance with DIN 47100.

Intermediate layer Foil taping over the outer layer.

Overall chield	Extremely bending registent braiding made of tipped conner wires

O voi aii oi iioia	Extraction boriaing resistant braiding made of timed copper wires.
7	Coverage linear approx. 70%, optical approx. 90%
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adaption

Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted
to suit the requirements in e-chains® (following DIN EN 50363-10-2)
Colour: Window-grey (similar to RAL 7040)

#### **Electrical information**

Nominal voltage	300/300V (following DIN VDE 0298-3)
<b>7</b> 0	300V (following UL)
A Testing voltage	1500V (following DIN FN 50395)

### Properties and approvals

-UV-	UV resistance	Medium

~	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3

### EPLAN download, configurators ► www.igus.eu/CF240.PUR

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









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

Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 - status
	1000)

	1992)
Halogen-free	Following DIN EN 60754

UL verified	Certificate No.	B129699:	"iaus	36-month	chainflex	cable	quarantee	and

A.	service life calculator based on 2 billion test cycles per year"
TH /CCA AVA/M	Con data about for dataila Nanny igua au/CE240 DLD

Type Approval Certificate TAE00003X3

NFPA NFPA	Following NFPA 79-2018, chapter 12.9

DNYCDMAF	
EAC	Certificate No. RU C-DE.ME77.B.00300/19

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

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

clean- Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with
room	CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1

	, , , , , , , , , , , , , , , , , , ,
C CE	Following 2014/35/EU

<b>UK</b> UKCA	In accordance with the valid	I regulations of the U	nited Kingdom (as at	08/2021)

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

≥ 10m R min.	< 10m R min.	≥ 10m R min.	< 10m R min.	≥ 10m R min.
		R min.	R min.	R min
[factor x d]	[factor x d]	[factor x d]	[factor x d]	[factor x d]
15	13.5	16	14.5	17
12.5	11	13.5	12	14.5
15	13.5	16	14.5	17
	12.5 15	12.5 11 15 13.5	12.5 11 13.5 15 13.5 16	12.5 11 13.5 12

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

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 50m for gliding applications, Class 4
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, storage and retrieval units for high-bay warehouses, packaging industry, quick handling, refrigerating sector



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

igus 36-month

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

chainflex CF249.PUR





Data cable | PUR | chainflex® CF240.PUR

Class 4.4.3.1

Basic requirements Travel distance Oil resistance Torsion



F240.PUR PUR

## igus° chainflex° CF240.PUR

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight
	[mm²]	[mm]	[kg/km]	[kg/km]
CF240.PUR.01.04	(4x0.14)C	5.5	15	39
CF240.PUR.01.07	(7x0.14)C	6.5	24	54
CF240.PUR.01.08	(8x0.14)C	7.0	26	64
CF240.PUR.01.14	(14x0.14)C	7.5	41	79
CF240.PUR.01.18	(18x0.14)C	8.0	51	97
CF240.PUR.01.25	(25x0.14)C	8.5	66	101
CF240.PUR.02.03	(3x0.25)C	5.5	18	41
CF240.PUR.02.04	(4x0.25)C	6.0	22	45
CF240.PUR.02.05	(5x0.25)C	6.0	25	50
CF240.PUR.02.07	(7x0.25)C	7.0	33	65
CF240.PUR.02.08	(8x0.25)C	7.0	39	72
CF240.PUR.02.14	(14x0.25)C	8.0	60	103
CF240.PUR.02.18	(18x0.25)C	9.0	71	122
CF240.PUR.02.25	(25x0.25)C	10.5	97	152
CF240.PUR.03.03	(3x0.34)C	5.0	25	47
CF240.PUR.03.04	(4x0.34)C	5.5	30	54
CF240.PUR.03.05	(5x0.34)C	6.0	34	60
CF240.PUR.03.07	(7x0.34)C	6.5	45	84
CF240.PUR.03.14	(14x0.34)C	8.0	74	126
CF240.PUR.03.18	(18x0.34)C	8.5	91	156

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



### Cables available in the chainflex® CASE

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

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





Order example: CF240.PUR.01.04 - to your desired length (0.5m steps)

CF240.PUR chainflex® series .01 Code nominal cross section .04 Number of cores

Order online ▶ www.igus.eu/CF240.PUR

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





Reduce cost, improve technology, now!

Do the chainflex® price check ... www.igus.eu/cf-price-check

... for example: reduce cost with CF240 ...































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

igus 36-month

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

EPLAN download, configurators ▶ www.igus.eu/CF240.PUR

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







Torsion

# Data cable | PVC | chainflex® CF211







- For heavy duty applications
- PVC outer jacket
- Shielded
- Flame-retardant
- Twisted pair

# **Dynamic information**

e-chain® linear minimum 7.5 x d flexible minimum 6 x d fixed minimum 4 x d

Temperature e-chain® linear +5°C up to +70°C flexible

-5°C up to +70°C (following DIN EN 60811-504) -15°C up to +70°C (following DIN EN 50305) fixed

Oil-resistant

v max. unsupported gliding 50m/s<sup>2</sup>

Travel distance Unsupported travels and up to 100m for gliding applications, Class 5

5m/s

3m/s

### Cable structure

Conductor Very finely stranded special conductors of particularly bending resistant design

made of bare copper wires. Mechanically high-quality TPE mixture.

Core insulation

Cores twisted in pairs with a short pitch length, core pairs then wound with Core structure

short pitch lengths.

Core identification Colour code in accordance with DIN 47100.

Intermediate layer Foil taping over the outer layer.

Overall shield Extremely bending-resistant braiding made of tinned copper wires.

Coverage linear approx. 70%, optical approx. 90%

Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in

e-chains® (following DIN EN 50363-4-1). Colour: Silver-grey (similar to RAL 7001)

#### **Electrical information**

Outer jacket

300/300V (following DIN VDE 0298-3) Nominal voltage

300V (following UL)

1500V (following DIN EN 50395) Testing voltage

### Properties and approvals

Class 5.5.2.1

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

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

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

UL verified Certificate No. B129699: "igus 36-month 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/CF211

NFPA NFPA Following NFPA 79-2018, chapter 12.9

EAC Certificate No. RU C-DE.ME77.B.00300/19

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

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

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

Following 2014/35/EU

**UK** UKCA In accordance with the valid regulations of the United Kingdom (as at 08/2021)  $\mathsf{C}\mathsf{A}$ 

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

Double 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]	
+5/+15	10	11	12	
+15/+60	7.5	8.5	9.5	
+60/+70	10	11	12	
* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife				

#### Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m for gliding applications, Class 5
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units, machining units/packaging machines, handling, indoor cranes



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

igus 36-month

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

EPLAN download, configurators ▶ www.igus.eu/CF211

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









chainflex CF211 DATA

igus



Telefon: +420 416 711 333 E-mail: lin-tech@hennlich.cz

www.hennlich.cz/lin-tech



Data cable | PVC | chainflex® CF211

### igus° chainflex° CF211 DATA



Example image

	Number of cores and conductor	Outer diameter	Copper	
Part No.	nominal cross section	(d) max.	index	Weight
	[mm²]	(mm]	[kg/km]	[kg/km]
CF211.02.01.02	(2x0.25)C	5.0	18	33
CF211.02.02.02 <sup>2)</sup>	(2x(2x0.25))C	6.5	25	51
CF211.02.03.02	(3x(2x0.25))C	7.0	36	63
CF211.02.04.02	(4x(2x0.25))C	7.5	44	76
CF211.02.05.02	(5x(2x0.25))C	8.5	52	92
CF211.02.06.02	(6x(2x0.25))C	9.0	62	105
CF211.02.08.02	(8x(2x0.25))C	10.5	78	137
CF211.02.10.02	(10x(2x0.25))C	12.0	90	170
CF211.02.14.02	(14x(2x0.25))C	12.0	119	204
CF211.03.03.02	(3x(2x0.34))C	8.0	44	86
CF211.03.08.02	(8x(2x0.34))C	12.0	102	206
CF211.05.01.02	(2x0.5)C	6.0	26	51
CF211.05.02.02 <sup>2)</sup>	(2x(2x0.5))C	7.0	46	90
CF211.05.03.02	(3x(2x0.5))C	9.0	61	109
CF211.05.04.02	(4x(2x0.5))C	9.5	74	125
CF211.05.05.02	(5x(2x0.5))C	11.0	91	153
CF211.05.06.02	(6x(2x0.5))C	11.5	103	189
CF211.05.08.02	(8x(2x0.5))C	13.0	137	234
CF211.05.10.02	(10x(2x0.5))C	15.5	181	326
CF211.05.14.02	(14x(2x0.5))C	16.0	193	341

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

**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® CASE

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

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

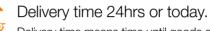




Order example: CF211.02.01.02 - to your desired length (0.5m steps)

CF211 chainflex® series .02 Code nominal cross section .01 Number of cores .02 Identification pairs





Delivery time means time until goods are shipped.





chainflex® cables (e.g. CF211) and igus® e-chains® (E065 series) in a pharmacy picking systems



















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

igus 36-month

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

EPLAN download, configurators ► www.igus.eu/CF211









# 36 10 million





- For heavy duty applications
- PUR outer jacket
- Shielded, twisted pair
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

### **Dynamic information**

Bend radius	e-chain® linear	minimum 7.5 x d
(CR	flexible	minimum 6 x d
	fixed	minimum 4 x d
Temperature	e-chain® linear	-25°C up to +80°C
	flovible	-40°C up to 180°C

flexible	-40°C up to +80°C (following DIN EN 60811-504
fixed	-50°C up to +80°C (following DIN EN 50305)

unsupported	5m/
gliding	3m/
	• •

a max.	3011/8
a max.	

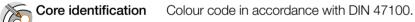


### Cable structure

Conductor	Very finely stranded special conductors of particularly bending resistant design
((0)	made of bare copper wires.

Core insulation	Mechanically high-quality TPE mixture.
1100	

with a short pitch length, core pairs then wound with



Intermediate layer	Foil taping over the outer layer.
--------------------	-----------------------------------

Overall shield	Extremely bending-resistant braiding made of tinned copper wires.
	700/

ooverage iii leai	арргола 1070	, optiot	ai appioni	0070		
Low-adhesion,	halogen-free,	highly	abrasion	resistant	PUR	mixt

Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted
to suit the requirements in e-chains® (following DIN EN 50363-10-2)
Colour: Window-grey (similar to RAL 7040)

#### **Electrical information**

Outer jacket

	Nominal voltage	300/300V (following DIN VDE 0298-3)
7u		300V (following UL)

Testing voltage	1500V (following DIN EN 50395)

EPLAN download, configurators ▶ www.igus.eu/CF211.PUR

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



### Properties and approvals

UV resistance	Medium

	Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3 $$
--	----------------	---

Basic requirements

Travel distance

Oil resistance

Torsion

Offshore	MUD-resistant following NEK 606 - status 2009
----------	---

Flame-retardant According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizonta	l Flame
---	---------

Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status
	1992)

Halogen-free	Following DIN EN 60754

UL verified Certificate No. B129699: "igus 36-month 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/CF211.PUR

NFPA NFPA	Following NFPA 79-2018, chapter 12.9
-----------	--------------------------------------

A CONTRACTOR OF THE PARTY OF TH	DNV	Type approval certificate No.	13 656-14 HH
DNV	]]		

FHIEAC	Certificate No. RU C-DE.ME77.B.00295/19
гпі	

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

RoHS 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
room	CF77.UL.05.12.D - tested by IPA according to standard DIN FN ISO 14644-1

Following 2014/35/EU

<b>UK</b> UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
CA	

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

Double 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]
-25/-15	10	11	12
-15/+70	7.5	8.5	9.5
+70/+80	10	11	12
* Higher pumber of double strakes? Conjugation colored to police > www.jourg.gu/shoinflevlife			

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

### Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1

**ŽIJEME TECHNIKOU** 

- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, storage and retrieval units for high-bay warehouses, packaging industry, quick handling, refrigerating sector



igus 36-month chainflex cable guarantee and

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



o.z. LIN-TECH HENNLICH s.r.o.

Českolipská 9. 412 01 Litoměřice

Telefon: +420 416 711 333 E-mail: lin-tech@hennlich.cz

service life calculator based on 2 billion test cycles per year



chainflex CF211.PUR

Data cable | PUR | chainflex® CF211.PUR

### igus° chainflex° CF211.PUR

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]
CF211.PUR.02.01.02	(2x0.25)C	5.0	18	32
CF211.PUR.02.02.02 <sup>2)</sup>	(2x(2x0.25))C	6.5	25	49
CF211.PUR.02.03.02	(3x(2x0.25))C	7.0	36	65
CF211.PUR.02.04.02	(4x(2x0.25))C	7.5	44	76
CF211.PUR.02.05.02	(5x(2x0.25))C	8.5	52	89
CF211.PUR.02.06.02	(6x(2x0.25))C	9.0	62	102
CF211.PUR.02.08.02	(8x(2x0.25))C	10.5	78	130
CF211.PUR.02.10.02	(10x(2x0.25))C	12.0	90	168
CF211.PUR.02.14.02	(14x(2x0.25))C	12.0	119	204
CF211.PUR.03.03.02	(3x(2x0.34))C	8.0	44	83
CF211.PUR.03.08.02	(8x(2x0.34))C	12.0	95	163
CF211.PUR.05.01.02	(2x0.5)C	6.0	26	51
CF211.PUR.05.02.02 <sup>2)</sup>	(2x(2x0.5))C	8.5	41	86
CF211.PUR.05.03.02	(3x(2x0.5))C	9.0	61	105
CF211.PUR.05.04.02	(4x(2x0.5))C	9.5	74	123
CF211.PUR.05.05.02	(5x(2x0.5))C	11.0	91	152
CF211.PUR.05.06.02	(6x(2x0.5))C	11.5	103	189
CF211.PUR.05.08.02	(8x(2x0.5))C	13.0	137	221
CF211.PUR.05.10.02	(10x(2x0.5))C	15.5	170	297
CF211.PUR.05.14.02	(14x(2x0.5))C	15.5	185	311

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

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® CASE

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

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





Order example: CF211.PUR.02.01.02 - to your desired length (0.5m steps) CF211.PUR chainflex® series .02 Code nominal cross section .01 Number of cores .02 Identification pairs









Reduce cost, improve technology, now!

Do the chainflex® price check ... www.igus.eu/cf-price-check

... for example: reduce cost with CF211 ..

























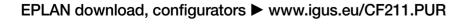




chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

igus 36-month





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







- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Twisted pair
- Oil and bio-oil-resistant
- PVC and halogen-free
- Hydrolysis and microbe-resistant

Now available with UL approval & 25% longer service life

### **Dynamic information**

Bend radius e-chain® linear minimum 6.8 x d flexible minimum 5 x d fixed minimum 4 x d Temperature

e-chain® linear -35°C up to +100°C

flexible -50°C up to +100°C (following DIN EN 60811-504) -55°C up to +100°C (following DIN EN 50305) fixed

10m/s unsupported gliding 6m/s

a max. 100m/s<sup>2</sup>

Travel distance Unsupported travels and up to 400m and more for gliding applications, Class 6

#### Cable structure

v max.

Conductor Stranded conductor in especially bending-resistant version consisting of bare

copper wires (following DIN EN 60228). Core insulation Mechanically high-quality TPE mixture.

Core structure Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.

Core identification Cores < 1.0mm<sup>2</sup>: Colour code in accordance with DIN 47100.

Cores ≥ 1.0mm<sup>2</sup>: Black cores with white numbers. Inner jacket TPE mixture adapted to suit the requirements in e-chains®.

Overall shield Extremely bending-resistant braiding made of tinned copper wires.

Coverage linear approx. 70%, optical approx. 90% Outer jacket Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture,

adapted to suit the requirements in e-chains®. Colour: Steel blue (similar to RAL 5011)

### **Electrical information**

300/300V (following DIN VDE 0298-3) Nominal voltage

300V (following UL)

Testing voltage 1500V (following DIN EN 50395)

### EPLAN download, configurators ▶ www.igus.eu/CF11

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









Basic requirements

Torsion

**Telefon:** +420 416 711 333

CF11

R

### Properties and approvals

UV resistance High

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

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

Following DIN EN 60754 Halogen-free

UL verified Certificate No. B129699: "igus 36-month chainflex cable guarantee and

service life calculator based on 2 billion test cycles per year'

**N**UL AWM See data sheet for details ▶ www.igus.eu/CF11 (from production date 01/2022)

'EAC Certificate No. RU C-DE.ME77.B.00300/19

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

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

According to ISO Class 1. The outer jacket material of this series complies with Cleanroom

CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU

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

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

Double s	trokes*	5 million	7.5 million	12.5 million
	emperature, rom/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
	-35/-25	7.5	8.5	9.5
	-25/+90	6.8	7.5	8.5
	+90/+100	7.5	8.5	9.5
* 1 1:			U / / / / / / /	.u.c.

<sup>\*</sup> 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
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications



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

igus 36-month

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

chainflex CF11

Data cable | TPE | chainflex® CF11

### igus° chainflex° CF11





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]
New	CF11.01.04.02	(4x(2x0.14))C	7.5	30	63
New	CF11.01.18.02	(18x(2x0.14))C	12.5	101	202
New	CF11.02.01.02	(2x0.25)C	6.0	17	39
New	CF11.02.02.02 <sup>2)</sup>	(2x(2x0.25))C	6.5	26	47
New	CF11.02.03.02	(3x(2x0.25))C	8.0	35	78
New	CF11.02.04.02	(4x(2x0.25))C	8.5	42	90
New	CF11.02.05.02	(5x(2x0.25))C	9.0	49	100
New	CF11.02.06.02	(6x(2x0.25))C	10.0	69	125
New	CF11.02.10.02	(10x(2x0.25))C	13.5	103	207
New	CF11.02.14.02	(14x(2x0.25))C	14.0	124	228
New	CF11.03.08.02	(8x(2x0.34))C	13.0	106	209
New	CF11.05.04.02	(4x(2x0.5))C	9.5	77	140
New	CF11.05.06.02	(6x(2x0.5))C	12.0	103	198
New	CF11.05.08.02	(8x(2x0.5))C	14.5	135	251
New	CF11.07.03.02	(3x(2x0.75))C	10.5	83	155
New	CF11.10.04.02	(4x(2x1.0))C	12.5	125	232
New	CF11.15.06.02	(6x(2x1.5))C	16.5	247	420

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

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® CASE

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

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



Order example: CF11.01.04.02 - to your desired length (0.5m steps)

CF11 chainflex® series .01 Code nominal cross section .04 Number of cores .02 Identification pairs

Order online ► www.igus.eu/CF11

Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

### cost down...



Reduce cost, improve technology, now!

Do the chainflex® price check ... www.igus.eu/cf-price-check

... for example: reduce cost with CF211.PUR ...































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

igus 36-month

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

EPLAN download, configurators ► www.igus.eu/CF11







156

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

c us

DNV

## Data cable | PUR | chainflex® CF112

36 10 million Double strokes guaranteed





- For extremely heavy duty applications
- PUR outer jacket
- Double shielded, twisted pair
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

### **Dynamic information**

Bend radius	e-chain® linear	minimum 10 x d
(CR	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	e-chain® linear	-25°C up to +80°C
	flexible	-40°C up to +80°0

flexible	-40°C up to +80°C (following DIN EN 60811-504)
fixed	-50°C up to +80°C (following DIN EN 50305)

_ v max.	unsupported	10m/s
	gliding	5m/s

a max.	80m/s



### Cable structure

Conductor	Very finely stranded special conductors of particularly bending resistant design
	made of bare copper wires.

Core insulation	Mechanically high-quality TPE mixture.
11 🔾	

Core structure	Cores twisted in pairs with a short pitch length, core pairs then wound with

	short pitch lengths.
Core identification	Colour code in accordance with DIN 47100.

(0)	
Flement shield	Extremely bending-resistant braiding made of tipned copper wires

Element snield	Extremely bending-resistant braiding made of tinned copper wir
	Coverage linear approx 70% ontical approx 90%

Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
--------------	--

Overall shield	Extremely bending-resistant braiding made of tinned copper wires.
( <del>)</del>	Coverage linear approx 70% optical approx 90%

coverage inteal approxite of the anapproxite control
Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted
to suit the requirements in e-chains® (following DIN EN 50363-10-2)

#### Colour: Anthracite grey (similar to RAL 7016)

### **Electrical information**

Outer jacket

Nominal voltage	300/300V (following DIN VDE 0298-3)
U	0001//6 !! ! ! !! )

300V (following UL)
 4500) / /( II I DI

Testing voltage 1500V (following DIN EN 50395)

### EPLAN download, configurators ▶ www.igus.eu/CF112

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



Oil resistance Oil-resistant (following DIN EN 50363-10-2), Class 3

High

Class 6.5.3.1

Properties and approvals

UV resistance

Offshore MUD-resistant following NEK 606 - status 2009

Basic requirements

Travel distance

Oil resistance

Torsion

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

Silicone-free Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

Halogen-free Following DIN EN 60754

UL verified Certificate No. B129699: "igus 36-month 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/CF112

NFPA NFPA Following NFPA 79-2018, chapter 12.9

DNV Type approval certificate No. 13 656-14 HH

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

RoHS 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 CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1

Certificate No. RU C-DE.ME77.B.00300/19

Following 2014/35/EU

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

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

Double 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]
-25/-15	12.5	13.5	14.5
-15/+70	10	11	12
+70/+80	12.5	13.5	14.5
* Higher number of double strokes? Service life calculation online ▶ www.igus.eu/chainflexlife			

#### Typical application areas

 $\mathsf{C}\mathsf{A}$ 

- For heavy-duty applications, Class 6
- Unsupported travels and up to 100m for gliding applications, Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications with average sun radiation
- Machining units/machine tools, storage and retrieval units for high-bay warehouses, packaging industry, quick handling, refrigerating sector



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

igus 36-month

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





chainflex CF112

**ŽIJEME TECHNIKOU** 

Data cable | PUR | chainflex® CF112

CF112 PUR

c**Fl**us

DNV

EHE

REACH

(€

UK

## igus" chainflex" CF112





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]
CF112.02.02.02	(2x(2x0.25)C)C	9.5	57	118
CF112.02.03.02	(3x(2x0.25)C)C	10.0	71	133
CF112.02.04.02	(4x(2x0.25)C)C	11.0	78	153
CF112.02.05.02	(5x(2x0.25)C)C	11.5	99	178
CF112.05.02.02	(2x(2x0.5)C)C	11.5	75	163
CF112.05.04.02	(4x(2x0.5)C)C	13.0	117	217
CF112.05.06.02	(6x(2x0.5)C)C	14.5	160	285

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® CASE

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

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





Order example: CF112.02.02.02 - to your desired length (0.5m steps)

CF112 chainflex® series .02 Code nominal cross section .02 Number of cores .02 Identification pairs

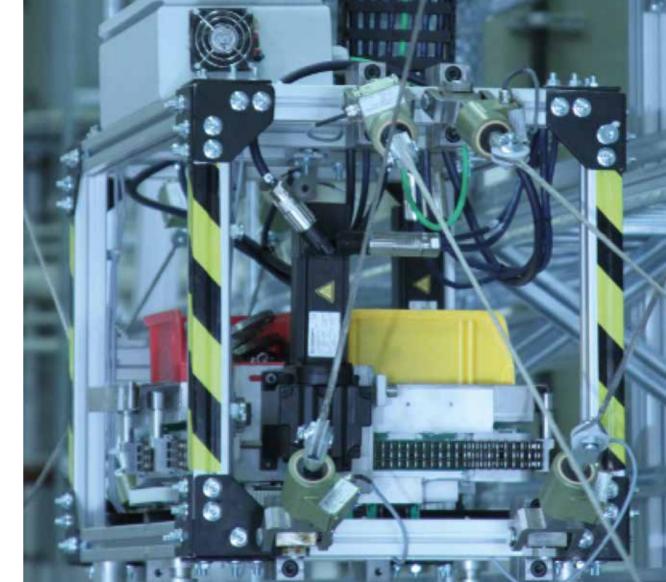


Order online ► www.igus.eu/CF112



Delivery time 24hrs or today.

Delivery time means time until goods are shipped.



Hanging application with chainflex® CF112 data cables

EPLAN download, configurators ▶ www.igus.eu/CF112













## Data cable | TPE | chainflex® CF12







- For extremely heavy duty applications
- TPE outer jacket
- Double-shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- Hydrolysis and microbe-resistant

Now available with UL approval & 25% longer service life

### **Dynamic information**

Bend radius e-chain® linear minimum 10 x d flexible minimum 8 x d minimum 5 x d fixed Temperature e-chain® linear -35°C up to +100°C

flexible -50°C up to +100°C (following DIN EN 60811-504) fixed -55°C up to +100°C (following DIN EN 50305)

v max. unsupported 10m/s gliding 6m/s

a max. 100m/s<sup>2</sup>

Travel distance Unsupported travels and up to 400m and more for gliding applications, Class 6

### Cable structure

Conductor Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).

Core insulation Mechanically high-quality TPE mixture.

Core structure Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.

Core identification Cores < 0.5mm<sup>2</sup>: Colour code in accordance with DIN 47100. Cores ≥ 0.5mm<sup>2</sup>: Black cores with white numbers.

Element shield Extremely bending-resistant braiding made of tinned copper wires.

Coverage linear approx. 70%, optical approx. 90% TPE mixture on pair shielding adapted to suit the requirements in e-chains®.

Inner jacket TPE mixture adapted to suit the requirements in e-chains<sup>®</sup>.

Overall shield Highly flexible shield consisting of galvanised steel wire braid.

Coverage linear approx. 70%, optical approx. 90% Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, Outer jacket

adapted to suit the requirements in e-chains®. Colour: Steel blue (similar to RAL 5011)

### **Electrical information**

Element shield

Nominal voltage 300/300V (following DIN VDE 0298-3) 300V (following UL)

1500V (following DIN EN 50395) Testing voltage

### Properties and approvals

chainflex CF12

**HENNLICH-**

UV resistance High

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













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

Part No.

New CF12.02.04.02

New CF12.05.04.02

New CF12.05.06.02

New CF12.05.08.02

New CF12.05.10.02

New CF12.05.14.02

New CF12.10.06.02

CF12.05.03.02

Basic requirements

1992)

Class 6.6.4.1

Silicone-free

UL verified

**UL AWM** 

'EAC

REACH REACH

RoHS Lead-free

**C**€<sup>CE</sup>

**UK** UKCA

Cleanroom

Temperature,

from/to [°C]

-35/-25

-25/+90

+90/+100

Typical application areas

No torsion, Class 1

• For heavy-duty applications, Class 6

For maximum EMC protection

Indoor and outdoor applications, UV-resistant

Guaranteed service life (details see page 26-27)

Halogen-free

Oil resistance

Travel distance

Following DIN EN 60754

(from production date 01/2022)

Following 2014/35/EU

R min

[factor x d]

12.5

10

12.5

• Unsupported travels and up to 400m and more for gliding applications, Class 6

 Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Number of cores and conductor

nominal cross section

 $[mm^2]$ 

(4x(2x0.25)C)C

(3x(2x0.5))C

(4x(2x0.5)C)C

(6x(2x0.5)C)C

(8x(2x0.5)C)C

(10x(2x0.5)C)C

(14x(2x0.5)C)C

(6x(2x1.0)C)C

o.z. LIN-TECH HENNLICH s.r.o.

Českolipská 9. 412 01 Litoměřice

Almost unlimited resistance to oil, also with bio-oils, Class 4

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

Oil resistance

Torsion

4 highest

Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA

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

Certificate No. B129699: "igus 36-month chainflex cable guarantee and

According to ISO Class 1. The outer jacket material of this series complies with

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

R min.

[factor x d]

13.5

11

13.5

Outer diameter

(d) max.

[mm]

11.5

13.5

14.5

17.0

20.5

22.5

22.5

20.0

CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1

24568 with Plantocut 8 S-MB tested by DEA), Class 4

service life calculator based on 2 billion test cycles per year'

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

See data sheet for details ▶ www.igus.eu/CF12

Certificate No. RU C-DE.ME77.B.00300/19

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

**Telefon:** +420 416 711 333 E-mail: lin-tech@hennlich.cz

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

CF12















R min.

[factor x d]

14.5

12

14.5

Copper

index

[kg/km]

52

65

83

128

163

203

297

198

Weight

[kg/km]

172

224

267

376

503

605

679

529













163



Telefon: +420 416 711 333

Double strokes guaranteed

Data cable | TPE | chainflex® CF298

Bend radius, e-chain®

Following DIN EN 60754

Following 2014/35/EU

R min.

[factor x d]

4

For heaviest duty applications and especially small radii down to 4 x d, Class 7

• Pick and place machines, automatic doors, cleanroom, very quick handling

Number of cores and conductor

nominal cross section

 $[mm^2]$ 

2x0.14

4x0.14

8x0.14

3x0.25

4x0.25

7x0.25

8x0.25

4x0.34

7x0.34

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

Almost unlimited resistance to oil, also with bio-oils, Class 4

• Torsion ±90°, with 1m cable length, Class 2 Indoor and outdoor applications, UV-resistant

• Especially for short, very fast applications with small radii and restricted installation space, Class 5

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

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

Certificate No. B129699: "igus 36-month chainflex cable guarantee and

According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - 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]

service life calculator based on 2 billion test cycles per year'

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

UL verified

EAC

REACH REACH

RoHS Lead-free

**UK** UKCA

CA

Cleanroom

Temperature,

from/to [°C]

-35/-25

-25/+80

+80/+90

Typical application areas

Part No.

CF298.01.02

CF298.01.04

CF298.01.08

CF298.02.03

CF298.02.04

CF298.02.07

CF298.02.08

CF298.03.04

CF298.03.07

CF298.05.04

Guaranteed service life (details see page 26-27)

Silicone-free

Halogen-free

Certificate No. RU C-DE.ME77.B.02806 (TR ZU)

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

R min.

[factor x d]

6

Copper

index

[kg/km]

5

9

17

12

16

28

32

19

34

28

Weight

[kg/km]

17

28

49

28

34

52

60

37

62

49











- For heaviest duty applications and especially small radii down to 4 x d
- TPE outer jacket

36 40 million

Oil and bio-oil-resistant

- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

Travel distance, e-chain®

### **Dynamic information**

,		
Bend radius	e-chain® linear	minimum 4 x d
R	flexible	minimum 4 x d
	fixed	minimum 3 x d
° Temperature	e-chain® linear	-35°C up to +90°C

e-chain® linear	-35°C up to +90°C
flexible	-50°C up to +90°C (following DIN EN 60811-504)

	fixed	-55°C up to +90°C (following DIN EN 50305)
_ v max.	unsupported	10m/s
	gliding	6m/s

a	a max.	100m/s <sup>2</sup>

Travel distance	Short, very fast applications with small radii and restricted installation space,
i i avei distance	Short, very last applications with small radii and restricted installation space,

Class 5	

Torsion	Torsion ±90°, with 1m cable length, Class 2
10131011	TOTSION 130 , WITH THI CADIE IENGTH, Class 2

### Cable structure

Conductor	Conductor consisting of a highly flexible special alloy.

Core insulation	Mechanically high-quality TPE mixture.
-----------------	--

Core structure	Cores wound in a layer with especially short pitch length.

Core identification	Colour code in accordance with DIN 47100.
	CF298.02.03: brown, blue, black

Low-adhesion,	extremely	abrasion-re	esistant	and	highly	flexible	TPE n	nixture,	
adapted to suit	the require	ements in e-	-chains®	)					

### Colour: Steel blue (similar to RAL 5011)

### **Electrical information**

Outer jacket

	Nominal voltage	300/300V
U		

### 1500V Testing voltage

#### Properties and approvals

UV resistance	High	
---------------	------	--

resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA
	OAFOO NI DI LI LOOMBLI LII DEALOL A

### 24568 with Plantocut 8 S-MB tested by DEA), Class 4

### EPLAN download, configurators ▶ www.igus.eu/CF298

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







Outer diameter

(d) max.

[mm]

4.5

5.5

7.0

5.5

6.0

7.0

7.5

6.0

7.5

6.5

chainflex CF298

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

High

Properties and approvals UV resistance

Oil resistance

Silicone-free

UL verified

REACH REACH

RoHS Lead-free

**UK** UKCA

 $\mathsf{C}\mathsf{A}$ 

Cleanroom

Temperature,

from/to [°C]

-35/-25

-25/+80

Typical application areas

Halogen-free

Oil resistance

Following DIN EN 60754

Following 2014/35/EU

Torsion

Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA

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

Certificate No. B129699: "igus 36-month chainflex cable guarantee and

According to ISO Class 1. The outer jacket material of this series complies with

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

R min.

[factor x d]

5

CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1

24568 with Plantocut 8 S-MB tested by DEA), Class 4

service life calculator based on 2 billion test cycles per year'

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

Certificate No. RU C-DE.ME77.B.02806 (TR ZU)

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





- For heaviest duty applications and especially small radii down to 4 x d
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

_					44
DΙ	/nam	IC	ınto	rma	itior

Bend radius	e-chain <sup>®</sup> linear	minimum 4 x d
R	flexible	minimum 4 x d
	fixed	minimum 3 x d
Temperature	e-chain® linear	-35°C up to +90°C

flexible	-50°C up to +90°C (following DIN EN 60811-504)
fixed	-55°C up to +90°C (following DIN EN 50305)

v max.	unsupported	10m/s
	gliding	6m/s

a_	a max.	100m/s
(		
$\overline{}$		

•	Travel distance	Short,	very	fast	applications	with	small	radii	and	restricted	installation	space,
-		$\bigcirc$ I	_									

### Class 5

### Cable structure

Conductor	Conductor consisting of a highly flexible special alloy.

Core insulation	Mechanically high-quality TPE mixture.
1190	

Core structure	Cores wound in a layer with especially short pitch length.

Core identification	Colour code in accordance with DIN 47100.

Inner jacket	TPE mixture adapted to suit the requirements in e-chains <sup>®</sup> .
	, ,

Overall shield	Extremely bending resistant braiding made of alloy wires.
( <del>(</del> )	Coverage linear approx. 70%, optical approx. 90%

Outer jacket	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture,
7	adapted to suit the requirements in e-chains®.

### Colour: Steel blue (similar to RAL 5011)

### **Electrical information**

<b>L</b> u	Nominal voltage	300/300V
10		



EPLAN download, configurators ▶ www.igus.eu/CF299

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





R min.

[factor x d]

6

• For heaviest duty applications and especially small radii down to 4 x d, Class 7

R min.

[factor x d]

5

4

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

- Especially for short, very fast applications with small radii and restricted installation space, Class 5
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant

Guaranteed service life (details see page 26-27)

• Pick and place machines, automatic doors, cleanroom, very guick handling

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF299.01.02	(2x0.14)C	6.0	17	37
CF299.01.04	(4x0.14)C	6.5	22	47
CF299.01.08	(8x0.14)C	8.5	35	80
CF299.02.04	(4x0.25)C	7.0	32	56
CF299.02.07	(7x0.25)C	8.5	46	82

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



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



























chainflex CF299

www.hennlich.cz/lin-tech

Torsion

## Coax cable | TPE | chainflex® CFKoax

36 10 million Double strokes guaranteed





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

### **Dynamic information**

Bend radius	e-chain® linear	minimum 10 x d	
(CR	flexible	minimum 8 x d	
	fixed	minimum 5 x d	
Temperature	e-chain® linear	-35°C up to +100°C (CFKoax1/3)	
		$-35^{\circ}$ C up to $\pm 70^{\circ}$ C (CEKpay2)	

	-35°C up to +70°C (CFKoax2)
flexible	-50°C up to+100°C (CFKoax1/3)

	-50°C up to +70°C (CFKoax2)
fixed	-55°C up to +100°C (CFKoax1/3)
	-55°C up to +70°C (CFKoax2)

	-55 C up i
unsupported	10m/s
alidina	5m/s

a	a max.	100m/s <sup>2</sup>
((		

Travel distance	Unsupported travels and up to 400m and more for gliding applications, Class 6
-----------------	---

### Cable structure

v max.

Conductor	Multi-wire; adapted to single-wire diameter with pitch length to suit the require-
	ments in e-chains®

Core insulation	Special FEP mixture (CFKoax1/3)		
	Special PE mixture (CFKoax2)		

Core structure	Cores wound in a layer with especially short pitch length.
----------------	--

Core identification	Coaxial elements ► Product range table
---------------------	--

Element shield	Extremely bending-resistant braiding made of tinned copper wires.
	Coverage linear approx. 70%, optical approx. 90%

	coverage in ear approxi 7070, optical approxi 0070
Element shield	TPE mixture adapted to suit the requirements in e-chains®.

Outer jacket	Low-adhesion,	extremely	abrasion-resistant	and highly	flexible	TPE	mixture,
	adanted to quit	the require	ments in e-chains	3			

### Colour: ▶ Product range table

### **Electrical information**

Nominal voltage	500/500V (following DIN VDE 0298-3

A	Testing voltage	1500V (following DIN EN 50395)
7		

### EPLAN download, configurators ▶ www.igus.eu/CFKOAX

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







# Class 6.6.4.1

EAC

**UK** UKCA

CA

Properties and approvals		
UV resistance	Medium	



Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status
	1992)

	1002)
UL verified	Certificate No. B129699: "igus 36-month chainflex cable guarantee and
~	service life calculator based on 2 billion test cycles per year"

Certificate No.	RU C-DE.ME77.B.00300/19
Och tilloato 140.	110 0 0 0 0 10 10 10 10 10 10 10 10 10 1

DEAGLI	1	4007/0000 (DEAOLI)
REACH	In accordance with regulation (EC) No	5. 1907/2006 (REACH)

RoHS Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
BoHS Load 1100	1 0110 1111 11 11 11 11 11 11 11 11 11 1

clean- Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with
room	CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1

CE	Following 2014/35/EU

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

The coaxial elements used in cables of the CFKoax1 series are comparable with a HF75-0.3/1.6 according to MIL-C-17/94-RG179 and thus fit into an RG179 plua!

The coaxial elements used in cables of the CFKoax2 series are comparable with a HF50-0.9/2.95 according to MIL-C-17/28-RG58 and thus fit into an

The coaxial elements used in cables of the CFKoax3 series are comparable with a HF50-0.3/0.84 according to MIL-C-17/93-RG178 and thus fit into an RG178 plug!

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

Double 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]
-35/-25	12.5	13.5	14.5
-25/+60 (CFKoax2)	10	11	12
-25/+90 (CFKoax1/CFKoax3)	10	11	12
+60/+70 (CFKoax2)	12.5	13.5	14.5
+90/+100 (CFKoax1/CFKoax3)	12.5	13.5	14.5

<sup>\*</sup> 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
- Indoor and outdoor applications with average sun radiation
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications



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

169

chainflex

Coax cable | TPE | chainflex® CFKoax

### igus" chainflex" CFKOAX

#### 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]
CFKoax1.01	1xHF75-0.3/1.6	4.5	8	23
CFKoax1.05	5xHF75-0.3/1.6	10.0	34	110
CFKoax2.01	1xHF50-0.9/2.95	5.5	19	36
CFKoax3.01	1xHF50-0.3/0.84	3.5	6	12

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

Part No.	Characteristic wave impedance approx. $[\Omega]$	Core identification	Colour outer jacket
CFKoax1.01	75	red	Steel-blue (similar to RAL 5011)
CFKoax1.05	75	red, green, blue, white, black	Steel-blue (similar to RAL 5011)
CFKoax2.01	50		Jet black (similar to RAL 9005)
CFKoax3.01	50		Window-grey (similar to RAL 7040)



### Cables available in the chainflex® CASE

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

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





Order example: CFKoax1.01 - to your desired length (0.5m steps)

CFKoax chainflex® series .01 Number of coaxial elements

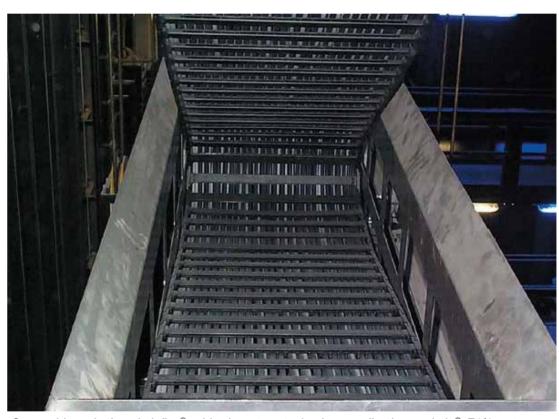


Order online ▶ www.igus.eu/CFKoax



Delivery time 24hrs or today.

Delivery time means time until goods are shipped.



Coax cable and other chainflex® cables in a stage technology application. e-chain®: E4/4 system



























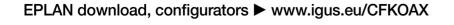




chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

igus 36-month





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

