

# guarantee

igus.eu ... chainflex® cables ... 2023 ... motion plastics...

chainflex® CF98,PLUS

# 100,000,000



100 million cycles ...

guaranteed for CF98.PLUS and CF99.PLUS

Guarantee  
igus chainflex

# 36

up to 36 months guarantee

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



# chainflex®

# chainflex® works: Worldwide No. 1 in cable tests

... and in variety ... and with 36 month guarantee ... and with more than 25 years experience ... and 100 million EUR annual sales



## Available from stock.

### Ready for delivery in 24–48h, earlier upon request.

The delivery times indicated correspond to the average time until the ordered goods are dispatched.



## No minimum order value! No surcharges!

No minimum order value with igus®. Just order the amount you need – no cutting charges (up to 10 cuts of the same type).



## From 1 metre

Because chainflex® cables are high quality you only need to order the length you require. We appreciate every order from 1 m. In addition they can be planned in 0.5 m units.



## 36 month guarantee

We give a 36 month guarantee on every chainflex® cable. Up to 10 million double strokes guaranteed. Due to our tests in the largest lab for moved e-chain® cables, we are able to give a unique and reliable 36 month guarantee on our cables.



## "7 to 8 plus Saturday" service

Monday to Friday 7.00 am to 8.00 pm

Saturday 8.00 am to 12.00 pm



## Order hotline

Phone +49-2203 9649-800

Fax +49-2203 9649-222



## Onlineshop [www.chainflex.eu](http://www.chainflex.eu)

Our complete product range incl. product finder, lifetime calculator and much more. Order around-the-clock!



## Lifetime calculator [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

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.



## Do you have any questions?

If you have any questions, simply call us or use our online tools at [www.chainflex.eu](http://www.chainflex.eu)



# Classification of chainflex® cables according to basic requirements, travel distance, oil-resistance and torsion

The chainflex® class is composed of 4 parts:

	Basic requirements	Travel distance	Oil resistance	Torsion
	1 to 7	1 to 6	1 to 4	1 to 4
1	Basic requirements	low	1 2 3 4 5 6 7	highest
2	Travel distance	unsupported	1 2 3 4 5 6	400 m +
3	Oil-resistance	none	1 2 3 4	highest
4	Torsion	none	1 2 3 4	±360°

## 1 Basic requirements



- 1: Flexible cables
- 2: Highly flexible cables
- 3: Cables without special structure (e.g. winding in layers) for use in e-chains®.
- 4: Cables with special structure for continuous movement in e-chains® for medium duty applications and radii from 7.5 x d, speed up to 3 m/s.
- 5: Cables for continuous movement in e-chains® for heavy duty applications and radii from 6.8 x d, speed up to 10 m/s.
- 6: Cables for continuous movement in e-chains® for heaviest duty applications and radii from 5 x d, speed up to 10 m/s.
- 7: Cables for continuous movement in e-chains® for heaviest duty applications and smallest radii, indoor and outdoor, radii from 4 x d, speed up to 10 m/s and more.

## 2 Travel distance



- 1: Unsupported travel up to 10 m
- 2: Gliding travel up to 10 m
- 3: Gliding travel up to 20 m
- 4: Gliding travel up to 50 m
- 5: Gliding travel up to 100 m
- 6: Gliding travel up to 400 m and more

## 3 Oil resistance



- 1: No oil resistance
- 2: Oil-resistant (following DIN EN 50363-4-1)
- 3: Oil-resistant (following DIN EN 50363-10-2)
- 4: Oil-resistant (following EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA)

## 4 Torsion



- 1: No torsion
- 2: ±90°, with 1 m cable length
- 3: ±180°, with 1 m cable length
- 4: ±360°, with 1 m cable length


To make selection easier, we have classified all chainflex® cables according to 4 criteria: basic application requirements, travel distance, oil resistance and torsion. The higher the number the better the cable.

**Example:** If you are looking for a cable which is suitable for the highest mechanical load, travel distance up to 100 m for unsupported and gliding applications and oil-resistant following DIN EN 60811-2-1.

Choose from the classification overview:

Basic requirements: 7  
 Travel distance: 5  
 Oil resistance: 4  
 Torsion: 2

This results in the cable classification – here "Class 7.5.4.2". This can be found on every product page.



**Control cable | TPE | chainflex® CF88**

**40 million** Double strokes guaranteed

**4 x d** Bend radius, e-chain®

**100m** Travel distance, e-chain®

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

**Dynamic information**

**Bend radius**  
 e-chain® linear flexible fixed: minimum 4 x d, minimum 4 x d, minimum 3 x d  
 e-chain® linear flexible: -30°C up to +90°C  
 flexible: -50°C up to +90°C following DIN EN 60811-504  
 fixed: -50°C up to +90°C following DIN EN 50305

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

**a max.**  
 100m/s²

**Travel distance**  
 Short, very fast applications with small radii and restricted installation space, Class 5

**Torsion**  
 Torsion ±90°, with 1 m cable length, 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.  
 CF88.02.03.LINE: brown, blue, black  
 CF88.03.04.LINE: brown, blue, black, white

**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**

**Nominal voltage**  
 300/300V

**Testing voltage**  
 1500V

**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 1992)

**Halogen-free**  
 Following DIN EN 60754

**UL verified**  
 Certificate No. B129899; \*igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year\*

Basic requirements: 7  
 Travel distance: 5  
 Oil resistance: 4  
 Torsion: 2

**Class 7.5.4.2**

**EN EAC** Certificate No. RU C-DEMET7.B.0030019

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

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

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

**CE** Following 2014/35/EU

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

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

Operating temperature [°C]	10 million		20 million	
	R min. [factor x d]	R max. [factor x d]	R min. [factor x d]	R max. [factor x d]
-35/-25	5	6	7	7
-25/-10	4	5	6	6
+10/+90	5	6	6	7

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

**Typical application areas**

- For heaviest duty applications and especially small radii down to 4 x d, Class 7
- 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
- Torsion ±90°, with 1 m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, cleanroom, very quick handling

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (Ø) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF88.01.02	2x0.14	4.5	5	18
CF88.01.03	3x0.14	4.5	6	20
CF88.01.04	4x0.14	5.0	8	25
CF88.01.08	8x0.14	6.5	15	43
CF88.02.03.INI	3x0.25	5.0	11	29
CF88.02.04	4x0.25	5.5	15	36
CF88.02.08 (1)	8x0.25	7.5	30	67
CF88.03.04.INI	4x0.34	6.0	15	39
CF88.05.04	4x0.5	6.0	33	53

(1) Phase-out model

Note: The given outer diameter are maximum values and may tend toward lower tolerance limits. Ø is with green/yellow earth core, ø without earth core.

**Cables available in the chainflex® CASE**

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

More on this on page 34/25 and online: [www.igus.de/case](http://www.igus.de/case)

**igus** **UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)**

In theory the following classes would be possible:  
 Lowest "Class 1.1.1.1", highest "Class 7.6.4.4"



Tested, tested, tested  
**chainflex® test lab**

from page  
**24**



chainflex®  
**Control cables**

from page  
**52**



chainflex®  
**Data/coax cables**

from page  
**142**



chainflex®  
**Bus cables**

from page  
**180**



chainflex®  
**Fibre Optic Cables**

from page  
**214**



chainflex®  
**Measuring system cables**

from page  
**236**



chainflex®  
**Servo cables**

from page  
**274**



chainflex®  
**Motor cables**

from page  
**312**



chainflex® CFROBOT  
**Twistable cables**

from page  
**378**



chainflex®  
**Special cables**

from page  
**418**



chainflex® CFCLEAN elements  
**for cleanroom applications**

from page  
**444**



chainflex®  
**Pneumatic hoses**

from page  
**462**



EX CLEAN AIR

# chainflex® selection according to "Class"

chainflex® Series	Basic requirements	Travel distance	Oil resistance	Torsion
CF880	3	1	1	1
CF881	3	1	1	1
CFLG88	3	1	1	1
CF884	3	1	1	1
CF885	3	1	1	1
CF885.PE	3	1	1	1
CF886	3	1	1	1
CF887	3	1	1	1
CF888	3	1	1	1
CF890	3	1	3	1
CF891	3	1	3	1
CF894	3	1	3	1
CF895	3	1	3	1
CF896	3	1	3	1
CF897	3	1	3	1
CF898	3	1	3	1
CF210.UL	4	2	2	1
CF210.UL (motor)	4	2	2	1
New! CF211 (measuring)	4	2	2	1
New! CF220.UL.H	4	2	2	1
New! CF111.D	4	2	3	1
CF270.UL.D	4	2	3	1
CF270.UL.D (motor)	4	2	3	1
New! CF280.UL.H	4	2	3	1
CFBUS.PVC	4	3	2	1
CFBUS.PUR	4	3	3	1
CF140.UL	4	4	1	1
CF130.UL	4	4	1	2
CF240	4	4	2	1
CF240.PUR	4	4	3	1
CF150.UL	4	4	3	2
CF160.UL	4	4	3	1
CF77.UL.D (robot)	5	1	3	3
CFLK	5	3	3	1
CFTHERMO	5	4	3	1
CF6	5	5	2	1
CF21.UL	5	5	2	1
CF211 (data)	5	5	2	1
CF31	5	5	2	1
CF5	5	5	2	2
CF30	5	5	2	2
CF78.UL	5	5	3	1
CF211.PUR (data)	5	5	3	1
CF77.UL.D	5	5	3	3
CFROBOT2	6	1	3	3
CFROBOT3	6	1	3	3
CFROBOT4	6	1	3	3

chainflex® Series	Basic requirements	Travel distance	Oil resistance	Torsion
CFROBOT7	6	1	3	3
CFROBOT8	6	1	3	3
CFROBOT9	6	1	3	3
New! CFROBOT8.PLUS	6	1	3	4
CFROBOT	6	1	4	3
CFROBOT5	6	1	4	3
CFROBOT6	6	1	4	3
CF2	6	5	3	1
CF112	6	5	3	1
CFLG.LB.PUR	6	5	3	1
CF113.D	6	5	3	1
CF27.D	6	5	3	1
CF27.D (motor)	6	5	3	1
CFCRANE	6	6	3	1
CFCRANE.PUR	6	6	3	1
CF10.UL	6	6	4	1
CF11	6	6	4	1
CF12	6	6	4	1
CFKCoax	6	6	4	1
CFBUS	6	6	4	1
CF11.D	6	6	4	1
CF35.UL	6	6	4	1
CF310.UL	6	6	4	1
CF9.UL	6	6	4	2
CF34.UL.D	6	6	4	2
CF300.UL.D	6	6	4	2
CFPE	6	6	4	2
CFSOFT1	7	1	2	2
CFSOFT2	7	1	2	2
CF99	7	5	4	1
CF299	7	5	4	1
CFLG.LB	7	5	4	1
New! CF99.PLUS	7	5	4	1
CFFLAT	7	5	4	1
CF98	7	5	4	2
CF298	7	5	4	2
New! CF98.PLUS	7	5	4	2
CFBUS.LB	7	6	4	1
CFLG.G	7	6	4	1
CF10	7	6	4	1
CF29.D	7	6	4	1
CF38	7	6	4	1
CF340	7	6	4	1
CF9	7	6	4	2
CF37.D	7	6	4	2
CF330.D	7	6	4	2



chainflex® for  
**Video / vision / bus technology**

from page  
**466**



chainflex® for  
**Network technology**

from page  
**478**



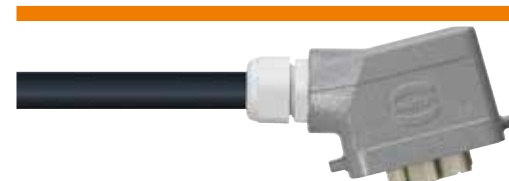
Harnessed Fibre Optic Cables  
**FOC**

from page  
**518**



CF.INI  
**Sensor/actuator cables**

from page  
**524**



chainflex® cables with  
**Industrial connectors**

from page  
**542**



Harnessed dress packs and cables  
**for robots**

from page  
**552**



Cables suitable for 24 manufacturer standards  
**Drive technology**

from page  
**574**



Connectors, tools and accessories  
**Connectors**

from page  
**786**



Condition monitoring and predictive maintenance  
**smart plastics New!**

from page  
**852**



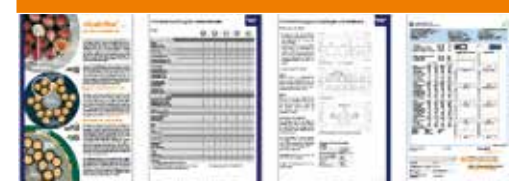
Strain relief  
**chainfix**

from page  
**870**



Ready-to-install assembled e-chain systems®  
**readychain®**

from page  
**910**



Facts, figures and data  
**Technical appendix**

from page  
**922**



# Control cables ...

# chainflex® types



chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page
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Control cables 52

Guaranteed service life for these series (Details ▶ Page 28-29) Selection table ▶ From page 54



















	CF880	PVC		12.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room					3	20	3.1.1.1	58	
	CF881	PVC	✓	12.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room					3	20	3.1.1.1	62	
	CF130.UL	PVC		7.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room				✓	3	2	20	4.4.1.2	66
	CF140.UL	PVC	✓	7.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room					3	2	20	4.4.1.1	70
	CF150.UL	PVC		7.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	3	2	20	4.4.3.2	74
	CF160.UL	PVC	✓	7.5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	3	2	20	4.4.3.1	78
	CF5	PVC		6.8	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	5.5.2.2	82
	CF6	PVC	✓	6.8	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	5.5.2.1	86
	CFSOFT1	PVC		5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	7.1.2.1	90
	CFSOFT2	PVC	✓	5	+5/ +70	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	7.1.2.1	92
	CF890	iguPUR		12.5	-20/+80	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	3	20	3.1.3.1	94	
	CF891	iguPUR	✓	12.5	-20/+80	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	3	20	3.1.3.1	98	
	CF77.UL.D	PUR		6.8	-25/ +80	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	5.5.3.3	102
	CF78.UL	PUR	✓	6.8	-25/ +80	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	5.5.3.1	106
	CF2	PUR	✓	5	-20/+80	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	5	80	6.5.3.1	110
	CF9	TPE		5	-35/ +100	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.6.4.2	114
	CF10	TPE	✓	5	-35/ +100	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.6.4.1	118
	CF9.UL	TPE		5	-35/ +100	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	6.6.4.2	122
	CF10.UL	TPE	✓	5	-35/ +100	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	6.6.4.1	126
	CF98	TPE		4	-35/ +90	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.5.4.2	130
	CF99	TPE	✓	4	-35/ +90	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.5.4.1	132
	CF98.PLUS <b>New!</b>	TPE		3	-35/ +90	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.5.4.2	134
	CF99.PLUS <b>New!</b>	TPE	✓	3	-35/ +90	●●●	UL, IEC, NEMA, CE, EAC, REACH, RoHS, clean room	✓			✓	10	6	100	7.5.4.1	138

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

chainflex® types mentioned in the catalogue as "resistant to bio oil" have been tested by DEA according to VDMA 24568 with Plantocut 8 S-MB.

Download the EPLAN library for any type of cable ▶ [www.igus.eu/EPLAN-download](http://www.igus.eu/EPLAN-download)

Get online and use all of the tools and data ▶ [www.igus.eu/chainflex](http://www.igus.eu/chainflex)

chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page	
<b>Data cables</b>																	
Guaranteed service life for these series (Details ► Page 28-29)															Selection table ► Page 144		
	CF240	PVC	✓	10	+5/ +70	●●●		✓	✓			3	2	20	4.4.2.1	146	
	CF240.PUR	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	3	2	20	4.4.3.1	150	
	CF211	PVC	✓	7.5	+5/ +70	●●●		✓	✓			5	3	50	5.5.2.1	154	
	CF211.PUR	PUR	✓	7.5	-25/ +80	●●●		✓	✓	✓	✓	5	3	50	5.5.3.1	158	
	CF11	TPE	✓	6.8	-35/ +100	●●●			✓	✓	✓	10	6	100	6.6.4.1	162	
	CF112	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	5	80	6.5.3.1	166	
	CF12	TPE	✓	10	-35/ +100	●●●			✓	✓	✓	10	6	100	6.6.4.1	170	
	CF298	TPE		4	-35/ +90	●●●			✓	✓	✓	✓	10	6	100	7.5.4.2	172
	CF299	TPE	✓	4	-35/ +90	●●●			✓	✓	✓	10	6	100	7.5.4.1	174	
<b>Coax cables</b>																	
	CFKoax	TPE		10	-35/ +100	●●●					✓	✓	10	5	100	6.6.4.1	176

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

chainflex® types mentioned in the catalogue as "resistant to bio oil" have been tested by DEA according to VDMA 24568 with Plantocut 8 S-MB.

 Download the EPLAN library for any type of cable ► [www.igus.eu/EPLAN-download](http://www.igus.eu/EPLAN-download)

 Get online and use all of the tools and data ► [www.igus.eu/chainflex](http://www.igus.eu/chainflex)

**36-month chainflex® guarantee**  
 Guaranteed service life for predictable reliability  
 ► Selection table page 144

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:


 [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Guarantee  
igus chainflex

# 36























up to 36 months guarantee

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



# Bus ... Ethernet ... FOC

# chainflex® types

chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page
<b>Bus cables</b>																180
Guaranteed service life for these series (Details ► Page 28-29)																Selection table ► Page 182
	CF888	PVC	15	+5/ +70	●●●		✓					3	20	3.1.1.1	188	
	CFBUS.PVC	PVC	12.5	+5/ +70	●●●		✓	✓		✓		3	2	30	4.3.2.1	192
	CF898	iguPUR	15	-20/ +70	●●●		✓	✓		✓		3	20	3.1.3.1	196	
	CFBUS.PUR	PUR	12.5	-20/ +70	●●●		✓	✓	✓	✓		3	2	30	4.3.3.1	200
	CFBUS	TPE	10	-35/ +70	●●●		✓	✓		✓		10	6	100	6.6.4.1	204
	CFBUS.LB	TPE	7.5	-35/ +70	●●●			✓	✓	✓		10	6	100	7.6.4.1	210
<b>Fibre Optic Cables</b>																214
Guaranteed service life for these series (Details ► Page 28-29)																Selection table ► Page 218
	CFLK	PUR	12.5	-20/ +60	●●●			✓	✓	✓		10	5	20	5.3.3.1	220
	CFLG88	PVC	7.5	+5/ +70	●●●		✓					3	20	3.1.1.1	222	
	CFLG.LB.PUR	PUR	5	-35/ +80	●●●		✓	✓	✓	✓		10	6	20	6.5.3.1	224
	CFLG.LB	TPE	5	-35/ +80	●●●			✓	✓	✓		10	6	20	7.5.4.1	228
	CFLG.G	TPE	10	-40/ +80	●●●			✓	✓	✓		10	6	20	7.6.4.1	232

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## 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 182 (Bus) and page 218 (FOC)

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:

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



# ... measuring system ... servo ...

# chainflex® types



chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page
<b>Measuring system cables</b>																236
Guaranteed service life for these series (Details ► Page 28-29)																Selection table ► Page 238
	CF884	PVC	✓	15	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, CE, UK	✓				3	20	3.1.1.1	242	
	CF211 <b>New!</b>	PVC	✓	10	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓			5	3	30	4.2.2.1	246
	CF894	iguPUR	✓	15	-20/+80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, CE, UK	✓	✓	✓		3	20	3.1.3.1	252	
	CF111.D <b>New!</b>	PUR	✓	10	-25/ +80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓	✓	5	3	30	4.2.3.1	256
	CF113.D	PUR	✓	7.5	-25/ +80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓	✓	10	5	50	6.5.3.1	262
	CF11.D	TPE	✓	6.8	-35/ +90	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK		✓	✓	✓	10	6	100	6.6.4.1	268
<b>Servo cables</b>																274
Guaranteed service life for these series (Details ► Page 28-29)																Selection table ► Page 276
	CF887	PVC	✓	15	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, CE, UK	✓				3	20	3.1.1.1	280	
	CF210.UL	PVC	✓	10	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓		10	2	50	4.2.2.1	282
	CF21.UL	PVC	✓	7.5	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓		10	5	80	5.5.2.1	286
	CF897	iguPUR	✓	15	-20/+80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, CE, UK	✓	✓	✓		3	20	3.1.3.1	290	
	CF270.UL.D	PUR	✓	10	-25/ +80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓	✓	10	2	50	4.2.3.1	292
	CF27.D	PUR	✓	7.5	-25/ +80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓	✓	10	5	80	6.5.3.1	296
	CF29.D	TPE	✓	6.8	-35/ +100	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK		✓	✓	✓	10	5	80	7.6.4.1	300
<b>Hybrid cables</b>																
	CF220.UL.H <b>New!</b>	PVC	✓	10	+5/ +70	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓		10	2	50	4.2.2.1	302
	CF280.UL.H <b>New!</b>	PUR	✓	10	-25/ +80	●●●	UL, IEC, NFPA, EAC, REACH, RoHS, clean room, CE, UK	✓	✓	✓	✓	10	2	50	4.2.3.1	306

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### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 238 (measuring system) and page 276 (servo)










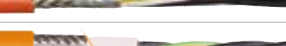















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# ... Motor cables ...

# chainflex® types

		chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page	
<b>Motor cables</b>																			312
Guaranteed service life for these series (Details ▶ Page 28-29)														Selection table ▶ From page 314					
	CF885	PVC		15	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓	3	20	3.1.1.1	318								
	CF886	PVC	✓	15	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓	3	20	3.1.1.1	320								
	CF210.UL	PVC	✓	10	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	2	50	4.2.2.1	322							
	CF30	PVC		7.5	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	5	80	5.5.2.2	324							
	CF31	PVC	✓	7.5	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	5	80	5.5.2.1	328							
	CF895	iguPUR		15	-20/+80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓, ✓, ✓	3	20	3.1.3.1	332								
	CF896	iguPUR	✓	15	-20/+80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓, ✓, ✓	3	20	3.1.3.1	334								
	CF270.UL.D	PUR	✓	10	-25/ +80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	2	50	4.2.3.1	336							
	CF27.D	PUR	✓	7.5	-25/ +80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	5	80	6.5.3.1	340							
	CF34.UL.D	TPE		7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	80	6.6.4.2	344							
	CF35.UL	TPE	✓	7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	6	80	6.6.4.1	348							
	CF37.D	TPE		7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	80	7.6.4.2	352							
	CF38	TPE	✓	7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	6	80	7.6.4.1	354							
<b>Spindle cables/Single cores</b>																			
	CF885	PVC		15	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓	3	20	3.1.1.1	356								
	CF885.PE	PVC		15	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓	3	20	3.1.1.1	358								
	CF886	PVC	✓	15	+5/ +70	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓	3	20	3.1.1.1	360								
	CF270.UL.D	PUR	✓	10	-25/ +80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	2	50	4.2.3.1	362							
	CF300.UL.D	TPE		7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	100	6.6.4.2	364							
	CFPE	TPE		7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	100	6.6.4.2	366							
	CF310.UL	TPE	✓	7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	6	100	6.6.4.1	368							
	CF330.D	TPE		7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	100	7.6.4.2	370							
	CF340	TPE	✓	7.5	-35/ +90	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, clean room, CE, UK, PA, ✓, ✓, ✓	10	6	100	7.6.4.1	372							
<b>Medium voltage cables</b>																			
	CFCRANE.PUR	PUR	✓	10	-20/+80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓, ✓, ✓, ✓	10	6	50	6.6.3.1	374							
	CFCRANE	igupren	✓	10	-20/+80	●●●	UL, IEC, NFPA, C, UL, A, EAC, REACH, RoHS, CE, UK, PA, ✓, ✓, ✓	10	6	50	6.6.3.1	376							























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# ... Robots ... Torsion ...

# chainflex® types

chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Torsion angle [°/m]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. twisted [°/s]	a max. twisted [°/s²]	chainflex® Class	Page
<b>Twistable cables</b>																
<b>Control cables</b>																
 CF77.UJ.D	PUR		6.8	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	5.1.3.3	384
 CFROBOT2	PUR	✓	10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	388
<b>Data cable</b>																
 CFROBOT3	PUR	✓	10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	390
<b>Measuring system cable</b>																
 CFROBOT4	PUR	✓	10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	392
<b>Fibre Optic Cable</b>																
 CFROBOT5	TPE		10	±180	-35/ +80	●●●			✓	✓	✓	✓	180	60	6.1.4.3	396
<b>Motor cables</b>																
 CFROBOT6	PUR		10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	398
 CFROBOT7	PUR	✓	10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	400
<b>Spindle cables/Single cores</b>																
 CFROBOT	TPE	✓	10	±180	-35/ +90	●●●		✓	✓		✓	✓	180	60	6.1.4.3	404
<b>Bus cables</b>																
 CFROBOT8	PUR	✓	10	±180	-25/ +70	●●●		✓	✓		✓	✓	180	60	6.1.3.3	406
 CFROBOT8.PLUS <b>New!</b>	PUR	✓	10	±360	-25/ +70	●●●		✓	✓	✓	✓	✓	360	60	6.1.3.4	410
<b>Hybrid cable</b>																
 CFROBOT9	PUR	✓	10	±180	-25/ +80	●●●		✓	✓	✓	✓	✓	180	60	6.1.3.3	414

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**36-month chainflex® guarantee**  
 Guaranteed service life for predictable reliability  
 ► Selection table page 382

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**Guarantee**  
igus chainflex

# 36

up to 36 months guarantee



































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





# ... Special ... CFCLEAN ...

# chainflex® types

chainflex® cable	Jacket	Shield	Minimum bend radius, e-chain® [factor x d]	Temperature, e-chain® from/to [°C]	Price index	Approvals and standards	Flame retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion-resistant	v max. unsupported [m/s]	v max. gliding [m/s]	a max. [m/s²]	chainflex® Class	Page
<b>Special cables</b>																
	CFTHERMO	PUR	✓	12.5	-25/ +80	●●●		✓	✓	✓		2	1	20	5.4.3.1	420
	CFFLAT	TPE		5	-35/ +90	●●●		✓	✓	✓		10	6	100	7.5.4.1	422
	CFSPECIAL.182	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	6	100	-	424
	CFSPECIAL.192 <b>New!</b>	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	2	50	-	426
	CFSPECIAL.414			7.5	-20/+80	●●●		✓	✓	✓	✓	10	-	20	-	428
	CFSPECIAL.484		✓	12.5	-20/+80	●●●		✓	✓	✓	✓	10	-	20	-	430
	CFSPECIAL.532	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	2	50	-	432
	CFSPECIAL.562.PE	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	2	50	-	434
	CFSPECIAL.572	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	2	50	-	436
	CFSPECIAL.592 <b>New!</b>	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	10	2	50	-	438
	CFSPECIAL.792	PUR	✓	10	-25/ +80	●●●		✓	✓	✓	✓	3	2	20	-	440
<b>CFCLEAN elements for cleanroom applications</b>																
	CFCLEAN1 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		450
	CFCLEAN2 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		452
	CFCLEAN3 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		454
	CFCLEAN4 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		456
	CFCLEAN7 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		458
	CFCLEAN8 <b>New!</b>		✓	70mm	-10/ +80	●●●		✓				2	-	40		460

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## chainflex® guarantee

























These series are solutions for special applications, please contact igus® for information about the service life guarantee:

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

# ... Video ... Network ...

Cable type	Jacket	Page
<b>Harnessed bus cables</b>		
 <b>FireWire</b>	Pre-harnessed cable	TPE 468
 <b>USB 2.0</b>	Pre-harnessed cable	PVC/PUR/TPE 470
 <b>USB 3.0</b>	Pre-harnessed cable	PVC/PUR 471
 <b>GigE</b>	Pre-harnessed cable	PUR-ROBOT/TPE 472
 <b>DVI-D/HDMI</b>	Pre-harnessed cable	TPE 473
<b>Harnessed coax cables</b>		
 <b>Coax</b>	Pre-harnessed cable (BNC/SMA)	TPE 474
 <b>VGA</b>	Pre-harnessed cable	TPE 477
<b>Harnessed Ethernet cables</b>		
 <b>CAT5 Straight</b>	PVC/PUR/TPE	481
 <b>SPE Single Pair Ethernet</b>	PUR	481
 <b>CAT5e Straight</b>	PVC/PUR/TPE	482
 <b>CAT5e Straight</b>	PVC/PUR/TPE	485
 <b>CAT5e Crossover</b>	PVC/PUR/TPE	486
 <b>CAT5e with 615 connectors</b>	PVC/PUR/TPE	487
 <b>CAT5e with angled connectors (L/T angle)</b>	PVC/PUR/TPE	488
 <b>CAT6 Straight</b>	PVC/PUR/TPE	492
 <b>CAT6 Straight/Crossover</b>	TPE	494
 <b>CAT6A with M12 connectors</b>	PVC/PUR/TPE	495
 <b>CAT7 Straight</b>	PUR/TPE	497
 <b>Industrial Ethernet moulded</b>	PVC/PUR	498
<b>Harnessed Profibus cables</b>		
 <b>Profibus</b>	PVC/PUR/TPE	500
<b>Harnessed Profinet cables</b>		
 <b>Profinet</b>	PVC/PUR/TPE	506
 <b>Industrial Profinet moulded</b>	PVC/PUR	510
 <b>Profinet with moulded connectors</b>	PVC/PUR/TPE	512
<b>Harnessed DevicNet cable</b>		
 <b>DeviceNet with Binder M12 a-coded <span style="color: orange;">New</span></b>	TPE	513


















# ... FOC ... Sensor ... Actuator ...

Cable type	Jacket	Page
<b>Harnessed Fibre Optic Cables for video</b>		
 <b>FOC 2 fibres</b>	PVC/TPE	520
 <b>FOC 4 fibres</b>	TPE	521
<b>Harnessed Fibre Optic Cables for network</b>		
 <b>FOC 6 fibres</b>	TPE	522
 <b>FOC 12 fibres</b>	TPE	522
<b>Sensor/actuator CF9 - CF.INI (minimum bend radius 5 x d)</b>		
 <b>Connection cable M12 x 1, straight/angled</b>	TPE	527
 <b>Linking cable M12 x 1, straight/angled</b>	TPE	527
 <b>Connection cable M12 x 1, straight/angled, LED</b>	TPE	529
 <b>Connection cable M8 x 1, straight/angled</b>	TPE	531
 <b>Linking cable M8 x 1, straight/angled</b>	TPE	531
 <b>Connection cable M8 x 1, angled, LED</b>	TPE	533
<b>Sensor/actuator CF10 - CF.INI (minimum bend radius 5 x d) 360° shielded</b>		
 <b>Connection cable M12 x 1, straight/angled</b>	TPE	535
 <b>Linking cable M12 x 1, straight/angled</b>	TPE	535
<b>Sensor/actuator CF98 - CF.INI (minimum bend radius 4 x d)</b>		
 <b>Connection cable M12 x 1, straight/angled</b>	TPE	537
 <b>Linking cable M12 x 1, straight/angled</b>	TPE	537
 <b>Connection cable M8 x 1, straight/angled</b>	TPE	539
 <b>Linking cable M8 x 1, straight/angled</b>	TPE	539
<b>chainflex® cables for actuator/sensor distribution box</b>		
 <b>Connection cable M23, straight</b>	TPE	540
 <b>Linking cable M23, straight/angled</b>	TPE	540
 <b>Connection cable M12, straight</b>	TPE	541




























# Industrial ... Robots ...



























Cable type	Page
<b>chainflex® cables with industrial connectors</b>	<b>542</b>
 <b>Han 6B</b>	Harnessed cable, single locking lever at both ends, straight Harnessed cable, single locking lever at both ends, angled 544
 <b>Han 10B</b>	Harnessed cable, single locking lever at both ends, straight Harnessed cable, single locking lever at both ends, angled 546
 <b>Han 10B</b>	Harnessed cable, double locking lever at both ends, straight Harnessed cable, double locking lever at both ends, angled 546
 <b>Han 16B</b>	Harnessed cable, single locking lever at both ends, straight Harnessed cable, single locking lever at both ends, angled 548
 <b>Han 16B</b>	Harnessed cable, double locking lever at both ends, straight Harnessed cable, double locking lever at both ends, angled 548
 <b>Han 24B</b>	Harnessed cable, single locking lever at both ends, straight Harnessed cable, single locking lever at both ends, angled 550
 <b>Han 24B</b>	Harnessed cable, double locking lever at both ends, straight Harnessed cable, double locking lever at both ends, angled 550
<b>HARTING Connector sets (Connectors chapter page 786)</b>	
	Connector sets with pin inserts 836
	Connector sets Premium (pin + socket) 838
<b>Dress packs for robots</b>	
 <b>readychain® Robot</b>	Harnessed dress packs for welding robots 554
<b>Harnessed cables for robots</b>	
 <b>readycable® Kuka</b>	Harnessed cables for KUKA robots 556
 <b>readycable® Fanuc</b>	Harnessed cables for Fanuc robots 562
 <b>readycable® ABB</b>	Harnessed cables for ABB robots 566
<b>Direct connection cables for robots</b>	
 <b>readycable® Kuka</b>	Direct connection cables for KUKA robots 557
 <b>readycable® Fanuc</b>	Direct connection cables for Fanuc robots 563
 <b>readycable® ABB</b>	Direct connection cables for ABB robots 567
<b>Cables according to AIDA specifications</b>	
 <b>readycable® AIDA</b>	Harnessed cables according to AIDA specifications 572

# ... Drive technology ...



Selection according to manufacturer	Jacket	Page
<b>Harnessed cables for drive technology</b>		
 <b>Allen Bradley/ Rockwell</b>	Motor/servo/hybrid servo/ brake/feedback/adaptor cables	PVC/PUR/TPE 584
 <b>B&amp;R</b>	Motor/servo/EnDat/encoder/ resolver/bus cable	PVC/PUR/TPE 585
 <b>Baumüller</b>	Servo/resolver/pulse encoder cables	PVC/PUR/TPE 585
 <b>Baumüller, SpeedTec</b> <span style="background-color: orange; color: white; padding: 2px;">New!</span>	Servo/resolver/pulse encoder cables	PVC/PUR/TPE 588
 <b>Beckhoff</b>	Motor/servo/hybrid servo/encoder/thermal protection/resolver/network cables	PVC/PUR/TPE 590
 <b>Berger Lahr</b>	Servo/resolver cables	PVC/PUR/TPE 590
 <b>Bosch Rexroth</b>	Motor/servo/hybrid servo/ encoder cables	PVC/PUR/TPE 590
 <b>ELAU/ Schneider Electric</b>	Servo/hybrid servo/encoder cables	PVC/PUR/TPE 593
 <b>FAGOR</b>	Path measuring cables	PUR/TPE 593
 <b>Fanuc</b>	Motor/servo/brake/signal cables	PVC/PUR/TPE 593
 <b>Festo</b>	Servo/control/encoder/data/ bus cables	PVC/PUR/TPE 594
 <b>Heidenhain</b>	Servo/adaptor cables	PVC/PUR/TPE 594
 <b>Jetter</b>	Motor/servo/resolver cables	PVC/PUR/TPE 595
 <b>Kollmorgen/ Danaher Motion</b>	Motor/servo/signal cables	PVC/PUR/TPE 595
 <b>Lenze</b>	Servo/fan/decoder/encoder/ feedback/resolver cables	PVC/PUR/TPE 598
 <b>LinMot</b>	Motor/servo cables	PVC/PUR 599
 <b>LTi DRIVES</b>	Servo/encoder cables	PVC/PUR/TPE 599
 <b>Mitsubishi Electric</b>	Motor/encoder cables	PVC/PUR 599
 <b>Nidec/Control Techniques</b>	Motor/servo/encoder cables	PVC/PUR/TPE 598
 <b>NUM</b>	Power/servo/fan/encoder cables	PVC/PUR/TPE 601
 <b>Omron</b>	Motor/control/encoder cables	PVC/PUR/TPE 601
 <b>Parker</b>	Motor/resolver cables	PVC/PUR/TPE 601
 <b>SEW</b>	Motor/servo/hybrid servo/ control/encoder cables	PVC/PUR/TPE 602
 <b>Siemens</b>	Power/servo/signal cables	PVC/PUR/TPE 603
 <b>Siemens, Speedtec</b>	Power/servo/signal cables	PVC/PUR/TPE 606
<b>Stöber</b>	Servo/encoder cables	PVC/PUR/TPE 607

# Connectors ... Strain relief

	Page
<b>Connectors</b>	<b>786</b>
 <b>SERIES A 623</b> Signal connector	788
 <b>SERIES B 923</b> Power connector	793
 <b>SERIES C 940</b> Power connector	798
 <b>SERIES D 958</b> Power connector	801
 <b>SERIES 615/915</b> Signal and power connector	803
 <b>SERIES M17 617/917</b> Signal and power connector	811
 <b>SERIES S 623</b> Power connector	816
 <b>Tools/accessories and connector packs</b>	818
 <b>igus® ibow</b> Angle adapter for power connector 923 and signal connector 623	821
 <b>Torque Master <span>New!</span></b> Connector assembly with precise torque	822
 <b>Module Connect</b> Connector system	824
 <b>SUB-D</b> Signal connector	830
 <b>Yamaichi Y-CONKIT</b>	834
 <b>HARTING</b> Connector sets	836
 <b>Binder</b> Connector	839
 <b>Glands</b>	844
<b>smart plastics</b>	<b>852</b>
 <b><span>New!</span> i.Sense and i.Cee</b> – condition monitoring and predictive maintenance	
<b>chainfix strain relief</b>	<b>870</b>
 <b>C-profiles</b>	884
 <b>Clamps</b> , steel or stainless steel - for maximum holding strength	888
 <b>Universal tiwrap plates</b> , bolted or clip-on	892
 <b>Tiwrap plates</b> , with clip-on connection to C-profile	894
 <b>Honeycomb strain relief</b> assembled in seconds	897
 <b>Strain relief separators</b> , with integrated teeth	902
 <b>Nuggets</b> , for top hat rail and C-profile	907
 <b>Strain relief blocks</b> , special strain relief for hoses	908
<b>readychain®</b>	<b>910</b>
 <b>igus® readychain®</b> pre-harnessed e-chain systems®	866

# ... Technical appendix

	Page
<b>Tested, tested, tested</b>	<b>24</b>
chainflex® CASE shipping drum - ship'n store by igus®	24
Welcome to the world ... chainflex® approvals for all major markets	26
36 month guarantee on every chainflex® cable	28
The chainflex® test lab	30
World first: 100,000,000 guaranteed double strokes	34
High-end TPE cables with UL approval	36
test methods	38
<b>Technical appendix</b>	<b>922</b>
<b>The tricks and features of the chainflex® design</b>	
Know-how from testing	924
Results from the tests	926
Construction and sectional views through the chainflex® cable types	928
<b>Tested, tested, tested</b>	
Test no. 4876 - Tested at -40°C	930
Test no. 4866 - 4 year continuous test chainflex® Profinet	932
Servo cable structure	934
"Millions of double strokes" in an energy chain	936
CF98 with < 4xd!	938
Light in the cold	940
Completely twisted	942
Container crane with 50m travel distance	944
Comparison of jacket materials exposed to different oils	946
Completely twisted, take two	947
<b>Data</b>	
DIN 47100 colour code/copper wire dimensions according to AWG numbers	948
Calculation of the copper surcharge	949
Load-carrying capacity of cores	950
Chemical resistance	952
<b>Designing with igus®</b>	
Cables and hoses - general rules for cables and hoses in e-chains®	956
Cables and hoses - separation in e-chains®	957
Cables and hoses - further information on the separation of cables	958
Round electrical cables	959
Round electrical cables - information on assembly and strain relief of round electrical cables	960
Pneumatic hoses	961
<b>Information</b>	
Approvals and standards	962
General conditions	970
User information, disclaimer, KTG, product illustrations	970
Technical notes	971
chainflex® CASE shipping drum - ship'n store by igus®	972
chainflex® online tools, data sheets, catalogues and brochures	984
Table of contents according to part number	1,000
<b>Contact igus®</b>	
igus® worldwide - International map	988

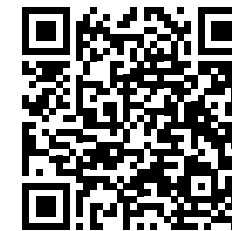


# Storage made easy ...

# chainflex® CASE S and CASE M



The chainflex® CASE is a cardboard box that allows cable drum shipping without a pallet. This means that the goods can be sent by a parcel carrier. The chainflex® CASE is not only used for transport, but also works as a storage system for cable drums. The cable can be easily unreeled directly from the box. Thanks to its stackability, you can set up flexible storage facilities. The QR code on the shipping box makes online re-ordering easy. All in all, this system helps you save shipping, process and storage costs.



**chainflex® CASE application example from the field: BSH Hausgeräte GmbH**  
"The maintenance staff at the BSH plant in Bad Neustadt an der Saale have implemented a real "out of the box" solution. Electrical cables no longer arrive by hank or cable drum, but in the "chainflex CASE" shipping and storage solution. This saves costs, space and waste."

chainflex® CASE allows cable drums to be shipped in a cardboard box via parcel carriers. Very simple and you can save up to 84% shipping cost compared to standard shipping on a pallet by a freight forwarder.



Remove expensive storage systems for cable drums. Unreel the cable immediately from the chainflex® CASE. Carrying handles and stackability allow for individual storage spaces.

This system makes storage mobile and can be used directly on construction sites, for instance. Expensive special shelving is not required, instead, it can be stored simply in standard shelving systems.

With the QR code on every chainflex® CASE, you can re-order your cable online in a few seconds. Simply use your smartphone's scanner.



► [www.igus.eu/cf-case](http://www.igus.eu/cf-case)

## Two sizes ... can be ordered separately ...

Just add the required CASE to your order



chainflex® CASE

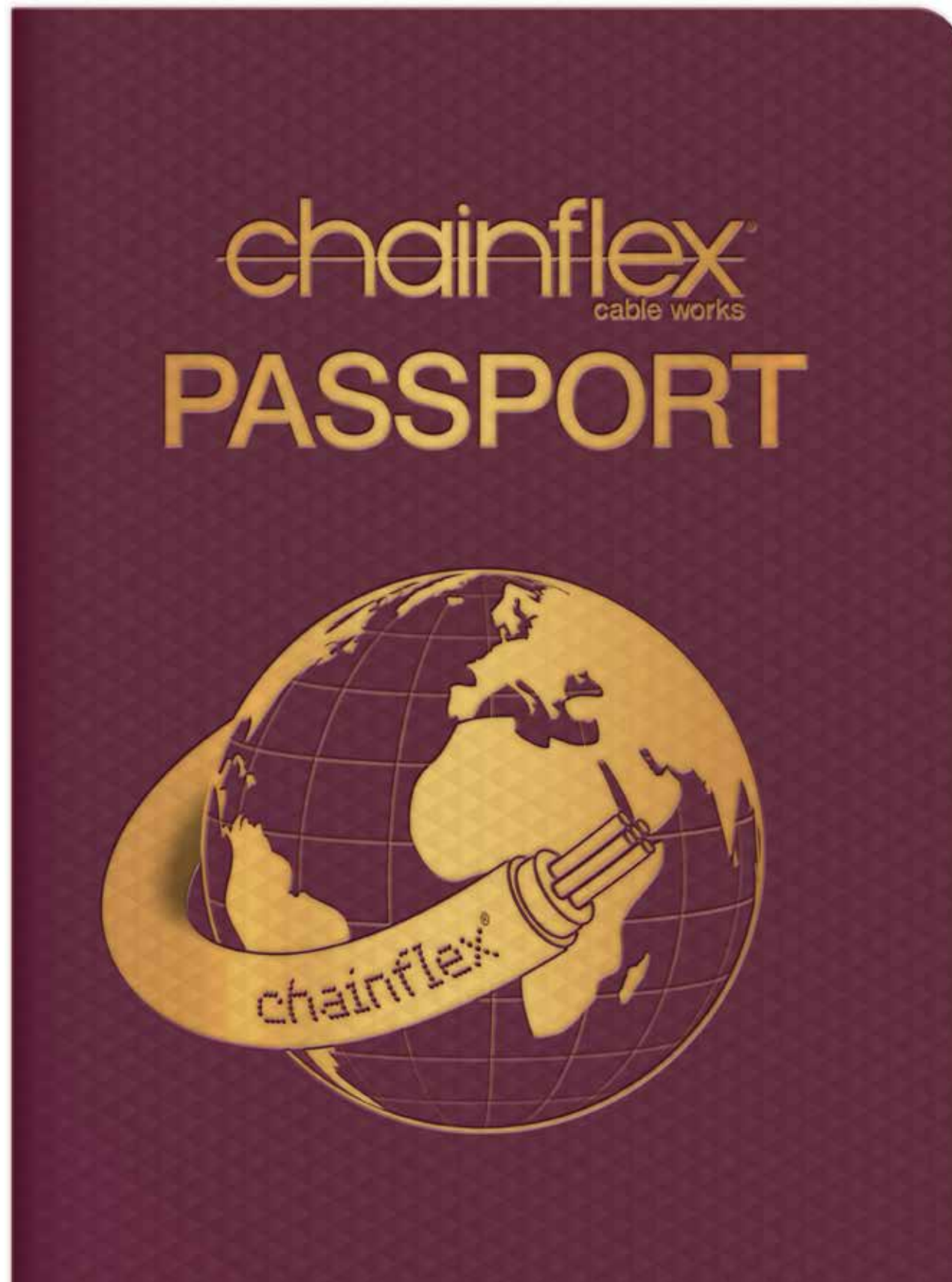


chainflex® CASE S



# Welcome to the world ... chainflex® approvals for all major markets

Design confidence, reduced costs, simple supply



## One cable for all major markets ...

You benefit from the worldwide common approvals for chainflex® cables

Today, almost all plant and machine builders export their products. Depending on the region, there are very different standards and approvals required for different products. Cables for moving applications are no exception.

Therefore igus® has been working for many decades to obtain as many approvals as possible for chainflex® cables. Due to the special nature of chainflex® cables running in e-chains® this is a challenge, as the varied applications are not described in any standard or approval.

Therefore igus® had to work out concepts with the certification authorities over many years to enable the approval of chainflex® cables.

Today, for example, igus® is the only company worldwide to offer cables with DNV approval for use in the offshore sector.

Details on this can be found on the following pages: 962-969.

## Approvals overview

- CE ... 1,377 cables
- UKCA ... 1,377 cables
- DESINA ... 270 cables
- NFPA ... 972 cables
- UL-Listed ... 63 cables
- UL-AWM ... 1,042 cables
- UL-verified ... 1,317 cables
- EAC ... 1,269 cables
- DNV ... 381 cables
- CC-Link IE Field ... 8 cables
- Cleanroom ... 1,063 cables
- Ethercat ... 13 cables
- Profinet ... 10 cables
- Profibus ... 27 cables



# 36-month guarantee on every chainflex® cable in this catalogue

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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




## The chainflex® guarantee - predictable safety through laboratory and field experience

Safety is of utmost importance, operationally, legally and financially. Plant and machine constructors have to make binding statements about operational safety and reliability. However, a guarantee declaration to the end customer always entails a considerable risk. The chainflex® guarantee on igus® cables in e-chains® now makes this risk not only more predictable, but reduces it significantly. With the unique 36 month guarantee on every chainflex® cable in this catalogue, we assume part of the responsibility and create valuable planning security for the manufacturer. Twenty-five years of experience from tried and tested applications and from intensive tests in the world's largest test laboratory for cables and e-chains® allow us to make reliable and verifiable statements about durability and service life. Predictable reliability for every user!

**"In case of guarantee the buyer is entitled to the rights under the guarantee as per the terms set down in the guarantee statement vis-à-vis the person who has given the guarantee, regardless of the legal claims (§ 443 I BGB)."**

In Germany, quality and durability guarantees are used. The latter in particular is of great importance for many customers. A mere extension of the guarantee is not enough for them, they want binding statements on the durability. The chainflex® guarantee based on the reliable data from laboratory and field experience, was created precisely for this purpose.



Analysis of the measured data: igus® "AutΩMeS" system

### Guarantee instead of just warranty or defects liability expands the assurance in legal terms

The assurance of a guarantee is done voluntarily by the manufacturer, and goes beyond the mandatory assurance or warranty by the seller. For the customer not only receives the promise to obtain a defect-free product, but also the ability to function over a certain period.

## Direct overview of the service life using the "double strokes" selection tables

For each chainflex® series you will find a selection table called "Double strokes - guaranteed service life" This gives the technical parameters for using the respective chainflex® cable. If the cable is operated in accordance with the operating conditions specified in the selection table, a guaranteed service life of 5, 7.5 or 10 million double strokes is applicable depending on the application. The service life itself, measured by the number of possible double strokes, can even be

- 1 Temperature, from/to [°C]
- 2 Double strokes guaranteed
- 3 Minimum bend radius [factor x d]

Guaranteed lifetime according to guarantee conditions (Page 22-23)

Double strokes*	2 5 million	2 7.5 million	2 10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
1 -35/-25	6.8	7.5	8.5
-25/+90	5 3	6 3	7 3
+90/+100	6.8	7.5	8.5

**Example: Selection table "Guaranteed service life" for CF9**

\* Higher number of double strokes? Online lifetime calculation: [www.igus-asean.com/chainflexlife](http://www.igus-asean.com/chainflexlife)

### Example:

A cable with a diameter of 12mm in an energy chain with a radius of 100mm results in a bending factor of 8.3 (100mm/12mm). In order to determine the guaranteed durability, you set the technical conditions from the data ranges 1 & 2. In data range 3, you can now see that (with an assumed temperature range of -25/+90°C) with 8.3 x d the effective bending factor is above the minimum limit of 7 and therefore for that cable you have a guaranteed operation of 10 million double strokes. Should the temperature become higher or lower, the

necessary factor for this guarantee level would be 8.5, meaning that the number of guaranteed double strokes is reduced to 7.5 million. This very clear statement provides reliability and planning safety for your machine and can be further refined with the **online service life calculator**.

 Calculate service life online: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



# Testing, testing, testing ... specific tests for specific requirements

## Over 25 years of testing experience in the chainflex® laboratory

The chainflex® laboratory specialises in tests which, apart from just theoretical procedures, also investigate real applications as they would occur in the real world of mechanical and production engineering. For more than 25 years, specific data has been collected in the largest test laboratory for moving cables, which is indispensable for determining service life and function. On a laboratory floor area of 3,800 m<sup>2</sup>, 700 tests are currently running in parallel, which help to constantly monitor and improve the interplay of e-chains® and cables in dynamic applications. The combination of e-chains® and chainflex® cables on the one hand, and of e-chains® and other cables that are sold as "chain-compatible" by a large number of cable providers on the market on the other. However, it is here that questions arise for the customer as to the extent to which these cables are actually suitable for use in energy chains and what is the expected service life. The conventional standard tests give generalised answers to generalised questions. The customer, however, wants a concrete answer and solution for their specific problem, which is often not, or only partially, addressed by the normal standards. It is precisely these individual customer requirements that the igus® laboratory devotes itself to.

A further consequence of our intensive research and laboratory activities is the development of standard tests and production standards for chainflex® cables for long-term use in e-chains®.

In principle, there are five main focus areas:

### 1. Tests of materials

In line with customer requirements, new materials for the conductors, insulation and outer jackets are developed. Differences arise that are significant but not obvious, particularly in the case of conductor and jacket materials. To this end, up to eight different chainflex® standards are used in the tests.

### 2. Tests of the technical design

These tests systematically evaluate new designs, manufacturing methods and the associated influences on service life. As the studies have shown, tiny differences in manufacturing processes can lead to significantly different outcomes in moving applications.

### 3. Quality tests during production

After production, a random number of cables are subjected to the VDE or UL standard tests, as well as other special igus® tests according to certain selection criteria. The laboratory batch tests up to 20% of all finished cables in a continuous bending test and then carries out the necessary structural examinations afterwards.

### 4. Long-time tests of service life

These tests have to be carried out over a period of up to 5 years and investigate the actual maximum service life of the selected cables. The focus here is on a continuous monitoring of the electrical and mechanical parameters in order to detect a failure.

### 5. Customer-specific applications

A special service is offered for customer-specific tests according to the igus® standard. This type of test is based on the customer-specific movement sequences and offers the significant advantage of test-defined limits and the potential for optimisation before the start of mass production.



The chainflex® cables must also prove themselves in real applications under extreme conditions



Linear chain tests of all chainflex® cables with different radii and travels



Rotary movement tests in very demanding chain applications using igus® twisterchain®

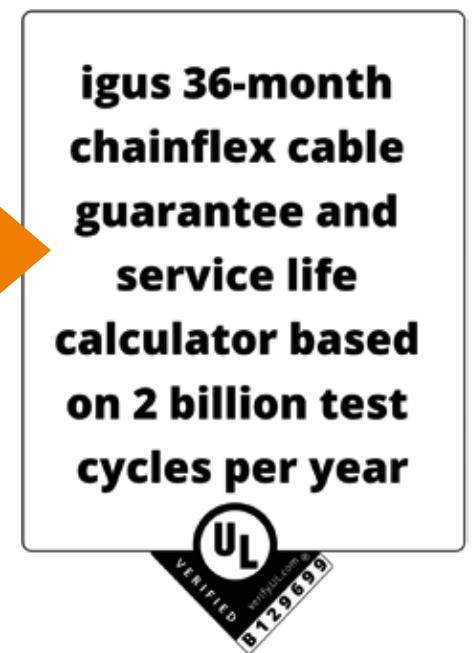
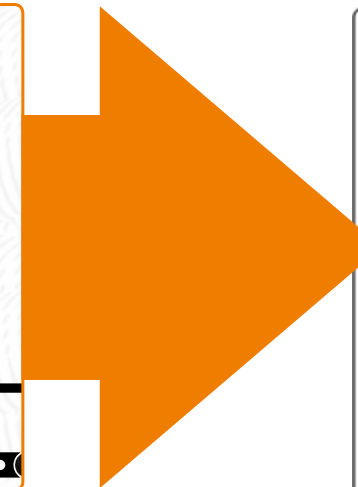


Test for complex movements by simulating multi-axis applications on robots



# chainflex® in the laboratory – the largest test lab for moving cables in the world

... 3,800m<sup>2</sup> test laboratory with over 65 test stations, two climatic containers (40 feet each), and 200m of outdoor testing facilities ...



**2 billion test strokes every year**

**250 million cycles in batch testing per year**

**36-month guarantee**

Anyone who wants to carry out systematic, comparative and reproducible tests for more than 2 billion double strokes and 1.4 million electrical measurements must invest in the necessary space and resources. On a total of 65 test stations, various test series are carried out according to the igus® test standards. The laboratory team is made up of technically qualified employees who test and monitor thousands of measuring points in e-chains® and cables over a wide range of travel lengths, in horizontal or vertical applications and always under the most real-life conditions possible. Multi-axis e-chains® such as the triflex® series from the robot range are also tested for torsional strength on special test rigs.

**Special test equipment for special applications**  
In addition to the normal service life and quality tests, special test rigs are also available for custom tests. For example, abrasion and media tests for materials are carried out under more demanding experimental conditions than carried out according to UL or VDE standards for storage and aging. The optimum matching of igus® cable outer jacket materials to the energy supply system materials is vital. The influence of thermal factors on moving cables can be analysed in two special 40 foot climatic containers covering a temperature range of -40°C to +60°C. Both are equipped with a 6m long travel, which can be operated with different radii and e-chains®. In contrast to the standard VDE winding mandrel test (for details see page 34), one can test the aging in very different temperature profiles during continuous motion in e-chains®.

**Consistent monitoring and accurate test documentation**

A necessary condition for successful and meaningful testing is the systematic monitoring and documentation of the results. Here, monitoring systems developed by igus® are used which, in addition to offering constant online monitoring, ensure documentation with a very high accuracy. In this way wear can also be detected before failure. This early detection - without a destructive test - allows design modifications to be made. After each test, all the cables are dissected into their elements, examined in detail and their properties documented.

**Because of these test programs, good quality data on all chainflex® cables are available and offer the user planning reliability for their cable selection.**

## Facts and figures

- The industry's largest test lab for moving cables
- 25 years of experience
- 3,800m<sup>2</sup> test area
- 65 test stations
- 800 tests conducted in parallel
- 2 billion double strokes a year
- 1.4 million electric measurements per year
- Audited and certified by Underwriter Laboratories (UL)

World's first

3xd

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

igus 36-month  
chainflex cable  
guarantee and  
service life  
calculator based  
on 2 billion test  
cycles per year  
UL  
VERIFIED  
www.igus.com  
B122699

**100,000,000**  
chainflex® CF99.PLUS

100 million  
double strokes  
in e-chains®  
guaranteed!

Smaller and smaller installation spaces, shorter and shorter cycle times, 99% availability. These are the requirements that innovative automation specialists must meet. To do this, igus® has been working on an unprecedented innovation for more than ten years. The new generation of chainflex® **CF98.PLUS** (unshielded) and chainflex® **CF99.PLUS** (shielded) control cables are a consistent development of the well-known, highly successful CF98/CF99 and CF298 and CF299 control cable series. Systematic research on process technology and insulation and conductor materials supported by a wide variety of test series in the igus® laboratory enabled igus® to develop this new generation of control cables. The result is cable series that can be used reliably with a minimum **bend radius of just 3 x d** (3 x cable diameter).

The cross-sectional areas range from 0.14mm² to 0.5mm² in both the shielded and unshielded versions. This makes igus® the first and only manufacturer to offer catalogue goods for use in an e-chain® with a guaranteed service life of 100 million double strokes. This is with acceleration values of up to 100m/s².

You will find the complete information about the new generation of chainflex® control cables in this catalogue:

**chainflex® CF98.PLUS ▶ Page 134**

**chainflex® CF99.PLUS ▶ Page 138**



# World first: High-end TPE cables ...

# ... with UL approval

Avoid machine fires with high-end TPE cables

... cold ...

... hot ...

... long ...

... small ...



According to the US National Fire Protection Association (NFPA), machine fires are the fourth leading cause of fires in industrial environments in the USA, closely followed by electrical fires. NFPA analyses state that leading causes of unclassified fires in manufacturing buildings involved flammable or combustible liquids or gases, pipelines or filters, but also included fires started by electrical wire or cable insulation. In addition to loose clamp connections, this is also caused by overloading or cable breaks. Cables that are exposed to continuous movement and the smallest bending radii are therefore particularly at risk. If these conditions apply, the cables used in such applications must have jacket materials that can withstand these dynamics over very long periods of time.

igus® has been developing and testing cables for moving applications for more than 30 years. Their different types are adapted to various electrical and mechanical challenges of customers in the industrial environment via different types of stranding, bundled cores and jacket materials. The result is a product range of different cable

types with jacket materials made of PVC, iguPUR, PUR and TPE, which guarantee the same electrical properties in every version.

This selection opens up all possibilities for customers to find the right cable for completely different and very specific applications.

igus® categorises the jacket materials of the chainflex® cables in terms of media resistance, temperature resistance, flexural strength and the properties "flame-retardant" or "halogen-free", among others.

Many thousands of test series and over 30 years of experience in the field also led to the realisation that the halogen-free, non-flame-retardant igus® TPE jacket materials show by far the highest breaking strength at a high bending load and at small bending radii within an e-chain®.

However, although these cable series easily achieved the best performance under continuous bending in

e-chains®, they also had a major disadvantage; since the material was not flame-retardant, an UL AWM approval was not possible.

In cooperation with the Underwriters Laboratories (UL) igus® has now been able to prove that an AWM approval of the high-end TPE jacket material can indeed follow the UL standards.

The basis of the argument is the comparison of fire safety and reliable functionality of a cable: UL specifies the following requirements for approval, that cables must ensure maximum safety and prevent the spread of fire in an application.

igus® was able to prove to Underwriters Laboratories that using halogen-free high-end TPE reliably prevents premature ageing of the outer jackets in highly dynamic applications; indeed, it rules them out almost completely. This means that the voltage-carrying cores are protected even under maximum bending stress and are so safe that even the development of fires can be avoided.

The fact that the cables reliably avoid a reduction of the

cable cross-section even under the highest load and with the tightest radii reliably excludes an increase of the current density and thus an excessive heating of the cable up to a possible fire.

By granting the unique new igus® UL AWM approval for chainflex® cables with high-end TPE jackets, the UL thus acknowledges that ensuring the function of cables in motion is of equal relevance to all factors that prevent the spread of fire.

Thus, igus® can expand its high-end chainflex® cable product range with UL AWM approval.

# Safe cable selection – the different test methods

The movements carried out by cables in industrial applications range from simple linear strokes to 6-axis robot applications. Systematic, repeated series of tests under realistic conditions are essential in order to be able to predict the service life of cables.

On the following pages, igus® provides an overview of the test methods that are used for chainflex® cables, depending on the requirements and the materials used. The tabular overview enables the speedy selection of cables that meet your requirements.

## Fire tests (page 39-40)

Depending on the application and the place of use, there are different requirements regarding the flame-retardant properties of a cable. To meet this, igus® offers a wide variety of tests in order to guarantee the product is appropriate.

## Media tests (page 41)

Media resistance is a very important factor when selecting the optimum jacket material. Due to the test series, the properties of the products are clearly defined and, if the correct material is chosen, cost-intensive failures during operation can be avoided.

## Temperature tests (page 42)

Near the respective temperature limits, moving cables can fail quickly with fractures in the jacket due to the molecular structure of the thermoplastic material used. As a result of multiple test series, igus® has been able to demonstrate that standards based tests do not provide enough adequate information about the use of cables in energy chains as they do not replicate the real stresses and loads that cables are subjected to in the real world. Today, igus® is the only manufacturer in the world, to supply cables with tested jacket materials that are guaranteed to withstand the stresses of movements in e-chains® at the indicated ambient temperatures, because they have been tested under such real conditions.

## Motion tests (page 43)

Though there are many test standards, none of today's standards specify tests that can adequately verify the service life of a cable in an energy chain. In this regard, igus® is the only manufacturer that has more than 30 years of experience testing cables in e-chains® and performs the most comprehensive range of dynamic cable tests in the world. This includes a large number of different test series. This overview shows the igus® range of basic tests for qualifying e-chain® cables.



Test	Specification	Design										
IEC 60332-1-2	<p>Test of vertical flame propagation on a core, an insulated wire or a cable, test method 1kW - flame with gas/air mixture</p> <p>Sample length: 600mm                      Burner: According to IEC 60332-1-1                      Test temperature: 1kW flame                      Position of the sample: Vertical                      Position of the flame: 45° to the vertical                      Flame duration: See table below                      Conditions: The damage or carbonisation must only occur between 50mm and 500mm, measured from the upper attachment point</p> <table border="1"> <thead> <tr> <th>Outer diameter of the sample [mm]</th> <th>Flame duration [s]</th> </tr> </thead> <tbody> <tr> <td>&lt;25</td> <td>60</td> </tr> <tr> <td>25-50</td> <td>120</td> </tr> <tr> <td>50-75</td> <td>240</td> </tr> <tr> <td>&gt;75</td> <td>480</td> </tr> </tbody> </table>	Outer diameter of the sample [mm]	Flame duration [s]	<25	60	25-50	120	50-75	240	>75	480	
Outer diameter of the sample [mm]	Flame duration [s]											
<25	60											
25-50	120											
50-75	240											
>75	480											
IEC 60332-3-22/-23/-24/-25	<p>Testing vertical flame propagation of vertically arranged bundles of cables or insulated cables</p> <p>Sample length: 3,500mm                      Burner: Flat burner (Ribbon gas burner of American Gas Furnace Co.)                      Test temperature: Given by the prescribed gas and air flow rate                      Position of the sample: Vertical                      Position of the flame: Horizontal                      Flame duration: See table below                      Conditions: The burnt distance should not be more than 2.5m from the lower end of the burner, unless otherwise specified in the relevant standards.</p> <table border="1"> <thead> <tr> <th>Regulation</th> <th>Flame duration</th> </tr> </thead> <tbody> <tr> <td>IEC 60332-3-22 and -23</td> <td>40 minutes</td> </tr> <tr> <td>IEC 60332-3-24 and -25</td> <td>20 minutes</td> </tr> </tbody> </table>	Regulation	Flame duration	IEC 60332-3-22 and -23	40 minutes	IEC 60332-3-24 and -25	20 minutes					
Regulation	Flame duration											
IEC 60332-3-22 and -23	40 minutes											
IEC 60332-3-24 and -25	20 minutes											
FT2 Flame Test	<p>UL 1581, § 1100 (FT2 Flame Test)</p> <p>Length of the sample: 250 – 300mm                      Position of the sample: Horizontal                      Position of the flame: 20° to the vertical                      Flame duration: 30 seconds                      Conditions: The burnt distance must not exceed 100mm.</p> <p>Dripping material must not ignite the underlying cotton (B).</p>											



Test	Specification	Design
Vertical Flame and FT1	<p><b>UL 1581, § 1060 (Vertical Flame und FT1 Test)</b></p> <p>Sample length: 457mm-610mm                      Burner: Bunsen burner with additional air supply (Tirril gas burner) Ø9.5mm                      Test temperature: 500W flame                      Position of the sample: Vertical                      Position of the flame: 20° to the vertical                      Flame duration: 5 x 15 seconds with 15 second flame break each                      Conditions:                      - Paper flag up to maximum 25% charred                      - The sample must continue to burn for maximum 1 minute</p>	
VW-1 Flame	<p><b>UL 1581, § 1080 (VW-1 Flame Test)</b></p> <p>Sample length: 610mm                      Burner: Bunsen burner with additional air supply (Tirril gas burner) Ø9.5mm                      Test temperature: 500W flame                      Position of the sample: Vertical                      Position of the flame: 20° to the vertical                      Flame duration: 5 x 15 seconds with 15 second flame break each                      Conditions:                      - Paper flag up to maximum 25% charred                      - The sample must continue to burn for maximum 1 minute                      - Time noted until the flame/sample is extinguished                      - Dripping material must not ignite the cotton (B) lying under it</p>	
Cable Flame	<p><b>UL 1581, § 1061 (Cable Flame Test)</b></p> <p>Sample length: 455mm                      Burner: Bunsen burner with additional air supply (Tirril gas burner) Ø9.5mm                      Test temperature: 500W flame                      Position of the sample: Vertical                      Position of the flame: 20° to the vertical                      Flame duration: 3 x 60 seconds with 30 seconds flame break each                      Conditions:                      - Paper flag up to maximum 25% charred                      - The sample must continue to burn for maximum 1 minute                      - Dripping material must not ignite the cotton (B) lying under it</p>	

Test	Specification	Design
DIN EN 50363-4-1	<p><b>Testing of oil resistance for PVC jackets</b></p> <p>Test according to DIN EN 60811-2-1, Clause 10</p> <p>Test oil: IRM 902</p> <p>Preparation of the sample according to DIN EN 60811-501</p> <p>Test temperature: 90±2°                      Test duration: 7x 24hrs</p> <p>Followed by storage at room temperature of at least 16hrs, but not longer than 24hrs</p> <p>Maximum alteration of tensile strength: ±30%                      Maximum elongation at break: ±30%</p>	
DIN EN 50363-10-2	<p><b>Testing of oil resistance for PUR jacket</b></p> <p>Test according to DIN EN 60811-2-1, Clause 10</p> <p>Test oil: IRM 902</p> <p>Preparation of the sample according to DIN EN 60811-501</p> <p>Test temperature: 100±2°                      Test duration: 7x 24hrs</p> <p>Followed by storage at room temperature of at least 16hrs, but not longer than 24hrs</p> <p>Maximum alteration of tensile strength: ±40%                      Minimum median elongation at break: 300%                      Maximum elongation at break: ±30%</p>	
DIN EN 60811-404	<p><b>Testing of oil resistance for TPE jacket</b></p> <p>Test according to DIN EN 60811-2-1, Clause 10</p> <p>Test oil: IRM 902</p> <p>Preparation of the sample according to DIN EN 60811-501</p> <p>Test temperature: 100±2°                      Test duration: 7x 24hrs</p> <p>Followed by storage at room temperature of at least 16hrs, but not longer than 24hrs</p> <p>Maximum alteration of tensile strength: ±30%                      Maximum elongation at break: ±30%</p>	

Details on the media resistance of chainflex® cables ► Pages 956-959

Test Specification Design

**Bending test at low temperature for jacket**

Feed-through of the cold winding test according to 8.2 from DIN EN 60811-504

Deviating from the standard also the outer diameter of the sample > 12.5mm

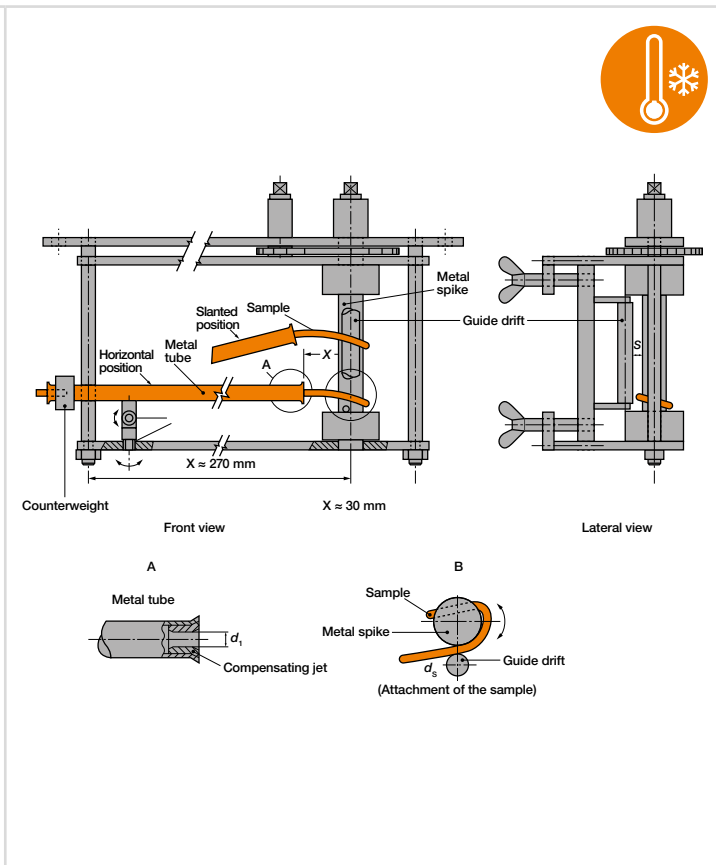
Mandrel diameter 4-5 times the sample diameter (there must be at least 2 samples)

Outer diameter (d) of the sample [mm]	Number of windings
$d \leq 2.5$	10
$2.5 < d \leq 4.5$	6
$4.5 < d \leq 6.5$	4
$6.5 < d \leq 8.5$	3
$8.5 < d$	2

Storage of the wound sample > 16hrs at test temperature

Heat to room temperature

When viewed with the naked eye or visual aid without magnification, there should not be any cracks in the outer jacket



**Low temperature impact test for jacket**

Feed-through of the cold impact test according to 8.5 from DIN EN 60811-504

**Selection criteria according to 5.1 from DIN EN 50305**

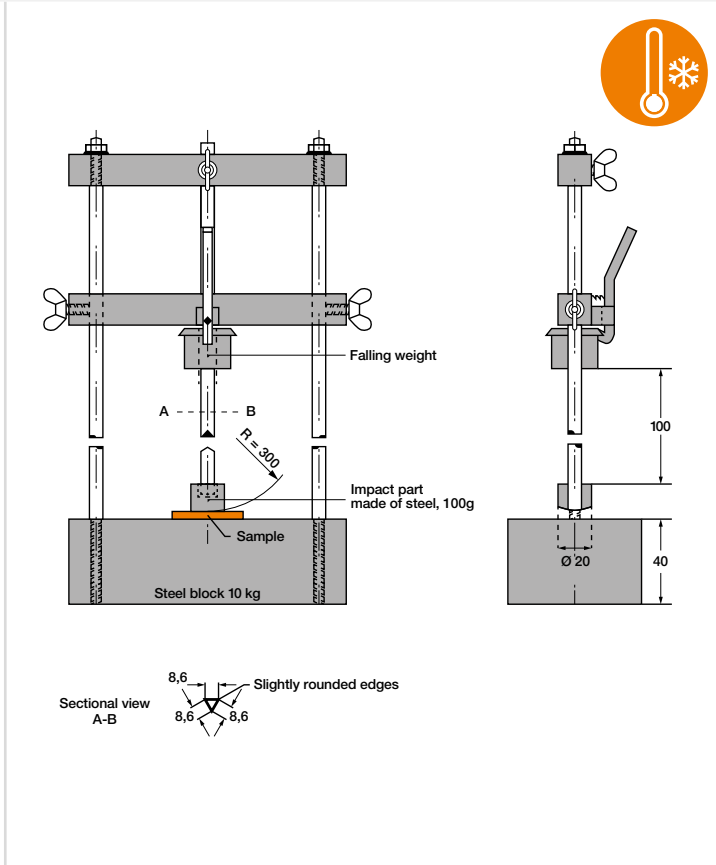
Diameter of the cable (D) [mm]	Weight of the hammer [g]	Weight of the intermediate sample [g]	Fall height [mm]
$D < 15$	1,000	200	100
$15 < D \leq 25$	1500	200	150
$D > 25$	2,000	200	200

3 pieces, length at least 5x the outer diameter or 150mm

Storage of test equipment and samples > 16hrs at test temperature

Heat to room temperature

When viewed with the naked eye or visual aid without magnification, there should not be any cracks in the outer jacket.

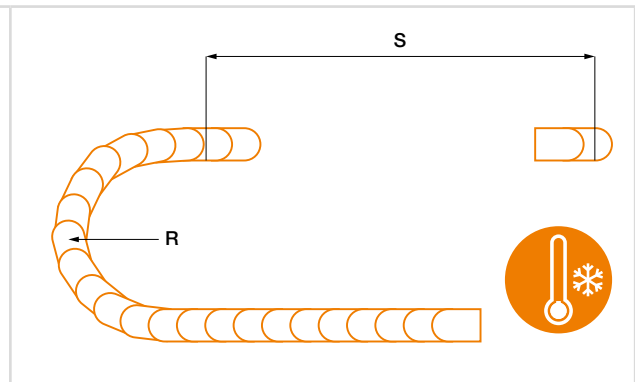


Test Specification Design

**igus® test "Cold test" in e-chain®**

**Horizontal travel**

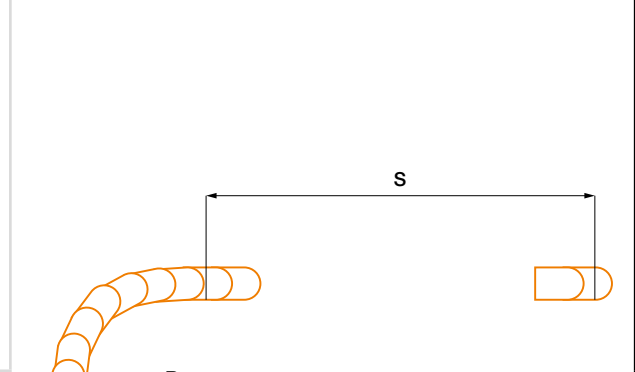
Travel length S: up to about 5m  
 Temperature: down to about -40°C  
 Bending factor: according to the catalogue (approx. 6.8 – 10 x d)  
 Target: **minimum 500,000 double strokes**



**igus® test "Short travel" in e-chain®**

**Horizontal travel**

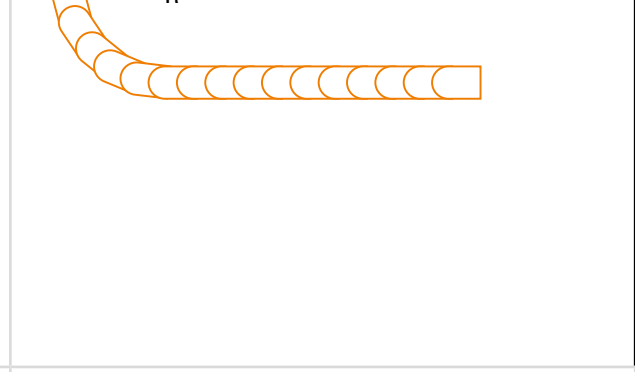
Travel S: up to about 2.5m  
 Temperature: down to about -20°C  
 Bending factor: according to the catalogue (approx. 5 – 7.5 x d)  
 Target: **minimum 5,000,000 double strokes**



**igus® test "Long travel" in e-chain®**

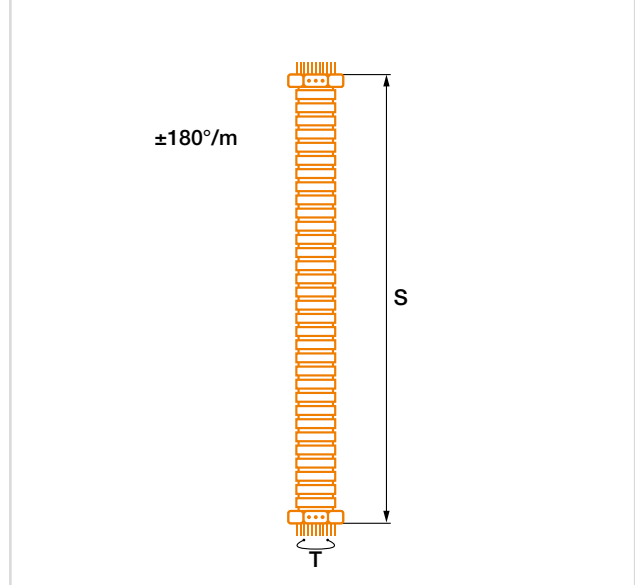
**Horizontal travel**

Travel S: up to about 7.5 m  
 Temperature: approx. from +5°C to +30°C  
 Bending factor: according to the catalogue (approx. 5 – 7.5 x d)  
 Target: **minimum 5,000,000 double strokes**



**igus® test "Torsion test"**

Twisted length S: about 1m  
 Rotation angle: according to catalogue (about ±180°)  
 Target: **minimum 5,000,000 cycles**



Test no.  
2233 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 2233: Control cable tested for 41 million strokes ...

Control cables are still used everywhere in automation. This makes it all the more important for control cables for constant movement in e-chains® to have a safe construction in order to meet increasingly stringent mechanical requirements.

The special properties of the chainflex® control cables are:

- igus® **braiding** in bundles with specially aligned short pitch lengths
- Gusset-filling extruded **inner jacket** in shielded cables
- **Braided shields** with optimised braid angle and optical covering up to 90%
- **Gusset-filled extruded outer jackets to secure the core braiding**, especially for long travels

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 2233 of a control cable of the CF5 series on a short travel, with a test bend radius reduced by 25%.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	2233
Cable type	CF5.10.25
Bend radius factor in e-chain®	5.3 x d
Number of bending strokes without damage	41 million

Details of the test online:  
[www.igus.eu/test2233](http://www.igus.eu/test2233)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Test no.  
4901 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 4901: Data cable tested for 53 million strokes ...

Although data cables have different electrical requirements than bus cables, data cables have a specific requirement for EMC protection. In the case of constant movement in e-chains®, the EMC shielding is subjected to very high mechanical loads.

To ensure that this load does not lead to failures in the data, a safe construction is important, especially in the shielding.

The special properties of the chainflex® data cables are:

- Very short balanced **winding in pairs** according to electrical requirements
- **Braid angles** overall shields have been especially developed and tested by igus®
- **Pressure extruded outer jackets** to secure the shield and core structure

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 4901 of a CF211 series data cable with short travel, with a 75mm test bend radius.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	4901
Cable type	CF211 Data
Bend radius factor in e-chain®	6.6 x d
Number of bending strokes without damage	53 million

Details of the test online:  
[www.igus.eu/test4901](http://www.igus.eu/test4901)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



Test no.  
3089 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 3089: Ethernet bus cable tested for 76 million strokes ...

The use of fieldbus cables, and particularly the rapid growth of Ethernet communication in the industrial environment, places very high requirements on the design and manufacture of bus cables. This is the only way to prevent the classic mechanical damage and the gradual loss of data transmission quality.

Increasing attenuation due to shield damage or characteristic impedance changes leads to reduction in data speed. Since the attenuation values are constantly changing during movement, troubleshooting is very challenging.

The special properties of the chainflex® bus cables are:

- The **insulation material selection**, which does not change its electrical properties even after millions of cycles.
- Very **balanced cores**, which meet the bus requirements in combination with the mechanical demands
- **Braid angle** of the chainflex® overall shield developed and tested by igus®
- With **pressure extruded outer jackets** for securing the shield and core structure

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	3089
Cable type	CFBUS.045
Bend radius factor in e-chain®	9.4 x d
Number of bending strokes without damage	76 million

Details of the test online:  
[www.igus.eu/test3089](http://www.igus.eu/test3089)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Test no.  
4011 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 4011: Fibre Optic Cable tested for 50 million strokes ...

FOC cables are the safest and most effective data transmission method.

When using glass fibres, the effective length, the effective data volume and the EMC safety is unsurpassed for today's automation technology.

However, the pure glass fibres are sensitive to mechanical loads. Therefore, chainflex® fibre optic cables are designed in such a way that the fibres are never exposed to mechanical loads at any time, but the cable structure safely absorbs all forces, thus protecting the fibres.

The special properties of the chainflex® fibre optic cables are:

- FOC **multimode or singlemode fibre** with high flexural strength
- **Balanced winding** of the aramide-protected subcable elements
- High tensile strength **aramid torsion protection braid**
- With pressure extruded **outer jackets** for securing the structure.

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 4011 of a multimode fibre glass cable of CFLB series tested short travel distance, with a bend radius factor of only 4.2 x d.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	4011
Cable type	CFLG.2LB
Bend radius factor in e-chain®	4.2 x d
Number of bending strokes without damage	50 million

Details of the test online:  
[www.igus.eu/test4011](http://www.igus.eu/test4011)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Test no.  
3479 online  
Further tests,  
service life,  
product finder &  
shop online



## Test 3479: Measuring system cable tested for 66 million strokes ...

Measuring system cables are the important communication link between the drive and the control system. Damage can occur if the electrical signals are not transmitted safely and in the correct time due to motion. Therefore measuring system cables have a special requirement for EMC protection.

In the case of constant movement in e-chains®, the EMC shielding is subjected to very high mechanical loads. To ensure that this load does not lead to failures in the measuring system, a safe construction is very important, especially in the shielding and stranding.

The special properties of the chainflex® measuring system cables are:

- Stranding elements **specifically designed for the measuring system** with the necessary element shields and optimised strand pitch lengths
- Core colour code matched to the defined measuring system
- Gusset-filling extruded **inner jacket**
- **Shield structures especially** developed and tested by igus®
- With **pressure extruded outer jackets** for securing the shield and core structure

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 3479 of a measuring system cable of the CF11.D series, with a 75mm test bend radius.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	3479
Cable type	CF11.002.D
Bend radius factor in e-chain®	7.1 x d
Number of bending strokes without damage	66 million

 Details of the test online:  
[www.igus.eu/test3479](http://www.igus.eu/test3479)

 Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Test no.  
3841 online  
Further tests,  
service life,  
product finder &  
shop online



## Test 3841: Servo cable tested for 53 million strokes ...

Servo cables are the standard for drive technology in automation and machine construction. Servo cables are often mechanically constructed in a very unbalanced manner, because of the combination of power cores and shielded pairs.

To ensure that this asymmetry does not lead to failures when in movement in e-chains®, servo cables must have very special design features, especially in long, gliding travels. Due to the ever increasing speed of today's IGBT frequency converters, very low-capacitance insulating materials are usually needed.

The special properties of the chainflex® servo cables are:

- Low-capacitance **insulating materials**
- Short **optimised pitch lengths**, in combination with good sliding materials
- The **signal or brake pairs matched** to the drive type with optimised shielding for the highest EMC protection
- Gusset-filling extruded **inner jacket**
- **High EMC protection** due to optimised overall shield

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 3841 of a CF21 series servo cable with a test bend factor of only 6.1 x d.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)

A test result from the igus® database

Test no.	3841
Cable type	CF21.UL
Bend radius factor in e-chain®	6.1 x d
Number of bending strokes without damage	53 million

 Details of the test online:  
[www.igus.eu/test3841](http://www.igus.eu/test3841)

 Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



Test no.  
4904 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 4904: Motor cable tested for 43 million strokes ...

Motor cables are very common in drive technology for automation as well as in plant and machine construction.

Because of today's high dynamics, the design features of conductors, insulation and in particular the core winding must be chosen in such a way that the cables can safely withstand millions of strokes.

Due to the ever increasing speed of today's IGBT frequency converters, very low-capacitance insulating materials are usually needed.

The special properties of the chainflex® motor cables are:

- Low-capacitance **insulating materials**
- Short optimised **pitch lengths**, in combination with good sliding materials
- In shielded motor cables, the gusset-filled extruded **inner jacket** with optimised shielding for maximum EMC protection
- Gusset-filling extruded **outer jackets** for unshielded types

Every design has to be tested time and again under real-world conditions, in order to be able to calculate a binding guarantee, or show the service life online.

Example of long-term test 4904 of a CF38 series motor cable, with a test bend factor of only 6.5 x d.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)



A test result from the igus® database

Test no. 4904

Cable type CF38

Bend radius factor in e-chain® 6.5 x d

Number of bending strokes without damage 43 million

Details of the test online:  
[www.igus.eu/test4904](http://www.igus.eu/test4904)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Test no.  
3486 online  
Further tests,  
service life,  
product finder &  
shop online

## Test 3486: Robot bus cable tested for 22 million cycles ...

Cables for torsion are subjected to very specific stresses. In the case of shielded bus cables a high mechanical load is exerted by the bending and torsion on the insulation materials and especially on the shield.

This requires completely different structural concepts when compared to cables for linear e-chains application.

The special properties of the chainflex® bus robot cables are:

- Low-capacitance **insulating materials**
- Optimised **pitch lengths**, in combination with force-absorbing filler elements
- Special sliding **films** between the shielded elements
- Pressure extruded **outer jacket**

Every design, no matter how well thought out, should be tested again and again under real conditions so that a binding guarantee or the service life can be calculated online.

Therefore, test standards are also necessary for robotic cables, which test these constructions time and again.

Example for long-term test 3486 of an Ethernet robot cable with 4 shielded Ethernet pairs of the series CFROBOT8, with a test torsion angle of ±180° on one metre.

This is just one example of the numerous cable tests from the chainflex® laboratory. All current tests can be found online at ► [www.igus.eu/tests](http://www.igus.eu/tests)



A test result from the igus® database

Test no. 3486

Cable type CFROBOT8

Torsion angle in e-chain® ±180°/m

Cycle frequency without damage 22 million

Details of the test online:  
[www.igus.eu/test3486](http://www.igus.eu/test3486)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)











# Control cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page	
<b>Control cables</b>										
CF880	PVC		12.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA		3	20	58	
CF881	PVC	✓	12.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA		3	20	62	
CF130.UL	PVC		7.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA		3	2	20	66
CF140.UL	PVC	✓	7.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA		3	2	20	70
CF150.UL	PVC		7.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	3	2	20	74
CF160.UL	PVC	✓	7.5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	3	2	20	78
CF5	PVC		6.8	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	82
CF6	PVC	✓	6.8	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	86
CFSOFT1	PVC		5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	90
CFSOFT2	PVC	✓	5	+5/+70	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	92
CF890	iguPUR		12.5	-20/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	3	20	94	
CF891	iguPUR	✓	12.5	-20/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	3	20	98	
CF77.UL.D	PUR		6.8	-25/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	102
CF78.UL	PUR	✓	6.8	-25/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	106
CF2	PUR	✓	5	-20/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	5	80	110
CF9	TPE		5	-35/+100	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	114
CF10	TPE	✓	5	-35/+100	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	118
CF9.UL	TPE		5	-35/+100	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	122
CF10.UL	TPE	✓	5	-35/+100	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	126
CF98	TPE		4	-35/+90	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	130
CF99	TPE	✓	4	-35/+90	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	132
CF98.PLUS	TPE		3	-35/+90	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	134 <b>New</b>
CF99.PLUS	TPE	✓	3	-35/+90	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓	10	6	100	138 <b>New</b>
<b>Twistable control cables (twistable cables chapter ▶ Page 378 )</b>										
CF77.UL.D	PUR		6.8	+25/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓			384	
CFROBOT2	PUR	✓	10	+25/+80	UL LISTED, CE, NFPA, EN, ENEC, EAC, REACH, RoHS, DZSINA	✓			388	


















chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
<b>Control cables</b>						<b>5 million (1 million) double strokes *</b>		<b>7.5 million (3 million) double strokes *</b>		<b>10 million (5 million) double strokes *</b>		
 CF880	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	58
 CF881	+5 / +15 +15 / +60 +70 / +70	3	-	20	≤ 10	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	62
 CF130.UL	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 50	10 7.5 10	12.5 10 12.5	11 8.5 11	13.5 11 13.5	12 9.5 12	14.5 12 14.5	66
 CF140.UL	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 50	10 7.5 10	12.5 10 12.5	11 8.5 11	13.5 11 13.5	12 9.5 12	14.5 12 14.5	70
 CF150.UL	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 50	10 7.5 10	12.5 10 12.5	11 8.5 11	13.5 11 13.5	12 9.5 12	14.5 12 14.5	74
 CF160.UL	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 50	10 7.5 10	12.5 10 12.5	11 8.5 11	13.5 11 13.5	12 9.5 12	14.5 12 14.5	78
 CF5	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	7.5 6.8 7.5	10 7.5 10	8.5 7.8 8.5	11 8.5 11	9.5 8.8 9.5	12 9.5 12	82
 CF6	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	7.5 6.8 7.5	10 7.5 10	8.5 7.8 8.5	11 8.5 11	9.5 8.8 9.5	12 9.5 12	86
						<b>10 million</b>		<b>15 million</b>		<b>20 million</b>		
 CFSOFT1	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 5	6.8 5 6.8	- - -	7.5 6 7.5	- - -	8.5 7 8.5	- - -	90
 CFSOFT2	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 5	6.8 5 6.8	- - -	7.5 6 7.5	- - -	8.5 7 8.5	- - -	92

<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](http://www.igus.eu/chainflexlife)  
Values in brackets apply to the CF880 and CF881 series





chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
<b>Control cables</b>												
 CF890	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	94
 CF891	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	98
 CF77.UL.D	-25 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	8.5 6.8 7.5	10 7.5 10	9.5 7.5 9.5	11 8.5 11	10.5 8.5 10.5	12 9.5 12	102
 CF78.UL	-25 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	8.5 6.8 7.5	10 7.5 10	9.5 7.5 9.5	11 8.5 11	10.5 8.5 10.5	12 9.5 12	106
 CF2	-20 / -10 -10 / +70 +70 / +80	10	5	80	≤ 100	6.8 5 6.8		7.5 6.8 7.5		8.5 7.5 8.5		110
						5 million		7.5 million		12.5 million		
 CF9	-35 / -25 -25 / +90 +90 / +100	10	6	100	> 400	6.8 5 6.8		7.5 6 7.5		8.5 7 8.5		114
 CF10	-35 / -25 -25 / +90 +90 / +100	10	6	100	> 400	6.8 5 6.8		7.5 6 7.5		8.5 7 8.5		118
						5 million		7.5 million		10 million		
 CF9.UL	-35 / -25 -25 / +90 +90 / +100	10	6	100	> 400	6.8 5 6.8		7.5 6 7.5		10 7 10		122
 CF10.UL	-35 / -25 -25 / +90 +90 / +100	10	6	100	> 400	6.8 5 6.8		7.5 6 7.5		8.5 7 8.5		126
						20 million		30 million		40 million		
 CF98	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	5 4 5		6 5 6		7 6 7		130
 CF99	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	5 4 5		6 5 6		7 6 7		132
						5 million		40 million		100 million		
 CF98.PLUS <b>New!</b>	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	4 3 4		6 5 6		7 6 7		134
 CF99.PLUS <b>New!</b>	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	4 3 4		6 5 6		7 6 7		136

<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](http://www.igus.eu/chainflexlife)  
Values in brackets apply to the CF890 and CF891 series

# Control cable | PVC | chainflex® CF880

- 36** 5,000,000 Double strokes guaranteed
- 12.5 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d minimum 10 x d
	<b>fixed</b>	minimum 7 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound with an optimised pitch length.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Electrical information

<b>Nominal voltage</b>	300/500V 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
Travel distance	1	2	3	4	5	6	7	≥ 400m
Oil resistance	1	2	3	4	highest			
Torsion	1	2	3	4	±360°			

## Class 3.1.1.1

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See datasheet for details ► <a href="http://www.igus.eu/CF880">www.igus.eu/CF880</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

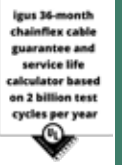
### Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	15	16	17
+15/+60	12.5	13.5	14.5
+60/+70	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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







igus® chainflex® CF880

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]
CF880.05.02	2x0.5	5.0	11	32
CF880.05.03	3G0.5	5.5	16	37
CF880.05.04	4G0.5	6.0	21	46
CF880.05.05	5G0.5	6.5	26	55
CF880.05.07	7G0.5	7.5	37	73
CF880.05.12	12G0.5	8.5	63	108
CF880.05.18	18G0.5	10.0	94	158
CF880.05.25	25G0.5	12.0	128	227
CF880.07.02	2x0.75	5.5	16	40
CF880.07.03	3G0.75	6.0	24	49
CF880.07.04	4G0.75	6.5	32	61
CF880.07.05	5G0.75	7.0	40	73
CF880.07.07	7G0.75	8.0	56	99
CF880.07.12	12G0.75	10.0	94	152
CF880.07.18	18G0.75	11.5	140	167
CF880.07.25	25G0.75	13.5	194	284
CF880.10.02	2x1.0	6.0	21	48
CF880.10.03	3G1.0	6.5	32	58
CF880.10.04	4G1.0	7.0	42	62
CF880.10.05	5G1.0	7.5	52	86
CF880.10.07	7G1.0	8.5	73	116
CF880.10.12	12G1.0	10.5	124	182
CF880.10.18	18G1.0	12.5	186	278
CF880.10.25	25G1.0	15.0	258	393
CF880.15.02	2x1.5	6.5	32	64
CF880.15.03	3G1.5	7.0	47	82
CF880.15.04	4G1.5	7.5	63	104
CF880.15.05	5G1.5	8.5	78	120
CF880.15.07	7G1.5	10.0	109	167
CF880.15.12	12G1.5	12.0	186	260
CF880.15.18	18G1.5	14.5	279	370
CF880.15.25	25G1.5	17.5	387	514

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

### Class 3.1.1.1

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF880.25.03	3G2.5	8.5	78	120
CF880.25.04	4G2.5	9.0	103	150
CF880.25.05	5G2.5	10.0	129	184
CF880.25.07	7G2.5	12.0	181	256
CF880.25.12	12G2.5	15.0	327	414

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/cf-case](http://www.igus.eu/cf-case)



chainflex® CF880 in a short travel application



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





# Control cable | PVC | chainflex® CF881

- 36** 5,000,000 Double strokes guaranteed
- 12.5 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d
	<b>fixed</b>	minimum 10 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s²
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound with an optimised pitch length.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Electrical information

<b>Nominal voltage</b>	300/500V 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.1.1

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF881">www.igus.eu/CF881</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

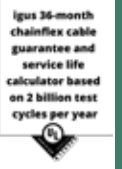
### Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	15	16	17
+15/+60	12.5	13.5	14.5
+60/+70	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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





igus® chainflex® CF881

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]
CF881.05.03	(3G0.5)C	6.0	28	47
CF881.05.04	(4G0.5)C	6.5	35	54
CF881.05.05	(5G0.5)C	7.0	41	65
CF881.05.07	(7G0.5)C	8.0	59	75
CF881.05.12	(12G0.5)C	9.0	91	125
CF881.05.18	(18G0.5)C	11.0	136	177
CF881.05.25	(25G0.5)C	13.0	210	243
CF881.07.02	(2x0.75)C	6.5	30	50
CF881.07.03	(3G0.75)C	7.0	37	66
CF881.07.04	(4G0.75)C	7.5	46	72
CF881.07.05	(5G0.75)C	8.0	61	87
CF881.07.07	(7G0.75)C	9.0	83	112
CF881.07.12	(12G0.75)C	10.5	124	170
CF881.07.18	(18G0.75)C	12.0	183	238
CF881.07.25 <sup>11)</sup>	(25G0.75)C	14.5	222	309
CF881.10.02	(2x1.0)C	6.5	30	52
CF881.10.03	(3G1.0)C	7.0	46	73
CF881.10.04	(4G1.0)C	7.5	63	102
CF881.10.05	(5G1.0)C	8.0	76	110
CF881.10.07	(7G1.0)C	9.5	100	130
CF881.10.12	(12G1.0)C	11.5	167	229
CF881.10.18	(18G1.0)C	13.0	213	281
CF881.10.25	(25G1.0)C	16.0	291	390
CF881.15.02	(2x1.5)C	7.5	60	71
CF881.15.03	(3G1.5)C	7.5	63	87
CF881.15.04	(4G1.5)C	8.5	90	111
CF881.15.05	(5G1.5)C	9.0	94	131
CF881.15.07	(7G1.5)C	11.0	153	183
CF881.15.12	(12G1.5)C	13.0	212	282
CF881.15.18	(18G1.5)C	15.0	399	458
CF881.15.25	(25G1.5)C	18.5	425	573
CF881.25.04	(4G2.5)C	10.0	141	163
CF881.25.05	(5G2.5)C	11.0	149	195
CF881.25.07	(7G2.5)C	13.0	204	262
CF881.25.12 <sup>11)</sup>	(12G2.5)C	16.0	342	428

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

**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

### Class 3.1.1.1

**Order example: CF881.25.25 - to your desired length (0.5m steps)**  
CF881 chainflex® series .25 Code nominal cross section .25 Number of cores

Order online ► [www.igus.eu/CF881](http://www.igus.eu/CF881)

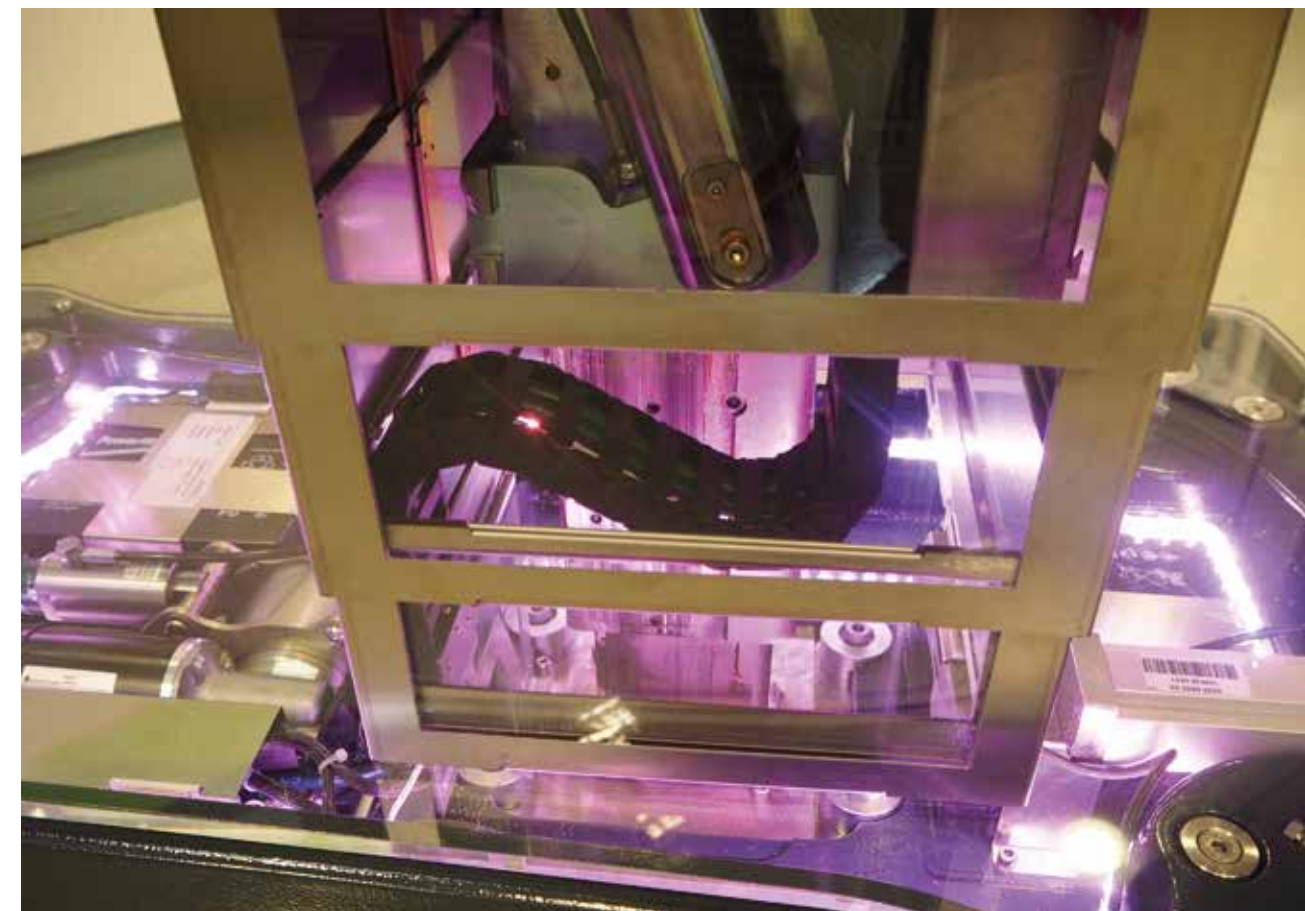
Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



#### 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/cf-case](http://www.igus.eu/cf-case)



chainflex® CF881 in a mobile surgical table





# Control cable | PVC | chainflex® CF130.UL

- 36** 10 million Double strokes guaranteed
- 7.5 x d** Bend radius, e-chain®
- 50m** Travel distance, e-chain®

- For medium duty applications
- PVC outer jacket
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 50m for gliding applications, Class 4
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

## Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.5mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core.
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Silver-grey (similar to RAL 7001)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.1.2

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	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 ► <a href="http://www.igus.eu/CF130UL">www.igus.eu/CF130UL</a>
<b>UL/CSA AWM</b>	
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	12.5	11	13.5	12	14.5
+15/+60	7.5	10	8.5	11	9.5	12
+60/+70	10	12.5	11	13.5	12	14.5

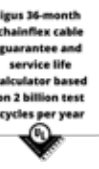
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 50m for gliding applications, Class 4
- Without influence of oil, Class 1
- Torsion ±90°, with 1m cable length, Class 2
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices



chainflex® CF130.UL for woodworking application. e-chain®: E4/light



igus® chainflex® CF130.UL

Example image

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Control cable | PVC | chainflex® CF130.UL

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF130.UL

Example image

## Class 4.4.1.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF130.02.03.UL	3x0.25	5.0	9	26
CF130.02.04.UL	4x0.25	5.5	11	35
CF130.02.06.UL	6x0.25	6.0	16	48
CF130.02.07.UL	7x0.25	6.5	19	56
CF130.02.12.UL	12x0.25	8.5	33	96
CF130.02.18.UL	18x0.25	10.0	46	123
CF130.02.20.UL	20x0.25	10.5	51	145
CF130.02.25.UL	25x0.25	11.5	66	164
CF130.02.30.UL	30x0.25	12.5	75	188
CF130.03.02.UL	2x0.34	5.0	8	27
CF130.03.05.UL	5x0.34	6.0	18	42
CF130.05.02.UL	2x0.5	5.5	11	38
CF130.05.03.UL	3G0.5	5.5	16	40
CF130.05.04.UL	4G0.5	6.0	21	47
CF130.05.05.UL	5G0.5	6.5	26	56
CF130.05.07.UL	7G0.5	7.5	37	76
CF130.05.12.UL	12G0.5	10.0	63	140
CF130.05.18.UL	18G0.5	12.0	94	192
CF130.05.25.UL	25G0.5	13.5	129	259
CF130.07.02.UL	2x0.75	6.0	16	48
CF130.07.03.UL	3G0.75	6.0	23	50
CF130.07.04.UL	4G0.75	6.5	31	60
CF130.07.05.UL	5G0.75	7.0	38	70
CF130.07.07.UL	7G0.75	8.0	54	96
CF130.07.12.UL	12G0.75	11.0	91	175
CF130.07.18.UL	18G0.75	13.5	134	248
CF130.07.25.UL	25G0.75	16.0	186	346
CF130.07.36.UL	36G0.75	19.0	293	531
CF130.07.42.UL	42G0.75	21.0	341	608
CF130.10.02.UL	2x1.0	6.0	21	55
CF130.10.03.UL	3G1.0	6.5	31	61
CF130.10.04.UL	4G1.0	7.0	41	74
CF130.10.05.UL	5G1.0	7.5	50	87
CF130.10.07.UL	7G1.0	9.0	71	118
CF130.10.12.UL	12G1.0	12.5	120	228
CF130.10.18.UL	18G1.0	15.0	179	308
CF130.10.25.UL	25G1.0	17.5	248	410

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.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF130.15.02.UL	2x1.5	6.5	31	71
CF130.15.03.UL	3G1.5	7.0	46	76
CF130.15.04.UL	4G1.5	8.0	61	93
CF130.15.05.UL	5G1.5	8.5	75	111
CF130.15.07.UL <sup>17)</sup>	7G1.5	10.5	105	166
CF130.15.12.UL	12G1.5	13.0	179	288
CF130.15.18.UL	18G1.5	17.0	268	438
CF130.15.25.UL	25G1.5	19.5	371	563
CF130.15.36.UL	36G1.5	23.0	579	887
CF130.25.03.UL	3G2.5	8.5	75	118
CF130.25.04.UL	4G2.5	9.5	100	149
CF130.25.07.UL <sup>17)</sup>	7G2.5	12.0	174	250
CF130.25.12.UL	12G2.5	16.5	297	445
CF130.40.03.UL	3G4.0	10.0	119	209
CF130.40.05.UL	5G4.0	12.0	198	294
CF130.60.04.UL	4G6.0	13.0	237	392
CF130.60.05.UL	5G6.0	14.0	299	471

<sup>17)</sup> When using the cables with "7G1.5mm<sup>2</sup>" and "7G2.5mm<sup>2</sup>" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/cf-case](http://www.igus.eu/cf-case)



Guarantee igus chainflex  
**36**  
up to 36 months guarantee  
igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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# Control cable | PVC | chainflex® CF140.UL

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **50m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 50m for gliding applications, Class 4

## Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.5mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core.
<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Silver-grey (similar to RAL 7001)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF140UL](http://www.igus.eu/CF140UL)

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

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.1.1

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF140UL">www.igus.eu/CF140UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 1. The outer jacket material of this series complies with CF130.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

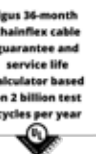
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	12.5	11	13.5	12	14.5
+15/+60	7.5	10	8.5	11	9.5	12
+60/+70	10	12.5	11	13.5	12	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 50m for gliding applications, Class 4
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices



igus® chainflex® CF140.UL

Example image

# Control cable | PVC | chainflex® CF140.UL

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF140.UL

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]
CF140.02.12.UL	(12x0.25)C	10.5	72	133
CF140.03.05.UL	(5x0.34)C	7.5	36	72
CF140.05.03.UL	(3G0.5)C	7.0	33	72
CF140.05.05.UL	(5G0.5)C	8.0	45	91
CF140.05.18.UL	(18G0.5)C	14.5	147	258
CF140.05.36.UL	(36G0.5)C	18.5	258	468
CF140.07.03.UL	(3G0.75)C	8.0	42	85
CF140.07.04.UL	(4G0.75)C	8.5	51	102
CF140.07.05.UL	(5G0.75)C	9.0	61	115
CF140.07.07.UL	(7G0.75)C	10.0	83	152
CF140.07.12.UL	(12G0.75)C	13.0	136	263
CF140.07.18.UL	(18G0.75)C	15.5	194	359
CF140.07.25.UL	(25G0.75)C	18.0	261	479
CF140.10.02.UL	(2x1.0)C	8.0	35	86
CF140.10.03.UL	(3G1.0)C	8.5	51	105
CF140.10.04.UL	(4G1.0)C	9.0	62	118
CF140.10.05.UL	(5G1.0)C	9.5	74	136
CF140.10.07.UL	(7G1.0)C	10.5	104	176
CF140.10.12.UL	(12G1.0)C	14.0	166	300
CF140.10.18.UL	(18G1.0)C	16.5	240	413
CF140.10.25.UL	(25G1.0)C	19.5	325	562
CF140.15.03.UL	(3G1.5)C	9.0	68	126
CF140.15.04.UL	(4G1.5)C	9.5	86	146
CF140.15.05.UL	(5G1.5)C	9.5	108	168
CF140.15.07.UL <sup>17)</sup>	(7G1.5)C	11.5	144	226
CF140.15.12.UL	(12G1.5)C	16.0	233	387
CF140.15.18.UL	(18G1.5)C	19.0	346	463
CF140.15.25.UL	(25G1.5)C	22.5	464	737
CF140.15.36.UL	(36G1.5)C	26.5	663	1150
CF140.25.03.UL	(3G2.5)C	10.5	106	202
CF140.25.04.UL	(4G2.5)C	11.5	140	210

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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

## Class 4.4.1.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



chainflex® CF140.UL in a feeder application. e-chain®: easychain®



### 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/cf-case](http://www.igus.eu/cf-case)



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



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

EPLAN download, configurators ► [www.igus.eu/CF140UL](http://www.igus.eu/CF140UL)



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Control cable | PVC | chainflex® CF150.UL

- 36** 10 million Double strokes guaranteed
- 7.5 x d** Bend radius, e-chain®
- 50m** Travel distance

- For medium duty applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant
- TC-ER (Power and Control Tray Cable)

<b>UL</b> TC-ER UL 1277 MTW UL 1063 WTTC UL 2277 DP-1 UL 1690 AWM 2587	<b>CSA:</b> C(UL) CIC/TC  <b>Specifications:</b> OIL RES I / SUN RES 75°C wet ≥2.5mm² 90°C dry DIR BUR ≥2.5mm²
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### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d
	<b>fixed</b>	minimum 6 x d
	<b>e-chain® linear flexible</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>	<b>gliding</b>	2m/s
<b>Travel distance</b>	Unsupported travels and up to 50m for gliding applications, Class 4	
<b>Torsion</b>	Torsion ±90°, with 1m cable length, Class 2	

### Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality PVC/PA mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1) Colour: jet black (similar to RAL 9005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 600V TC-ER, 1000V WTTC, 600V MTW, 600V AWM
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Class 4.4.2.2

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil resistant (according to DIN EN 50363-4-1), UL Oil Res I, Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame, FT4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
<b>UL listed</b>	TC-ER UL 1277, WTTC UL 2277, MTW UL W63
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF150UL">www.igus.eu/CF150UL</a>
<b>NEC</b>	In accordance with Article 501 Part II 501.10(B) Class I Division 2 and Article 502 Part II 502.10(B), TC-ER cables may be used in Class I and Class II, Division 2 hazardous areas.
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

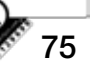
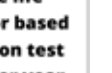
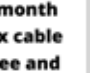
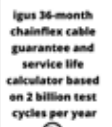
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	12.5	11	13.5	12	14.5
+15/+60	7.5	10	8.5	11	9.5	12
+60/+70	10	12.5	11	13.5	12	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Torsion ±90°, with 1m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, laying of cables on cable trays



Example image

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Control cable | PVC | chainflex® CF150.UL

Strip cables 50% faster with CFRIP® tear strip

## Class 4.4.2.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

igus® chainflex® CF150.UL

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]
CF150.UL.10.03	3G1.0	8.0	30	78
CF150.UL.10.04	4G1.0	8.5	40	94
CF150.UL.10.05	5G1.0	9.0	50	112
CF150.UL.10.07	7G1.0	10.5	70	155
CF150.UL.10.12	12G1.0	15.0	119	281
CF150.UL.10.18	18G1.0	19.0	178	425
CF150.UL.15.03	3G1.5	8.5	45	98
CF150.UL.15.04	4G1.5	9.0	60	122
CF150.UL.15.05	5G1.5	10.0	75	148
CF150.UL.15.07 <sup>17)</sup>	7G1.5	12.0	104	205
CF150.UL.15.12	12G1.5	16.5	178	365
CF150.UL.15.18	18G1.5	21.0	267	529
CF150.UL.25.03	3G2.5	9.5	75	133
CF150.UL.25.04	4G2.5	10.0	100	164
CF150.UL.25.05	5G2.5	11.0	124	200
CF150.UL.25.07 <sup>17)</sup>	7G2.5	12.0	173	268
CF150.UL.25.12	12G2.5	18.5	297	502
CF150.UL.25.18	18G2.5	24.5	445	808

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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

Order example: **CF150.UL.10.03** - to your desired length (0.5m steps)  
CF150.UL chainflex® series .10 Code nominal cross section .03 Number of cores

Order online ► [www.igus.eu/CF150UL](http://www.igus.eu/CF150UL)

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



### 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/cf-case](http://www.igus.eu/cf-case)



## The only MTW/TC-ER cable for e-chain® AND cable tray

- UL**  
TC-ER UL 1277  
MTW UL 1063  
WTTC UL 2277  
DP-1 UL 1690  
AWM 2587

**CSA:**  
C(UL) CIC/TC

**Specifications:**  
OIL RES I / SUN RES  
75°C wet ≥2.5mm²  
90°C dry  
DIR BUR ≥2.5 mm²

\* with guaranteed service life for use in e-chains® according to the guarantee conditions



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

**Guarantee igus chainflex**  
**36**  
up to 36 months guarantee

**Guarantee igus chainflex**  
**36**  
up to 36 months guarantee

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





# Control cable | PVC | chainflex® CF160.UL

- 36** 10 million Double strokes guaranteed
- 7.5 x d** Bend radius, e-chain®
- 50m** Travel distance

- For medium duty applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant
- TC-ER (Power and Control Tray Cable)

<b>UL</b>	<b>CSA:</b>
TC-ER UL 1277	C(UL) CIC/TC
MTW UL 1063	
WTTC UL 2277	<b>Specifications:</b>
DP-1 UL 1690	OIL RES I / SUN RES
AWM 2587	75°C wet ≥ 2.5mm <sup>2</sup>
	90°C dry
	DIR BUR ≥ 2.5mm <sup>2</sup>

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 50m for gliding applications, Class 4

### Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality PVC/PA mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1) Colour: jet black (similar to RAL 9005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 600V TC-ER, 1000V WTTC, 600V MTW, 600V AWM
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF160UL](http://www.igus.eu/CF160UL)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.2.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil resistant (according to DIN EN 50363-4-1), UL Oil Res I, Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame, FT4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
<b>UL listed</b>	TC-ER UL 1277, WTTC UL 2277, MTW UL W63
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF160UL">www.igus.eu/CF160UL</a>
<b>NEC</b>	In accordance with Article 501 Part II 501.10(B) Class I Division 2 and Article 502 Part II 502.10(B), TC-ER cables may be used in Class I and Class II, Division 2 hazardous areas.
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

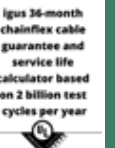
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	12.5	11	13.5	12	14.5
+15/+60	7.5	10	8.5	11	9.5	12
+60/+70	10	12.5	11	13.5	12	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, laying of cables on cable trays



# Control cable | PVC | chainflex® CF160.UL

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF160.UL

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]
CF160.UL.10.03	(3G1.0)C	9.5	53	121
CF160.UL.10.04	(4G1.0)C	10.0	66	143
CF160.UL.10.05	(5G1.0)C	11.0	77	164
CF160.UL.10.07	(7G1.0)C	12.5	107	220
CF160.UL.10.12	(12G1.0)C	18.5	177	389
CF160.UL.10.18	(18G1.0)C	23.5	280	648
CF160.UL.15.03	(3G1.5)C	10.0	72	149
CF160.UL.15.04	(4G1.5)C	11.0	89	175
CF160.UL.15.05	(5G1.5)C	12.0	105	204
CF160.UL.15.07 <sup>17)</sup>	(7G1.5)C	13.5	140	271
CF160.UL.15.12	(12G1.5)C	20.0	243	478
CF160.UL.15.18	(18G1.5)C	25.5	373	762
CF160.UL.25.03	(3G2.5)C	11.0	103	185
CF160.UL.25.04	(4G2.5)C	12.0	129	219
CF160.UL.25.05	(5G2.5)C	13.0	159	264
CF160.UL.25.07 <sup>17)</sup>	(7G2.5)C	14.5	223	361
CF160.UL.25.12	(12G2.5)C	23.5	389	688
CF160.UL.25.18	(18G2.5)C	29.5	573	1092

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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

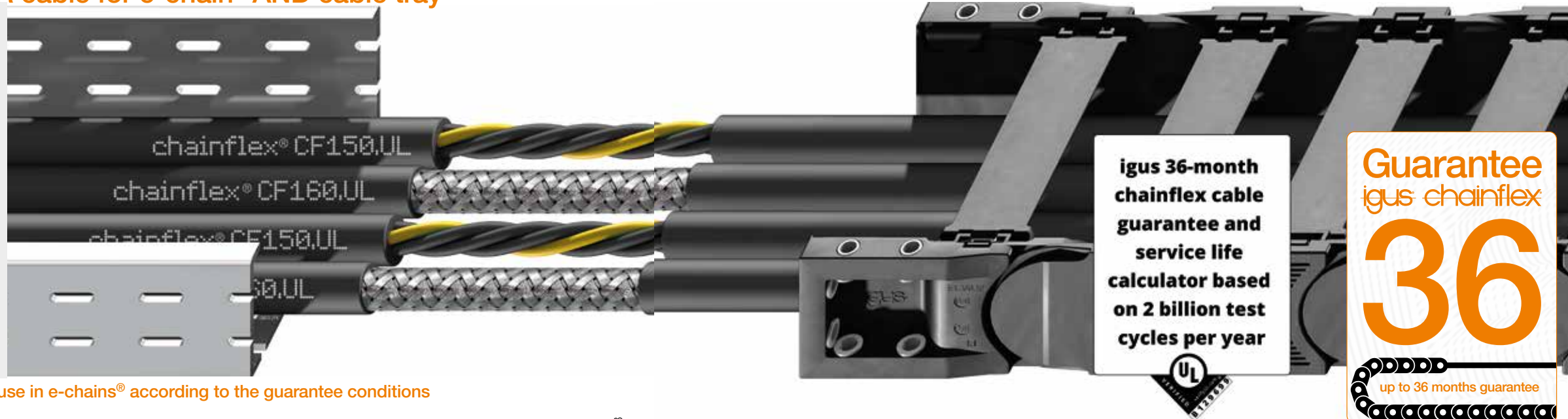
## The only MTW/TC-ER cable for e-chain® AND cable tray

- UL**  
TC-ER UL 1277  
MTW UL 1063  
WTTC UL 2277  
DP-1 UL 1690  
AWM 2587

**CSA:**  
C(UL) CIC/TC

**Specifications:**  
OIL RES I / SUN RES  
75°C wet ≥2.5mm²  
90°C dry  
DIR BUR ≥2.5 mm²

\* with guaranteed service life for use in e-chains® according to the guarantee conditions



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.2.1

**Order example: CF160.UL.10.03 - to your desired length (0.5m steps)**  
CF160.UL chainflex® series .10 Code nominal cross section .03 Number of cores

Order online ► [www.igus.eu/CF160UL](http://www.igus.eu/CF160UL)

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

Guarantee  
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igus 36-month  
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calculator based  
on 2 billion test  
cycles per year

CFRIP

LISTED LISTED

US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UK CA



# Control cable | PVC | chainflex® CF5

**36** 10 million Double strokes guaranteed **6.8 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

- For heavy duty applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 6.8 x d minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

### Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	<b>Cores ≤ 0.5mm<sup>2</sup></b> : mechanically high-quality TPE mixture. <b>Cores ≥ 0.75mm<sup>2</sup></b> : mechanically high-quality PVC mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12</b> : Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12</b> : Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.5mm<sup>2</sup></b> : Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup></b> : Black cores with white numbers, one green-yellow core.
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 600V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.2

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF5">www.igus.eu/CF5</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2, material/cable tested by IPA according to ISO standard 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	7.5	10	8.5	11	9.5	12
+15/+60	6.8	7.5	7.8	8.5	8.8	9.5
+60/+70	7.5	10	8.5	11	9.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

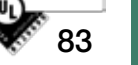
- For heavy-duty applications, Class 5
- Unsupported travels and up to 100m for gliding applications, Class 5
- Light oil influence, Class 2
- Torsion ±90°, with 1m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units, machining units/packaging machines, quick handling, indoor cranes



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



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



igus chainflex® CF5

Example image

EPLAN download, configurators ► [www.igus.eu/CF5](http://www.igus.eu/CF5)

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Control cable | PVC | chainflex® CF5

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF5

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]
CF5.02.36	36x0.25	15.0	99	209
CF5.03.15	15x0.34	11.0	55	113
CF5.03.18	18x0.34	12.0	67	143
CF5.03.25	25x0.34	14.0	92	194
CF5.05.02	2x0.5	6.0	11	38
CF5.05.03	3G0.5	6.0	16	41
CF5.05.04	4G0.5	6.5	21	47
CF5.05.05	5G0.5	7.0	25	59
CF5.05.07	7G0.5	8.0	36	78
CF5.05.12	12G0.5	11.0	61	131
CF5.05.18	18G0.5	13.0	91	190
CF5.05.25	25G0.5	16.0	124	281
CF5.05.30	30G0.5	18.0	149	325
CF5.07.03	3G0.75	6.5	23	54
CF5.07.04	4G0.75	7.0	32	67
CF5.07.05	5G0.75	7.5	39	82
CF5.07.07	7G0.75	9.0	56	115
CF5.07.12	12G0.75	12.5	91	189
CF5.07.18	18G0.75	15.0	134	269
CF5.07.25	25G0.75	17.5	190	384
CF5.07.36	36G0.75	22.0	267	587
CF5.07.42	42G0.75	23.5	313	745
CF5.10.03	3G1.0	6.5	31	56
CF5.10.04	4G1.0	7.0	41	78
CF5.10.05	5G1.0	8.0	50	94
CF5.10.07	7G1.0	9.5	74	130
CF5.10.12	12G1.0	13.0	119	227
CF5.10.18	18G1.0	16.5	179	306
CF5.10.25	25G1.0	19.5	248	487
CF5.15.03	3G1.5	7.5	46	74
CF5.15.04	4G1.5	8.0	61	105
CF5.15.05	5G1.5	9.0	75	127
CF5.15.07 <sup>17)</sup>	7G1.5	10.5	105	180
CF5.15.12	12G1.5	15.0	179	264
CF5.15.18	18G1.5	19.5	267	478
CF5.15.25	25G1.5	21.5	371	645
CF5.15.36	36G1.5	26.5	529	960

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/CF5](http://www.igus.eu/CF5)

## Class 5.5.2.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee  
igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

CFRIP®  
if  
design  
assist  
plus

CE  
LISTED

UL  
US

nec  
MPP

NFPA

CUL  
A

DNV

EAC

REACH

RoHS

clean-room

UL  
CSA

CE

UK  
CA

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF5.25.04	4G2.5	10.0	96	170
CF5.25.05	5G2.5	11.0	120	200
CF5.25.07 <sup>17)</sup>	7G2.5	13.0	169	279
CF5.25.12	12G2.5	18.5	284	480
CF5.25.18	18G2.5	23.5	427	765
CF5.25.25	25G2.5	27.5	591	1054

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/cf-case](http://www.igus.eu/cf-case)



chainflex® CF5/CF6 for storage retrieval unit: Long travel in longitudinal axis.  
e-chain®: Series E4/00 with igus® guide trough made of steel

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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



# Control cable | PVC | chainflex® CF6

**36** 10 million Double strokes guaranteed **6.8 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

## Dynamic information

Bend radius	<b>e-chain® linear flexible</b>	minimum 6.8 x d minimum 5 x d
	<b>fixed</b>	minimum 4 x d
Temperature	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
a max.		80m/s <sup>2</sup>
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

Conductor	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
Core insulation	<b>Cores ≤ 0.5mm<sup>2</sup></b> : mechanically high-quality TPE mixture. <b>Cores ≥ 0.75mm<sup>2</sup></b> : mechanically high-quality PVC mixture.
Core structure	<b>Number of cores &lt; 12</b> : Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12</b> : Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
Core identification	<b>Cores &lt; 0.5mm<sup>2</sup></b> : Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup></b> : Black cores with white numbers, one green-yellow core.
Inner jacket	PVC 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, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

Nominal voltage	300/500V (following DIN VDE 0298-3) 600V (following UL)
Testing voltage	2,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF6](http://www.igus.eu/CF6)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
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 1992)
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 ► <a href="http://www.igus.eu/CF">www.igus.eu/CF</a>
NFPA	Following NFPA 79-2018, chapter 12.9
EAC	Certificate No. RU C-DE.ME77.B.00300/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU
CE	
UKCA	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		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	7.5	10	8.5	11	9.5	12
+15/+60	6.8	7.5	7.8	8.5	8.8	9.5
+60/+70	7.5	10	8.5	11	9.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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/packages machines, quick handling, indoor cranes



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

UL

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



# Control cable | PVC | chainflex® CF6

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF6

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]
CF6.02.04	(4x0.25)C	7.0	29	61
CF6.02.25	(25x0.25)C	14.5	111	260
CF6.03.05	(5x0.34)C	7.5	37	90
CF6.05.02	(2x0.5)C	7.0	30	77
CF6.05.05	(5G0.5)C	8.5	49	106
CF6.05.07	(7G0.5)C	10.0	64	127
CF6.05.09	(9G0.5)C	12.0	80	154
CF6.05.12	(12G0.5)C	13.0	98	232
CF6.05.18	(18G0.5)C	15.0	145	286
CF6.05.25	(25G0.5)C	17.5	192	399
CF6.07.03	(3G0.75)C	8.0	46	98
CF6.07.04	(4G0.75)C	8.5	56	113
CF6.07.05	(5G0.75)C	9.0	67	128
CF6.07.07	(7G0.75)C	10.5	87	152
CF6.07.12	(12G0.75)C	14.0	128	266
CF6.07.18	(18G0.75)C	17.5	196	400
CF6.07.25	(25G0.75)C	19.5	265	536
CF6.10.03	(3G1.0)C	8.0	54	107
CF6.10.04	(4G1.0)C	9.0	65	116
CF6.10.05	(5G1.0)C	9.5	77	136
CF6.10.07	(7G1.0)C	12.0	103	205
CF6.10.12	(12G1.0)C	15.0	161	319
CF6.10.18	(18G1.0)C	19.0	245	482
CF6.10.25	(25G1.0)C	21.0	322	595
CF6.15.03	(3G1.5)C	9.0	72	122
CF6.15.04	(4G1.5)C	9.5	88	155
CF6.15.05	(5G1.5)C	10.5	105	177
CF6.15.07 <sup>17)</sup>	(7G1.5)C	12.5	146	258
CF6.15.12	(12G1.5)C	17.0	225	375
CF6.15.18	(18G1.5)C	21.0	345	581
CF6.15.25	(25G1.5)C	24.0	462	865
CF6.25.03	(3G2.5)C	10.5	107	180
CF6.25.04	(4G2.5)C	11.5	131	222

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/CF6](http://www.igus.eu/CF6)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

Order example: **CF6.02.04** - to your desired length (0.5m steps)  
CF6 chainflex® series .02 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF6](http://www.igus.eu/CF6)

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



chainflex® CF5 and CF6 control cables (green) as well as CF211 measuring system cables (grey) in a screwing station of a car factory. e-chain®: E4/00 system with chainfix clip strain relief devices.



### 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/cf-case](http://www.igus.eu/cf-case)



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



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





# Control cable | PVC | chainflex® CFSOFT1

**36** 20 million Double strokes guaranteed **5 x d** Bend radius, e-chain® **5m** Travel distance, e-chain®

- For heaviest duty applications and very small radii down to 5 x d
- Highly flexible, soft design
- PVC outer jacket
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
	<b>e-chain® linear flexible</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Short, very fast applications with small radii and restricted installation space, Class 1	

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: jet black (similar to RAL 9005)

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.1.2.1

- UL verified
- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- CE
- UKCA

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/CFSOFT1](http://www.igus.eu/CFSOFT1)

Following NFPA 79-2018, chapter 12.9

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

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

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

According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1  
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*	10 million	15 million	20 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	6.8	7.5	8.5
+15/+60	5	6	7
+60/+70	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications and very small radii down to 5 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 1
- Light oil influence, Class 2
- No torsion, Class 1
- Especially soft cable design, for reduced forces
- Pick and place machines, automatic doors, cleanroom, very quick handling

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFSOFT1.02.03	3x0.25	5.5	9	28
CFSOFT1.02.08	8x0.25	7.0	21	62
CFSOFT1.03.04	4x0.34	6.0	15	39
CFSOFT1.05.04	4x0.5	7.0	21	52

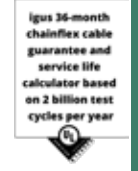
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



## 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/cf-case](http://www.igus.eu/cf-case)



Example image

igus® chainflex® CFSOFT1

# Control cable | PVC | chainflex® CFSOFT2

**36** 20 million  
Double strokes guaranteed

**5 x d**  
Bend radius, e-chain®

**5m**  
Travel distance, e-chain®

- For heaviest duty applications and very small radii down to 5 x d
- Highly flexible, soft design
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d minimum 4 x d
	<b>fixed</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space, Class 1

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
<b>Core identification</b>	<b>Cores &lt; 0.75mm<sup>2</sup></b> : Colour code in accordance with DIN 47100. <b>Cores ≥ 0.75mm<sup>2</sup></b> : Black cores with white numbers, one green-yellow core.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: jet black (similar to RAL 9005)

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2

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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.1.2.1

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	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 ► <a href="http://www.igus.eu/CFSOFT2">www.igus.eu/CFSOFT2</a>
<b>UL/CSA AWM</b>	
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	10 million	15 million	20 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	6.8	7.5	8.5
+15/+60	5	6	7
+60/+70	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications and very small radii down to 5 x d, Class 7
- Especially for short, very fast applications with small radii and restricted installation space, Class 1
- Light oil influence, Class 2
- No torsion, Class 1
- Especially soft cable design, for reduced forces
- Pick and place machines, automatic doors, cleanroom, very quick handling

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]
CFSOFT2.02.03	(3x0.25)C	6.0	17	41
CFSOFT2.02.08	(8x0.25)C	7.5	38	86
CFSOFT2.03.04	(4x0.34)C	6.5	24	50
CFSOFT2.05.04	(4x0.5)C	7.5	36	80

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



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





# Control cable | iguPUR | chainflex® CF890




**36** 5,000,000  
Double strokes guaranteed

**12.5 x d**  
Bend radius, e-chain®






**10m**  
Travel distance, e-chain®

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



## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 12.5 x d
	<b>flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 7 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	-20°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	3m/s
 <b>a max.</b>		20m/s²
 <b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

 <b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	Cores wound with an optimised pitch length.
 <b>Core identification</b>	Black cores with white numbers, one green-yellow core.
 <b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Electrical information












 <b>Nominal voltage</b>	300/500V 600V (following UL)
 <b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

### Properties and approvals

 <b>UV resistance</b>	Medium
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF890">www.igus.eu/CF890</a>
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 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/+70	12.5	13.5	14.5
+70/+80	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially 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



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



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





igus® chainflex® CF890

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]
CF890.05.02	2x0.5	5.0	11	30
CF890.05.03	3G0.5	5.5	16	34
CF890.05.04	4G0.5	6.0	21	44
CF890.05.05	5G0.5	6.5	26	53
CF890.05.07	7G0.5	7.5	37	70
CF890.05.12	12G0.5	8.5	63	105
CF890.05.18	18G0.5	10.0	94	155
CF890.05.25	25G0.5	12.0	128	222
CF890.07.02	2x0.75	5.5	16	38
CF890.07.03	3G0.75	6.0	24	46
CF890.07.04	4G0.75	6.5	32	58
CF890.07.05	5G0.75	7.0	40	71
CF890.07.07	7G0.75	8.0	56	96
CF890.07.12	12G0.75	10.0	94	146
CF890.07.18	18G0.75	11.5	140	162
CF890.07.25	25G0.75	13.5	194	278
CF890.10.02	2x1.0	6.0	21	46
CF890.10.03	3G1.0	6.5	32	56
CF890.10.04	4G1.0	7.0	42	58
CF890.10.05	5G1.0	7.5	52	89
CF890.10.07	7G1.0	8.5	73	117
CF890.10.12	12G1.0	10.5	124	178
CF890.10.18	18G1.0	12.5	186	273
CF890.10.25	25G1.0	15.0	258	375
CF890.15.02	2x1.5	6.5	32	62
CF890.15.03	3G1.5	7.0	47	76
CF890.15.04	4G1.5	7.5	63	97
CF890.15.05	5G1.5	8.5	78	117
CF890.15.07	7G1.5	10.0	109	163
CF890.15.12	12G1.5	12.0	186	256
CF890.15.18	18G1.5	14.5	279	362
CF890.15.25	25G1.5	17.5	387	502
CF890.25.03	3G2.5	8.5	118	136
CF890.25.04	4G2.5	9.0	103	145
CF890.25.05	5G2.5	10.0	129	175
CF890.25.07	7G2.5	12.0	181	246
CF890.25.12 <sup>11)</sup>	12G2.5	15.0	327	408
CF890.25.25	25G2.5	21.5	638	786

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

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/CF890](http://www.igus.eu/CF890)

Order example: **CF890.05.02** - to your desired length (0.5m steps)  
CF890 chainflex® series .05 Code nominal cross section .02 Number of cores

Order online ► [www.igus.eu/CF890](http://www.igus.eu/CF890)

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



**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/cf-case](http://www.igus.eu/cf-case)



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



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



# Control cable | iguPUR | chainflex® CF891

**36** 5,000,000 Double strokes guaranteed **12.5 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

### Dynamic information

Bend radius	<b>e-chain® linear flexible</b>	minimum 12.5 x d minimum 10 x d
	<b>fixed</b>	minimum 7 x d
Temperature	<b>e-chain® linear flexible</b>	-20°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
v max.	<b>unsupported</b>	3m/s
a max.		20m/s²
Travel distance		Unsupported travels up to 10m, Class 1

### Cable structure

Conductor	Conductor consisting of bare copper wires (according to DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	Cores wound with an optimised pitch length.
Core identification	Black cores with white numbers, one green-yellow core.
Overall shield	Braiding made of tinned copper wires. Coverage approx. 60% optical
Outer jacket	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

### Electrical information

Nominal voltage	300/500V 600V (following UL)
Testing voltage	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
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 1992)
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 ► <a href="http://www.igus.eu/CF891">www.igus.eu/CF891</a>
EAC	Certificate No. RU C-DE.ME77.B.00300/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UK CA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 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/+70	12.5	13.5	14.5
+70/+80	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially 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



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



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





igu® chainflex® CF891

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]
CF891.05.02	(2x0.5)C	6.0	18	37
CF891.05.03	(3G0.5)C	6.0	28	45
CF891.05.05	(5G0.5)C	7.0	41	62
CF891.05.12	(12G0.5)C	9.0	91	122
CF891.05.18	(18G0.5)C	11.0	136	174
CF891.05.25	(25G0.5)C	13.0	210	234
CF891.07.02	(2x0.75)C	6.5	30	48
CF891.07.03	(3G0.75)C	7.0	37	63
CF891.07.04	(4G0.75)C	7.5	46	68
CF891.07.05	(5G0.75)C	8.0	61	85
CF891.07.07	(7G0.75)C	9.0	83	109
CF891.07.12	(12G0.75)C	10.5	124	166
CF891.07.18	(18G0.75)C	12.0	183	232
CF891.07.25	(25G0.75)C	14.5	222	299
CF891.10.02	(2x1.0)C	6.5	30	50
CF891.10.03	(3G1.0)C	7.0	46	71
CF891.10.04	(4G1.0)C	7.5	63	98
CF891.10.05	(5G1.0)C	8.0	76	105
CF891.10.07	(7G1.0)C	9.5	100	126
CF891.10.12	(12G1.0)C	11.5	167	224
CF891.10.18 <sup>11)</sup>	(18G1.0)C	13.0	213	276
CF891.10.25	(25G1.0)C	16.0	291	382
CF891.15.02	(2x1.5)C	7.5	60	69
CF891.15.03	(3G1.5)C	7.5	63	85
CF891.15.04	(4G1.5)C	8.5	90	108
CF891.15.05	(5G1.5)C	9.0	94	129
CF891.15.07	(7G1.5)C	11.0	153	177
CF891.15.12	(12G1.5)C	13.0	212	276
CF891.15.25 <sup>11)</sup>	(25G1.5)C	18.5	425	560
CF891.25.04	(4G2.5)C	10.0	141	157
CF891.25.05	(5G2.5)C	11.0	149	192
CF891.25.07	(7G2.5)C	13.0	204	255

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

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

### Class 3.1.3.1

Order example: **CF891.05.02** - to your desired length (0.5m steps)  
CF891 chainflex® series .05 Code nominal cross section .02 Number of cores

Order online ► [www.igus.eu/CF891](http://www.igus.eu/CF891)

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



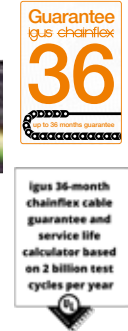
#### Cables available in the chainflex® CASE

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/cf-case](http://www.igus.eu/cf-case)



chainflex® CF891 in an adjustment device for a process crane





# Control cable | PUR | chainflex® CF77.UL.D

**36** 10 million Double strokes guaranteed **6.8 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 6.8 x d minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s 80m/s²
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3 (except for 5-core types ≥ 4.0mm² ▶ <a href="#">Product range table</a> )	

### Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.5mm²:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm²:</b> Black cores with white numbers, one green-yellow core. <b>CF77.UL.02.03.INI:</b> brown, blue, black <b>CF77.UL.03.04.INI:</b> brown, blue, black, white <b>CF77.UL.03.05.INI:</b> brown, blue, black, white, green-yellow
<b>Outer jacket</b>	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) Variants ▶ <a href="#">Product range table</a>

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Number of cores &lt; 12:</b> <b>Cores &lt; 0.5mm²:</b> 300V (following UL) <b>Cores ≥ 0.5mm²:</b> 1000V (following UL) <b>Number of cores ≥ 12:</b> 1000V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ▶ <a href="http://www.igus.eu/CF77ULD">www.igus.eu/CF77ULD</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X1
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	8.5	10	9.5	11	10.5	12
-15/+70	6.8	7.5	7.5	8.5	8.5	9.5
+70/+80	8.5	10	9.5	11	10.5	12

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://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
- Torsion ±180°, with 1m cable length, Class 3
- 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 service life calculator based on 2 billion test cycles per year



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CF77.UL.02.03.INI <sup>12)</sup>	3x0.25	5.0	9	29
CF77.UL.02.04.D	4x0.25	5.5	11	35
CF77.UL.02.05.D	5x0.25	6.0	13	39
CF77.UL.02.07.D	7x0.25	6.5	18	51
CF77.UL.02.12.D	12x0.25	9.0	32	78
CF77.UL.02.18.D	18x0.25	10.5	47	127
CF77.UL.02.25.D	25x0.25	11.5	63	155
CF77.UL.03.04.INI <sup>12)</sup>	4x0.34	6.0	14	37
CF77.UL.03.05.INI <sup>12)</sup>	5x0.34	6.0	18	36
CF77.UL.03.05.INI.D	5x0.34	6.0	18	36
CF77.UL.05.04.D	4G0.5	6.0	21	46
CF77.UL.05.05.D	5G0.5	6.5	26	53
CF77.UL.05.07.D	7G0.5	7.5	39	78
CF77.UL.05.12.D	12G0.5	10.0	63	130
CF77.UL.05.18.D	18G0.5	12.0	94	184
CF77.UL.05.25.D	25G0.5	14.0	129	243
CF77.UL.05.30.D	30G0.5	15.0	155	315
CF77.UL.07.03.D	3G0.75	6.5	23	52
CF77.UL.07.04.D	4G0.75	7.0	31	59
CF77.UL.07.05.D	5G0.75	7.5	38	71
CF77.UL.07.07.D	7G0.75	8.5	54	100
CF77.UL.07.12.D	12G0.75	12.0	91	180
CF77.UL.07.18.D	18G0.75	13.5	134	239
CF77.UL.07.20.D	20G0.75	14.5	149	269
CF77.UL.07.25.D	25G0.75	16.0	186	336
CF77.UL.07.36.D	36G0.75	19.0	279	506
CF77.UL.07.42.D	42G0.75	21.0	341	580
CF77.UL.10.02.D	2x1.0	6.5	21	51
CF77.UL.10.03.D	3G1.0	6.5	31	58
CF77.UL.10.04.D	4G1.0	7.0	41	73
CF77.UL.10.05.D	5G1.0	8.0	50	90
CF77.UL.10.07.D	7G1.0	9.0	71	120
CF77.UL.10.12.D	12G1.0	12.5	120	220
CF77.UL.10.18.D	18G1.0	15.0	179	314
CF77.UL.10.25.D	25G1.0	17.5	248	431
CF77.UL.10.42.D	42G1.0	22.5	433	699

<sup>12)</sup> Colour outer jacket: Colza yellow (similar to RAL 1021)

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

Class 5.5.2.1

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF77.UL.15.03.D	3G1.5	7.0	46	71
CF77.UL.15.04.D	4G1.5	7.5	61	88
CF77.UL.15.05.D	5G1.5	8.0	75	105
CF77.UL.15.07.D <sup>17)</sup>	7G1.5	9.5	105	152
CF77.UL.15.12.D	12G1.5	13.0	179	297
CF77.UL.15.18.D	18G1.5	17.0	268	405
CF77.UL.15.25.D	25G1.5	19.5	297	564
CF77.UL.15.36.D	36G1.5	23.5	551	848
CF77.UL.25.03.D	3G2.5	8.5	75	132
CF77.UL.25.04.D	4G2.5	9.5	95	167
CF77.UL.25.05.D	5G2.5	10.0	124	196
CF77.UL.25.07.D <sup>17)</sup>	7G2.5	12.0	174	270
CF77.UL.25.12.D	12G2.5	17.0	297	479
CF77.UL.40.04.D <sup>90)</sup>	4G4.0	11.5	165	245
CF77.UL.40.05.D <sup>90)</sup>	5G4.0	12.0	198	284
CF77.UL.60.05.D <sup>90)</sup>	5G6.0	13.5	297	412

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.  
<sup>90)</sup> Torsion ± 90°

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/cf-case](http://www.igus.eu/cf-case)



Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

CE LISTED

UL US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

DESINA

CE

UK CA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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



# Control cable | PUR | chainflex® CF78.UL

- 36** 10 million Double strokes guaranteed
- 6.8 x d** Bend radius, e-chain®
- 100m** Travel distance, e-chain®

- For heavy 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

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 6.8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	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)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Number of cores &lt; 12:</b> <b>Cores &lt; 0.5mm²:</b> 300V (following UL) <b>Cores ≥ 0.5mm²:</b> 1000V (following UL) <b>Number of cores ≥ 12:</b> 1000V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Example image

igus® chainflex® CF78.UL

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF78UL">www.igus.eu/CF78UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X1
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

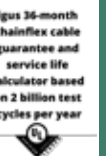
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	8.5	10	9.5	11	10.5	12
-15/+70	6.8	7.5	7.5	8.5	8.5	9.5
+70/+80	8.5	10	9.5	11	10.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- 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



UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Control cable | PUR | chainflex® CF78.UL

Strip cables 50% faster with CFRIP® tear strip



igus® chainflex® CF78.UL

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]
CF78.UL.05.04	(4G0.5)C	8.0	38	77
CF78.UL.05.05	(5G0.5)C	8.0	45	91
CF78.UL.05.07	(7G0.5)C	9.5	59	115
CF78.UL.05.09	(9G0.5)C	11.0	77	143
CF78.UL.05.12	(12G0.5)C	12.5	92	202
CF78.UL.05.18	(18G0.5)C	14.5	146	248
CF78.UL.05.25	(25G0.5)C	16.0	168	354
CF78.UL.07.03	(3G0.75)C	8.0	42	79
CF78.UL.07.04	(4G0.75)C	8.5	49	96
CF78.UL.07.05	(5G0.75)C	9.5	61	112
CF78.UL.07.07	(7G0.75)C	10.5	83	151
CF78.UL.07.12	(12G0.75)C	13.5	136	249
CF78.UL.07.18	(18G0.75)C	15.5	194	354
CF78.UL.07.36	(36G0.75)C	22.0	390	702
CF78.UL.10.03	(3G1.0)C	8.5	50	96
CF78.UL.10.04	(4G1.0)C	9.0	62	112
CF78.UL.10.05	(5G1.0)C	9.5	74	129
CF78.UL.10.07	(7G1.0)C	11.0	104	176
CF78.UL.10.12	(12G1.0)C	14.5	166	300
CF78.UL.10.18	(18G1.0)C	17.0	240	407
CF78.UL.10.25	(25G1.0)C	20.0	325	545
CF78.UL.15.03	(3G1.5)C	9.5	68	122
CF78.UL.15.04	(4G1.5)C	10.0	86	145
CF78.UL.15.05	(5G1.5)C	9.5	108	159
CF78.UL.15.07 <sup>17)</sup>	(7G1.5)C	11.5	144	217
CF78.UL.15.12	(12G1.5)C	16.0	233	387
CF78.UL.15.18	(18G1.5)C	19.0	346	541
CF78.UL.15.25	(25G1.5)C	22.5	464	724
CF78.UL.15.36	(36G1.5)C	26.5	663	1095
CF78.UL.15.42	(42G1.5)C	29.5	820	1296
CF78.UL.25.03	(3G2.5)C	10.0	106	174
CF78.UL.25.04	(4G2.5)C	11.5	140	203
CF78.UL.25.05	(5G2.5)C	12.0	166	235
CF78.UL.25.07 <sup>17)</sup>	(7G2.5)C	14.5	230	334
CF78.UL.25.12	(12G2.5)C	19.0	382	585
CF78.UL.40.04	(4G4.0)C	13.0	203	328

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/CF78UL](http://www.igus.eu/CF78UL)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.3.1

Order example: **CF78.UL.05.04** - to your desired length (0.5m steps)  
CF78.UL chainflex® series .05 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF78UL](http://www.igus.eu/CF78UL)

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



### 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/cf-case](http://www.igus.eu/cf-case)



### cost down...



...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF6 ...



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



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





# Control cable | PUR | chainflex® CF2

**36** 10 million  
Double strokes guaranteed

**5 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®

- For extremely heavy duty applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
	<b>e-chain® linear flexible</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Example image

EPLAN download, configurators ► [www.igus.eu/CF2](http://www.igus.eu/CF2)

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.5.3.1

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF2">www.igus.eu/CF2</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UK UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

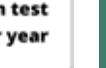
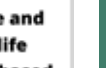
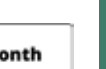
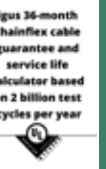
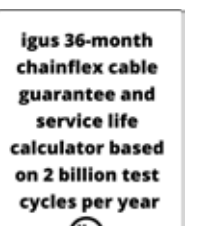
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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	6.8	7.5	8.5
-10/+70	5	6.8	7.5
+70/+80	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- 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
- Storage and retrieval units, machining units/packaging machines, quick handling, indoor cranes, refrigeration sector





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]
CF2.01.04	(4x0.14)C	6.5	18	49
CF2.01.08	(8x0.14)C	7.5	31	66
CF2.01.12	(12x0.14)C	9.5	51	102
CF2.01.18	(18x0.14)C	10.5	56	135
CF2.01.24 <sup>3)</sup>	(24x0.14)C	11.5	68	162
CF2.01.36	(36x0.14)C	14.5	92	240
CF2.02.04	(4x0.25)C	7.0	25	59
CF2.02.08	(8x0.25)C	8.0	43	84
CF2.02.18	(18x0.25)C	12.0	100	173
CF2.02.48	(48x0.25)C	17.5	191	387

The chainflex® types marked with a <sup>3)</sup> refer to cables that are based on a bundling of 4 cores each. Due to their excellent electrical properties (starquad with especially minimum crosstalk), these cables can virtually be used in all cases in which otherwise twisted-pair cables are required.

**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

**Order example: CF2.01.04 - to your desired length (0.5m steps)**  
CF2 chainflex® series .01 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF2](http://www.igus.eu/CF2)

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



**Cables available in the chainflex® CASE**

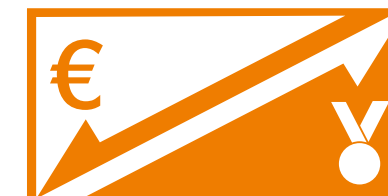
Simple savings on delivery, storage space and re-ordering with the chainflex® CASE - ship'n store by igus®.

More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



chainflex® CF2 cables are resistant to oil and coolants. e-chain®: E4/00 system.

cost down...



...life up

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

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



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



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



# Control cable | TPE | chainflex® CF9

36

12.5 million  
Double strokes guaranteed



5 x d  
Bend radius, e-chain®



400m  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

Now available  
with UL approval  
& 25% longer  
service life

## Dynamic information

Bend radius	e-chain® linear	minimum 5 x d
	flexible	minimum 4 x d
	fixed	minimum 3 x d
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 for gliding applications, Class 6
Torsion		Torsion ±90°, with 1m cable length, Class 2

## 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	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
Core identification	<b>Cores &lt; 0.75mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.75mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core. <b>CF9.02.03.INI:</b> brown, blue, black <b>CF9.03.04.INI:</b> brown, blue, black, white <b>CF9.03.05.INI:</b> brown, blue, black, white, green-yellow <b>CF9.03.16.07.03.INI:</b> <b>0.34mm<sup>2</sup>:</b> violet/red/grey/red-blue, green/grey-pink/white-green/white-yellow, white-grey/black/yellow-brown/brown-green, white/yellow/pink/grey-brown <b>0.75mm<sup>2</sup>:</b> blue/green-yellow/brown
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)
CFRIP®	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

EPLAN download, configurators ► [www.igus.eu/CF9](http://www.igus.eu/CF9)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.6.4.2

### Electrical information

Nominal voltage	300/500V (following DIN VDE 0298-3) <b>Cores &lt; 0.5mm<sup>2</sup>:</b> 300V (following UL) <b>Cores ≥ 0.5mm<sup>2</sup>:</b> 1000V (following UL)
Testing voltage	2,000V (following DIN EN 50395)

### 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 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 AWM	See data sheet for details ► <a href="http://www.igus.eu/CF9">www.igus.eu/CF9</a> (from production date 01/2022)
EAC	Certificate No. RU C-DE.ME77.B.00300/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1 Following 2014/35/EU
CE	
UKCA	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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	6.8	7.5	8.5
-25/+90	5	6	7
+90/+100	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- 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
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Guarantee  
igus chainflex  
36  
up to 36 months guarantee

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

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

UL  
LISTED

RU

UL  
AWM

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL  
LISTED

CE

UK  
CA

Guarantee  
igus chainflex  
36  
up to 36 months guarantee

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

UL  
LISTED

# Control cable | TPE | chainflex® CF9

Strip cables 50% faster with CFRIP® tear strip

igus chainflex CF9

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]
CF9.02.02	2x0.25	4.5	5	18
CF9.02.03.INI	3x0.25	4.5	8	22
CF9.02.06	6x0.25	5.5	15	36
CF9.02.07	7x0.25	6.5	18	43
CF9.02.08	8x0.25	6.5	20	49
CF9.02.12	12x0.25	8.0	30	71
CF9.02.18	18x0.25	9.0	45	100
CF9.02.20	20x0.25	9.5	50	113
CF9.02.25	25x0.25	10.5	63	138
CF9.03.04.INI	4x0.34	5.0	14	31
CF9.03.05.INI	5x0.34	5.5	17	36
CF9.03.06	6x0.34	6.0	21	43
CF9.03.08	8x0.34	7.0	28	57
CF9.03.16.07.03.INI	16x0.34+3x0.75	11	77	152
CF9.05.02	2x0.5	5.0	10	28
CF9.05.03	3x0.5	5.5	15	34
CF9.05.04	4x0.5	6.0	20	41
CF9.05.05	5x0.5	6.5	25	50
CF9.05.07	7x0.5	7.5	35	69
CF9.05.12	12x0.5	10.0	60	123
CF9.05.18	18x0.5	11.5	90	179
CF9.05.25	25x0.5	13.5	124	240
CF9.05.36	36x0.5	16.5	178	345
CF9.07.04	4G0.75	6.5	30	56
CF9.07.05	5G0.75	7.0	38	69
CF9.07.07	7G0.75	8.0	53	94
CF9.07.12	12G0.75	11.0	90	176
CF9.07.20	20G0.75	13.5	149	270
CF9.07.25	25G0.75	15	186	330
CF9.10.03	3G1.0	6.0	30	54
CF9.10.04	4G1.0	6.5	40	68
CF9.10.05	5G1.0	7.5	50	84
CF9.10.12	12G1.0	12.0	120	212
CF9.10.18	18G1.0	14.0	179	303
CF9.10.25	25G1.0	16.5	248	417

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

## Class 7.6.4.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

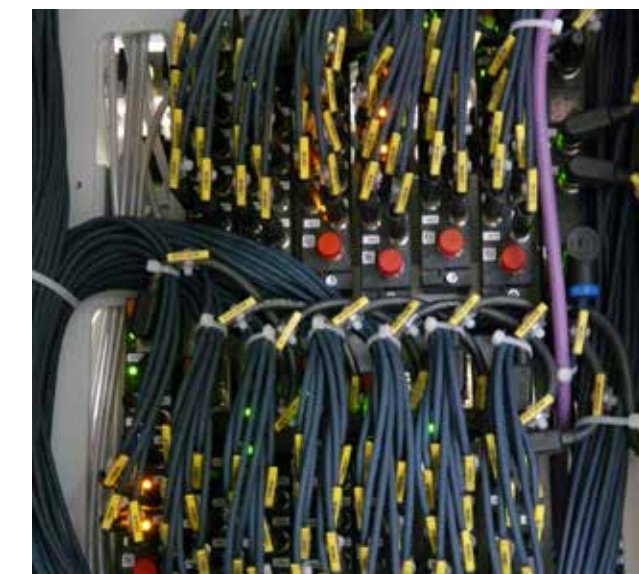
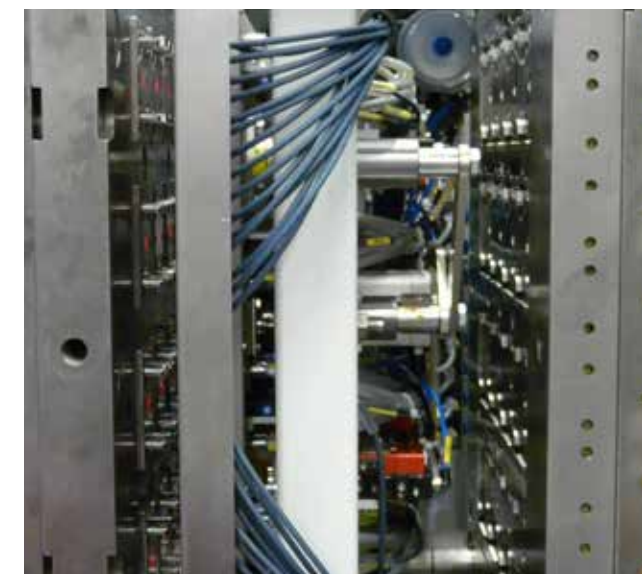
low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF9.15.02	2x1.5	6.5	30	55
CF9.15.04	4G1.5	7.5	60	90
CF9.15.05	5G1.5	8.0	75	111
CF9.15.07 <sup>17)</sup>	7G1.5	9.5	104	159
CF9.15.12	12G1.5	13.0	178	280
CF9.15.18	18G1.5	16.0	267	412
CF9.15.25	25G1.5	19.0	371	585
CF9.15.36	36G1.5	22.5	534	816
CF9.25.04	4G2.5	9.0	100	144
CF9.25.05	5G2.5	9.5	124	176
CF9.25.07 <sup>17)</sup>	7G2.5	12.0	174	253
CF9.25.12	12G2.5	17.0	297	465
CF9.25.16	16G2.5	19.0	396	616
CF9.25.18 <sup>7)</sup>	18G2.5	22.5	445	795
CF9.25.25	25G2.5	23.0	612	926
CF9.40.04	4G4.0	10.5	159	212
CF9.60.04	4G6.0	12.0	238	308
CF9.60.05	5G6.0	13.0	297	378
CF9.100.04	4G10	16.5	396	550
CF9.160.04	4G16	20.5	633	843

<sup>7)</sup> Nominal voltage 600/1000V

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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



chainflex® CF9 INI cables in a high-performance system for plastics processing with cycle times in seconds. e-chain® E6 series. (Source: Hekuma)

Guarantee  
igus chainflex  
**36**  
months

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

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NFPA

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EAC

REACH

RoHS

clean-room

UL

CE

UK  
CA



# Control cable | TPE | chainflex® CF10



**12.5 million**  
Double strokes guaranteed



**5 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

**Now available  
with UL approval  
& 25% longer  
service life**

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
	<b>e-chain® linear flexible</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +100°C
	<b>fixed</b>	-50°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +100°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Unsupported travels and up to 400m for gliding applications, Class 6	

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.75mm²:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.75mm²:</b> Black cores with white numbers, one green-yellow core. <b>CF9.03.05.INI:</b> brown, blue, black, white, green-yellow
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.6.4.1

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Cores &lt; 0.5mm²:</b> 300V (following UL) <b>Cores ≥ 0.5mm²:</b> 1000V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF10">www.igus.eu/CF10</a> (from production date 01/2022)
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	6.8	7.5	8.5
-25/+90	5	6	7
+90/+100	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- 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, ship to shore, outdoor cranes, low-temperature applications



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



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



# Control cable | TPE | chainflex® CF10

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF10

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]
CF10.01.12	(12x0.14)C	7.5	37	78
CF10.01.18	(18x0.14)C	9.5	63	119
CF10.02.04	(4x0.25)C	6.5	24	49
CF10.02.08	(8x0.25)C	8.0	40	79
CF10.02.12	(12x0.25)C	9.5	65	122
CF10.02.25	(25x0.25)C	12.0	110	211
CF10.03.05.INI	(5x0.34)C	7.0	33	63
CF10.05.04	(4x0.5)C	7.0	37	70
CF10.05.05	(5x0.5)C	7.5	44	81
CF10.05.07	(7x0.5)C	8.5	58	104
CF10.05.12	(12x0.5)C	12.0	107	198
CF10.05.18	(18x0.5)C	13.5	144	261
CF10.05.25	(25x0.5)C	15.0	186	332
CF10.07.04	(4G0.75)C	7.5	49	86
CF10.07.05	(5G0.75)C	8.0	58	102
CF10.07.07	(7G0.75)C	9.5	90	147
CF10.07.12	(12G0.75)C	12.5	139	244
CF10.07.20	(20G0.75)C	15.0	210	350
CF10.07.25	(25G0.75)C	17.0	255	443
CF10.10.02	(2x1.0)C	7.5	38	72
CF10.10.03	(3G1.0)C	7.5	48	84
CF10.10.04	(4G1.0)C	8.0	60	100
CF10.10.05	(5G1.0)C	8.5	72	118
CF10.10.07	(7G1.0)C	10.0	110	172
CF10.10.12	(12G1.0)C	13.5	175	294
CF10.10.18	(18G1.0)C	16.0	244	404
CF10.10.25	(25G1.0)C	19.0	323	550
CF10.15.04	(4G1.5)C	9.0	94	141
CF10.15.05	(5G1.5)C	9.5	111	163
CF10.15.07 <sup>17)</sup>	(7G1.5)C	11.5	148	224
CF10.15.12	(12G1.5)C	15.0	240	373
CF10.15.18	(18G1.5)C	18.5	365	568
CF10.25.04	(4G2.5)C	11.0	140	209
CF10.25.07 <sup>17)</sup>	(7G2.5)C	13.5	227	335
CF10.25.12	(12G2.5)C	19.5	402	636
CF10.40.04	(4G4.0)C	12.5	205	287
CF10.40.05 <sup>11)</sup>	(5G4.0)C	13.5	254	351

<sup>11)</sup> Phase-out model  
<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.  
 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/CF10](http://www.igus.eu/CF10)

## Class 7.6.4.1

Basic requirements  
 Travel distance  
 Oil resistance  
 Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

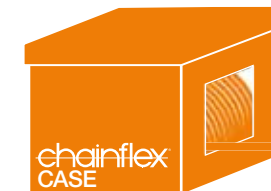
Order example: **CF10.01.12** - to your desired length (0.5m steps)  
 CF10 chainflex® series .01 Code nominal cross section .12 Number of cores

Order online ► [www.igus.eu/CF10](http://www.igus.eu/CF10)

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



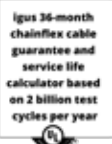
chainflex CF10 control cable in storage and retrieval units e-chain®: E2 system



### 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/cf-case](http://www.igus.eu/cf-case)





# Control cable | TPE | chainflex® CF9.UL

**36** 10 million Double strokes guaranteed **5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- For extremely heavy duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- Flame-retardant
- PVC-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 5 x d
	<b>flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-45°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +100°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		100m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m for gliding applications, Class 6
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.75mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.75mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core. <b>CF9.UL.02.03.INI:</b> brown, blue, black <b>CF9.UL.03.04.INI:</b> brown, blue, black, white <b>CF9.UL.03.05.INI:</b> braun, blau, schwarz, weiß, grüngelb
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Slate grey (similar to RAL 7015)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

EPLAN download, configurators ► [www.igus.eu/CF9UL](http://www.igus.eu/CF9UL)

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



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## Class 6.6.4.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Cores &lt; 0.5mm<sup>2</sup>:</b> 300V (following UL) <b>Cores ≥ 0.5mm<sup>2</sup>:</b> 1000V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF9UL">www.igus.eu/CF9UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X2
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	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	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	6.8	7.5	8.5
-25/+90	5	6	7
+90/+100	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Torsion ±90°, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, ship to shore, outdoor cranes, low-temperature applications



EU2023

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



# Control cable | TPE | chainflex® CF9.UL

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF9.UL

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]
CF9.UL.02.02	2x0.25	5.0	5	24
CF9.UL.02.03.INI	3x0.25	5.0	8	28
CF9.UL.02.04	4x0.25	5.5	10	32
CF9.UL.02.06	6x0.25	6.0	15	42
CF9.UL.02.08	8x0.25	7.0	20	57
CF9.UL.02.12	12x0.25	7.5	30	81
CF9.UL.03.04.INI	4x0.34	5.5	14	38
CF9.UL.03.05.INI	5x0.34	6.0	17	46
CF9.UL.03.06	6x0.34	6.5	21	51
CF9.UL.03.08	8x0.34	7.5	28	67
CF9.UL.05.02	2x0.5	5.5	10	35
CF9.UL.05.03	3x0.5	6.0	15	42
CF9.UL.05.04	4x0.5	6.0	20	50
CF9.UL.05.05	5x0.5	6.5	25	56
CF9.UL.05.07	7x0.5	7.5	35	79
CF9.UL.05.12	12x0.5	9.5	60	137
CF9.UL.05.18	18x0.5	12.0	90	201
CF9.UL.07.05	5G0.75	7.0	38	77
CF9.UL.07.07	7G0.75	8.5	53	105
CF9.UL.07.12	12G0.75	11.0	90	191
CF9.UL.07.25	25G0.75	15.0	186	366
CF9.UL.10.03	3G1.0	6.5	30	62
CF9.UL.10.04	4G1.0	7.0	40	78
CF9.UL.10.12	12G1.0	11.5	119	228
CF9.UL.10.18 <sup>11)</sup>	18G1.0	14.5	178	332
CF9.UL.10.25	25G1.0	16.0	248	447
CF9.UL.15.04	4G1.5	8.0	60	102
CF9.UL.15.05	5G1.5	8.5	75	124
CF9.UL.15.07 <sup>17)</sup>	7G1.5	10.0	104	171
CF9.UL.15.12	12G1.5	13.5	178	309
CF9.UL.15.18	18G1.5	16.0	267	449
CF9.UL.15.25	25G1.5	19.0	371	650

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

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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

## Class 6.6.4.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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



Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF9.UL.25.04	4G2.5	9.0	100	159
CF9.UL.25.05	5G2.5	10.0	124	194
CF9.UL.25.07 <sup>17)</sup>	7G2.5	12.0	174	270
CF9.UL.25.12	12G2.5	16.0	297	502
CF9.UL.25.18	18G2.5	20.0	445	737
CF9.UL.25.25	25G2.5	23.5	612	1,011
CF9.UL.40.04	4G4.0	10.5	159	231

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

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/cf-case](http://www.igus.eu/cf-case)



igus® chainflex® cables in a drilling application.



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

EPLAN download, configurators ► [www.igus.eu/CF9UL](http://www.igus.eu/CF9UL)



# Control cable | TPE | chainflex® CF10.UL

**36** 10 million Double strokes guaranteed **5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- Flame-retardant
- PVC-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 5 x d
	<b>flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-45°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +100°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		100m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m for gliding applications, Class 6

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
<b>Core identification</b>	<b>Cores &lt; 0.75mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.75mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Slate grey (similar to RAL 7015)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

EPLAN download, configurators ► [www.igus.eu/CF10UL](http://www.igus.eu/CF10UL)

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



EU2023

## Class 6.6.4.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	5	6	7	highest
none	1	2	3	4	5	6	7	±360°

### Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Cores &lt; 0.5mm<sup>2</sup>:</b> 300V (following UL) <b>Cores ≥ 0.5mm<sup>2</sup>:</b> 1000V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF10UL">www.igus.eu/CF10UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X2
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	6.8	7.5	8.5
-25/+90	5	6	7
+90/+100	6.8	7.5	8.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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, ship to shore, outdoor cranes, low-temperature applications



EU2023

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



# Control cable | TPE | chainflex® CF10.UL

Strip cables 50% faster with CFRIP® tear strip



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]
CF10.UL.02.04	(4x0.25)C	6.5	24	60
CF10.UL.02.08	(8x0.25)C	8.5	40	94
CF10.UL.02.12	(12x0.25)C	9.5	64	137
CF10.UL.02.25	(25x0.25)C	12.5	110	241
CF10.UL.05.04	(4x0.5)C	7.5	37	83
CF10.UL.05.05	(5x0.5)C	8.0	44	98
CF10.UL.05.12	(12x0.5)C	11.5	103	211
CF10.UL.05.25	(25x0.5)C	15.5	186	383
CF10.UL.07.04	(4G0.75)C	8.0	49	101
CF10.UL.07.05 <sup>11)</sup>	(5G0.75)C	8.5	59	119
CF10.UL.07.07	(7G0.75)C	10.0	89	171
CF10.UL.07.12	(12G0.75)C	12.5	135	268
CF10.UL.07.25 <sup>11)</sup>	(25G0.75)C	17.0	256	489
CF10.UL.10.02	(2x1.0)C	7.5	38	88
CF10.UL.10.03 <sup>11)</sup>	(3G1.0)C	8.0	48	99
CF10.UL.10.04	(4G1.0)C	8.5	61	117
CF10.UL.10.05 <sup>11)</sup>	(5G1.0)C	9.0	72	137
CF10.UL.10.07	(7G1.0)C	11.0	110	204
CF10.UL.10.25 <sup>11)</sup>	(25G1.0)C	18.5	348	608
CF10.UL.15.04	(4G1.5)C	9.0	83	144
CF10.UL.15.05 <sup>11)</sup>	(5G1.5)C	10.0	111	184
CF10.UL.15.07 <sup>17)</sup>	(7G1.5)C	11.5	148	250
CF10.UL.15.12	(12G1.5)C	15.0	240	420
CF10.UL.15.18	(18G1.5)C	18.5	365	613
CF10.UL.25.04	(4G2.5)C	11.0	140	232
CF10.UL.25.07 <sup>17)</sup>	(7G2.5)C	14.0	226	369
CF10.UL.25.12	(12G2.5)C	18.5	395	666
CF10.UL.40.04	(4G4.0)C	12.5	205	315

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

<sup>17)</sup> When using the cables with "7G1.5mm²" and "7G2.5mm²" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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

## Class 6.6.4.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

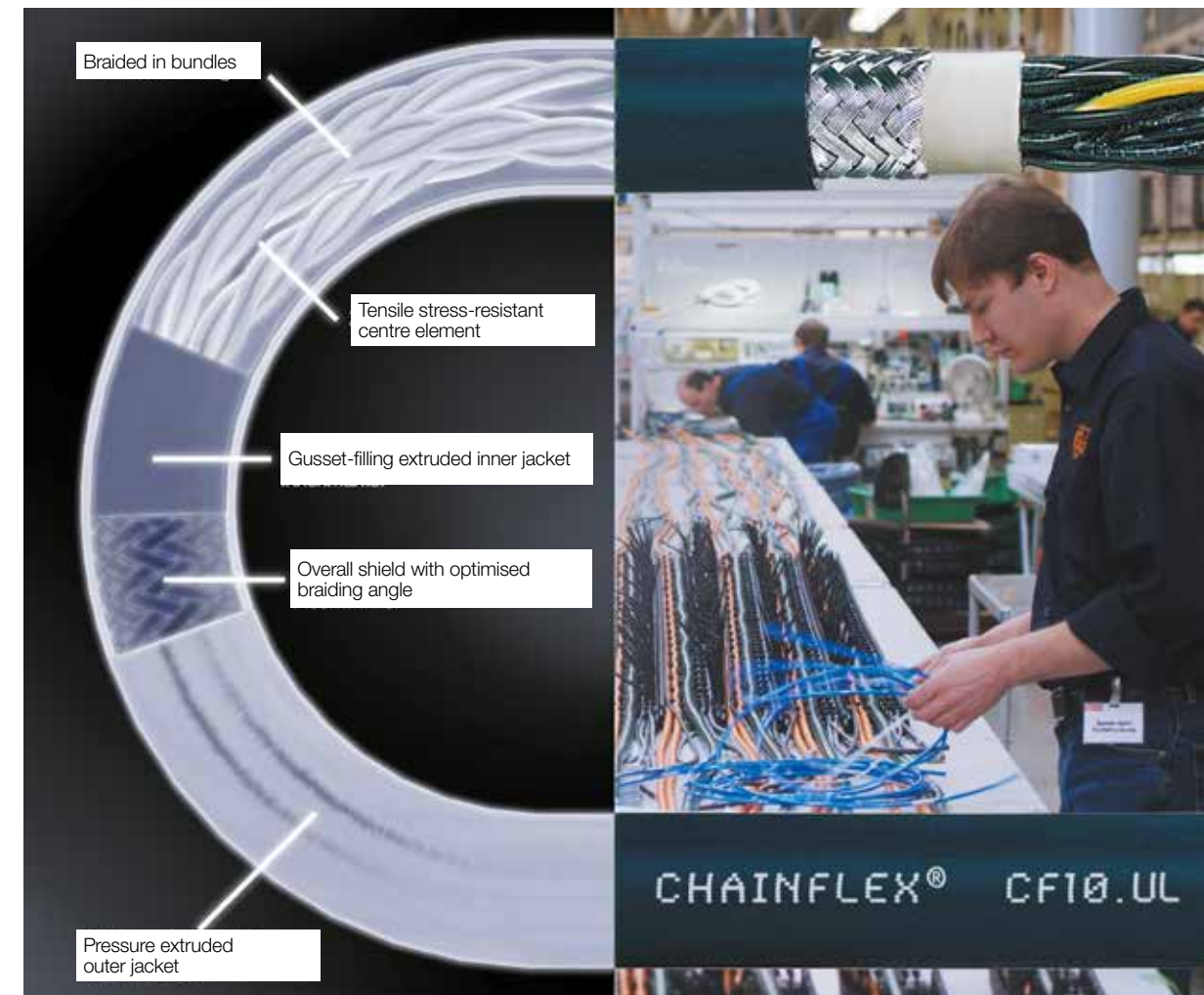
low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



### 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/cf-case](http://www.igus.eu/cf-case)



The special cable structure of chainflex® CF10.UL guarantees quality – offered by igus® fully harnessed.



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





# Control cable | TPE | chainflex® CF98

**36** 40 million  
Double strokes guaranteed







**4 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®






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

**New generation  
CF98.PLUS  
▶ Page 134**

### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 4 x d
	<b>flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
 <b>a max.</b>		100m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space, Class 5
 <b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2




### Cable structure

 <b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	Cores wound in a layer with especially short pitch length.
 <b>Core identification</b>	Colour code in accordance with DIN 47100. <b>CF98.02.03.INI:</b> brown, blue, black <b>CF98.03.04.INI:</b> brown, blue, black, white
 <b>Outer jacket</b>	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

 <b>Nominal voltage</b>	300/300V
 <b>Testing voltage</b>	1,500V

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

## Class 7.5.4.2

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

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

 **EAC**

 **REACH**

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

 **Lead-free**

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

 **Cleanroom**

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

 **CE**

Following 2014/35/EU

 **UKCA**

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

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

Double strokes*	20 million	30 million	40 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	5	6	7
-25/+80	4	5	6
+80/+90	5	6	7

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

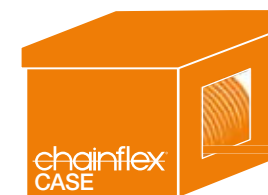
### Typical application areas

- For heaviest duty applications and very small radii down to 4 x d, Class 7
- 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
- Torsion ±90°, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, cleanroom, very quick handling

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]
CF98.01.02 <sup>11)</sup>	2x0.14	4.5	5	18
CF98.01.03 <sup>11)</sup>	3x0.14	4.5	6	20
CF98.01.04 <sup>11)</sup>	4x0.14	5.0	8	25
CF98.01.08 <sup>11)</sup>	8x0.14	6.5	15	43
CF98.02.03.INI <sup>11)</sup>	3x0.25	5.0	11	29
CF98.02.04 <sup>11)</sup>	4x0.25	5.5	15	36
CF98.02.08 <sup>11)</sup>	8x0.25	7.5	30	67
CF98.03.04.INI <sup>11)</sup>	4x0.34	6.0	15	39
CF98.05.04 <sup>11)</sup>	4x0.5	6.0	33	53

<sup>11)</sup> Phase-out model (new generation CF98.PLUS ▶ Page 134)

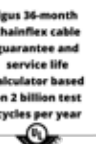
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



### 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/cf-case](http://www.igus.eu/cf-case)



# Control cable | TPE | chainflex® CF99

**36** 40 million  
Double strokes guaranteed

**4 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®

- 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

**New generation  
CF99.PLUS  
▶ Page 138**

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Short, very fast applications with small radii and restricted installation space, Class 5	

### Cable structure

<b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending resistant braiding made of alloy wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V
<b>Testing voltage</b>	1,500V

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4

## Class 7.5.4.1

<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

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

Double strokes*	20 million	30 million	40 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	5	6	7
-25/+80	4	5	6
+80/+90	5	6	7

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

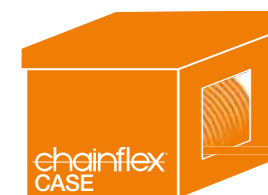
### Typical application areas

- For heaviest duty applications and very small radii down to 4 x d, Class 7
- 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
- Pick and place machines, automatic doors, cleanroom, very quick handling

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF99.01.02 <sup>11)</sup>	(2x0.14)C	6.0	12	37
CF99.01.04 <sup>11)</sup>	(4x0.14)C	6.5	17	47
CF99.01.08 <sup>11)</sup>	(8x0.14)C	8.0	29	76
CF99.02.04 <sup>11)</sup>	(4x0.25)C	7.0	24	60
CF99.03.08 <sup>11)</sup>	(8x0.34)C	9.5	45	108

<sup>11)</sup> Phase-out model (new generation CF99.PLUS ▶ Page 138)

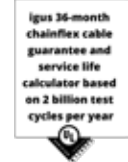
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. G = with green-yellow earth core x = without earth core



### 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/cf-case](http://www.igus.eu/cf-case)





# Control cable | TPE | chainflex® CF98.PLUS

**36** 100,000,000  
Double strokes guaranteed







**3 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®






- For heaviest duty applications and very small radii down to 3 x d
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

**100 million double strokes in e-chains® guaranteed!**



### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 3 x d
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 60811-504)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>	<b>gliding</b>	6m/s
 <b>Travel distance</b>	Short, very fast applications with small radii and restricted installation space, Class 5	
 <b>Torsion</b>	Torsion ±90°, with 1m cable length, Class 2	

### Cable structure

 <b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	Cores wound in a layer with especially short pitch length.
 <b>Core identification</b>	Colour code in accordance with DIN 47100. <b>CF98.PLUS.02.03.INI:</b> brown, blue, black <b>CF98.PLUS.03.04.INI:</b> brown, blue, black, white
 <b>Outer jacket</b>	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












 <b>Nominal voltage</b>	300/300V
 <b>Testing voltage</b>	1,500V

## Class 7.5.4.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	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
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	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	40 million	100 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	4	6	7
-25/+80	3	5	6
+80/+90	4	6	7

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications and very small radii down to 3 x d, Class 7
- 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
- Torsion ±90°, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, cleanroom, very quick handling

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL US LISTED

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

UL

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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 CF98.PLUS.01.02	2x0.14	4.5	4	18
New CF98.PLUS.01.03	3x0.14	4.5	6	20
New CF98.PLUS.01.04	4x0.14	5.0	7	25
New CF98.PLUS.01.08	8x0.14	6.5	15	45
New CF98.PLUS.02.03.INI	3x0.25	5.0	10	29
New CF98.PLUS.02.04	4x0.25	5.5	14	36
New CF98.PLUS.02.08	8x0.25	7.5	29	68
New CF98.PLUS.03.04.INI	4x0.34	6.0	15	38
New CF98.PLUS.05.04	4x0.5	6.0	32	53

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/cf-case](http://www.igus.eu/cf-case)



- Order example: CF98.PLUS.01.02 – to your desired length (0.5m steps)**  
CF98.PLUS chainflex® series .01 Code nominal cross section .02 Number of cores
- Order online ► [www.igus.eu/CF98PLUS](http://www.igus.eu/CF98PLUS)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

chainflex® CF98.PLUS

**Guarantee**  
igus chainflex  
**36**  
up to 36 months guarantee

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

Smaller and smaller installation spaces, shorter and shorter cycle times, 99% availability. These are the requirements that innovative automation specialists must meet. To do this, igus® has been working on an unprecedented innovation for more than ten years. The new generation of chainflex® CF98.PLUS (unshielded) and chainflex® CF99.PLUS (shielded) control cables are a consistent development of the well-known, highly successful CF98/CF99 and CF298 and CF299 control cable series.

Systematic research on process technology and insulation and conductor materials supported by a wide variety of test series in the igus® laboratory enabled igus® to develop this new generation of control cables. The result is cable series that can be used reliably with a minimum **bend radius of just 3 x d** (3 x cable diameter).

The cross-sectional areas range from 0.14mm² to 0.5mm² in both the shielded and unshielded versions. This makes igus® the first and only manufacturer to offer catalogue goods for use in an e-chain® with a **guaranteed service life of 100 million double strokes!** This is with acceleration values of up to 100m/s².



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





# Control cable | TPE | chainflex® CF99.PLUS

**36** 100,000,000  
Double strokes guaranteed

**3 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®

- For heaviest duty applications and very small radii down to 3 x d
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

**100 million double strokes in e-chains® guaranteed!**

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 3 x d
	<b>fixed</b>	minimum 2 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Short, very fast applications with small radii and restricted installation space, Class 5	

### Cable structure

<b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending resistant braiding made of alloy wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V
<b>Testing voltage</b>	1,500V

EPLAN download, configurators ► [www.igus.eu/CF99PLUS](http://www.igus.eu/CF99PLUS)

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



EU2023

EU2023

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.5.4.1

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	40 million	100 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	4	6	7
-25/+80	3	5	6
+80/+90	4	6	7

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications and very small radii down to 3 x d, Class 7
- 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
- Pick and place machines, automatic doors, cleanroom, very quick handling



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



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](http://www.igus.eu/ul-verified)

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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 CF99.PLUS.01.02	(2x0.14)C	6.0	12	39
New CF99.PLUS.01.04	(4x0.14)C	6.5	16	48
New CF99.PLUS.01.08	(8x0.14)C	8.0	28	76
New CF99.PLUS.02.04	(4x0.25)C	7.0	23	60
New CF99.PLUS.03.08	(8x0.34)C	9.5	45	111

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/cf-case](http://www.igus.eu/cf-case)



**Order example: CF99.PLUS.01.02 – to your desired length (0.5m steps)**  
CF99.PLUS chainflex® series .01 Code nominal cross section .02 Number of cores

Order online ► [www.igus.eu/CF99PLUS](http://www.igus.eu/CF99PLUS)

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

**Guarantee**  
igus chainflex  
**36**  
up to 36 months guarantee

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

chainflex® CF99.PLUS

Smaller and smaller installation spaces, shorter and shorter cycle times, 99% availability. These are the requirements that innovative automation specialists must meet. To do this, igus® has been working on an unprecedented innovation for more than ten years. The new generation of chainflex® CF98.PLUS (unshielded) and chainflex® CF99.PLUS (shielded) control cables are a consistent development of the well-known, highly successful CF98/CF99 and CF298 and CF299 control cable series.

Systematic research on process technology and insulation and conductor materials supported by a wide variety of test series in the igus® laboratory enabled igus® to develop this new generation of control cables. The result is cable series that can be used reliably with a minimum **bend radius of just 3 x d** (3 x cable diameter).

The cross-sectional areas range from 0.14mm² to 0.5mm² in both the shielded and unshielded versions. This makes igus® the first and only manufacturer to offer catalogue goods for use in an e-chain® with a **guaranteed service life of 100 million double strokes!** This is with acceleration values of up to 100m/s².



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





# Data cables

## Coax cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page	
<b>Data cables – wound in layers</b>										
CF240	PVC	✓	10	+5/+70		✓	3	2	20	146
CF240.PUR	PUR	✓	10	-25/+80		✓	3	2	20	150
<b>Data cables – twisted pair</b>										
CF211	PVC	✓	7.5	+5/+70		✓	5	3	50	154
CF211.PUR	PUR	✓	7.5	-25/+80		✓	5	3	50	158
CF11	TPE	✓	6.8	-35/+100		✓	10	6	100	162
<b>Data cables – twisted pair with pair shield</b>										
CF112	PUR	✓	10	-25/+80		✓	10	5	80	166
CF12	TPE	✓	10	-35/+100		✓	10	6	100	170
<b>Data cables – wound in layers</b>										
CF298	TPE		4	-35/+90		✓	10	6	100	172
CF299	TPE	✓	4	-35/+90		✓	10	6	100	174
<b>Coax cable</b>										
CFKoax	TPE	✓	10	-35/+100 -35/+70		✓	10	5	100	176
<b>Twistable data cable (twistable cables chapter ▶ Page 378 )</b>										
CFROBOT3	PUR	✓	10	-25/+80		✓				390

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

▶ Selection table page 144

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:

[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)












Guarantee  
igus chainflex

# 36

up to 36 months guarantee

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



chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Minimum bend radius [factor x d] for travel distance		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
						5 million (1 million) double strokes *		7.5 million (3 million) double strokes *		10 million (5 million) double strokes *		
<b>Data cables</b>												
 CF240	+5 / +15 +15 / +60 +60 / +70	3	2	20	≤ 50	12.5 10 12.5	15 12.5 15	13.5 11 13.5	16 13.5 16	14.5 12 14.5	17 14.5 17	146
 CF240.PUR	-25 / -15 -15 / +70 +70 / +80	3	2	20	≤ 50	12.5 10 12.5	15 12.5 15	13.5 11 13.5	16 13.5 16	14.5 12 14.5	17 14.5 17	150
 CF211	+5 / +15 +15 / +60 +60 / +70	5	3	50	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		154
 CF211.PUR	-25 / -15 -15 / +70 +70 / +80	5	3	50	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		158
						5 million		7.5 million		12.5 million		
 CF11	-35 / -25 -25 / +90 +90 / +100	10	6	100	≤ 400	7.5 6.8 7.5		8.5 7.5 8.5		9.5 8.5 9.5		162
						5 million		7.5 million		10 million		
 CF112	-20 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		166
						5 million		7.5 million		12.5 million		
 CF12	-35 / -25 -25 / +90 +90 / +100	10	6	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		170
						20 million		30 million		40 million		
 CF298	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	5 4 5		6 5 6		7 6 7		172
 CF299	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 100	5 4 5		6 5 6		7 6 7		174
<b>Coax cables</b>												
						5 million		7.5 million		10 million		
 CFKoax1/3	-35 / -25 -25 / +90 +90 / +100	10	5	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		176
 CFKoax2	-35 / -25 -25 / +60 +60 / +70	10	5	100	≤ 400	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		176

<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](http://www.igus.eu/chainflexlife)  
Values in brackets apply to the CF8821 series



# Data cable | PVC | chainflex® CF240

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 50m** Travel distance, e-chain®

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

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
		<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
		<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	3m/s
		<b>gliding</b>	2m/s
	<b>a max.</b>	20m/s²	
	<b>Travel distance</b>	Unsupported travels and up to 50m for gliding applications, Class 4	

### Cable structure

	<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	The individual cores are wound in layers with a short pitch length.
	<b>Core identification</b>	Colour code in accordance with DIN 47100.
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	<b>Outer jacket</b>	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

	<b>Nominal voltage</b>	300/300V (following DIN VDE 0298-3) 300V (following UL)
	<b>Testing voltage</b>	1,500V (following DIN EN 50395)

Example image

EPLAN download, configurators ► [www.igus.eu/CF240](http://www.igus.eu/CF240)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.2.1

### Properties and approvals

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF240">www.igus.eu/CF240</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	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		7.5 million		10 million	
	< 10m R min. [factor x d]	≥ 10m R min. [factor x d]	< 10m R min. [factor x d]	≥ 10m R min. [factor x d]	< 10m R min. [factor x d]	≥ 10m R min. [factor x d]
Temperature, from/to [°C]						
+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

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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



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



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](http://www.igus.eu/ul-verified)

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



Example image

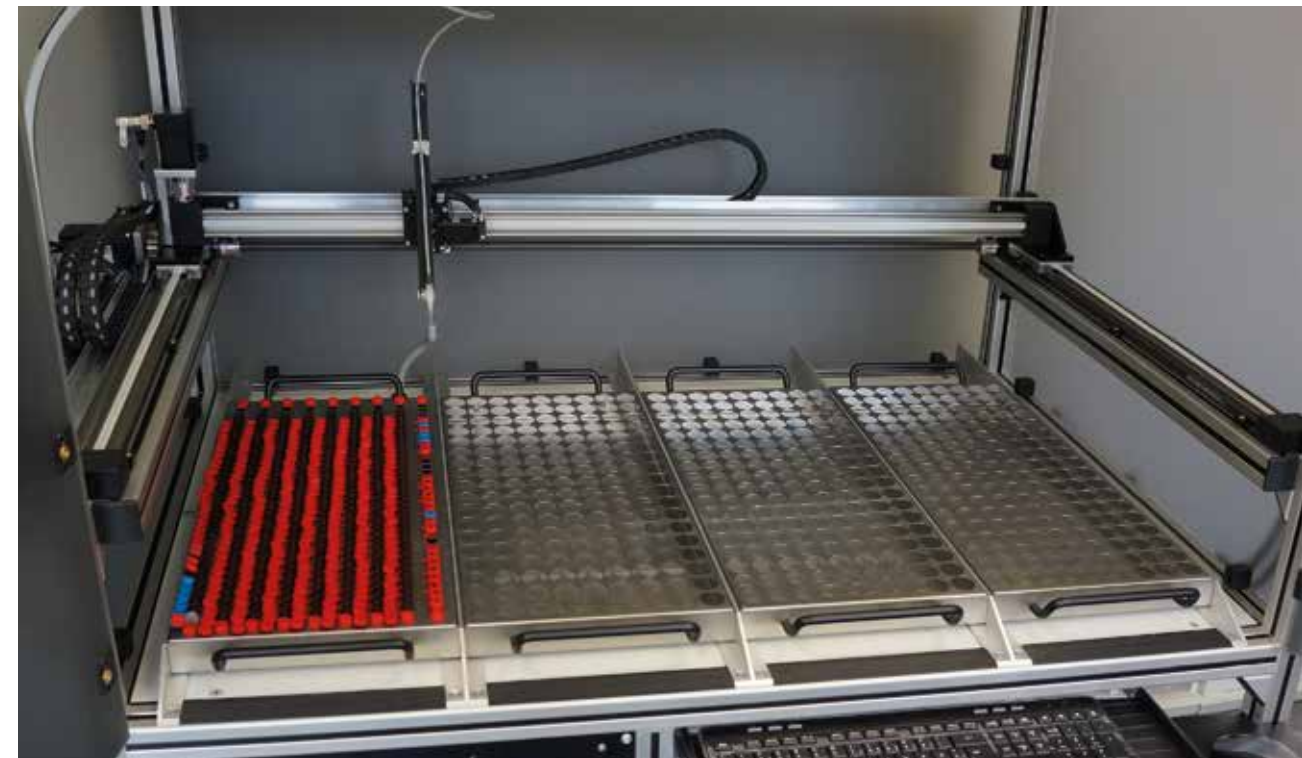
Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF240.01.03	(3x0.14)C	4.5	12	28
CF240.01.04	(4x0.14)C	5.0	17	32
CF240.01.05	(5x0.14)C	5.5	19	37
CF240.01.07	(7x0.14)C	6.0	25	47
CF240.01.14	(14x0.14)C	7.0	41	75
CF240.01.18	(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 x = without earth core

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

Order online ► [www.igus.eu/CF240](http://www.igus.eu/CF240)

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



chainflex® CF240 data cables in small handling machines



Cables available in the chainflex® CASE

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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



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



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





# Data cable | PUR | chainflex® CF240.PUR

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 50m** Travel distance, e-chain®

- 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

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 50m for gliding applications, Class 4

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	The individual cores are wound in layers with a short pitch length.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	1,500V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.4.3.1

<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF240PUR">www.igus.eu/CF240PUR</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X3
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	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		7.5 million		10 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	12.5	15	13.5	16	14.5	17
-15/+70	10	12.5	11	13.5	12	14.5
+70/+80	12.5	15	13.5	16	14.5	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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



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

UL



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



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
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 <sup>11)</sup>	(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

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

**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



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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



**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/CF240PUR](http://www.igus.eu/CF240PUR)



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



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



# Data cable | PVC | chainflex® CF211

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d
	<b>fixed</b>	minimum 6 x d
	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>Temperature</b>	<b>unsupported</b>	5m/s
	<b>gliding</b>	3m/s
<b>v max.</b>		50m/s <sup>2</sup>
<b>a max.</b>		
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	1,500V (following DIN EN 50395)

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 5.5.2.1

### Properties and approvals

<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF211DATA">www.igus.eu/CF211DATA</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	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	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](http://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



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



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CF211.02.01.02	(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 <sup>2)</sup> 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

- 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
- Order online ► [www.igus.eu/CF211DATA](http://www.igus.eu/CF211DATA)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



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



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# Data cable | PUR | chainflex® CF211.PUR

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

- 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

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d
	<b>fixed</b>	minimum 6 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	5m/s
<b>a max.</b>	<b>gliding</b>	3m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	1,500V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 5.5.3.1

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF211PUR">www.igus.eu/CF211PUR</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X3
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	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	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 number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- 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

Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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CFRIP

UL LISTED

UL US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UK CA



Example image

igus® chainflex® CF211.PUR

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

UL

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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 <sup>2)</sup> 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/cf-case](http://www.igus.eu/cf-case)



**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



Order online ► [www.igus.eu/CF211PUR](http://www.igus.eu/CF211PUR)



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Delivery time means time until goods are shipped.

**cost down...**



**...life up**

**Reduce cost, improve technology, now!**

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



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



# Data cable | TPE | chainflex® CF11



**12.5 million**  
Double strokes guaranteed



**6.8 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- 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	<b>e-chain® linear</b>	minimum 6.8 x d
	<b>flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
Temperature	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-50°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +100°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	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	<b>Cores &lt; 1.0mm<sup>2</sup></b> : Colour code in accordance with DIN 47100. <b>Cores ≥ 1.0mm<sup>2</sup></b> : 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

Nominal voltage	300/300V (following DIN VDE 0298-3) 300V (following UL)
Testing voltage	1,500V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 6.6.4.1

## 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 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 AWM	See data sheet for details ► <a href="http://www.igus.eu/CF11">www.igus.eu/CF11</a> (from production date 01/2022)
EAC	Certificate No. RU C-DE.ME77.B.00300/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	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
CE	Following 2014/35/EU
UK CA	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	7.5 million	12.5 million
Temperature, from/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

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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



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



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



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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

The chainflex® types marked with <sup>2)</sup> 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/cf-case](http://www.igus.eu/cf-case)



Class 6.6.4.1



**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](http://www.igus.eu/CF11)



Delivery time 24hrs or today.

Delivery time means time until goods are shipped.

cost down...



...life up

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

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



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



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



# Data cable | PUR | chainflex® CF112

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 100m** Travel distance, e-chain®

- 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

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of bare copper wires.
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	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

<b>Nominal voltage</b>	300/300V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	1,500V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF112](http://www.igus.eu/CF112)

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



EU2023

# Class 6.5.3.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF112">www.igus.eu/CF112</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X3
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

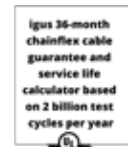
## Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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](http://www.igus.eu/chainflexlife)

## Typical application areas

- 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



UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

Example image

igus® chainflex® CF112

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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



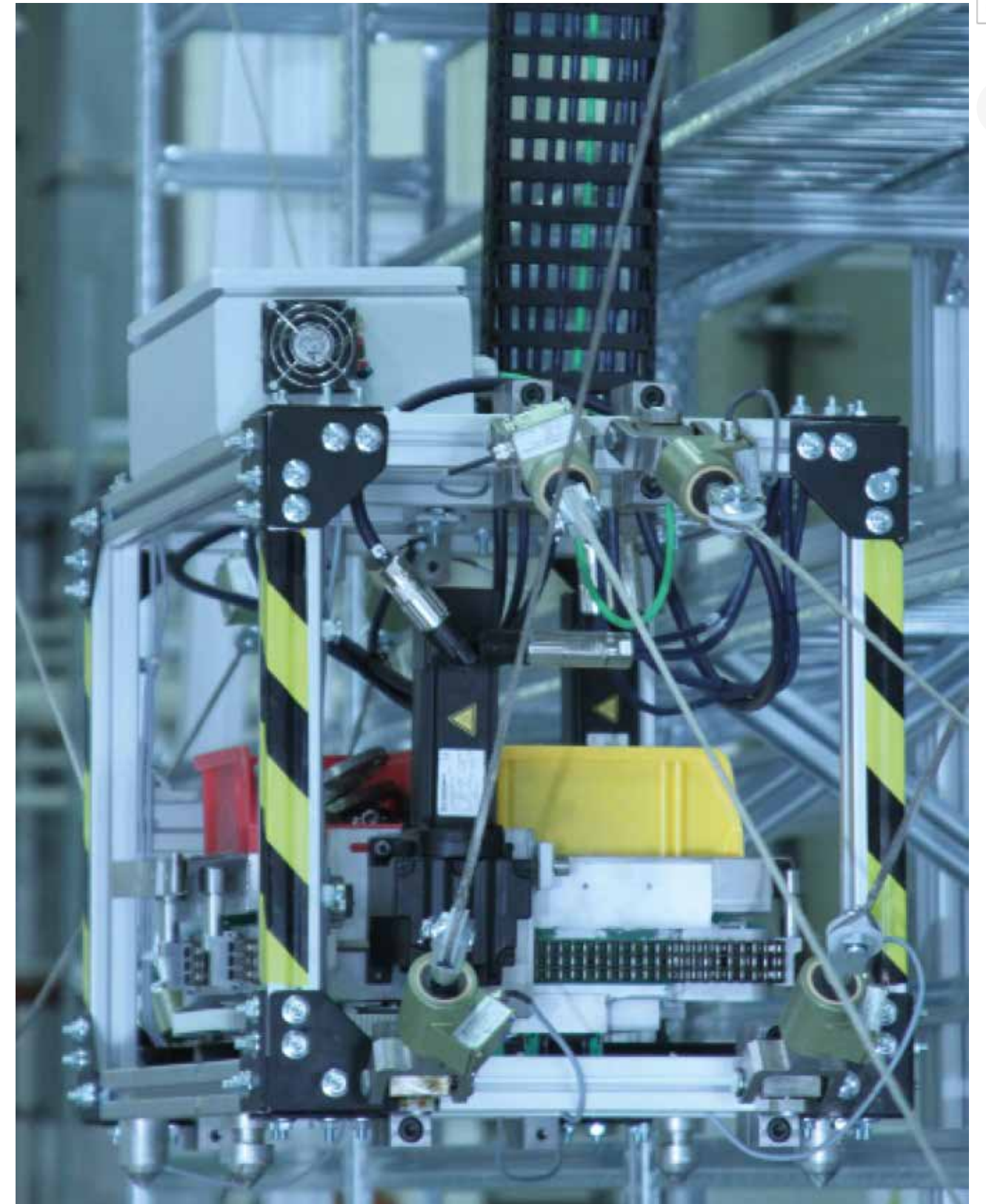
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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



- 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](http://www.igus.eu/CF112)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



Hanging application with chainflex® CF112 data cables



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





# Data cable | TPE | chainflex® CF12



**12.5 million**  
Double strokes guaranteed



**10 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- 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	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
Temperature	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-50°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +100°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	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	<b>Cores &lt; 0.5mm<sup>2</sup></b> : Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup></b> : Black cores with white numbers.
Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Element shield	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®.
Overall shield	Highly flexible shield consisting of galvanised steel wire braid. 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

Nominal voltage	300/300V (following DIN VDE 0298-3) 300V (following UL)
Testing voltage	1,500V (following DIN EN 50395)

## Properties and approvals

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

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.6.4.1

- 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 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 AWM: See data sheet for details ► [www.igus.eu/CF12](http://www.igus.eu/CF12) (from production date 01/2022)
- EAC: Certificate No. RU C-DE.ME77.B.00300/19
- REACH: In accordance with regulation (EC) No. 1907/2006 (REACH)
- Lead-free: Following 2011/65/EC (RoHS-II/RoHS-III)
- Cleanroom: According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
- CE: Following 2014/35/EU
- UKCA: 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	7.5 million	12.5 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/+90	10	11	12
+90/+100	12.5	13.5	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- For maximum EMC protection
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

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]
CF12.02.04.02	(4x(2x0.25))C	11.5	52	172
CF12.05.03.02	(3x(2x0.5))C	13.5	65	224
CF12.05.04.02	(4x(2x0.5))C	14.5	83	267
CF12.05.06.02	(6x(2x0.5))C	17.0	128	376
CF12.05.08.02	(8x(2x0.5))C	20.5	163	503
CF12.05.10.02 <sup>1)</sup>	(10x(2x0.5))C	22.5	203	605
CF12.05.14.02	(14x(2x0.5))C	22.5	297	679
CF12.10.06.02	(6x(2x1.0))C	20.0	198	529

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

**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



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



Example image

# Data cable | TPE | chainflex® CF298

**36** 40 million  
Double strokes guaranteed







**4 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®






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

**New generation  
CF98.PLUS  
► Page 134**

## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 4 x d
	<b>flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
 <b>a max.</b>		100m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space, Class 5
 <b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2



## Cable structure

 <b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	Cores wound in a layer with especially short pitch length.
 <b>Core identification</b>	Colour code in accordance with DIN 47100. <b>CF298.02.03:</b> brown, blue, black <b>CF298.03.04:</b> brown, blue, black, white
 <b>Outer jacket</b>	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

 <b>Nominal voltage</b>	300/300V
 <b>Testing voltage</b>	1,500V

## Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4

EPLAN download, configurators ► [www.igus.eu/CF298](http://www.igus.eu/CF298)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.5.4.2

 **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"

 **REACH**

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

 **Lead-free**

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

 **Cleanroom**

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

 **CE**

Following 2014/35/EU

 **UK CA**

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

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

Double strokes*	20 million	30 million	40 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	5	6	7
-25/+80	4	5	6
+80/+90	5	6	7

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

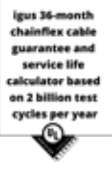
## Typical application areas

- For heaviest duty applications and especially small radii down to 4 x d, Class 7
- 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
- Torsion ±90°, with 1m cable length, Class 2
- Indoor and outdoor applications, UV-resistant
- Pick and place machines, automatic doors, cleanroom, very quick handling

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]
CF298.01.02 <sup>11)</sup>	2x0.14	4.5	5	17
CF298.01.04 <sup>11)</sup>	4x0.14	5.5	9	28
CF298.01.08 <sup>11)</sup>	8x0.14	7.0	17	49
CF298.02.03 <sup>11)</sup>	3x0.25	5.5	12	28
CF298.02.04 <sup>11)</sup>	4x0.25	6.0	16	34
CF298.02.07 <sup>11)</sup>	7x0.25	7.0	28	52
CF298.02.08 <sup>11)</sup>	8x0.25	7.5	32	60
CF298.03.04 <sup>11)</sup>	4x0.34	6.0	19	37
CF298.03.07 <sup>11)</sup>	7x0.34	7.5	34	62
CF298.05.04 <sup>11)</sup>	4x0.5	6.5	28	49

<sup>11)</sup> Phase-out model (new generation CF98.PLUS ► Page 134)

**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





# Data cable | TPE | chainflex® CF299

**36** 40 million  
Double strokes guaranteed






**4 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®








- 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

**New generation  
CF99.PLUS  
▶ Page 138**



## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 4 x d
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 60811-504)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>	<b>gliding</b>	6m/s
 <b>Travel distance</b>	Short, very fast applications with small radii and restricted installation space, Class 5	

## Cable structure

 <b>Conductor</b>	Conductor consisting of a highly flexible special alloy.
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	Cores wound in a layer with especially short pitch length.
 <b>Core identification</b>	Colour code in accordance with DIN 47100.
 <b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
 <b>Overall shield</b>	Extremely bending resistant braiding made of alloy wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer jacket</b>	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

 <b>Nominal voltage</b>	300/300V
 <b>Testing voltage</b>	1,500V

Example image

EPLAN download, configurators ▶ [www.igus.eu/CF299](http://www.igus.eu/CF299)

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



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


Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.5.4.1

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	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
 <b>CE</b>	Following 2014/35/EU
 <b>UK UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	20 million	30 million	40 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	5	6	7
-25/+80	4	5	6
+80/+90	5	6	7

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications and especially small radii down to 4 x d, Class 7
- 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
- Pick and place machines, automatic doors, cleanroom, very quick 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 <sup>11)</sup>	(2x0.14)C	6.0	17	37
CF299.01.04 <sup>11)</sup>	(4x0.14)C	6.5	22	47
CF299.01.08 <sup>11)</sup>	(8x0.14)C	8.5	35	80
CF299.02.04 <sup>11)</sup>	(4x0.25)C	7.0	32	56
CF299.02.07 <sup>11)</sup>	(7x0.25)C	8.5	46	82

<sup>11)</sup> Phase-out model (new generation CF99.PLUS ▶ Page 138)

**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



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



# Coax cable | TPE | chainflex® CFKoaX

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 400m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +100°C (CFKoaX1/3)
		-35°C up to +70°C (CFKoaX2)
	<b>flexible</b>	-50°C up to +100°C (CFKoaX1/3)
		-50°C up to +70°C (CFKoaX2)
	<b>fixed</b>	-55°C up to +100°C (CFKoaX1/3)
		-55°C up to +70°C (CFKoaX2)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Unsupported travels and up to 400m and more for gliding applications, Class 6	

## Cable structure

<b>Conductor</b>	Multi-wire; adapted to single-wire diameter with pitch length to suit the requirements in e-chains®.
<b>Core insulation</b>	Special FEP mixture (CFKoaX1/3) Special PE mixture (CFKoaX2)
<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
<b>Core identification</b>	Coaxial elements ► <a href="#">Product range table</a>
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Element shield</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: ► <a href="#">Product range table</a>

## Electrical information

<b>Nominal voltage</b>	500/500V (following DIN VDE 0298-3)
<b>Testing voltage</b>	1,500V (following DIN EN 50395)

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

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



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Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 6.6.4.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	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
<b>EAC</b>	
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
<b>Info</b>	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 plug! 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 RG58 plug! 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 28-29)

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

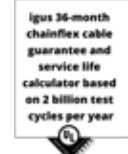
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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](http://www.igus.eu/ul-verified)





Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			



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. [Ω]	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/cf-case](http://www.igus.eu/cf-case)



**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](http://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



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



# BUS cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page
<b>Bus cables</b>									
Selection chart for chainflex® bus cables									184
Selection chart for chainflex® Ethernet cables									187
CF888	PVC	✓	15	+5/+70			3	20	188
CFBUS.PVC	PVC	✓	12.5	+5/+70		✓	3	2 30	192
CF898	iguPUR	✓	15	-20/+70		✓	3	20	196
CFBUS.PUR	PUR	✓	12.5	-20/+70		✓	3	2 30	200
CFBUS	TPE	✓	10	-35/+70		✓	10	6 100	204
CFBUS.LB	TPE	✓	7.5	-35/+70		✓	10	6 100	210
<b>Twistable bus cables (twistable cables chapter ▶ Page 378 )</b>									
CFROBOT8	PUR	✓	10	-25/+70		✓ ✓			406
CFROBOT8. PLUS	PUR	✓	10	-25/+70		✓ ✓			410 <b>New</b>

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

▶ Selection table page 182

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:









[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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





chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million (5 million) double strokes *		
<b>Bus cables</b>										
 CF888	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	188	
 CFBUS.PVC	+5 / +15 +15 / +60 +60 / +70	3	2	30	≤ 20	15 12.5 15	16 13.5 16	17 14.5 17	192	
 CF898	-20 / -10 -10 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	196	
 CFBUS.PUR	-20 / -10 -10 / +60 +60 / +70	3	2	30	≤ 20	15 12.5 15	16 13.5 16	17 14.5 17	200	
 CFBUS.001-.049 CFBUS.060	-35 / -25	10	6	100	≤ 400	12.5	13.5	14.5	204	
	-25 / +60					10	11	12		
	+60 / +70					12.5	13.5	14.5		
 CFBUS.050-.055 CFBUS.065-.070	-35 / -25	10	6	100	≤ 400	15	16	17	204	
	-25 / +60					12.5	13.5	14.5		
	+60 / +70					15	16	17		
						5 million	7.5 million	12.5 million		
 CFBUS.LB .001-.022	-35 / -25	10	6	100	≤ 400	12.5	13.5	14.5	210	
	-25 / +60					10	11	12		
	+60 / +70					12.5	13.5	14.5		
 CFBUS.LB. .040-.060	-35 / -25	10	6	100	≤ 400	10	11	12	210	
	-25 / +60					7.5	8.5	9.5		
	+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](http://www.igus.eu/chainflexlife)  
Figures in brackets refer to series CF888 and CF898



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

Bus types	Cable Selection Matrix							
DVI							chainflex® CFBUS Page 204	
CC-Link		chainflex® CFBUS.PVC Page 192		chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204			
SPE				chainflex® CFBUS.PUR Page 200				
Ethercat*	chainflex® CF888 Page 188	chainflex® CFBUS.PVC Page 192	chainflex® CF898 Page 196	chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204	chainflex® CFBUS.LB Page 210	chainflex® CFROBOT8 Page 406	
Ethernet*	chainflex® CF888 Page 188	chainflex® CFBUS.PVC Page 192	chainflex® CF898 Page 196	chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204	chainflex® CFBUS.LB Page 210	CFROBOT8 Page 406 CFROBOT8.PLUS Page 410 <b>NEW</b>	CFSPECIAL.182 Page 424 CFSPECIAL.484 Page 430
Profinet*	chainflex® CF888 Page 188	chainflex® CFBUS.PVC Page 192	chainflex® CF898 Page 196	chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204	chainflex® CFBUS.LB Page 210	CFROBOT8 Page 406 CFROBOT8.PLUS Page 410	chainflex® CFSPECIAL.182 Page 424
USB		chainflex® CFBUS.PVC Page 192		chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204			
FireWire		chainflex® CFBUS.PVC Page 192		chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204			
CAN-Bus	chainflex® CF888 Page 188	chainflex® CFBUS.PVC Page 192	chainflex® CF898 Page 196	chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204		CFROBOT8 Page 406 CFROBOT8.PLUS Page 410 <b>NEW</b>	
ASI			chainflex® CF898 Page 196					
Device Net					chainflex® CFBUS Page 204			
Interbus					chainflex® CFBUS Page 204			
Profibus	chainflex® CF888 Page 188	chainflex® CFBUS.PVC Page 192	chainflex® CF898 Page 196	chainflex® CFBUS.PUR Page 200	chainflex® CFBUS Page 204		CFROBOT8 Page 406 CFROBOT8.PLUS Page 410	chainflex® CFSPECIAL.182 Page 424
	PVC 15 x d	PVC oil-resistant 12.5 x d	iguPUR 15 x d	PUR 12.5 x d	TPE UL 10-12.5 x d	TPE 7.5 x d	Torsion 10 x d	Special applications
								high tensile strain (.182) for rail vehicles (.414)

\* Detailed selection for Ethernet cables can be found on page 187

Bus system/ chainflex® type	Number of cores and conductor Jacket nominal cross section[mm²]	Page
<b>Profibus (1x2x0.64mm)</b> 150Ohm		
CF888.001	PVC (2x0.25)C	190
CFBUS.PVC.001	PVC (2x0.25)C	194
CF898.001	iguPUR(2x0.25)C	198
CFBUS.PUR.001	PUR (2x0.25)C	202
CFBUS.001	TPE (2x0.25)C	206
CFBUS.002	TPE (2x0.25)C+4x1.5	206
CFBUS.003	TPE (2x0.25)C+3G0.75	206
CFBUS.LB.001	TPE (2x0.25)C	212
CFROBOT8.001	PUR (2x0.35)C	408
CFROBOT8.PLUS.001	PUR (2x0.25)C	412
CFSPECIAL.182.001	PUR (2x0.25)C	424
<b>Interbus</b> 100Ohm		
CFBUS.010	TPE (3x(2x0.25))C	206
CFBUS.011	TPE (3x(2x0.25)+(3G1.0))C	206
<b>CAN-Bus</b> 120Ohm		
CF888.021	PVC (2x0.5)C	190
CFBUS.PVC.020	PVC (4x0.25)C	194
CFBUS.PVC.021	PVC (2x0.5)C	194
CFBUS.PVC.022	PVC (4x0.5)C	194
CF898.021	iguPUR(2x0.5)C	198
CFBUS.PUR.020	PUR (4x0.25)C	202
CFBUS.PUR.021	PUR (2x0.5)C	202
CFBUS.PUR.022	PUR (4x0.5)C	202
CFBUS.020	TPE (4x0.25)C	206
CFBUS.021	TPE (2x0.5)C	206
CFBUS.022	TPE (4x0.5)C	206
CFBUS.LB.020	TPE (4x0.25)C	212
CFBUS.LB.021	TPE (2x0.5)C	212
CFBUS.LB.022	TPE (4x0.5)C	212
CFROBOT8.022	PUR (4x0.5)C	408
CFROBOT8.PLUS.022 <b>New</b>	PUR (4x0.5)C	412
<b>Device Net</b> 120Ohm		
CFBUS.030	TPE ((2xAWG24)C+2xAWG22)C	206
CFBUS.031	TPE ((2xAWG18)C+2xAWG15)C	206
<b>CC-Link</b> 110Ohm		
CFBUS.PVC.035	PVC (3x0.5)C	194
CFBUS.PUR.035	PUR (3x0.5)C	204
CFBUS.035	TPE (3xAWG20)C	206
<b>Ethernet/CAT5I</b> 100Ohm		
CFBUS.PVC.040	PVC (4x0.25)C	194
CFBUS.PUR.040	PUR (4x0.25)C	202
CFBUS.040	TPE (4x0.25)C	208
CFBUS.LB.040	TPE (4x(0.25)C	212
<b>Single Pair Ethernet</b> 100Ohm		
CFBUS.PUR.042	PUR (2x0.15)C	202
<b>Ethernet/CAT5e</b> 100Ohm		
CF888.045	PVC (4x(2x0.14))C	190
CFBUS.PVC.045	PVC (4x(2x0.15))C	194
CF898.045	iguPUR (4x(2x0.14))C	198

Bus system/ chainflex® type	Number of cores and conductor Jacket nominal cross section[mm²]	Page
<b>Ethernet/CAT5e</b> 100Ohm		
CFBUS.PUR.045	PUR (4x(2x0.15))C	202
CFBUS.045	TPE (4x(2x0.15))C	208
CFBUS.LB.045	TPE (4x(2x0.15))C	212
CFROBOT8.045	PUR 4x(2x0.15)C	408
CFROBOT8.PLUS.045	PUR (4x(2x0.15))C	412
CFSPECIAL.182.045	PUR (4x(2x0.15))C	424
<b>Ethernet/CAT6</b> 100Ohm		
CFBUS.PVC.049	PVC (4x(2x0.15))C	194
CFBUS.PUR.049	PUR (4x(2x0.15))C	202
CFBUS.PUR.H01.049	PUR (4x(2x0.15))C+4x1.5	202
CFBUS.049	TPE (4x(2x0.15))C	208
CFBUS.LB.049	TPE (4x(2x0.15))C	212
CFROBOT8.049	PUR 4x(2x0.15)C	408
CFROBOT8.PLUS.049 <b>New</b>	PUR (4x(2x0.15))C	412
CFSPECIAL.484.049	- (4x(2x0.15))C	424
<b>Ethernet/CAT6A</b> 100Ohm		
CFBUS.PVC.050	PVC 4x(2x0.20)C	194
CFBUS.PUR.050	PUR 4x(2x0.20)C	202
CFBUS.050	TPE (4x(2x0.15)C)C	208
CFROBOT8.050	PUR 4x(2x0.15)C	408
CFROBOT8.PLUS.050 <b>New</b>	PUR (4x(2x0.15)C)C	412
<b>Ethernet/CAT7</b> 100Ohm		
CFBUS.PVC.052	PVC (4x(2x0.15)C)C	192
CFBUS.PUR.052	PUR (4x(2x0.15)C)C	200
CFBUS.052	TPE (4x(2x0.15)C)C	206
<b>FireWire IEEE 1394a/b</b> 100Ohm		
CFBUS.PUR.056	PUR (2x(2x0.15)C+2x0.38)C	202
CFBUS.055	TPE 2x(2x0.15)C+2x(0.34)C	208
<b>Profinet</b> 100Ohm		
CF888.060	PVC (4x0.38)C	190
CFBUS.PVC.060	PVC (4x0.38)C	194
CF898.060	iguPUR (4x0.34)C	198
CF898.061.FC	iguPUR (4x0.34)C	198
CFBUS.PUR.060	PUR (4x0.38)C	202
CFBUS.PUR.H01.060	PUR (4x0.38)C+4x1.5	202
CFBUS.060	TPE (4x0.38)C	208
CFBUS.LB.060	TPE (4x0.38)C	212
CFROBOT8.060	PUR (2x(2x0.34))C	408
CFROBOT8.PLUS.060	PUR (4x0.38)C	412
<b>USB</b> 90Ohm		
CFBUS.065	TPE ((2xAWG28)+2xAWG20)C	208
CFBUS.066	TPE ((2xAWG24)+2xAWG20)C	208
<b>USB 3.0</b> 90Ohm		
CFBUS.PVC.068	PVC (2x(2xAWG28)+2x(2xAWG28)C)C	194
CFBUS.PUR.068	PUR (2x(2xAWG28)+2x(2xAWG28)C)C	202
<b>DVI</b> 100Ohm		
CFBUS.070	TPE (4x(2xAWG28)C +2xAWG28)+3xAWG28)C	208
<b>ASI BUS (flat cables)</b>		
CF898.082 (yellow)	iguPUR 2x2.5	198
CF898.083 (black)	iguPUR 2x2.5	198

\* Details of the chainflex® Ethernet cables can be found on page 187!



## For all data rates and types of movement ... Networking your machine with chainflex® 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® 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.

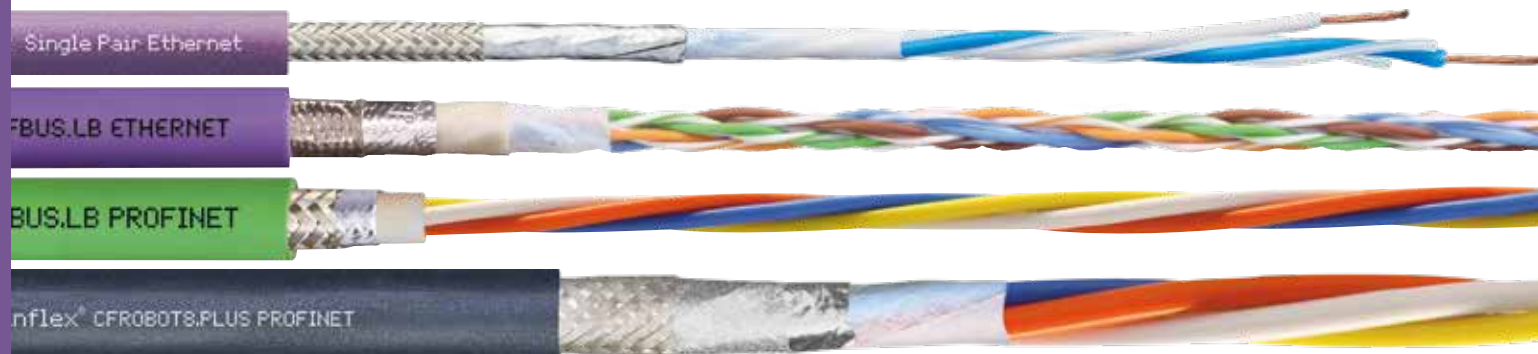
By taking into account the individual mechanical requirements in your application, we can offer more customised solutions. There are cables for large and small bend radii for linear movements in energy chains or torsional movements on robots. We can offer you a reasonably priced PVC solution, an oil-resistant 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:



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

CAT7 10Gbit 600MHz	chainflex® CFBUS.PVC.052 Page 194	chainflex® CFBUS.PUR.052 Page 202	chainflex® CFBUS.052 Page 208	chainflex® CFROBOT8.052 Page 408					
CAT6A 10Gbit 500MHz	chainflex® CFBUS.PVC.050 Page 194	chainflex® CFBUS.PUR.050 Page 202	chainflex® CFBUS.050 Page 208	chainflex® CFROBOT8.050 Page 408	chainflex® CFROBOT8. PLUS.050 Page 412				
CAT6 1Gbit 250MHz	chainflex® CFBUS.PVC.049 Page 194	chainflex® CFBUS.PUR.049 Page 202	chainflex® CFBUS.049 Page 208	chainflex® CFBUS.LB.049 Page 212	chainflex® CFROBOT8.049 Page 408	chainflex® CFROBOT8. PLUS.049 Page 412	chainflex® CFSPECIAL. 484.049 Page 430		
CAT5e 1Gbit 100MHz	chainflex® CF888.045 Page 190	chainflex® CFBUS.PVC.045 Page 194	chainflex® CF898.045 Page 198	chainflex® CFBUS.PUR.045 Page 202	chainflex® CFBUS.045 Page 208	chainflex® CFBUS.LB.045 Page 212	chainflex® CFROBOT8.045 Page 408	chainflex® CFROBOT8. PLUS.045 Page 412	chainflex® CFSPECIAL. 182.045 p. 424 CFCLEAN8.045 Page 460
SPE 1Gbit 600MHz			chainflex® CFBUS.PUR.042 Page 202						
Profinet 100Mbit 100MHz	chainflex® CF888.060 Page 190	chainflex® CFBUS.PVC.060 Page 194	CF898.060 Page 198 CF898.061.FC Page 198	chainflex® CFBUS.PUR.060 Page 202	chainflex® CFBUS.060 Page 208	chainflex® CFBUS.LB.060 Page 212	chainflex® CFROBOT8.060 Page 408	chainflex® CFROBOT8. PLUS.060 Page 412	
CAT5 100Mbit 100MHz		chainflex® CFBUS.PVC.040 Page 194		chainflex® CFBUS.PUR.040 Page 202	chainflex® CFBUS.040 Page 208	chainflex® CFBUS.LB.040 Page 212			
	CF888 PVC 15 x d	CFBUS.PVC PVC, oil-res. 12.5 x d	CF898 iguPUR 15 x d	CFBUS.PUR PUR 12.5 x d	CFBUS TPE UL 10 x d	CFBUS.LB TPE Hal 7.5 x d	CFROBOT8 PUR ± 180°/m	CFROBOT8.PLUS PUR ± 360°/m	Special cables

Mechanical 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 derivatives 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 CAT6A 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® 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.

low	1	2	3	4	5	6	7	highest
Travel distance	1	2	3	4	5	6	7	≥ 400m
Oil resistance	1	2	3	4	highest			
Torsion	1	2	3	4	±360°			

# Bus cable | PVC | chainflex® CF888

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s²
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

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

## Electrical information

<b>Nominal voltage</b>	50V 300V (following UL), except <b>CF888.001</b> : 30V (following UL)
<b>Testing voltage</b>	500V

# Class 3.1.1.1

## Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF888">www.igus.eu/CF888</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

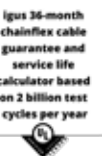
## Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## 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



igus® chainflex® CF888.045

Example image

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

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



# Bus cable | PVC | chainflex® CF888

## Class 3.1.1.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
<b>Profibus (1x2x0.64mm)</b>				
CF888.001	(2x0.25)C	8.0	18	59
<b>CAN-Bus</b>				
CF888.021	(2x0.5)C	8.5	24	73
<b>Ethernet/CAT5e</b>				
CF888.045	(4x(2x0.14))C	7.0	25	62
<b>Profinet</b>				
CF888.060 <sup>2) 13)</sup>	(4x0.34)C	7.0	25	59

The chainflex® 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

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CF888.001	150	2x0.25	red, green
<b>CAN-Bus</b>			
CF888.021	120	2x0.5	white, brown
<b>Ethernet/CAT5e</b>			
CF888.045	100	4x(2x0.14)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
CF888.060 <sup>2) 13)</sup>	100	4x0.34	white, orange, blue, yellow (star-quad)



### 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/cf-case](http://www.igus.eu/cf-case)



### 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



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



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

# Bus cable | PVC | chainflex® CFBUS.PVC

- 36** 10 million Double strokes guaranteed
- 12.5 x d** Bend radius, e-chain®
- 20m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 12.5 x d
	<b>flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 7 x d
<b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		30m/s²
<b>Travel distance</b>		Unsupported travels and up to 20m for gliding applications, Class 3

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ► <b>Product range table</b>
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Red lilac (similar to RAL 4001) Variants ► <b>Product range table</b>

### Electrical information

<b>Nominal voltage</b>	50V 300V (following UL), except <b>CFBUS.PVC.020</b> : 30V (following UL)
<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.3.2.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL listed</b>	CMX, 75°C (except CFBUS.PVC.068)
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFBUSPVC">www.igus.eu/CFBUSPVC</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>CLPA</b>	<b>CFBUS.PVC.045: CC-Link IE Field</b> , Reference no. 153 <b>CFBUS.PVC.049: CC-Link IE Field</b> , Reference no. 154
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	15	16	17
+15/+60	12.5	13.5	14.5
+60/+70	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Machining units/packages machines, handling, indoor cranes



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



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



Example image

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

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)







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]
<b>Profibus (1x2x0.64mm)</b>				
CFBUS.PVC.001	(2x0.25)C	8.5	25	77
<b>CAN-Bus</b>				
CFBUS.PVC.020 <sup>2)</sup>	(4x0.25)C	7.0	23	57
CFBUS.PVC.021	(2x0.5)C	8.5	32	86
CFBUS.PVC.022 <sup>2)</sup>	(4x0.5)C	8.5	43	94
<b>CC-Link</b>				
CFBUS.PVC.035	(3x0.5)C	8.0	40	82
<b>Ethernet/CAT5I</b>				
CFBUS.PVC.040 <sup>2)</sup>	(4x0.25)C	6.5	29	70
<b>Ethernet/CAT5e</b>				
CFBUS.PVC.045	(4x(2x0.15))C	7.5	33	67
<b>Ethernet/CAT6</b>				
CFBUS.PVC.049	(4x(2x0.15))C	7.5	33	67
<b>Ethernet/CAT6A</b>				
CFBUS.PVC.050	4x(2x0.20)C	10.0	65	123
<b>Ethernet/CAT7</b>				
CFBUS.PVC.052	(4x(2x0.15)C)C	9.5	89	136
<b>Profinet</b>				
CFBUS.PVC.060 <sup>2) 13)</sup>	(4x0.38)C	7.0	33	67
<b>USB 3.0</b>				
CFBUS.PVC.068	(2x(2xAWG28) + 2x(2xAWG28)C)C	7.0	39	68

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFBUS.PVC.001	150	2x0.25	red, green
<b>CAN-Bus</b>			
CFBUS.PVC.020 <sup>2)</sup>	120	4x0.25	white, green, brown, yellow (star-quad)
CFBUS.PVC.021	120	2x0.5	white, brown
CFBUS.PVC.022 <sup>2)</sup>	120	4x0.5	white, green, brown, yellow (star-quad)
<b>CC-Link</b>			
CFBUS.PVC.035	110	3x0.5	white, blue, yellow
<b>Ethernet/CAT5I</b>			
CFBUS.PVC.040 <sup>2)</sup>	100	4x0.25	white, green, brown, yellow (star-quad)
<b>Ethernet/CAT5e</b>			
CFBUS.PVC.045	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>			
CFBUS.PVC.049	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A</b>			
CFBUS.PVC.050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT7</b>			
CFBUS.PVC.052	100	4x(2x0.15)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
CFBUS.PVC.060 <sup>2) 13)</sup>	100	4x0.38	white, orange, blue, yellow (star-quad)
<b>USB 3.0</b>			
CFBUS.PVC.068	90	2x(2xAWG28) / 2x(2xAWG28)C	red/black, green/white-green / blue/yellow, orange/violet

The chainflex® 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

**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.



**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/cf-case](http://www.igus.eu/cf-case)



# Bus cable | iguPUR | chainflex® CF898

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
	<b>e-chain® linear flexible</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +70°C
	<b>fixed</b>	-40°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s²
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

### Cable structure

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

### Electrical information

<b>Nominal voltage</b>	50V 300V (following UL), except <b>CF898.001</b> : 30V (following UL)
<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame <b>CF898.082-CF898.083</b> : According to IEC 60332-1-2, FT2
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF898">www.igus.eu/CF898</a>
<b>NFPA</b>	<b>CF898.001-CF898.060</b> : Following NFPA 79-2018, Kapitel 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially 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



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



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



Example image

EPLAN download, configurators ► [www.igus.eu/CF898](http://www.igus.eu/CF898)

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



EU2023

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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)





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]
<b>Profibus (1x2x0.64mm)</b>				
CF898.001	(2x0.25)C	8.0	18	56
<b>CAN-Bus</b>				
CF898.021	(2x0.5)C	8.5	24	80
<b>Ethernet/CAT5e</b>				
CF898.045	(4x(2x0.14))C	7.0	25	54
<b>Profinet</b>				
CF898.060 <sup>13)</sup>	(4x0.34)C	7.0	25	58
CF898.061.FC	(4x0.34)C	7.0	25	72
<b>ASI BUS (flat cables)</b>				
CF898.082 <sup>14)</sup>	According to ASI	4.0	50	82
CF898.083 <sup>15)</sup>	According to ASI	4.0	50	79

<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



**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/cf-case](http://www.igus.eu/cf-case)

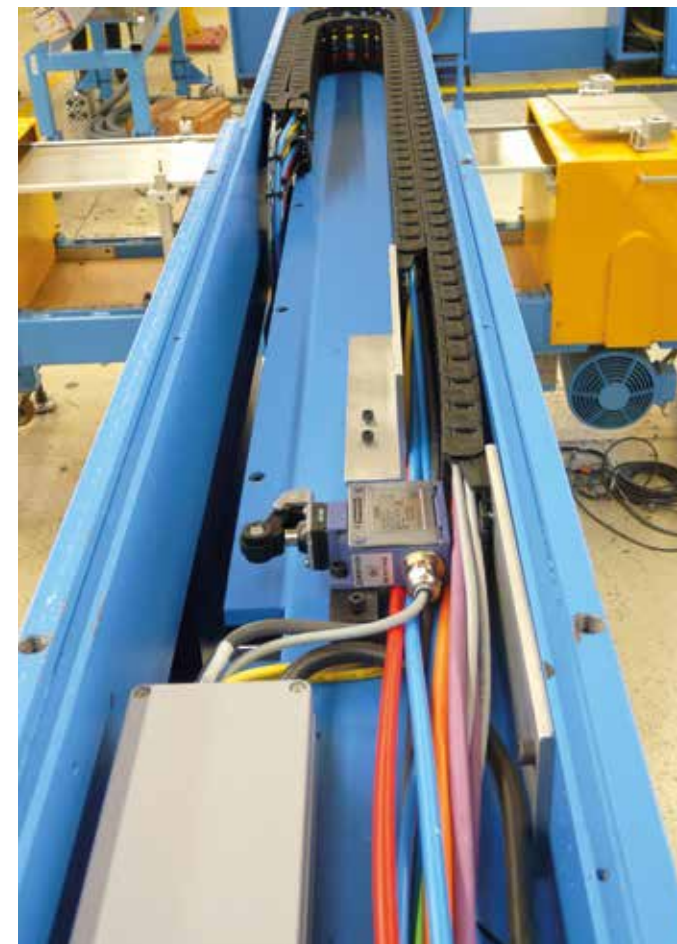


**Technical note on bus cables**

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](http://www.igus.eu/CF898)

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CF898.001	150	2x0.25	red, green
<b>CAN-Bus</b>			
CF898.021	120	2x0.5	white, brown
<b>Ethernet/CAT5e</b>			
CF898.045	100	4x(2x0.14)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
CF898.060 <sup>13)</sup>	100	4x0.34	white, orange, blue, yellow (star-quad)
CF898.061.FC	100	4x0.34	white, orange, blue, yellow (star-quad)
<b>ASI BUS (flat cables)</b>			
CF898.082 <sup>14)</sup>	According to ASI	2x2.5	blue, brown
CF898.083 <sup>15)</sup>	According to ASI	2x2.5	blue, brown



Adjustment device with chainflex® CF898 bus cables



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



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

# Bus cable | PUR | chainflex® CFBUS.PUR

- 36** 10 million Double strokes guaranteed
- 12.5 x d** Bend radius, e-chain®
- 20m** Travel distance, e-chain®

- 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

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d minimum 10 x d
	<b>fixed</b>	minimum 7 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +70°C -40°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>	<b>gliding</b>	2m/s 30m/s²
<b>Travel distance</b>	Unsupported travels and up to 20m for gliding applications, Class 3	

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ► <b>Product range table</b>
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	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 ► <b>Product range table</b>

### Electrical information

<b>Nominal voltage</b>	50V 300V (following UL), except <b>CFBUS.PUR.020</b> : 30V (following UL)
<b>Testing voltage</b>	500V

### Properties and approvals

<b>UV resistance</b>	Medium
----------------------	--------

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

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

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 4.3.3.1

<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL listed</b>	CMX, 75°C (except CFBUS.PUR.068)
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFBUSPUR">www.igus.eu/CFBUSPUR</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>CLPA</b>	<b>CFBUS.PUR.045: CC-Link IE Field</b> , Reference no. 151 <b>CFBUS.PUR.049: CC-Link IE Field</b> , Reference no. 152
<b>DNV</b>	Type Approval Certificate TAE00003X6
<b>EAC</b>	<b>CFBUS.PUR.040-.052</b> : Type Approval Certificate TAE00003X8 Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

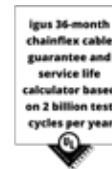
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

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







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]
<b>Profibus (1x2x0.64mm)</b>				
CFBUS.PUR.001	(2x0.25)C	8.5	25	75
<b>CAN-Bus</b>				
CFBUS.PUR.020 <sup>2)</sup>	(4x0.25)C	7.5	23	64
CFBUS.PUR.021	(2x0.5)C	8.5	32	82
CFBUS.PUR.022 <sup>2)</sup>	(4x0.5)C	8.5	43	91
<b>CC-Link</b>				
CFBUS.PUR.035	(3x0.5)C	8.0	40	76
<b>Ethernet/CAT5I</b>				
CFBUS.PUR.040 <sup>2)</sup>	(4x0.25)C	6.5	29	69
<b>Single Pair Ethernet/CAT5e</b>				
CFBUS.PUR.042	(2x0.15)C	5.5	12	33
<b>Ethernet/CAT5e</b>				
CFBUS.PUR.045	(4x(2x0.15))C	7.5	33	66
<b>Ethernet/CAT6</b>				
CFBUS.PUR.049	(4x(2x0.15))C	7.5	33	66
CFBUS.PUR.H01.049	((4x(2x0.15))C+4x1.5)C	12.5	125	202
<b>Ethernet/CAT6A</b>				
CFBUS.PUR.050	4x(2x0.20)C	10.0	65	120
<b>Ethernet/CAT7</b>				
CFBUS.PUR.052	(4x(2x0.15)C)C	9.5	89	129
<b>FireWire IEEE 1394b</b>				
CFBUS.PUR.056	(2x(2x0.15)C+2x0.38)C	9.0	59	91
<b>Profinet</b>				
CFBUS.PUR.060 <sup>2) 13)</sup>	(4x0.38)C	7.0	33	64
CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	11.5	120	196
<b>USB 3.0</b>				
CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	39	64

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFBUS.PUR.001	150	2x0.25	red, green
<b>CAN-Bus</b>			
CFBUS.PUR.020 <sup>2)</sup>	120	4x0.25	white, green, brown, yellow (star-quad)
CFBUS.PUR.021	120	2x0.5	white, brown
CFBUS.PUR.022 <sup>2)</sup>	120	4x0.5	white, green, brown, yellow (star-quad)
<b>CC-Link</b>			
CFBUS.PUR.035	110	3x0.5	white, blue, yellow
<b>Ethernet/CAT5I</b>			
CFBUS.PUR.040 <sup>2)</sup>	100	4x0.25	white, green, brown, yellow (star-quad)
<b>Single Pair Ethernet/CAT5e</b>			
CFBUS.PUR.042		2x0.15	white/blue
<b>Ethernet/CAT5e</b>			
CFBUS.PUR.045	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>			
CFBUS.PUR.049	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
CFBUS.PUR.H01.049	100	(4x(2x0.15))C 4x1.5	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown black, brown, grey, blue
<b>Ethernet/CAT6A</b>			
CFBUS.PUR.050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT7</b>			
CFBUS.PUR.052	110	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>FireWire IEEE 1394b</b>			
CFBUS.PUR.056	110	2x(2x0.15)C 2x0.38	orange/blue, blue/red black, white
<b>Profinet</b>			
CFBUS.PUR.060 <sup>2) 13)</sup>	100	4x0.38	white, orange, blue, yellow (star-quad)
CFBUS.PUR.H01.060	100	(4x0.38)C 4x1.5	white, orange, blue, yellow (star-quad) black, brown, grey, blue
<b>USB 3.0</b>			
CFBUS.PUR.068	90	2x(2xAWG28) 2x(2xAWG28)C	red/black, green/white-green blue/yellow, orange/violet

The chainflex® 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

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

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

CFRIP  
UL LISTED  
UL US  
NFPA  
CLPA  
DNV  
EAC  
REACH  
RoHS  
clean-room  
DESINA  
CE  
UK CA

# Bus cable | TPE | chainflex® CFBUS

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d (CFBUS.001-.049 and CFBUS.060)
		<b>flexible</b>	minimum 8 x d
	<b>Temperature</b>	<b>fixed</b>	minimum 5 x d
		<b>e-chain® linear</b>	-35°C up to +70°C
		<b>flexible</b>	-45°C up to +70°C (following DIN EN 60811-504)
	<b>v max.</b>	<b>fixed</b>	-50°C up to +70°C (following DIN EN 50305)
		<b>unsupported</b>	10m/s
	<b>a max.</b>	<b>gliding</b>	6m/s
			100m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travels and up to 400m and more for gliding applications, Class 6	

### Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ► <a href="#">Product range table</a>
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001) Variants ► <a href="#">Product range table</a>

### Electrical information

	<b>Nominal voltage</b>	50V 600V (following UL), except <b>CFBUS.065/.066</b> : 30V (following UL)
	<b>Testing voltage</b>	500V (following DIN EN 50289-1-3)

### Properties and approvals

	<b>UV resistance</b>	Medium
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Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 6.6.4.1

- Oil resistance
- Flame-retardant
- Silicone-free
- UL verified
- UL/CSA AWM
- NFPA
- CLPA
- DNV
- EAC
- REACH
- Lead-free
- Cleanroom
- DESINA
- CE
- UKCA

Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4  
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 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](http://www.igus.eu/CFBUS)

Following NFPA 79-2018, chapter 12.9

**CFBUS.045**: [CC-Link IE Field](#), Reference no. 130

**CFBUS.049**: [CC-Link IE Field](#), 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 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  
According to VDW, DESINA standardisation

Following 2014/35/EU

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

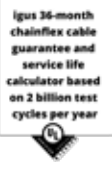
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million		7.5 million		10 million	
	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	12.5	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](http://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 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





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]
<b>Profibus (1x2x0.64mm)</b>				
 CFBUS.001	(2x0.25)C	9.0	33	92
 CFBUS.002	(2x0.25)C+4x1.5	12.5	94	191
 CFBUS.003	(2x0.25)C+3G0.75	11.5	55	145
<b>Interbus</b>				
CFBUS.010	(3x(2x0.25))C	9.0	47	91
CFBUS.011	(3x(2x0.25)+(3G1.0))C	10.5	87	152
<b>CAN-Bus</b>				
CFBUS.020 <sup>2)</sup>	(4x0.25)C	6.5	28	58
CFBUS.021	(2x0.5)C	8.0	39	81
CFBUS.022 <sup>2)</sup>	(4x0.5)C	8.0	43	87
<b>DeviceNet</b>				
CFBUS.030 <sup>4)</sup>	((2xAWG24)C +2xAWG22)C	7.0	36	57
CFBUS.031 <sup>4)</sup>	((2xAWG18)C +2xAWG15)C	11.5	103	174
<b>CC-Link</b>				
 CFBUS.035	(3xAWG20)C	8.5	43	96

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® 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/cf-case](http://www.igus.eu/cf-case)



Class 6.6.4.1

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFBUS.001	150	2x0.25	red, green
CFBUS.002	150	(2x0.25)C 4x1.5	red/green black with white numbers 1-4
CFBUS.003	150	(2x0.25)C 3G0.75	red/green black, blue, green-yellow
<b>Interbus</b>			
CFBUS.010	100	3x(3x0.25)	white/brown, green/yellow, grey/pink
CFBUS.011	100	3x(2x0.25) (3G1.0)	white/brown, green/yellow, grey/pink red, blue, green-yellow
<b>CAN-Bus</b>			
CFBUS.020 <sup>2)</sup>	120	4x0.25	white, green, brown, yellow (star-quad)
CFBUS.021	120	2x0.5	white, brown
CFBUS.022 <sup>2)</sup>	120	4x0.5	white, green, brown, yellow (star-quad)
<b>DeviceNet</b>			
CFBUS.030 <sup>4)</sup>	120	(2xAWG24)C 2xAWG22	white/blue red, black
CFBUS.031 <sup>4)</sup>	120	(2xAWG18)C 2xAWG15	white/blue red, black
<b>CC-Link</b>			
CFBUS.035	110	3xAWG20	white, blue, yellow

**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.



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



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

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]
<b>Ethernet/CAT5I</b>				
<b>CFBUS.040</b> <sup>2)</sup>	(4x0.25)C	7.0	33	59
<b>Ethernet/CAT5e</b>				
<b>CFBUS.045</b>	(4x(2x0.15))C	8.5	42	84
<b>Ethernet/CAT6</b>				
<b>CFBUS.049</b>	(4x(2x0.15))C	8.5	42	84
<b>Ethernet/CAT6A</b>				
<b>CFBUS.050</b> <sup>4)</sup>	(4x(2x0.15)C)C	10.5	83	134
<b>Ethernet/CAT7</b>				
<b>CFBUS.052</b> <sup>4)</sup>	(4x(2x0.15)C)C	10.5	89	133
<b>FireWire 1394a</b>				
<b>CFBUS.055</b>	2x(2x0.15)C+2x(0.34)C	8.0	39	76
<b>Profinet</b>				
<b>CFBUS.060</b> <sup>2) 13)</sup>	(4x0.38)C	7.5	39	74
<b>USB</b>				
<b>CFBUS.065</b>	((2xAWG28)+2xAWG20)C	5.5	28	45
<b>CFBUS.066</b>	((2xAWG24)+2xAWG20)C	6.5	32	51
<b>DVI</b>				
<b>CFBUS.070</b> <sup>4) 6)</sup>	(4x(2xAWG28)C +(2xAWG28)+3xAWG28)C	9.0	35	95

Class 6.6.4.1

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5I</b>			
<b>CFBUS.040</b> <sup>2)</sup>	100	4x0.25	white, green, brown, yellow (star-quad)
<b>Ethernet/CAT5e</b>			
<b>CFBUS.045</b>	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>			
<b>CFBUS.049</b>	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A</b>			
<b>CFBUS.050</b> <sup>4)</sup>	100	4x(2x0.15)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT7</b>			
<b>CFBUS.052</b> <sup>4)</sup>	100	4x(2x0.15)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>FireWire 1394a</b>			
<b>CFBUS.055</b>	100	2x(2x0.15)C 2x(0.34)C	orange/blue, green/red white, black
<b>Profinet</b>			
<b>CFBUS.060</b> <sup>2) 13)</sup>	100	4x0.38	white, orange, blue, yellow (star-quad)
<b>USB</b>			
<b>CFBUS.065</b>	90	(2xAWG28) 2xAWG20	white/green red, black
<b>CFBUS.066</b>	90	(2xAWG24) 2xAWG20	white/green red, black
<b>DVI</b>			
<b>CFBUS.070</b> <sup>4) 6)</sup>	100	4x(2xAWG28)C (2xAWG28) 3xAWG28)C	4 x white/yellow with element-shield in blue, black, red, white white/brown green, yellow, grey

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

<sup>4)</sup> Manufactured without inner jacket

<sup>6)</sup> 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**

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.





# Bus cable | TPE | chainflex® CFBUS.LB



**12.5 million**  
Double strokes guaranteed



**7.5 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- Low-temperature-flexible
- PVC and halogen-free
- Hydrolysis and microbe-resistant

**Now available  
with UL approval  
& 25% longer  
service life**

## Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
		<b>flexible</b>	minimum 6 x d
		<b>fixed</b>	minimum 4 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +70°C
		<b>flexible</b>	-50°C up to +70°C (following DIN EN 60811-504)
		<b>fixed</b>	-55°C up to +70°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>gliding</b>	6m/s
	<b>a max.</b>		100m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

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

## Electrical information

	<b>Nominal voltage</b>	50V 600V (following UL)
	<b>Testing voltage</b>	500V (following DIN EN 50289-1-3)

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

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.6.4.1

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFBUSLB">www.igus.eu/CFBUSLB</a> (from production date 01/2022)
	<b>CLPA</b>	<b>CFBUS.LB.045: CC-Link IE Field</b> , Reference no. 131 <b>CFBUS.LB.049: CC-Link IE Field</b> , Reference no. 138
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	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		7.5 million		12.5 million	
	CFBUS.LB .001-.022	CFBUS.LB .040-.060	CFBUS.LB .001-.022	CFBUS.LB .040-.060	CFBUS.LB .001-.022	CFBUS.LB .040-.060
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	12.5	10	13.5	11	14.5	12
-25/+60	10	7.5	11	8.5	12	9.5
+60/+70	12.5	10	13.5	11	14.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- 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 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



**36**  
up to 36 months guarantee

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



211








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



igus® chainflex® CFBUS.LB.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]
<b>Profibus (1x2x0.64mm)</b>				
 CFBUS.LB.001	(2x0.25)C	9.0	33	78
<b>CAN-Bus/Feldbus</b>				
CFBUS.LB.020 <sup>2)</sup>	(4x0.25)C	6.5	28	49
CFBUS.LB.021	(2x0.5)C	8.0	39	67
CFBUS.LB.022 <sup>2)</sup>	(4x0.5)C	8.0	43	78
<b>Ethernet/CAT5I</b>				
 CFBUS.LB.040 <sup>2)</sup>	(4x0.25)C	7.0	33	50
<b>Ethernet/CAT5e</b>				
 CFBUS.LB.045	(4x(2x0.15))C	8.5	42	71
<b>Ethernet/CAT6</b>				
 CFBUS.LB.049	(4x(2x0.15))C	8.5	42	71
<b>Profinet</b>				
 CFBUS.LB.060 <sup>2) 13)</sup>	(4x0.38)C	7.5	39	67

The chainflex® 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® CASE**

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

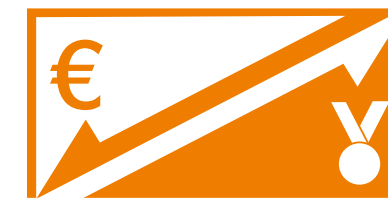
More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



Class 7.6.4.1

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFBUS.LB.001	150	2x0.25	red, green
<b>CAN-Bus/Feldbus</b>			
CFBUS.LB.020 <sup>2)</sup>	120	4x0.25	white, green, brown, yellow (star-quad)
CFBUS.LB.021	120	2x0.5	white, brown
CFBUS.LB.022 <sup>2)</sup>	120	4x0.5	white, green, brown, yellow (star-quad)
<b>Ethernet/CAT5I</b>			
CFBUS.LB.040 <sup>2)</sup>	100	4x0.25	white, green, brown, yellow (star-quad)
<b>Ethernet/CAT5e</b>			
CFBUS.LB.045	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>			
CFBUS.LB.049	100	4x(2x0.15)	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
CFBUS.LB.060 <sup>2) 13)</sup>	100	4x0.38	white, orange, blue, yellow (star-quad)

cost down...



...life up

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

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

**Technical note on bus cables**

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The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used.

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# Fibre Optic Cables



chainflex® cable	Jacket	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant	v max. [m/s] unsupported	v max. [m/s] gliding	a max.	Page
<b>Fibre Optic Cables</b>										
<b>Information about fibre optic cables</b>										216
CFLK	PUR	12.5	-20/+60		✓		10	5	20	220
CFLG88	PVC	7.5	+5/+70				3	2	20	222
CFLG.LB.PUR	PUR	5	-25/+80		✓		10	6	20	224
CFLG.LB	TPE	5	-35/+80		✓		10	6	20	228
CFLG.G	TPE	10	-40/+80		✓		10	6	20	232
<b>Twistable fibre optic cable (twistable cables chapter ▶ Page 378 )</b>										
CFROBOT5	TPE	10	-20/+80		✓		180	180		396

## Overview to find the right fibre optic cable

	POF Plastic FOC 980/1,000µm	GOF Multimode Glass fibre FOC 50/125µm 62.5/125µm	GOF Singlemode Glass fibre FOC 9/125µm
CFLK	✓		
CFLG88		✓	
CFLG.LB.PUR		✓	✓
CFLG.LB		✓	
CFLG.G		✓	✓
CFROBOT5		✓	

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

▶ Selection table page 218

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:

[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



## The safest and often most cost-efficient way to transfer data to machines and plant.

Communication between systems in machines and plant is becoming more and more complex all the time, yet fault-free performance is becoming ever more important.

However, many plant manufacturers or operators have major EMC problems that occur sporadically or even after years of operation.

These problems are often based on conventional bus cables that either have insufficient or unreliable shielding.

Alongside igus® chainflex® bus cables that already prevent these problems to a large extent, chainflex® fibre optic cables provide further advantages for even greater data safety.

Fibre Optic Cables (FOC) do not require a braided shielding that is susceptible to mechanical damage as EMC protection, and are insensitive to EMC on account of their very nature, since industrial conventional interference fields do not have any effect on light signals. In addition, fibre optic cables can be used independently of the system, since a special bus cable is not required for every bus system type, rather one FOC type can usually be used to operate any bus system providing the bus system manufacturer provides respective FOC converters.

The large number of fibre optic cables in industrial data transmission is also much more manageable than the large number of different field or high-speed buses which require a separate cable for each bus.

Thus the following fibre types can be used for industrial data communication, completely independently of the type of field bus used. The fibre type and number depends only on which converters are used and which fibre type the respective manufacturer prescribes. The fibres are defined on the basis of diameter and result in a clear and limited choice.

### Important fibre types:

- **Multi-mode fibres**

50/125µm

62.5/125µm

The ideal fibre for large data volumes and longer transmission lengths in the field of automation. Transmission lengths of several hundred metres can be realised quite easily, due to the very low output attenuation (0.8-3db/km per fibre and light wave length) of these fibre types.

- **POF (plastic fibres)**

980/1,000µm

The ideal and low-cost fibre for short transmission paths. On account of the high output attenuation of the fibre type of 160-230dB/km, lengths over 15m must be avoided in constantly moving energy chains.

- **PCF (Polymer Cladded Fiber)**

200/230µm

The ideal compromise for POF fibre. This plastic coated quartz glass fibre is a viable alternative for many terminal devices that have been designed for POF.

This means greater transmission lengths (100m and more) are possible without the original POF terminal devices having to be replaced.

chainflex® FOC offer the operator the following advantages:

#### 1. Greater data security

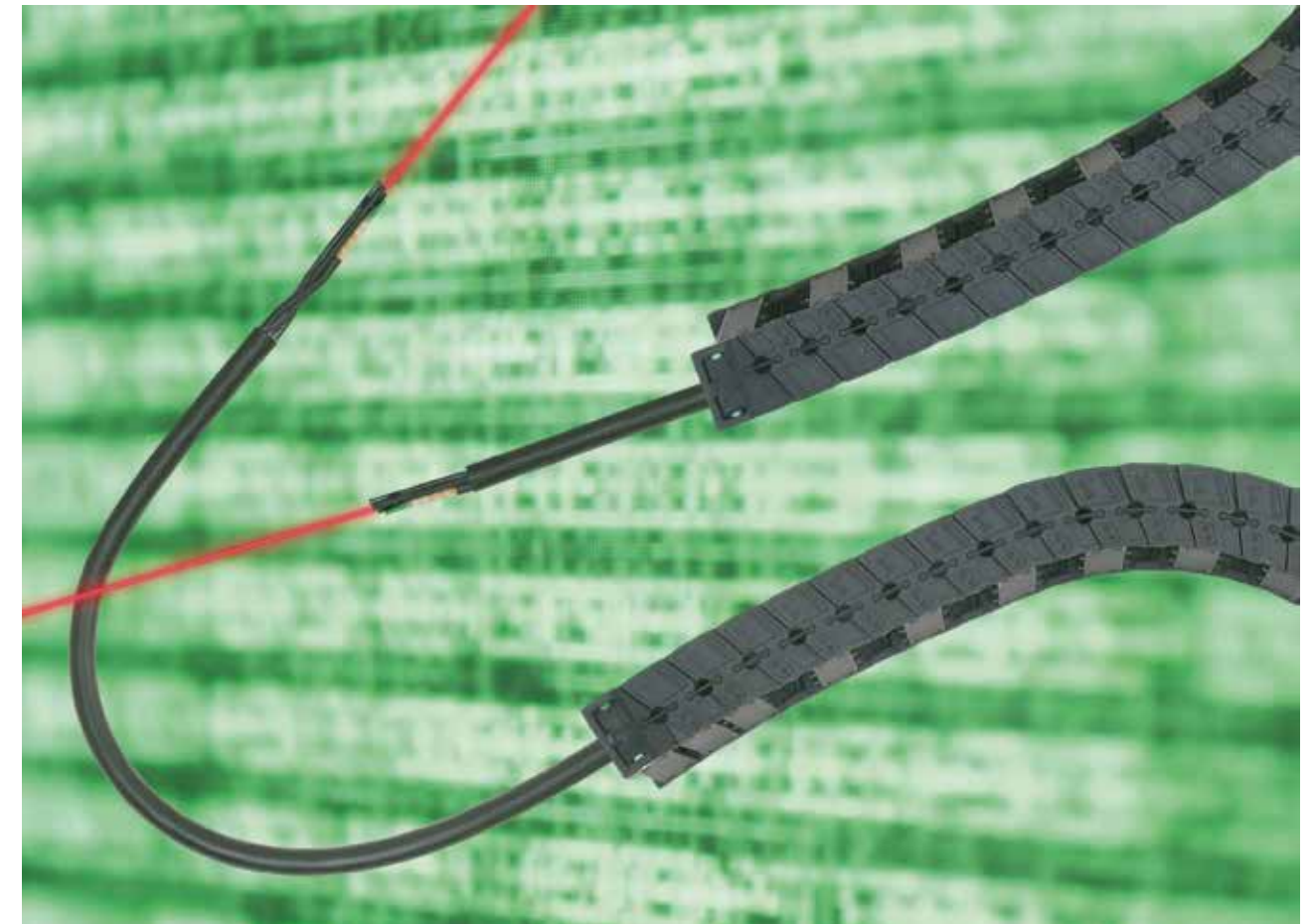
- Better transmission characteristics
- Greater possible transmission lengths of several 100m
- Greater possible data volumes thanks to lower attenuation values
- Maximum EMC protection for the data transmitted
- Future-proof installation (no cable replacement with new bus systems)

#### 2. Greater mechanical protection

- The FOC designed for permanent mechanical movement
- The igus® typical highly abrasion-proof and chemical-resistant sheathing materials
- The special chainflex® design concept (tested for 30 million cycles without a significant increase in attenuation)


#### 3. Future-oriented cost reduction

- Bus-independent bus cable wiring
- Longer service life in e-chains®
- Extendable without transmission limits







chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s <sup>2</sup> ]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million (5 million) double strokes *		
<b>Fibre Optic Cables</b>										
 CFLK	-20 / -10 -10/+50 +50/+60	10	5	20	≤ 20	15 12.5 15	16 13.5 16	17 14.5 17	220	
 CFLG88	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	10 7.5 10	11 8.5 11	12 9.5 12	222	
 CFLG.LB.PUR	-35 / -25 -25 / +70 +70 / +80	10	6	20	≤ 100	7.5 5 7.5	8.5 6 8.5	9.5 7 9.5	224	
 CFLG.LB	-35 / -25 -25 / +70 +70 / +80	10	6	20	≤ 100	7.5 5 7.5	8.5 6 8.5	9.5 7 9.5	228	
 CFLG.G	-40 / -30 -30 / +60 +60 / +70	10	6	20	> 400	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	232	

<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](http://www.igus.eu/chainflexlife)  
 Figures in brackets refer to series CFLG88



# Fibre Optic Cable | PUR | chainflex® CFLK

- 36** 10 million Double strokes guaranteed
- 12.5 x d** Bend radius, e-chain®
- 20m** Travel distance, e-chain®

- POF fibre for heavy duty applications and interference-free transmission
- PUR outer jacket
- Oil-resistant and coolant-resistant

### Dynamic information

Bend radius	<b>e-chain® linear</b>	minimum 12.5 x d
	<b>flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 7 x d
Temperature	<b>e-chain® linear</b>	-20°C up to +60°C
	<b>flexible</b>	-40°C up to +60°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +60°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
a max.		20m/s²
Travel distance		Unsupported travels and up to 20m for gliding applications, Class 3

### Cable structure

Fibre Optic Cable	980/1000 µm fibre with PE isolation.
Core structure	POF fibre with stranded high-tensile plastic reinforcement.
Core identification	► <b>Product range table</b>
Outer jacket	Low-adhesion, halogen-free PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Red lilac (similar to RAL 4001)

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
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"
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.3.3.1

Guaranteed service life (details see page 28-29)

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]
-20/-10	15	16	17
-10/+50	12.5	13.5	14.5
+50/+60	15	16	17

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

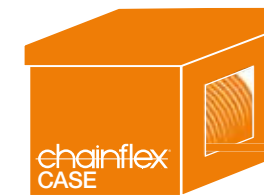
### Typical application areas

- For heavy-duty applications, Class 5
- Unsupported travels and up to 20m for gliding applications, Class 3
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Highest EMC safety
- Preferably indoor applications
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLK.L1.01	1x980/1,000	6.0	27
CFLK.L1.02	2x980/1,000	7.0	31

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

Part No.	Bandwidth [MHz x km] @ 650nm	Attenuation [dB/km] @ 650nm	Fibre identification
CFLK.L1.01	2	200	black
CFLK.L1.02	2	200	black, blue



### 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/cf-case](http://www.igus.eu/cf-case)



Woodworking machines with e-chains® and chainflex® cables



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



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





# Fibre Optic Cable | PVC | chainflex® CFLG88






**36** 5,000,000  
Double strokes guaranteed

**7.5 x d**  
Bend radius, e-chain®





**10m**  
Travel distance, e-chain®

- Graded index glass-fibre cable for flexing applications
- PVC outer jacket
- Flame-retardant









## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	3m/s
 <b>a max.</b>		20m/s <sup>2</sup>
 <b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

 <b>Fibre Optic Cable</b>	50/125µm, 62.5/125µm bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
 <b>Core structure</b>	FOC cores wound with a short pitch length with high-tensile aramid dampers.
 <b>Core identification</b>	FOC cores: Orange or blue with black numbers.
 <b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Properties and approvals

 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	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 Following 2014/35/EU
 <b>CE</b>	
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

EPLAN download, configurators ► [www.igus.eu/CFLG88](http://www.igus.eu/CFLG88)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.1.1

Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 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](http://www.igus.eu/chainflexlife)

## Typical application areas

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

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
<b>CFLG88.2.62.5/125</b> <sup>1)</sup>	2x62.5/125	7.0	44
<b>CFLG88.2.50/125</b>	2x50/125	7.0	44

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

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

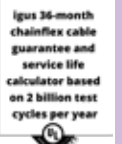
Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
<b>CFLG88.2.62.5/125</b>	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
<b>CFLG88.2.50/125</b>	≥ 200	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers



## 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/cf-case](http://www.igus.eu/cf-case)



# Fibre Optic Cable | PUR | chainflex® CFLG.LB.PUR

**36** 10 million  
Double strokes guaranteed

**5 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®

- Graded index glass-fibre cable for heaviest duty applications
- PUR outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible
- PVC and halogen-free
- UV-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Fibre Optic Cable</b>	50/125 µm, 62.5/125 µm, 9/125 µm especially bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
<b>Core structure</b>	FOC cores wound with a short pitch length with high-tensile aramid dampers.
<b>Core identification</b>	Orange, blue or yellow with black numbers.
<b>Overall shield</b>	Extremely bending-resistant aramid braid for torsion protection.
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: jet black (similar to RAL 9005)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.5.3.1

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>DNV</b>	Type Approval Certificate TAE000048J
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	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	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	7.5	8.5	9.5
-15/+70	5	6	7
+70/+80	7.5	8.5	9.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with 5-7.5 x d, Class 6
- Unsupported travels and up to 100 m for gliding applications (horizontal + vertical), Class 5
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Offshore, ships, storage and retrieval units, processing/packaging machines, fast handling, semiconductor assembly, refrigeration area

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

UL



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



igus® chainflex® CFLG.LB.PUR

Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG.2LB.PUR.62.5/125	2x62.5/125	8.5	62
CFLG.4LB.PUR.62.5/125	4x62.5/125	9.0	68
CFLG.6LB.PUR.62.5/125 <sup>11)</sup>	6x62.5/125	11.0	96
CFLG.12LB.PUR.62.5/125	12x62.5/125	14.0	150
CFLG.6LB.PUR.50/125	6x50/125	11.0	95
CFLG.12LB.PUR.50/125	12x50/125	14.0	160
CFLG.6LB.PUR.9/125	6x9/125	11.0	95

<sup>11)</sup> Phase-out model  
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
CFLG.2LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.4LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.6LB.PUR.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.12LB.PUR.62.5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numbers
CFLG.6LB.PUR.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.12LB.PUR.50/125	≥ 200	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers

Part No.	Attenuation [dB/km] @ 1,310nm	Chromatic dispersion [ps/nm/km] @ 1,310nm	Attenuation [dB/km] @ 1,550nm	Chromatic dispersion [ps/nm/km] @ 1,550nm	Fibre identification
CFLG.6LB.PUR.9/125	≤ 0.35	3.5	≤ 0.25	18	yellow with black numbers

**Order example: CFLG.4LB.PUR.62.5/125 - to your desired length (0.5m steps)**  
CFLG.LB.PUR chainflex® series .4 Number of fibres .62.5/125 Fibre diameter

Order online ► [www.igus.eu/CFLGLBPUR](http://www.igus.eu/CFLGLBPUR)

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



**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/cf-case](http://www.igus.eu/cf-case)



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



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

# Fibre Optic Cable | TPE | chainflex® CFLG.LB

**36** 10 million Double strokes guaranteed **5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

- Graded index glass-fibre cable for heaviest duty applications
- TPE outer jacket
- Metal-free
- Oil and bio-oil-resistant
- Low-temperature-flexible
- PVC and halogen-free
- UV-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +80°C
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5 <b>CFLG.12.LB:</b> Unsupported travels and up to 400m for gliding applications, Class 6

## Cable structure

<b>Fibre Optic Cable</b>	50/125µm, 62.5/125µm bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
<b>Core structure</b>	FOC cores wound with a short pitch length with high-tensile aramid dampers.
<b>Core identification</b>	Orange or blue with black numbers.
<b>Overall shield</b>	Extremely bending-resistant aramid braid for torsion protection.
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 7.5.4.1

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	7.5	8.5	9.5
-25/+70	5	6	7
+70/+80	7.5	8.5	9.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

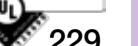
- For heaviest duty applications with 5-7.5 x d, Class 7
- Unsupported travels and up to 100m for gliding applications (horizontal + vertical), Class 5,  
**CFLG.12.LB:** Unsupported travels and up to 400m in gliding applications (horizontal + vertical), Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Crane applications, conveyor technology, storage and retrieval units, processing/ packaging machines, fast handling, semiconductor assembly, refrigeration area



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



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



Example image

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



igus® chainflex® CFLG.LB

Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG.2LB.62.5/125	2x62.5/125	8.5	57
CFLG.4LB.62.5/125	4x62.5/125	9.0	68
CFLG.6LB.62.5/125	6x62.5/125	11.0	91
CFLG.12LB.62.5/125	12x62.5/125	14.0	150
CFLG.2LB.50/125	2x50/125	8.5	54
CFLG.4LB.50/125	4x50/125	9.0	64
CFLG.6LB.50/125	6x50/125	11.0	86
CFLG.12LB.50/125	12x50/125	14.0	150

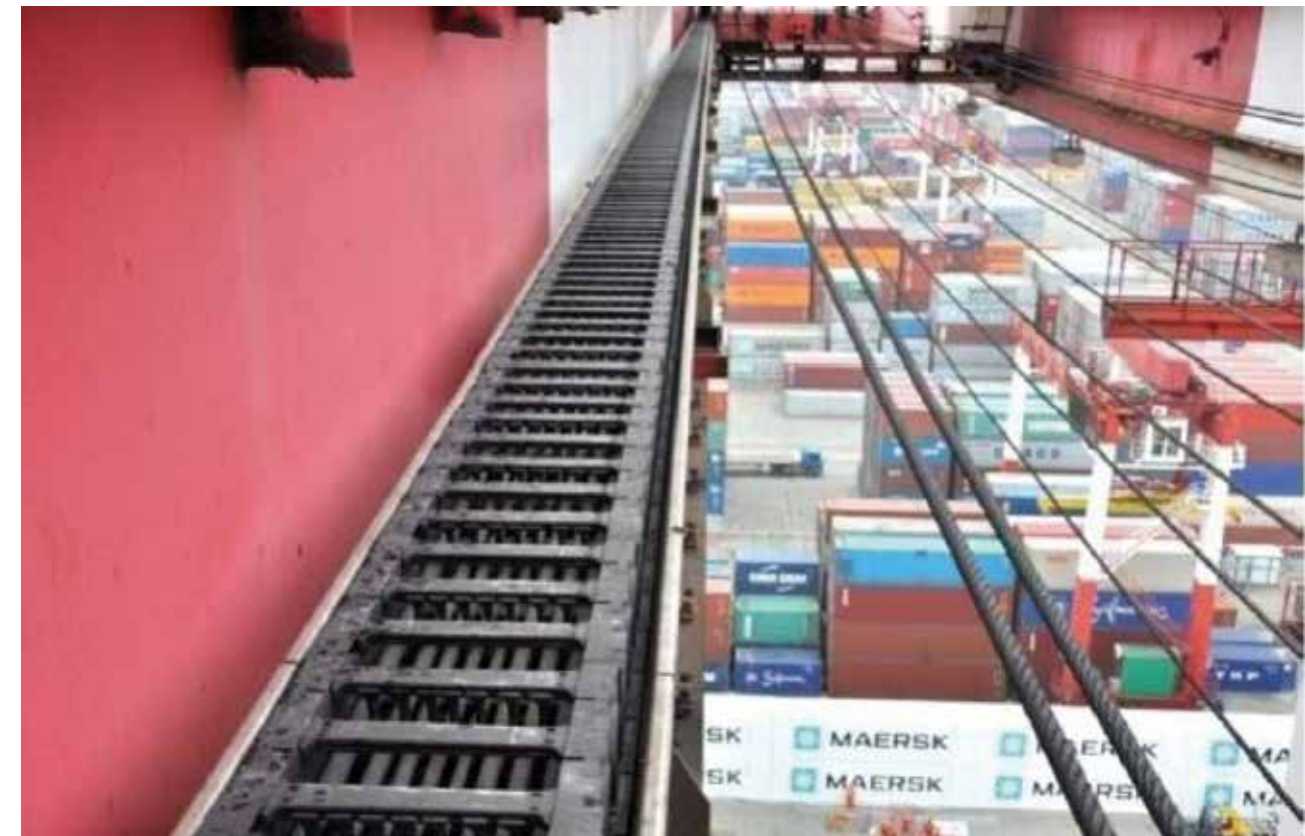
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm	Fibre identification
CFLG.2LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.4LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.6LB.62.5/125	≥ 200	≤ 3.5	≥ 500	≤ 1.5	orange with black numbers
CFLG.12LB.62.5/125	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with black numbers
CFLG.2LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.4LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.6LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers
CFLG.12LB.50/125	≥ 500	≤ 3.0	≥ 500	≤ 1.0	blue with black numbers

Order example: CFLG.4LB.62.5/125 - to your desired length (0.5m steps)  
CFLG.LB chainflex® series .4 Number of fibres .62.5/125 Fibre diameter

Order online ► [www.igus.eu/CFLGLB](http://www.igus.eu/CFLGLB)

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



chainflex® fibre optic cable on an STS crane



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/cf-case](http://www.igus.eu/cf-case)



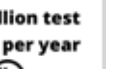
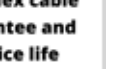
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igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year



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



# Fibre Optic Cable | TPE | chainflex® CFLG.G

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- Glass-fibre cable for heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- Low-temperature-flexible
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-40°C up to +80°C
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

<b>Fibre Optic Cable</b>	9/125 µm, 50/125 µm, 62.5/125 µm fibres in gel-filled tubes.
<b>Core structure</b>	Gel-filled fibre sheath surrounded by GRP rods and torsion protection braid in the outer jacket.
<b>Core identification</b>	Fibres ▶ <b>Product range table</b>
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.6.4.1

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
<b>Info</b>	For hanging applications, please use cables of the series CFLG.LB - see page 228!

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

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]
-40/-30	12.5	13.5	14.5
-30/+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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications (horizontal), Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Maximum EMC protection, with high transmission qualities
- Indoor and outdoor applications
- Crane applications, conveyor technology, low temperature applications



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



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







Example image

Part No.	Number of fibres/ Fibre diameter	Outer diameter (d) max. [mm]	Weight [kg/km]
CFLG.6G.62.5/125.TC	6x62.5/125	10.0	80
CFLG.12G.62.5/125.TC	12x62.5/125	10.0	80
CFLG.6G.50/125.TC <sup>11)</sup>	6x50/125	10.0	60
CFLG.12G.50/125.TC	12x50/125	10.0	75
CFLG.12E.9/125.TC	12x9/125	10.0	75

<sup>11)</sup> Phase-out model  
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.

Part No.	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Bandwidth [MHz x km] @ 1,300nm	Attenuation [dB/km] @ 1,300nm
CFLG.6G.62.5/125.TC	≥ 200	≤ 3.5	≥ 500	≤ 1.0
CFLG.12G.62.5/125.TC	≥ 200	≤ 3.5	≥ 500	≤ 1.0
CFLG.6G.50/125.TC	≥ 500	≤ 3.0	≥ 500	≤ 1.0
CFLG.12G.50/125.TC	≥ 500	≤ 3.0	≥ 500	≤ 1.0

Part No.	Attenuation [dB/km] @ 1,310nm	Chromatic dispersion [ps/nm/km] @ 1,310nm	Attenuation [dB/km] @ 1,550nm	Chromatic dispersion [ps/nm/km] @ 1,550nm
CFLG.12E.9/125.TC	≤ 0.35	3.5	≤ 0.25	18

Part No.	Fibre identification	Hollow core identification
CFLG.6G.62.5/125.TC	ecru, yellow, green, red, violet, blue	orange
CFLG.12G.62.5/125.TC	ecru, yellow, green, red, violet, blue, turquoise, grey, brown, black, orange, pink	orange
CFLG.6G.50/125.TC	ecru, yellow, green, red, violet, blue	blue
CFLG.12G.50/125.TC	ecru, yellow, green, red, violet, blue, turquoise, grey, brown, black, orange, pink	blue
CFLG.12E.9/125.TC	ecru, yellow, green, red, violet, blue, turquoise, grey, brown, black, orange, pink	yellow



**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/cf-case](http://www.igus.eu/cf-case)



Order example: **CFLG.6G.62.5/125.TC** - to your desired length (0.5m steps)  
CFLG.G chainflex® series 6G Number of fibres 62.5/125 Fibre diameter.TC Special marking

Order online ► [www.igus.eu/CFLGG](http://www.igus.eu/CFLGG)

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](http://www.igus.eu/cf-price-check)

... for example: Reduce bend radius with CFLG.LB ...



chainflex® fibre optic cable in a sea lock



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



# Measuring system cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page
<b>Measuring system cables</b>									
<b>Selection chart for chainflex® measuring system cables</b>									240
CF884	PVC	✓	15	+5/+70			3	20	242
CF211	PVC	✓	10	+5/+70			5	3 30	246 <b>New</b>
CF894	iguPUR	✓	15	-20/+80			3	20	252
CF111.D	PUR	✓	10	-25/+80			5	3 30	256 <b>New</b>
CF113.D	PUR	✓	7.5	-25/+80			10	5 50	262
CF11.D	TPE	✓	6.8	-35/+90			10	6 100	268
<b>Twistable measuring system cable (twistable cables chapter ► Page 378 )</b>									
CFROBOT4	PUR	✓	10	-25/+80					392

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 238

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:

[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

Guarantee  
igus chainflex

# 36

up to 36 months guarantee







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



# chainflex® guarantee



# Guaranteed service life <sup>(1)</sup>

chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
<b>Measuring system cables</b>						<b>5 million (1 million) double strokes *</b>		<b>7.5 million (3 million) double strokes *</b>		<b>10 million (5 million) double strokes *</b>		
 CF884	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5	242	
 CF211 <span>New!</span>	+5 / +15 +15 / +60 +60 / +70	5	3	30	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5	246	
 CF894	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5	252	
 CF111.D <span>New!</span>	-25 / -15 -15 / +70 +70 / +80	5	3	30	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5	256	
 CF113.D	-25 / -15 -15 / +70 +70 / +80	10	5	50	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12	262	
						<b>5 million</b>		<b>7.5 million</b>		<b>12.5 million</b>		
 CF11.D	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	8.5 6.8 7.5	10 7.5 10	9.5 7.5 9.5	11 8.5 11	10.5 8.5 10.5	12 9.5 12	268

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

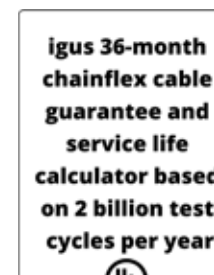
\* Higher number of double strokes? Calculate service life online: ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)  
 Figures in brackets refer to series CF884 and CF894



# Selection chart for chainflex® measuring system cables

Drive technology system	chainflex® series Class Jacket Page	CF884.yyy	CF211.yyy	CF894.yyy	CF111.yyy.D	CF113.yyy.D	CF11.yyy.D
		3.1.1.1 PVC 242	4.2.2.1 PVC 246	3.1.3.1 PUR 252	4.2.3.1 PUR 256	6.5.3.1 PUR 262	6.6.4.1 TPE 268
Number of cores and conductor nominal cross section [mm²]							
<b>Allen Bradley</b>							
CFxxx.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C				✓	✓	
<b>B&amp;R</b>							
CFxxx.024.D	((4x0.14)+2x(2x0.34))C		✓		✓		
CFxxx.027.D	(5x(2x0.14)+2x0.5)C		✓		✓	✓	✓
<b>Baumüller</b>							
CFxxx.027.D	(5x(2x0.14)+2x0.5)C		✓		✓	✓	✓
<b>Beckhoff</b>							
CFxxx.007.D	(4x0.34)C						✓
<b>Berger Lahr</b>							
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
<b>Control Techniques</b>							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓		✓	✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
CFxxx.026.D	(6x(2x0.25)+(2x0.34)C+2x0.5)C				✓		
<b>ELAU</b>							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
<b>Fagor</b>							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.015.D	(4x(2x0.14)+4x0.5)C	✓		✓	✓	✓	✓
<b>FANUC</b>							
CFxxx.021.D	((4x0.25)+3x(2x0.25+2x0.5))C				✓		✓
CFxxx.022.D	((2x0.25)+5x0.5)C	✓		✓	✓	✓	✓
CFxxx.041.D	(2x(2x0.18)+5x0.5)C		✓		✓		
CFxxx.042.D	(3x(2x0.18)+6x0.5)C		✓		✓		
<b>Festo</b>							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
<b>Heidenhain</b>							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.005.D	(4x(2x0.14)+4x0.5)C					✓	✓
CFxxx.015.D	(4x(2x0.14)+4x0.5)C	✓		✓	✓	✓	✓
CFxxx.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C		✓			✓	✓
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C					✓	✓
<b>Jetter</b>							
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C					✓	✓
<b>Lenze</b>							
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓		✓	✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.025.D	(3x(2x0.14)C+(2x0.5)C)C					✓	✓
CFxxx.032.D	3x(2x0.14)C+(3x0.14)C		✓			✓	✓
CFxxx.033.D	4x(2x0.14)C+2x(1.0)C		✓			✓	✓
CFxxx.034.D	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C					✓	✓

Drive technology system	chainflex® series Class Jacket Page	CF884.yyy	CF211.yyy	CF894.yyy	CF111.yyy.D	CF113.yyy.D	CF11.yyy.D
		3.1.1.1 PVC 242	4.2.2.1 PVC 246	3.1.3.1 PUR 252	4.2.3.1 PUR 256	6.5.3.1 PUR 262	6.6.4.1 TPE 268
Number of cores and conductor nominal cross section [mm²]							
<b>LTi DRIVES</b>							
CFxxx.004.D	(2x(2x2x0.14)+(4x0.14)C+(4x0.5))C				✓	✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓				✓
<b>NUM</b>							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓	✓			✓
<b>Omron</b>							
CFxxx.008.D	(3x(2x0.25))C					✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.018.D	(2x(2x0.25)+2x0.5)C		✓			✓	✓
CFxxx.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C		✓			✓	✓
<b>Rexroth</b>							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.010.D	(4x(2x0.25)+2x1.0)C		✓			✓	✓
CFxxx.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C		✓			✓	✓
CFxxx.018.D	(2x(2x0.25)+2x0.5)C		✓			✓	✓
CFxxx.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C		✓			✓	✓
<b>Schneider Electric</b>							
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
<b>SEW</b>							
CFxxx.008.D	(3x(2x0.25))C					✓	
CFxxx.036.D	(5x(2x0.25))C		✓			✓	
CFxxx.037.D	(6x(2x0.25))C		✓			✓	
<b>Siemens</b>							
CFxxx.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	✓	✓	✓		✓	✓
CFxxx.002.D	(3x(2x0.14)C+2x(0.5)C)C		✓			✓	✓
CFxxx.006.D	(3x(2x0.14)C+2x0.5+4x0.14+4x0.23)C	✓	✓	✓		✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓		✓	✓
CFxxx.028.D	(2x(2x0.15)+(2x0.38))C	✓	✓	✓	✓	✓	✓
<b>Stöber</b>							
CFxxx.008.D	(3x(2x0.25))C					✓	✓
CFxxx.009.D	(4x(2x0.25)+2x0.5)C	✓	✓	✓		✓	✓
CFxxx.011.D	(4x(2x0.34)+4x0.5)C	✓	✓	✓	✓	✓	✓
CFxxx.016.D	(3x(2x0.25)C)C		✓				
CFxxx.021.D	(3x(2x0.5+2x0.25)+(4x0.25))C					✓	✓





# Measuring system cable | PVC | chainflex® CF884

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	According to measuring system specification.
<b>Core identification</b>	According to measuring system specification. ▶ <b>Product range table</b>
<b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield. Coverage approx. 100% optical
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Yellow-green (similar to RAL 6018)

## Electrical information

<b>Nominal voltage</b>	50V 30V (following UL)
<b>Testing voltage</b>	500V

# Class 3.1.1.1

## Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ▶ <a href="http://www.igus.eu/CF884">www.igus.eu/CF884</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

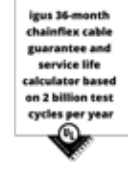
## Guaranteed service life (details see page 28-29)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## 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



# Measuring system cable | PVC | chainflex® CF884

## Class 3.1.1.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			




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]
CF884.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	8.5	41	91
CF884.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	9.0	50	101
CF884.009	(4x(2x0.25)+2x0.5)C	8.0	44	91
CF884.011	(4x(2x0.34)+4x0.5)C	9.5	64	117
CF884.015	(4x(2x0.14)+4x0.5)C	8.5	44	92
CF884.022	((2x0.25)+5x0.5)C	8.0	44	79
CF884.028	(2x(2x0.15)+(2x0.38))C	7.5	41	58

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.	Core group	Colour code
CF884.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	2x0.5	brown-red, brown-blue
CF884.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	4x0.22	yellow-brown, grey-brown, green-black, green-red
	2x0.5	brown-red, brown-blue
CF884.009	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF884.011	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
	4x0.5	blue-white, black-white, red-white, yellow-white
CF884.015	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF884.022	2x0.25	white, brown
	5x0.5	green, yellow, grey, pink, blue
CF884.028	2x(2x0.15)	green/yellow, pink/blue
	2x0.38	red/black



**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/cf-case](http://www.igus.eu/cf-case)



### cost down...






...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: Reduce bend radius with CF113.D ...

-  **Order example: CF884.015 – to your desired length (0.5m steps)**  
CF884 chainflex® series .015 Code measuring system type
-  Order online ► [www.igus.eu/CF884](http://www.igus.eu/CF884)
-  Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

EPLAN download, configurators ► [www.igus.eu/CF884](http://www.igus.eu/CF884)



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

Guarantee igus chainflex

36

up to 36 months guarantee

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



# Measuring system cable | PVC | chainflex® CF211






**36** 10 million  
Double strokes guaranteed

**10 x d**  
Bend radius, e-chain®










**10m**  
Travel distance, e-chain®

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



### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	5m/s
	<b>gliding</b>	3m/s
 <b>a max.</b>		30m/s²
 <b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

### Cable structure

 <b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of tinned copper wires.
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	According to measuring system specification.
 <b>Core identification</b>	According to measuring system specification. ► <a href="#">Product range table</a>
 <b>Element shield</b>	Extremely bending-resistant, tinned copper cover. Coverage approx. 90% optical
 <b>Element shield</b>	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
 <b>Intermediate layer</b>	Foil taping over the outer layer.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
 <b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Yellow-green (similar to RAL 6018)

### Electrical information

 <b>Nominal voltage</b>	50V 300V (following UL)
 <b>Testing voltage</b>	500V

EPLAN download, configurators ► [www.igus.eu/CF211](http://www.igus.eu/CF211)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.2.1

### Properties and approvals

 <b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF211">www.igus.eu/CF211</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	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	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	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	12.5	13.5	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- 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/package machines, handling, indoor cranes, wood/stone processing



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



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



# Measuring system cable | PVC | chainflex® CF211

## Class 4.2.2.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CF211.001	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	9.0	64	100
CF211.002	(3x(2x0.14)C)+2x(0.5)C	9.5	66	106
CF211.004	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.0	70	115
CF211.006	(3x(2x0.14)C)+(4x0.14)+(4x0.25)+(2x0.5)C	10.0	76	122
CF211.009	(4x(2x0.25)+2x0.5)C	8.0	49	79
CF211.010	(4x(2x0.25)+2x1.0)C	8.5	61	92
CF211.011	(4x(2x0.34)+4x0.5)C	9.5	72	109
CF211.014	(4x(2x0.25)C)+(2x0.5)C	10.5	77	124
CF211.015	(4x(2x0.14)+4x0.5)C	8.5	54	86
CF211.016	(3x(2x0.25)C)C	9.0	51	89
CF211.017	(4x(2x0.14)+(4x0.14)C)+4x1.0)C	10.0	92	134
CF211.018	(2x(2x0.25)+2x0.5)C	6.5	34	54
CF211.019	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	10.0	86	125
CF211.022	((2x0.25)+5x0.5)C	7.0	46	71
CF211.024	((4x0.14)+2x(2x0.34))C	7.0	36	61
CF211.027	(5x(2x0.14)+2x0.5)C	8.0	45	75

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.	Core group	Colour code
CF211.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red, brown-blue
CF211.002	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF211.004	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF211.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red, brown-blue
CF211.009	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF211.010	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF211.011	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF211.014	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
	(2x0.5)	black no. 1/black no. 2
CF211.015	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF211.016	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF211.017	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF211.018	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown
CF211.019	3x(2x0.25)C	brown/green, grey/pink, red/black
	(3x0.25)	blue/violet/yellow
	2x1.0	white, brown
CF211.022	(2x0.25)	white/brown
	5x0.5	green, yellow, grey, pink, blue
CF211.024	(4x0.14)	yellow/grey/violet/pink
	2x(2x0.34)	white-green/white, brown-green/blue
CF211.027	5x(2x0.14)	brown/green, yellow/grey, white/violet, red/black, pink/blue
	2x0.5	white-green, white-red



EPLAN download, configurators ► [www.igus.eu/CF211](http://www.igus.eu/CF211)

Further cable types ► Page 250



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CF211.028	(2x(2x0.15)+(2x0.38))C	7.5	40	77
CF211.032 <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.0	35	79
CF211.033 <sup>5)</sup>	4x(2x0.14)C+2x(1.0)C	9.5	64	112
CF211.036	(5x(2x0.25))C	8.0	42	69
CF211.037	(6x(2x0.25))C	8.5	51	83
CF211.038	(3x(2x0.14)+(2x0.34))C	7.5	33	62
CF211.039	(4x(2x0.14)C+2x(0.5)C)C	10.0	77	125
New CF211.041	(2x(2x0.18)+5x0.5)C	7.5	49	79
New CF211.042	(3x(2x0.18)+6x0.5)C	8.5	62	98

<sup>5)</sup> Manufactured without overall shield

**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

Further cable types ► Page 248



**Cables available in the chainflex® CASE**

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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



Part No.	Core group	Colour code
CF211.028	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF211.032 <sup>5)</sup>	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF211.033 <sup>5)</sup>	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF211.036	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF211.037	6x(2x0.25)	white/brown, green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue
CF211.038	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF211.039	(4x(2x0.14)C 2x(0.5)C	green/yellow, grey/pink, blue/red, black/violet brown, black
CF211.041	2x(2x0.18) 5x0.5	white/brown, black/violet blue, violet, green, yellow, grey
CF211.042	3x(2x0.18) 6x0.5	white/black, red/white, black/red black no. 1, black no. 2, black no. 3, red no. 4, red no. 5, red no. 6

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Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF884 ...

**Order example: CF211.038** – to your desired length (0.5m steps)  
CF211 chainflex® series .038 Code measuring system type

Order online ► [www.igus.eu/CF211](http://www.igus.eu/CF211)

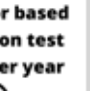
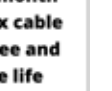
Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



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



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



# Measuring system cable | iguPUR | chainflex® CF894






**36** 5,000,000  
Double strokes guaranteed

**15 x d**  
Bend radius, e-chain®








**10m**  
Travel distance, e-chain®

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


## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	-20°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	3m/s
 <b>a max.</b>		20m/s²
 <b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

 <b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Core structure</b>	According to measuring system specification.
 <b>Core identification</b>	According to measuring system specification. ► <a href="#">Product range table</a>
 <b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield. Coverage approx. 100% optical
 <b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
 <b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Yellow-green (similar to RAL 6018)

## Electrical information













 <b>Nominal voltage</b>	50V 30V (following UL)
 <b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

### Properties and approvals

 <b>UV resistance</b>	Medium
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF894">www.igus.eu/CF894</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+70	15	16	17
+70/+80	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially 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



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



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



Example image

EPLAN download, configurators ► [www.igus.eu/CF894](http://www.igus.eu/CF894)

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



# Measuring system cable | iguPUR | chainflex® CF894

## Class 3.1.3.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			




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]
CF894.001	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	8.5	41	80
CF894.006	(3x(2x0.14)C)+(4x0.14)+(4x0.22)+(2x0.5)C	9.0	50	105
CF894.009	(4x(2x0.25)+2x0.5)C	8.0	44	80
CF894.011	(4x(2x0.34)+4x0.5)C	9.5	64	126
CF894.015	(4x(2x0.14)+4x0.5)C	8.5	44	84
CF894.022	((2x0.25)+5x0.5)C	8.0	44	78
CF894.028	(2x(2x0.15)+(2x0.38))C	7.5	41	57

**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.	Core group	Colour code
CF894.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	2x0.5	brown-red, brown-blue
CF894.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey, blue, white-yellow, white-black
	4 x 0.22	yellow-brown, grey-brown, green-black, brown-red
CF894.009	2x0.5	brown-red, brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF894.011	2x0.5	white/brown
	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
CF894.015	4x0.5	blue-white, black-white, red-white, yellow-white
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CF894.022	4x0.5	blue, white, brown-green, white-green
	2x0.25	white, brown
CF894.028	5x0.5	green, yellow, grey, pink, blue
	2x(2x0.15)	green/yellow, pink/blue
	2x0.38	red/black



**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/cf-case](http://www.igus.eu/cf-case)



cost down...






...life up

**Reduce cost, improve technology, now!**

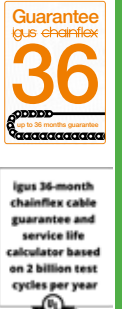
Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: Reduce bend radius with CF113.D ...

-  **Order example: CF894.011 – to your desired length (0.5m steps)**  
CF894 chainflex® series .011 Code measuring system type
-  Order online ► [www.igus.eu/CF894](http://www.igus.eu/CF894)
-  Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

EPLAN download, configurators ► [www.igus.eu/CF894](http://www.igus.eu/CF894)



# Measuring system cable | PUR | chainflex® CF111.D

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

- 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

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-25°C up to +80°C
		<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	5m/s
		<b>gliding</b>	3m/s
	<b>a max.</b>		30m/s²
	<b>Travel distance</b>	Unsupported travels and up to 10m for gliding applications, Class 2	

### Cable structure

	<b>Conductor</b>	Very finely stranded special conductors of particularly bending resistant design made of tinned copper wires.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	According to measuring system specification.
	<b>Core identification</b>	According to measuring system specification. ► <a href="#">Product range table</a>
	<b>Element shield</b>	Extremely bending-resistant, tinned copper cover. Coverage approx. 90% optical
	<b>Element shield</b>	TPE mixture on pair shielding adapted to suit the requirements in e-chains®.
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Yellow-green (similar to RAL 6018)

### Electrical information

	<b>Nominal voltage</b>	50V 300V (following UL)
	<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.3.1

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF111D">www.igus.eu/CF111D</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>DNV</b>	Type Approval Certificate TAE00003X4
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UK CA</b>	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	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

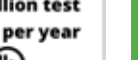
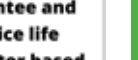
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications



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



Example image

igus® chainflex® CF111.D





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]
CF111.001.D	(3x(2x0.14)C)+(4x0.14)+(2x0.5)C	9.5	64	104
CF111.002.D	(3x(2x0.14)C)+2x(0.5)C	9.5	66	109
CF111.004.D	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5	70	116
CF111.006.D	(3x(2x0.14)C)+(4x0.14)+(4x0.25)+(2x0.5)C	10.0	76	122
CF111.009.D	(4x(2x0.25)+2x0.5)C	8.0	49	79
CF111.010.D	(4x(2x0.25)+2x1.0)C	8.5	61	94
CF111.011.D	(4x(2x0.34)+4x0.5)C	9.5	72	115
CF111.014.D	(4x(2x0.25)C)+(2x0.5)C	10.5	77	124
CF111.015.D	(4x(2x0.14)+4x0.5)C	8.5	54	87
CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5)C	8.5	52	87
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5)C	9.5	80	117
CF111.022.D	((2x0.25)+5x0.5)C	7.0	46	75
CF111.024.D	((4x0.14)+2x(2x0.34))C	7.0	36	61
CF111.026.D	(6x(2x0.25)+(2x0.34)C)+(2x0.5)C	10.5	74	119

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.	Core group	Colour code
CF111.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF111.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF111.004.D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF111.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
CF111.009.D	(2x0.5)	brown-red/brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF111.010.D	2x0.5	white, brown
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CF111.011.D	2x1.0	white, brown
	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
CF111.014.D	4x0.5	black-white, red-white, yellow-white, blue-white
	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
CF111.015.D	(2x0.5)	black no. 1/black no. 2
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CF111.020.D	4x0.5	blue, white, brown-green, white-green
	3x(2x0.14)	blue/red, black/violet, grey-pink/red-blue
	2x(4x0.14)	green/grey/yellow/pink, white-green/white-yellow/brown-green/yellow-brown
CF111.021.D	(2x0.5)	white/brown
	(2x0.5)	white/brown
	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
CF111.022.D	(4x0.25)	white/brown/grey/black
	3x2x0.25	white/yellow, white/grey, black/orange
CF111.024.D	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
	(2x0.25)	white/brown
CF111.026.D	5x0.5	green, yellow, grey, pink, blue
	(4x0.14)	yellow/grey/violet/pink
CF111.026.D	2x(2x0.34)	white-green/white, brown-green/blue
	6x(2x0.25)	green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue, white-green/brown-green
	(2x0.34)C	white/brown
	(2x0.5)	blue/red





Example image

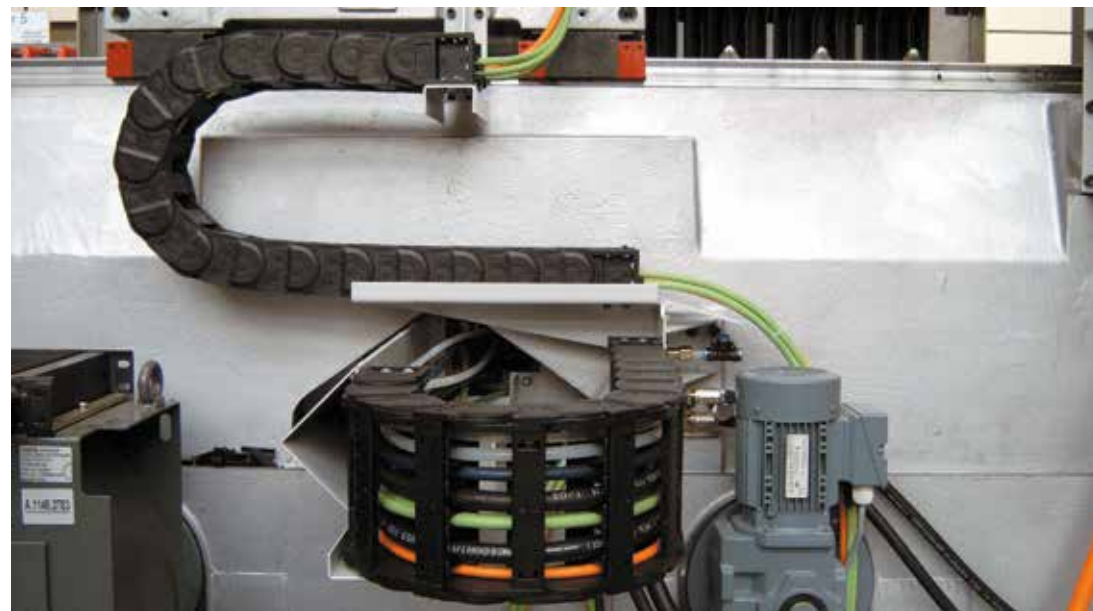
Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF111.027.D	(5x(2x0.14)+2x0.5)C	8.0	45	76
CF111.028.D	(2x(2x0.15)+(2x0.38))C	7.5	40	73
CF111.032.D <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.5	35	82
CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	81	118
New CF111.041.D	(2x(2x0.18)+5x0.5)C	7.5	49	80
New CF111.042.D	(3x(2x0.18)+6x0.5)C	8.5	62	99

<sup>5)</sup> Manufactured without overall shield

**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.	Core group	Colour code
CF111.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red
CF111.028.D	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
CF111.032.D <sup>5)</sup>	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF111.040.D	3x(4x0.14) (2x0.14+2x0.34) 2x1.5	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown violet/orange/weißviolet/weißorange white-grey, grey
CF111.041.D	2x(2x0.18) 5x0.5	white/brown, black/violet blue, violet, green, yellow, grey
CF111.042.D	3x(2x0.18) 6x0.5	white/black, red/white, black/red black no. 1, black no. 2, black no. 3, red no. 4, red no. 5, red no. 6

Further cable types ▶ Page 258



readychain® systems from igus® are completely pre-harnessed with chainflex® cables, hoses, metal parts etc.

EPLAN download, configurators ▶ [www.igus.eu/CF111D](http://www.igus.eu/CF111D)

**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/cf-case](http://www.igus.eu/cf-case)

**cost down...  
...life up**

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: [reduce cost with CF211 ...](#)

**Guarantee**  
igus chainflex  
**36**  
up to 36 months guarantee

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



# Measuring system cable | PUR | chainflex® CF113.D

**36** 10 million  
Double strokes guaranteed

**7.5 x d**  
Bend radius, e-chain®

**100m**  
Travel distance, e-chain®

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

DriveCliqu with  
300V UL approval

### Dynamic information

Bend radius	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
Temperature	<b>e-chain® linear</b>	-25°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
a max.		50m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

### Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of tinned copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ► <a href="#">Product range table</a>
Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Element shield	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®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Yellow-green (similar to RAL 6018)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

Nominal voltage	50V 300V (following UL)
Testing voltage	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.5.3.1

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2016
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 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 ► <a href="http://www.igus.eu/CF113D">www.igus.eu/CF113D</a>
NFPA	Following NFPA 79-2018, chapter 12.9
DNV	Type Approval Certificate TAE00003X4
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU
UK CA	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	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 number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- 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 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

Guarantee  
igus chainflex  
**36**  
months

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

CFRIP  
if

LISTED

UL

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

DESINA

CE

UK CA

# Measuring system cable | PUR | chainflex® CF113.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF113.D



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]
CF113.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	137
CF113.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	144
CF113.003.D	(3x(2x0.14)+2x1.0)C	8.0	56	103
CF113.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	78	152
CF113.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	115
CF113.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	85	158
CF113.007.D <sup>2)</sup>	(4x0.34)C	6.5	31	54
CF113.008.D	(3x(2x0.25))C	7.5	36	76
CF113.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	99
CF113.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	122
CF113.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	142
CF113.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	121
CF113.014.D	(4x(2x0.25)C+(2x0.5))C	11.0	86	163
CF113.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	114
CF113.016.D	(3x(2x0.25)C)C	10.0	60	126
CF113.017.D <sup>4)</sup>	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	150
CF113.018.D <sup>4)</sup>	(2x(2x0.25)+2x0.5)C	6.5	41	65

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

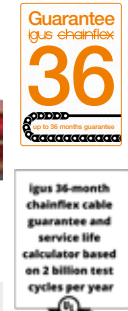
Basic requirements  
 Travel distance  
 Oil resistance  
 Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.5.3.1

Part No.	Core group	Colour code
CF113.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF113.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF113.003.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	2x1.0	blue, red
CF113.004.D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF113.005.D	4x(2x0.14)	white/brown, green/yellow, grey/pink, blue/red
	4x0.5	black, violet, grey-pink, red-blue
CF113.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red/brown-blue
CF113.007.D <sup>2)</sup>	4x0.34	white, green, brown, yellow (star-quad)
CF113.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF113.009.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF113.010.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF113.011.D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF113.013.D	3x(2x0.14)C	white/brown, green/yellow, grey/pink
	2x0.5	blue, red
CF113.014.D	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
	(2x0.5)	black no. 1/black no. 2
CF113.015.D	(4x(2x0.15))C	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green
CF113.016.D	3x(2x0.25)C	white/brown, green/yellow, grey/pink
CF113.017.D <sup>4)</sup>	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF113.018.D <sup>4)</sup>	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown

Further cable types ► Page 266





# Measuring system cable | PUR | chainflex® CF113.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF113.D

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]
CF113.019.D <sup>4)</sup>	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	10.0	93	143
CF113.022.D	((2x0.25)+5x0.5)C	8.0	54	94
CF113.025.D	(3x(2x0.14)C)+(2x0.5)C)C	10.0	72	141
CF113.027.D	(5x(2x0.14)+2x0.5)C	9.0	52	105
CF113.028.D <sup>4)</sup>	(2x(2x0.20)+(2x0.38))C	7.5	44	69
CF113.029.D	(5x(2x0.25)C)+(2x0.25+2x0.5)C	12.0	105	192
CF113.031.D	(2x(2x0.25)C+2x1.0)C	9.5	69	133
CF113.032.D <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.5	35	82
CF113.033.D <sup>5)</sup>	4x(2x0.14)C+2x(1.0)C	9.5	64	111
CF113.036.D	(5x(2x0.25))C	8.5	51	103
CF113.037.D	(6x(2x0.25))C	9.0	58	114
CF113.038.D	(3x(2x0.14)+(2x0.34))C	8.5	36	87
CF113.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	88	155

<sup>4)</sup> Manufactured without inner jacket  
<sup>5)</sup> Manufactured without overall shield

**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

Further cable types ► Page 264



### 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/cf-case](http://www.igus.eu/cf-case)



## Class 6.5.3.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Core group	Colour code
CF113.019.D <sup>4)</sup>	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, grey/pink, red/black blue/violet/yellow white, brown
CF113.022.D	(2x0.25) 5x0.5	white/brown green, yellow, grey, pink, blue
CF113.025.D	3x(2x0.14)C (2x0.5)C	green/yellow, blue/red, grey/pink white/brown
CF113.027.D	5x(2x0.14) 2x0.5	brown/green, yellow/grey, white/violet, red/black, pink/blue white-green, white-red
CF113.028.D <sup>4)</sup>	2x(2x0.20) (2x0.38)	green/yellow, pink/blue red/black
CF113.029.D	5x(2x0.25)C (2x0.25+2x0.5)	white/brown green/yellow, grey/pink, blue/red, black/violet grey-pink/brown-green/white-green/red-blue
CF113.031.D	2x(2x0.25)C 2x1.0	white/brown, green/yellow black no. 1, black no. 2
CF113.032.D <sup>5)</sup>	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black grey/pink/black
CF113.033.D <sup>5)</sup>	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
CF113.036.D	5x(2x0.25)	white/brown green/yellow, grey/pink, blue/red, black/violet
CF113.037.D	6x(2x0.25)	white/brown, green/yellow, grey/pink, blue/red, black/violet, grey-pink/red-blue
CF113.038.D	3x(2x0.14) (2x0.34)	white/brown, green/yellow, grey/pink blue/red
CF113.040.D	3x(4x0.14) (2x0.14+2x0.34) 2x1.5	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown violett/orange/weißviolett/weißorange white-grey, grey



chainflex® measuring system cables in a double-spindle machining centre.



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

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	5	6	7	highest
none	1	2	3	4	5	6	7	±360°

# Measuring system cable | TPE | chainflex® CF11.D

- 36** 12.5 million Double strokes guaranteed
- 6.8 x d** Bend radius, e-chain®
- 400m** Travel distance, e-chain®

- For extremely heavy duty applications
- TPE outer jacket
- 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	<b>e-chain® linear flexible</b>	minimum 6.8 x d minimum 5 x d
	<b>fixed</b>	minimum 4 x d
Temperature	<b>e-chain® linear flexible</b>	-35°C up to +90°C -50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
a max.		100m/s²
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 tinned copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core structure	According to measuring system specification.
Core identification	According to measuring system specification. ▶ <b>Product range table</b>
Element shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Element shield	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®.
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: Yellow-green (similar to RAL 6018)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ▶ <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

Nominal voltage	50V 300V (following UL)
Testing voltage	500V

## Class 6.6.4.1

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
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 AWM	See data sheet for details ▶ <a href="http://www.igus.eu/CF11D">www.igus.eu/CF11D</a>
EAC	Certificate No. RU C-DE.ME77.B.00295/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	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
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU
UKCA	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		7.5 million		12.5 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	8.5	10	9.5	11	10.5	12
-25/+80	6.8	7.5	7.5	8.5	8.5	9.5
+80/+90	8.5	10	9.5	11	10.5	12

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://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 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



Example image



# Measuring system cable | TPE | chainflex® CF11.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF11.D

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]
CF11.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	71	119
CF11.002.D	(3x(2x0.14)C+2x(0.5)C)C	10.0	74	125
CF11.003.D	(3x(2x0.14)+2x1.0)C	8.0	56	86
CF11.004.D <sup>11)</sup>	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	78	127
CF11.005.D	(4x(2x0.14)+4x0.5)C	9.0	60	97
CF11.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	85	139
CF11.007.D <sup>2)</sup>	(4x0.34)C	6.0	31	48
CF11.008.D	(3x(2x0.25))C	7.5	36	60
CF11.009.D	(4x(2x0.25)+2x0.5)C	8.5	57	91
CF11.010.D	(4x(2x0.25)+2x1.0)C	9.0	68	105
CF11.011.D	(4x(2x0.34)+4x0.5)C	10.0	81	124
CF11.012.D	(3x(2x0.14)C+(3x0.14)C+(4x0.14)+(2x0.14+2x0.5))C	11.0	89	140
CF11.013.D	(3x(2x0.14)C+2x0.5)C	9.0	62	104
CF11.014.D	(4x(2x0.25)C+(2x0.5))C	11.0	86	138
CF11.015.D	(4x(2x0.14)+4x0.5)C	9.0	60	97

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>11)</sup> Phase-out model

**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/CF11D](http://www.igus.eu/CF11D)

## Class 6.6.4.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Core group	Colour code
CF11.001.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(2x0.5)	brown-red/brown-blue
CF11.002.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	2x(0.5)C	black, red
CF11.003.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	2x1.0	blue, red
CF11.004.D <sup>11)</sup>	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (grey/pink)/(red/black)
	(4x0.14)C	yellow-black/red-black/green-black/blue-black
	(4x0.5)	brown-green/white-green/blue/white
CF11.005.D	4x(2x0.14)	white/brown, green/yellow, grey/pink, blue/red
	4x0.5	black, violet, grey-pink, red-blue
CF11.006.D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.25)	yellow-brown/grey-brown/green-black/green-red
	(2x0.5)	brown-red/brown-blue
CF11.007.D <sup>2)</sup>	4x0.34	white, green, brown, yellow (star-quad)
CF11.008.D	3x(2x0.25)	white/brown, green/yellow, grey/pink
CF11.009.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x0.5	white, brown
CF11.010.D	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
	2x1.0	white, brown
CF11.011.D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	4x0.5	black-white, red-white, yellow-white, blue-white
CF11.012.D	3x(2x0.14)C	green/yellow, white/grey, blue/red
	(3x0.14)C	red/green/brown
	(4x0.14)	grey/yellow/pink/violet
CF11.013.D	(2x0.14+2x0.5)	blue/brown-blue/grey/brown-red
	3x(2x0.14)C	white/brown, green/yellow, grey/pink
CF11.014.D	2x0.5	blue, red
	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red
CF11.015.D	(2x0.5)	black no. 1/black no. 2
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
	4x0.5	blue, white, brown-green, white-green

Further cable types ► Page 272



# Measuring system cable | TPE | chainflex® CF11.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF11.D

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]
CF11.017.D <sup>4) 11)</sup>	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0	100	126
CF11.018.D <sup>4)</sup>	(2x(2x0.25)+2x0.5)C	6.5	41	51
CF11.019.D <sup>4)</sup>	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0	93	120
CF11.021.D	((4x0.25)+3x(2x0.25+2x0.5)C	10.0	88	130
CF11.022.D	((2x0.25)+5x0.5)C	7.5	54	79
CF11.025.D	(3x(2x0.14)C+(2x0.5)C)C	10.0	72	123
CF11.027.D	(5x(2x0.14)+2x0.5)C	8.5	52	88
CF11.028.D	(2x(2x0.20)+(2x0.38)C	7.5	44	63
CF11.031.D	(2x(2x0.25)C+2x1.0)C	9.5	69	116
CF11.032.D <sup>5)</sup>	3x(2x0.14)C+(3x0.14)C	8.0	35	71
CF11.033.D <sup>5)</sup>	4x(2x0.14)C+2x(1.0)C	9.5	64	104
CF11.038.D	(3x(2x0.14)+(2x0.34)C	8.0	36	71

<sup>4)</sup> Manufactured without inner jacket  
<sup>5)</sup> Manufactured without overall shield  
<sup>11)</sup> Phase-out model

**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

Further cable types ► Page 270

EPLAN download, configurators ► [www.igus.eu/CF11D](http://www.igus.eu/CF11D)

## Class 6.6.4.1

Basic requirements  
 Travel distance  
 Oil resistance  
 Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Part No.	Core group	Colour code
CF11.017.D <sup>4) 11)</sup>	4x(2x0.14)	red/black, brown/green, yellow/violet, grey/pink
	(4x0.14)C	blue-black/yellow-black/red-black/green-black
	4x1.0	white-green, brown-green, blue, white
CF11.018.D <sup>4)</sup>	2x(2x0.25)	red/black, grey/pink
	2x0.5	white, brown
CF11.019.D <sup>4)</sup>	3x(2x0.25)C	brown/green, grey/pink, red/black
	(3x0.25)	blue/violet/yellow
	2x1.0	white, brown
CF11.021.D	(4x0.25)	white/brown/grey/black
	3x2x0.25	white/yellow, white/grey, black/orange
	3x2x0.5	black no. 1/black no. 2, black no. 3/black no. 4, black no. 5/black no. 6
CF11.022.D	(2x0.25)	white/brown
	5x0.5	green, yellow, grey, pink, blue
CF11.025.D	3x(2x0.14)C	green/yellow, blue/red, grey/pink
	(2x0.5)	white/brown
CF11.027.D	5x(2x0.14)	brown/green, yellow/grey, white/violet, red/black, pink/blue
	2x0.5	white-green, white-red
CF11.028.D	2x(2x0.20)	green/yellow, pink/blue
	(2x0.38)	red/black
CF11.031.D	2x(2x0.25)C	white/brown, green/yellow
	2x1.0	black no. 1, black no. 2
CF11.032.D <sup>5)</sup>	3x(2x0.14)C	green/black, yellow/black, red/black
	(3x0.14)C	grey/pink/black
CF11.033.D <sup>5)</sup>	4x(2x0.14)C	yellow/black, red/black, blue/black, green/black
	2x(1.0)C	white, brown
CF11.038.D	3x(2x0.14)	white/brown, green/yellow, grey/pink
	(2x0.34)	blue/red



### 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/cf-case](http://www.igus.eu/cf-case)



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





# Servo cables

## Hybrid cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page	
<b>Servo cables</b>										
Information and selection chart for hybrid servo cables									278	
CF887	PVC	✓	15	+5/+70			3	20	280	
CF210.UL	PVC	✓	10	+5/+70			10	2	50	282
CF21.UL	PVC	✓	7.5	+5/+70			10	5	80	286
CF897	iguPUR	✓	15	-20/+80			3	20	290	
CF270.UL.D	PUR	✓	10	-25/+80			10	2	50	292
CF27.D	PUR	✓	7.5	-25/+80			10	5	80	296
CF29.D	TPE	✓	6.8	-35/+100			10	5	80	300
<b>Hybrid cables</b>										
CF220.UL.H	PVC	✓	10	+5/+70			10	2	50	302 <b>New</b>
CF280.UL.H	PUR	✓	10	-25/+80			10	2	50	306 <b>New</b>
<b>Twistable hybrid cable (twistable cables chapter ▶ Page 378)</b>										
CFROBOT9	PUR	✓	10	-25/+80					414	

### 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

▶ Selection table page 276

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:

[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)










Guarantee  
igus chainflex

# 36

up to 36 months guarantee

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



chainflex® cables	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m	
<b>Servo cables</b>												
						5 million (1 million) double strokes *		7.5 million (3 million) double strokes *		10 million (5 million) double strokes *		
 CF887	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		280
 CF210.UL	+5 / +15 +15 / +60 +60 / +70	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		282
 CF21.UL	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		286
 CF897	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5		290
 CF270.UL.D	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		292
 CF27.D	-25 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	10 7.5 10		11 8.5 11		12 9.5 12		296
						5 million		7.5 million		12.5 million		
 CF29.D	-35 / -25 -25 / +90 +90 / +100	10	5	80	> 400	8.5 6.8 7.5	10 7.5 10	9.5 7.5 9.5	11 8.5 11	10.5 8.5 10.5	12 9.5 12	300
<b>Hybrid cables</b>												
 CF220.UL.H <b>New!</b>	+5 / +15 +15 / +60 +60 / +70	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		302
 CF280.UL.H <b>New!</b>	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5		306

<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](http://www.igus.eu/chainflexlife)  
 Figures in brackets refer to series CF887 and CF897





In chainflex® series **CF220.UL.H** and **CF280.UL.H**, you will see system cables for intelligent drive concepts for many well known system manufacturers.

To save installation space in e-chain systems® some manufacturers combine the servo cable for power with the measuring system cable for position data to make a so-called hybrid cable. The feedback of the position data to the servo controller is done frequently by various digital bus technologies.

When combining these two cables into a hybrid cable, it is necessary to guarantee the data transmission properties and the EMC behavior of the cable for many millions of movement cycles.

High optical coverage shielding designs are used in igus® chainflex® servo hybrid cables because of the close proximity of the power cores carrying high interference square-wave signals to the bus cores.

A secure transmission of bus signals at maximum cable length and at maximum speed makes high demands on the insulating materials of the bus or data cores.

In the 3,800m² large igus® laboratory, electrical parameters such as capacitance, impedance, attenuation and crosstalk are measured over the entire test period of several million double strokes and monitored for compliance with the specifications.

igus® chainflex® servo hybrid cables are available in cost-effective PVC and oil-resistant, halogen-free PUR.

As with all chainflex® cables, igus® also offers a guarantee of 36 months or 10 million double strokes for the servo hybrid cables and 5 million for chainflex® M.

In the chart on the opposite page you will find an overview of all currently available hybrid cables grouped by system manufacturer.

The companies listed are drive systems manufacturers or technology providers whose rotation sensors are commonly available.



Two become one: hybrid servo cables combine servo and measuring system cables.

Selection table hybrid servo cables

Hybrid technology/ Manufacturer	CF220.UL.H PVC 10 x d Page 302	CF280.UL.H PUR 10 x d Page 306
<b>SICK (HIPERFACE DSL)</b>		
ABB		
AMK		
B&R		
Baumüller		
BCB		
Beckhoff		
BMP		
CEDS		
Fertig		
Fine		
Han's		
Harmonic Drive AG		
Heidrive		
Infranor		
IRT		
Jetter		
KEBA	CF220.UL.H100-.H102	CF280.UL.H100-.H102
Kinavo		
Kollmorgen		
Lafert		
LTI DRIVES		
Mavilor		
Maxsine		
metronix		
NUM		
Parker		
PowerMotor		
ROBOX		
Selema		
Siboni		
Sigmathek		
STEP		
TG-Drives		
WEG		
<b>SEW cable type A, B, C, D, E</b>		
SEW	CF220.UL.H203	CF280.UL.H200-.H206
<b>MOVILINK DDI</b>		
SEW	-	CF280.UL.H207
<b>SINAMICS S210</b>		
Siemens	CF220.UL.H300-.H304	CF280.UL.H300-.H304
<b>IndraDrive / crtIXDRIVE</b>		
Bosch Rexroth	-	CF280.UL.H400-.H401
<b>HEIDENHAIN</b>		
B&R	CF220.UL.H501	CF280.UL.H501-.H502

# Servo cable | PVC | chainflex® CF887

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
<b>Core structure</b>	Power cores and control pair elements wound together in an optimised pitch length.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF887](http://www.igus.eu/CF887)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.1.1

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF887">www.igus.eu/CF887</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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

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]
<b>1 control pair shielded</b>				
CF887.07.05.02.01	(4G0.75+(2x0.5)C)C	10.0	69	119
CF887.15.15.02.01	(4G1.5+(2x1.5)C)C	12.5	124	200
CF887.25.15.02.01	(4G2.5+(2x1.5)C)C	13.5	182	254
CF887.40.15.02.01	(4G4.0+(2x1.5)C)C	14.5	236	340
<b>2 control pairs shielded</b>				
CF887.10.07.02.02	(4G1.0+2x(2x0.75)C)C	11.5	110	184
CF887.15.15.02.02	(4G1.5+2x(2x1.5)C)C	13.5	164	253
CF887.25.15.02.02	(4G2.5+2x(2x1.5)C)C	14.5	217	325

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



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



Example image

igus® chainflex® CF887



# Servo cable | PVC | chainflex® CF210.UL

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		50m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Pastel orange (similar to RAL 2003)

Example image

EPLAN download, configurators ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.2.1

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF210UL">www.igus.eu/CF210UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>RoHS</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

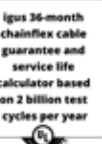
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	12.5	13.5	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices





# Servo cable | PVC | chainflex® CF210.UL

## Class 4.2.2.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
<b>1 control pair shielded</b>				
CF210.UL.15.15.02.01	(4G1.5+(2x1.5)C)	12.5	154	245
CF210.UL.25.15.02.01	(4G2.5+(2x1.5)C)C	14.0	210	299
CF210.UL.40.15.02.01	(4G4.0+(2x1.5)C)C	15.0	255	383
CF210.UL.60.15.02.01	(4G6.0+(2x1.5)C)C	16.5	343	488
<b>2 control pairs shielded</b>				
CF210.UL.15.07.02.02	(4G1.5+2x(2x0.75)C)C	13.5	161	278
CF210.UL.25.15.02.02	(4G2.5+2x(2x1.5)C)C	16.0	244	381
CF210.UL.40.15.02.02	(4G4.0+2x(2x1.5)C)C	17.0	332	428
CF210.UL.60.15.02.02	(4G6.0+2x(2x1.5)C)C	19.0	403	598
<b>without control pair</b>				
CF210.UL.05.04	(4G0.5)C	7.0	34	63
CF210.UL.15.04	(4G1.5)C	10.0	86	140
CF210.UL.25.04	(4G2.5)C	11.5	146	209
CF210.UL.40.04	(4G4.0)C	13.0	195	288

**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

**Order example: CF210.UL.40.15.02.01 - to your desired length (0.5m steps)**  
CF210.UL chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)

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



### 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/cf-case](http://www.igus.eu/cf-case)



chainflex® servo cable in a vertical e-chain®

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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



Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

EPLAN download, configurators ► [www.igus.eu/CF210UL](http://www.igus.eu/CF210UL)



# Servo cable | PVC | chainflex® CF21.UL

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5

### Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Moss green (similar to RAL 6005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

EPLAN download, configurators ► [www.igus.eu/CF21UL](http://www.igus.eu/CF21UL)

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

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF21UL">www.igus.eu/CF21UL</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>RoHS</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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](http://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, quick handling, indoor cranes

Guarantee igus chainflex **36** up to 36 months guarantee

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

Guarantee igus chainflex **36** up to 36 months guarantee

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

CFRIP

UL LISTED

UL US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

Cleanroom

UL

CE

UKCA

igus® chainflex® CF21.UL

Example image

# Servo cable | PVC | chainflex® CF21.UL


Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF21.UL


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]
<b>1 control pair shielded</b>				
CF21.07.05.02.01.UL	(4G0.75+(2x0.5)C)C	11.0	76	159
CF21.15.15.02.01.UL	(4G1.5+(2x1.5)C)	13.0	145	256
CF21.25.15.02.01.UL	(4G2.5+(2x1.5)C)C	14.5	199	330
CF21.40.15.02.01.UL	(4G4.0+(2x1.5)C)C	16.0	256	406
CF21.60.15.02.01.UL	(4G6.0+(2x1.5)C)C	18.0	343	546
CF21.100.15.02.01.UL	(4G10+(2x1.5)C)C	21.5	536	828
<b>2 control pairs shielded</b>				
CF21.07.03.02.02.UL	(4G0.75+2x(2x0.34)C)C	12.5	103	208
CF21.10.07.02.02.UL	(4G1.0+2x(2x0.75)C)	13.5	148	269
CF21.15.07.02.02.UL	(4G1.5+2x(2x0.75)C)C	14.5	167	309
CF21.25.15.02.02.UL	(4G2.5+2x(2x1.5)C)C	17.0	254	434
CF21.40.15.02.02.UL	(4G4.0+2x(2x1.5)C)C	18.0	308	515
CF21.60.15.02.02.UL	(4G6.0+2x(2x1.5)C)C	21.0	412	695
CF21.100.15.02.02.UL	(4G10+2x(2x1.5)C)C	23.0	592	925
CF21.160.15.02.02.UL	(4G16+2x(2x1.5)C)C	26.5	878	1287

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

 **Order example: CF21.40.15.02.01.UL - to your desired length (0.5m steps)**  
CF21.UL chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

 Order online ► [www.igus.eu/CF21UL](http://www.igus.eu/CF21UL)

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



### Cables available in the chainflex® CASE

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

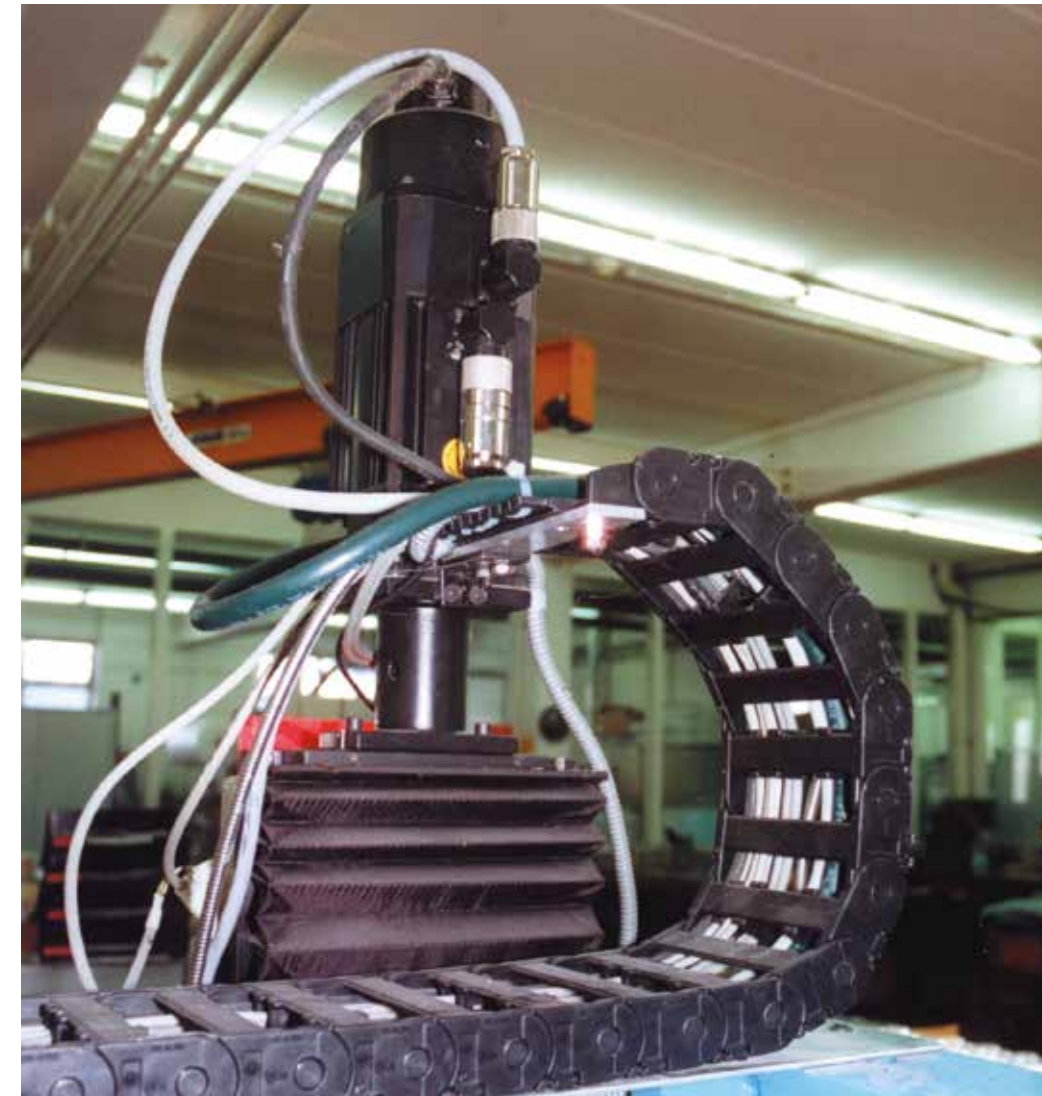
More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



## Class 5.5.2.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



chainflex® CF21.UL: cables for energy supply systems in spinneret production. e-chain®: E2/000



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



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

EPLAN download, configurators ► [www.igus.eu/CF21UL](http://www.igus.eu/CF21UL)



# Servo cable | iguPUR | chainflex® CF897



**5,000,000**  
Double strokes guaranteed



**15 x d**  
Bend radius, e-chain®



**10m**  
Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-20°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
<b>Core structure</b>	Power cores and control pair elements wound together in an optimised pitch length.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Foil taping of optimised, bending-resistant foil shield.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF897](http://www.igus.eu/CF897)

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



EU2023

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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF897">www.igus.eu/CF897</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+70	15	16	17
+70/+80	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For flexing applications, Class 3
- Especially 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

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]
<b>1 control pair shielded</b>				
CF897.15.15.02.01	(4G1.5+(2x1.5)C)	12.5	124	201
CF897.25.15.02.01	(4G2.5+(2x1.5)C)C	13.5	182	248
CF897.40.15.02.01	(4G4.0+(2x1.5)C)C	14.5	236	329
<b>2 control pairs shielded</b>				
CF897.15.15.02.02	(4G1.5+2x(2x1.5)C)C	13.5	164	246

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](http://www.igus.eu/ul-verified)



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



# Servo cable | PUR | chainflex® CF270.UL.D

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-25°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		50m/s²
<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8
<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF270ULD">www.igus.eu/CF270ULD</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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 According to VDW, DESINA standardisation
<b>DESINA</b>	
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

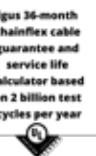
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications





# Servo cable | PUR | chainflex® CF270.UL.D

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
<b>1 control pair shielded</b>				
CF270.UL.15.15.02.01.D	(4G1.5+(2x1.5)C)	11.5	146	190
CF270.UL.25.15.02.01.D	(4G2.5+(2x1.5)C)C	13.0	195	248
CF270.UL.40.15.02.01.D	(4G4.0+(2x1.5)C)C	15.0	260	328
CF270.UL.60.15.02.01.D	(4G6.0+(2x1.5)C)C	16.5	350	430
CF270.UL.100.15.02.01.D	(4G10+(2x1.5)C)C	19.0	541	624
CF270.UL.160.15.02.01.D	(4G16+(2x1.5)C)C	22.0	786	900
<b>2 control pairs shielded</b>				
CF270.UL.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	11.0	96	151
CF270.UL.10.07.02.02.D	(4G1.0+2x(2x0.75)C)	12.5	139	200
CF270.UL.15.07.02.02.D	(4G1.5+2x(2x0.75)C)C	12.5	162	210
CF270.UL.25.15.02.02.D	(4G2.5+2x(2x1.5)C)C	15.5	265	322
CF270.UL.40.15.02.02.D	(4G4.0+2x(2x1.5)C)C	16.5	322	403
CF270.UL.60.15.02.02.D	(4G6.0+2x(2x1.5)C)C	18.5	407	505
CF270.UL.100.15.02.02.D	(4G10+2x(2x1.5)C)C	21.0	604	703
CF270.UL.160.15.02.02.D	(4G16+2x(2x1.5)C)C	24.0	857	997
CF270.UL.250.15.02.02.D	(4G25+2x(2x1.5)C)C	27.5	1219	1422
<b>without control pair</b>				
CF270.UL.07.04.D	(4G0.75)C	8.0	47	81
CF270.UL.10.06.D	(6G1.0)C	9.5	87	133
CF270.UL.15.04.D	(4G1.5)C	9.0	78	116
CF270.UL.25.04.D	(4G2.5)C	10.5	129	173
CF270.UL.40.04.D	(4G4.0)C	12.5	193	255
CF270.UL.60.04.D	(4G6.0)C	14.5	297	356
CF270.UL.100.04.D	(4G10)C	17.0	495	551
CF270.UL.160.04.D	(4G16)C	20.5	755	819
CF270.UL.250.04.D	(4G25)C	25.0	1117	1256
CF270.UL.350.04.D	(4G35)C	28.0	1597	1696
<b>Spindle cable/Single core</b>				
CF270.UL.60.01.D	(1x6.0)C	7.5	72	95
CF270.UL.100.01.D	(1x10)C	8.5	114	145
CF270.UL.160.01.D	(1x16)C	9.5	178	209
CF270.UL.250.01.D	(1x25)C	11.0	269	304
CF270.UL.350.01.D	(1x35)C	13.0	374	419
CF270.UL.500.01.D	(1x50)C	15.0	525	579
CF270.UL.700.01.D	(1x70)C	17.0	751	804

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

## Class 4.2.3.1

Order example: **CF270.UL.40.15.02.01.D** - to your desired length (0.5m steps)  
CF270.UL.D chainflex® series .40 Code nominal cross section .15 Code nominal cross section signal pairs  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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



### 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/cf-case](http://www.igus.eu/cf-case)



Linear robot with chainflex® servo and measuring system cables, short travel distance

EPLAN download, configurators ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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



# Servo cable | PUR | chainflex® CF27.D

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	5m/s
<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5 <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 7 4. Control core: 8 <b>Star quad:</b> yellow, black, red, white
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 6.5.3.1

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF27D">www.igus.eu/CF27D</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003XA
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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 number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

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



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





# Servo cable | PUR | chainflex® CF27.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF27.D

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]
<b>1 control pair shielded</b>				
CF27.07.05.02.01.D	(4G0.75+(2x0.5)C)C	11.5	76	169
CF27.15.15.02.01.D	(4G1.5+(2x1.5)C)	13.0	145	244
CF27.25.15.02.01.D	(4G2.5+(2x1.5)C)C	14.5	199	306
CF27.40.15.02.01.D	(4G4.0+(2x1.5)C)C	16.0	256	403
CF27.60.15.02.01.D	(4G6.0+(2x1.5)C)C	17.5	343	505
CF27.100.15.02.01.D	(4G10+(2x1.5)C)C	21.0	536	746
CF27.160.15.02.01.D	(4G16+(2x1.5)C)C	24.0	797	1086
CF27.250.15.02.01.D	(4G25+(2x1.5)C)C	28.0	1173	1528
CF27.350.15.02.01.D	(4G35+(2x1.5)C)C	32.0	1618	1998
<b>2 control pairs shielded</b>				
CF27.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	12.5	103	196
CF27.10.07.02.02.D	(4G1.0+2x(2x0.75)C)	13.5	148	245
CF27.15.07.02.02.D	(4G1.5+2x(2x0.75)C)C	14.5	167	287
CF27.25.15.02.02.D	(4G2.5+2x(2x1.5)C)C	16.0	254	383
CF27.40.15.02.02.D	(4G4.0+2x(2x1.5)C)C	17.5	308	459
CF27.60.15.02.02.D	(4G6.0+2x(2x1.5)C)C	19.5	412	604
CF27.100.15.02.02.D	(4G10+2x(2x1.5)C)C	22.5	592	842
CF27.160.15.02.02.D	(4G16+2x(2x1.5)C)C	26.0	878	1223
CF27.250.15.02.02.D	(4G25+2x(2x1.5)C)C	31.0	1250	1699
<b>1 star-quad shielded</b>				
CF27.15.05.04.D	(4G1.5+(4x0.5)C)C	12.5	131	231
CF27.25.05.04.D	(4G2.5+(4x0.5)C)C	14.0	176	292
CF27.40.05.04.D	(4G4.0+(4x0.5)C)	16.0	244	376
<b>without control pair</b>				
CF27.07.04.D	(4G0.75)C	9.5	55	115
CF27.15.04.D	(4G1.5)C	11.0	90	165
CF27.25.04.D	(4G2.5)C	12.5	135	231
CF27.500.04.D	(4G50)C	37.0	2244	2817

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/cf-case](http://www.igus.eu/cf-case)



## Class 6.5.3.1

Order example: **CF27.40.15.02.01.D** - to your desired length (0.5m steps)  
CF27.D chainflex® series .40 Code nominal cross section .10 Code nominal cross section  
.02 Identification pairs .01 Number of pairs

Order online ► [www.igus.eu/CF27D](http://www.igus.eu/CF27D)

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

### cost down...



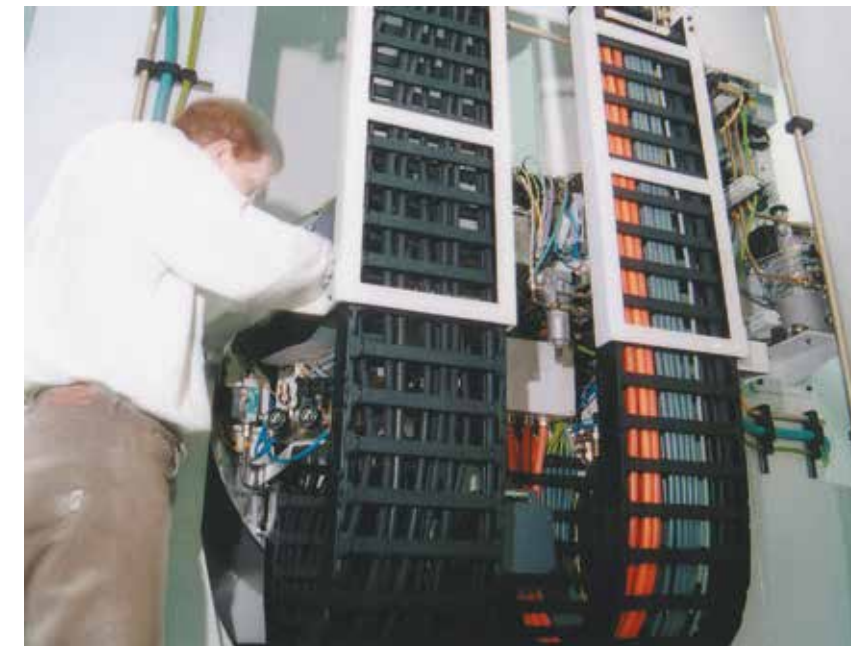
...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF21.UJ ...



Modular design, easy to retrofit: igus® E4 e-chain® and chainflex® cables.



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



# Servo cable | TPE | chainflex® CF29.D



**12.5 million**  
Double strokes guaranteed



**6.8 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

**Now available  
with UL approval  
& 25% longer  
service life**

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 6.8 x d
	<b>flexible</b>	minimum 5 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +100°C
	<b>flexible</b>	-50°C up to +100°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +100°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s²
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores with control pair elements wound with elements for high tensile stresses.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- <b>1 control pair:</b> Black cores with white numbers. 1. Control core: 4 2. Control core: 5
<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF29D](http://www.igus.eu/CF29D)

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



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 7.6.4.1

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF29D">www.igus.eu/CF29D</a> (from production date 01/2022)
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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		7.5 million		12.5 million	
	< 10m	≥ 10m	< 10m	≥ 10m	< 10m	≥ 10m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	8.5	10	9.5	11	10.5	12
-25/+90	6.8	7.5	7.5	8.5	8.5	9.5
+90/+100	8.5	10	9.5	11	10.5	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant, Class 4
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>1 control pair shielded</b>				
<b>CF29.15.15.02.01.D</b>	(4G1.5+(2x1.5)C)	13.0	145	231
<b>CF29.25.15.02.01.D</b>	(4G2.5+(2x1.5)C)C	14.0	199	291
<b>CF29.40.15.02.01.D</b>	(4G4.0+(2x1.5)C)C	15.5	256	367

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



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



Example image

igus® chainflex® CF29.D



# Hybrid servo cable | PVC | chainflex® CF220.UL.H

**36** 10 million  
Double strokes guaranteed

**10 x d**  
Bend radius, e-chain®

**10m**  
Travel distance, e-chain®

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

New cable suitable for Siemens SINAMICS S210

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	2m/s
<b>Travel distance</b>	Unsupported travels and up to 10m for gliding applications, Class 2	

## Cable structure

<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	According to Servo-Hybrid specification. Current data sheet ► <a href="http://www.chainflex.eu/CF220ULH">www.chainflex.eu/CF220ULH</a>
<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Pastel orange (similar to RAL 2003) Variants ► <a href="#">Product range table</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL) Variants ► <a href="#">Product range table</a>
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Example image

EPLAN download, configurators ► [www.igus.eu/CF220ULH](http://www.igus.eu/CF220ULH)

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.2.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF220ULH">www.igus.eu/CF220ULH</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
<b>Info</b>	As hybrid cables are always designed for specific drive systems, additional electrotechnical data may need to be considered. You will find more information in the latest data sheet for the cable series.

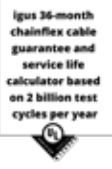
### Guaranteed service life (details see page 28-29)

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	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	12.5	13.5	14.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices



igus® chainflex® CF220.UL.H

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]
<b>SICK (HIPERFACE DSL)</b>				
CF220.UL.H100.07.04	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0	110	214
CF220.UL.H101.10.04	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	133	202
CF220.UL.H101.15.04	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0	156	230
CF220.UL.H102.25.04	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	203	348
CF220.UL.H102.40.04 <sup>11)</sup>	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.5	281	434
<b>SEW cable type E/1.5</b>				
CF220.UL.H203.15.04	(4G1.5+(3x1.0)C)C	11.5	133	219
<b>SINAMICS S210</b>				
CF220.UL.H300.03.04	(4Gx0.34+(2x0.34)C+(4xAWG26)C)C	10.0	78	139
CF220.UL.H301.07.04	(4Gx0.75+(2x0.5)C+(4xAWG26)C)C	11.0	100	168
New CF220.UL.H304.15.04	(4G1.5+(2x1.5)C+(4xAWG26)C)C	13.0	159	233
<b>HEIDENHAIN</b>				
CF220.UL.H501.15.04	(4G1.5+(2x0.75)C+(2x2x0.14+2x0.25)C)C	13.5	170	239

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

**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



Drilling machine for wooden plates equipped with latest hybrid cable technology with Hiperface DSL

EPLAN download, configurators ► [www.igus.eu/CF220ULH](http://www.igus.eu/CF220ULH)

Class 4.2.2.1

Part No.	Hybrid technology	Hybrid manufacturer
<b>SICK (HIPERFACE DSL)</b>		
CF220.UL.H100.07.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H101.10.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H101.15.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H102.25.04	SICK (HIPERFACE DSL)	please see selection table on page 278
CF220.UL.H102.40.04 <sup>11)</sup>	SICK (HIPERFACE DSL)	please see selection table on page 278
<b>SEW cable type E/1.5</b>		
CF220.UL.H203.15.04	SEW cable type E/1.5	SEW
<b>SINAMICS S210</b>		
CF220.UL.H300.03.04	SINAMICS S210	Siemens
CF220.UL.H301.07.04	SINAMICS S210	Siemens
CF220.UL.H304.15.04	SINAMICS S210	Siemens
<b>HEIDENHAIN</b>		
CF220.UL.H501.15.04	HEIDENHAIN	B&R



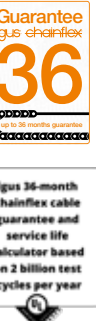
Cables available in the chainflex® CASE

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/cf-case](http://www.igus.eu/cf-case)



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





# Hybrid servo cable | PUR | chainflex® CF280.UL.H



**10 million**  
Double strokes guaranteed



**10 x d**  
Bend radius, e-chain®



**10m**  
Travel distance, e-chain®

- 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

New cable suitable for Bosch Rexroth ctrIX DRIVE

## Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-25°C up to +80°C
		<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>gliding</b>	2m/s
	<b>a max.</b>		50m/s <sup>2</sup>
	<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

	<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
	<b>Core structure</b>	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
	<b>Core identification</b>	According to Servo-Hybrid specification. Current data sheet ► <a href="http://www.chainflex.eu/CF220ULH">www.chainflex.eu/CF220ULH</a>
	<b>Element shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003) Variants ► <a href="#">Product range table</a>

## Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL) Variants ► <a href="#">Product range table</a>
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.3.1

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF280ULH">www.igus.eu/CF280ULH</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
	<b>Info</b>	As hybrid cables are always designed for specific drive systems, additional electrotechnical data may need to be considered. You will find more information in the latest data sheet for the cable series.

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

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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications



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



Example image

igus® chainflex® CF280.UL.H

# Hybrid servo cable | PUR | chainflex® CF280.UL.H

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

igus® chainflex® CF280.UL.H

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]
<b>SICK (HIPERFACE DSL)</b>				
CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0	110	200
CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	133	205
CF280.UL.H101.15.04.D	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0	156	215
CF280.UL.H102.25.04.D	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	203	324
CF280.UL.H102.40.04.D <sup>11)</sup>	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.5	281	431
CF280.UL.H102.60.04.D	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	364	499
<b>SEW cable type A, B, C, D, E</b>				
CF280.UL.H200.15.07.D <sup>15)</sup>	(7x1.5+(2x0.75)C)C	16.0	202	354
CF280.UL.H200.25.07.D <sup>15)</sup>	(7x2.5+(2x0.75)C)C	20.0	289	521
CF280.UL.H201.15.04.D <sup>15)</sup>	4G1.5+(2x0.75)C+(3x0.75)C	14.0	139	272
CF280.UL.H201.25.04.D <sup>15)</sup>	4G2.5+(2x0.75)C+(3x0.75)C	14.5	183	318
CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	12.0	158	253
CF280.UL.H203.25.04.D	(4G2.5+(3x1.0)C)C	13.5	197	277
CF280.UL.H204.15.04.D	(4G1.5+(2x0.75)C+(3x1.0)C)C	15.0	200	340
CF280.UL.H206.40.04.D	(4G4.0+(2x0.75)C+(3x1.5)C)C	17.5	339	482
CF280.UL.H206.60.04.D	(4G6.0+(2x0.75)C+(3x1.5)C)C	19.0	431	648
<b>MOVILINK DDI</b>				
CF280.UL.H207.15.04.D	(4G1.5+2x(2x1.0)C+HF50-0.9/2.95)C	15.5	191	303
CF280.UL.H207.25.04.D	(4G2.5+2x(2x1.0)C+HF50-0.9/2.95)C	16.5	232	351

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

## Class 4.2.3.1

Part No.	Hybrid technology	Hybrid manufacturer
<b>SICK (HIPERFACE DSL)</b>		
CF280.UL.H100.07.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H101.10.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H101.15.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.25.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.40.04.D <sup>11)</sup>	SICK (HIPERFACE DSL)	please see selection table on page 278
CF280.UL.H102.60.04.D	SICK (HIPERFACE DSL)	please see selection table on page 278
<b>SEW cable type A, B, C, D, E</b>		
CF280.UL.H200.15.07.D <sup>15)</sup>	SEW cable type A/1.5	SEW
CF280.UL.H200.25.07.D <sup>15)</sup>	SEW cable type A/2.5	SEW
CF280.UL.H201.15.04.D <sup>15)</sup>	SEW cable type B/1.5	SEW
CF280.UL.H201.25.04.D <sup>15)</sup>	SEW cable type B/2.5	SEW
CF280.UL.H203.15.04.D	SEW cable type E/1.5	SEW
CF280.UL.H203.25.04.D	SEW cable type E/2.5	SEW
CF280.UL.H204.15.04.D	SEW cable type D/1.5	SEW
CF280.UL.H206.40.04.D	SEW cable type D/4.0	SEW
CF280.UL.H206.60.04.D	SEW cable type D/6.0	SEW
<b>MOVILINK DDI</b>		
CF280.UL.H207.15.04.D	MOVILINK DDI	SEW
CF280.UL.H207.25.04.D	MOVILINK DDI	SEW

Further cable types ► Page 310

EPLAN download, configurators ► [www.igus.eu/CF280ULH](http://www.igus.eu/CF280ULH)



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



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



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

igus® chainflex® CF280.UL.H

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]
<b>SINAMICS S210</b>				
CF280.UL.H300.03.04.D	(4G0.34+(2x0.34)C+(4xAWG26)C)C	10.0	74	139
CF280.UL.H301.07.04.D	(4G0.75+(2x0.5)C+(4xAWG26)C)C	11.0	100	169
CF280.UL.H304.15.04.D	(4G1.5+(2x1.5)C+(4xAWG26)C)C	13.0	170	240
CF280.UL.H304.25.04.D	(4G2.5+(2x1.5)C+(2xAWG26)C)C	14.5	215	289
<b>IndraDrive</b>				
CF280.UL.H400.25.05.D	(5x2.5+(5x0,35)+(4xAWG22)C)C	17.0	240	389
<b>ctrlX DRIVE</b>				
New CF280.UL.H401.07.04.D	(4G0.75+(2x0.5)C+(4xAWG24)C)C	13.0	144	220
<b>HEIDENHAIN</b>				
CF280.UL.H501.15.04.D	(4G1.5+(2x0.75)C+(2x2x0.14+2x0.25)C)C	15.0	181	281
CF280.UL.H502.40.04.D	(4G4.0+(2x1.0)C+(2x2x0.14+2x0.25)C)C	16.5	295	407

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

Further cable types ► Page 308



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/cf-case](http://www.igus.eu/cf-case)



Part No.	Hybrid technology	Hybrid manufacturer
<b>SINAMICS S210</b>		
CF280.UL.H300.03.04.D	SINAMICS S210	Siemens
CF280.UL.H301.07.04.D	SINAMICS S210	Siemens
CF280.UL.H304.15.04.D	SINAMICS S210	Siemens
CF280.UL.H304.25.04.D	SINAMICS S210	Siemens
<b>IndraDrive</b>		
CF280.UL.H400.25.05.D	IndraDrive	Bosch Rexroth
<b>ctrlX DRIVE</b>		
CF280.UL.H401.07.04.D	ctrlX DRIVE	Bosch Rexroth
<b>HEIDENHAIN</b>		
CF280.UL.H501.15.04.D	HEIDENHAIN	B&R
CF280.UL.H502.40.04.D	HEIDENHAIN	B&R

Order example: **CF280.UL.H101.10.04** – to your desired length (0.5m steps)  
CF280.UL.H chainflex® series .101.10.04 Code hybrid bus element

Order online ► [www.igus.eu/CF280ULH](http://www.igus.eu/CF280ULH)

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



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



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

# Motor cables
















chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [m/s] unsupported	v max. [m/s] gliding a max.	Page	
<b>Motor cables</b>										
CF885	PVC		15	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA		3	20	318	
CF886	PVC	✓	15	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA		3	20	320	
CF210.UL	PVC	✓	10	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	2	50	322
CF30	PVC		7.5	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	5	80	324
CF31	PVC	✓	7.5	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	5	80	328
CF895	iguPUR		15	-20/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	3	20	332	
CF896	iguPUR	✓	15	-20/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	3	20	334	
CF270.UL.D	PUR	✓	10	-25/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	2	50	336
CF27.D	PUR	✓	7.5	-25/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	5	80	340
CF34.UL.D	TPE		7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	80	344
CF35.UL	TPE	✓	7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	80	348
CF37.D	TPE		7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	80	352
CF38	TPE	✓	7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	80	354
<b>Spindle cables/Single cores</b>										
CF885	PVC		15	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA		3	20	356	
CF885.PE	PVC		15	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA		3	20	358	
CF886	PVC	✓	15	+5/+70	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA		3	20	360	
CF270.UL.D	PUR	✓	10	-25/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	2	50	362
CF300.UL.D	TPE		7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	100	364
CFPE	TPE		7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	100	366
CF310.UL	TPE	✓	7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	100	368
CF330.D	TPE		7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	100	370
CF340	TPE	✓	7.5	-35/+90	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	100	372
<b>Medium voltage cables</b>										
CFCRANE.PUR	PUR	✓	10	-20/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	50	374
CFCRANE	igupren	✓	10	-20/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	10	6	50	376
<b>Twistable motor cables (twistable cables chapter ▶ Page 378 )</b>										
CFROBOT6	PUR		10	-25/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	✓		398	
CFROBOT7	PUR	✓	10	-25/+80	UL, IEC, NFPA, C-UL, ENEC, EAC, REACH, RoHS, CE, UK, CA	✓	✓		400	

**36-month chainflex® guarantee**  
 Guaranteed service life for predictable reliability  
 ▶ Selection table from page 314

 [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)
















chainflex® cable	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s <sup>2</sup> ]	Travel distance [m]	Minimum bend radius [factor x d]			Page	
		unsupported	gliding			5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million (5 million) double strokes *		
<b>Motor cables</b>										
 CF885	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	318	
 CF886	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	320	
 CF210.UL	+5 / +15 +15 / +60 +60 / +70	10	2	50	≤ 10	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	322	
 CF30	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	10 7.5 10	11 8.5 11	12 9.5 12	324	
 CF31	+5 / +15 +15 / +60 +60 / +70	10	5	80	≤ 100	10 7.5 10	11 8.5 11	12 9.5 12	328	
 CF895	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	332	
 CF896	-20 / -10 -10 / +70 +70 / +80	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	334	
 CF270.UL.D	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	336	
 CF27.D	-25 / -15 -15 / +70 +70 / +80	10	5	80	≤ 100	10 7.5 10	11 8.5 11	12 8.5 12	340	
 CF34.UL.D	-35 / -25 -25 / +80 +80 / +90	10	6	80	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	344	
 CF35.UL	-35 / -25 -25 / +80 +80 / +90	10	6	80	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	348	
						5 million	7.5 million	12.5 million		
 CF37.D	-35 / -25 -25 / +80 +80 / +90	10	6	80	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	352	
 CF38	-35 / -25 -25 / +80 +80 / +90	10	6	80	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	354	

<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](http://www.igus.eu/chainflexlife)  
Values in brackets apply to the CF885/CF886 and CF895/CF896 series



chainflex® cable	Temperature, from/to [°C]	v max. [m/s]		a max. [m/s²]	Travel distance [m]	Minimum bend radius [factor x d]		Minimum bend radius [factor x d]		Page
		unsupported	gliding			5 million (1 million) double strokes *	7.5 million (3 million) double strokes *	10 million (5 million) double strokes *		
<b>Spindle cables/Single cores</b>										
 CF885	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	356	
 CF885.PE	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	358	
 CF886	+5 / +15 +15 / +60 +60 / +70	3	-	20	≤ 10	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	360	
 CF270.UL.D	-25 / -15 -15 / +70 +70 / +80	10	2	50	≤ 10	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	362	
 CF300.UL.D	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	364	
 CFPE	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	366	
 CF310.UL	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	368	
						5 million	7.5 million	12.5 million		
 CF330.D	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	370	
 CF340	-35 / -25 -25 / +80 +80 / +90	10	6	100	≤ 400	10 7.5 10	11 8.5 11	12 9.5 12	372	
<b>Medium voltage cables</b>										
 CFRANE.PUR	-20 / -10 -10 / +70 +70 / +80	10	6	50	≤ 400	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	374	
 CFRANE	-20 / -10 -10 / +70 +70 / +80	10	6	50	≤ 400	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	376	

<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](http://www.igus.eu/chainflexlife)  
 Figures in brackets refer to series CF885 and CF886





# Motor cable | PVC | chainflex® CF885






**36** 5,000,000  
Double strokes guaranteed

**15 x d**  
Bend radius, e-chain®






**10m**  
Travel distance, e-chain®

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



## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	3m/s
 <b>a max.</b>		20m/s <sup>2</sup>
 <b>Travel distance</b>		Unsupported travels up to 10m, Class 1





## Cable structure

 <b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
 <b>Core structure</b>	Cores wound with an optimised pitch length.
 <b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
 <b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

 <b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
 <b>Testing voltage</b>	4,000V (following DIN EN 50395)







## Properties and approvals

 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF885">www.igus.eu/CF885</a>

EPLAN download, configurators ► [www.igus.eu/CF885](http://www.igus.eu/CF885)

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 3.1.1.1

 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## 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

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]
<b>CF885.15.04</b>	4G1.5	8.0	67	105
<b>CF885.25.04</b>	4G2.5	10.0	110	163
<b>CF885.40.04</b>	4G4.0	11.5	175	244
<b>CF885.60.04</b>	4G6.0	13.5	237	360
<b>CF885.100.04</b>	4G10	17.0	412	514
<b>CF885.160.04</b>	4G16	20.0	690	857

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/cf-case](http://www.igus.eu/cf-case)



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



# Motor cable | PVC | chainflex® CF886

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
	<b>e-chain® linear flexible</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C
	<b>fixed</b>	-5°C up to +70°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

### Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
<b>Core structure</b>	Cores wound with an optimised pitch length.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

EPLAN download, configurators ► [www.igus.eu/CF886](http://www.igus.eu/CF886)

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



EU2023

EU2023



Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
Travel distance	1	2	3	4	5	6	7	≥ 400m
Oil resistance	1	2	3	4	highest			
Torsion	1	2	3	4	±360°			

## Class 3.1.1.1

- UL verified** 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/CF886](http://www.igus.eu/CF886)
- UL/CSA AWM**
- NFPA** Following NFPA 79-2018, chapter 12.9
- EAC** Certificate No. RU C-DE.ME77.B.00302/19
- REACH** In accordance with regulation (EC) No. 1907/2006 (REACH)
- Lead-free** Following 2011/65/EC (RoHS-II/RoHS-III)
- CE** Following 2014/35/EU
- UKCA** In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

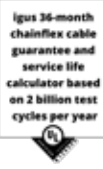
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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

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]
CF886.15.04	(4G1.5)C	9.0	82	119
CF886.25.04	(4G2.5)C	10.5	132	181
CF886.40.04	(4G4.0)C	12.0	204	263
CF886.60.04	(4G6.0)C	14.5	269	377
CF886.100.04	(4G10)C	18.5	458	577
CF886.160.04	(4G16)C	21.0	760	829

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





# Motor cable | PVC | chainflex® CF210.UL

- 36** 10 million Double strokes guaranteed
- 10 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		50m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with high tensile strength centre elements.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 4.2.2.1

- 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 1992)
- UL verified** 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/CF210UL](http://www.igus.eu/CF210UL)
- UL/CSA AWM**
- NFPA** Following NFPA 79-2018, chapter 12.9
- EAC** Certificate No. RU C-DE.ME77.B.00863/20
- REACH** In accordance with regulation (EC) No. 1907/2006 (REACH)
- Lead-free** Following 2011/65/EC (RoHS-II/RoHS-III)
- Cleanroom** According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1
- CE** Following 2014/35/EU
- UKCA** 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	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	12.5	13.5	14.5
+15/+60	10	11	12
+60/+70	12.5	13.5	14.5

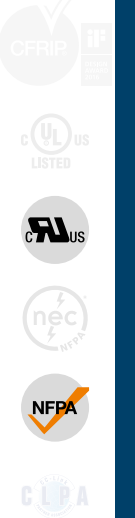
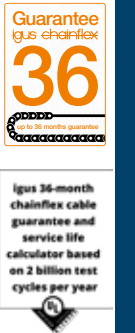
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Wood/stone processing, packaging industry, feeding, handling, adjusting devices

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]
CF210.UL.05.04	(4G0.5)C	7.0	34	63
CF210.UL.15.04	(4G1.5)C	10.0	86	140
CF210.UL.25.04	(4G2.5)C	11.5	146	209
CF210.UL.40.04	(4G4.0)C	13.0	195	288

**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



Example image

# Motor cable | PVC | chainflex® CF30

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

- For heavy duty applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

## Cable structure

<b>Conductor</b>	<b>Cores &lt;10mm<sup>2</sup>:</b> Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). <b>Cores ≥ 10mm<sup>2</sup>:</b> Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: jet black (similar to RAL 9005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.2

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF30">www.igus.eu/CF30</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU
<b>CE</b>	
<b>UKCA</b>	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	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](http://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
- Torsion ±90°, with 1m cable length, Class 2
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- Storage and retrieval units, machining units/packaging machines, quick handling, indoor cranes



Example image

EPLAN download, configurators ► [www.igus.eu/CF30](http://www.igus.eu/CF30)

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



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





# Motor cable | PVC | chainflex® CF30

Strip cables 50% faster with CFRIP® tear strip



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]
CF30.15.04	4G1.5	8.0	61	104
CF30.25.04	4G2.5	10.0	100	166
CF30.25.05	5G2.5	11.0	124	203
CF30.40.04	4G4.0	11.5	163	249
CF30.40.05	5G4.0	12.5	204	302
CF30.60.04	4G6.0	13.5	237	343
CF30.60.05	5G6.0	15.0	297	410
CF30.100.04	4G10	16.5	407	548
CF30.100.05	5G10	19.5	515	684
CF30.160.04	4G16	20.0	646	826
CF30.160.05	5G16	23.5	815	1067
CF30.250.04	4G25	25.0	1014	1320
CF30.350.04	4G35	28.5	1439	1795
CF30.500.04 <sup>11)</sup>	4G50	34.0	2061	2528

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

**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/cf-case](http://www.igus.eu/cf-case)



## Class 5.5.2.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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



Order example: **CF30.15.04** – to your desired length (0.5m steps)  
CF30 chainflex® series .15 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF30](http://www.igus.eu/CF30)

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

cost down...



...life up

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF885 ...



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

# Motor cable | PVC | chainflex® CF31

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **100m** Travel distance, e-chain®

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

### Dynamic information

Bend radius	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
Temperature	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
a max.		80m/s²
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

### Cable structure

Conductor	<b>Cores &lt;10mm²:</b> Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). <b>Cores ≥ 10mm²:</b> Conductor cable consisting of pre-leads (following DIN EN 60228).
Core insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Core structure	Cores wound with a short pitch length around a high tensile strength centre element.
Core identification	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
Inner jacket	PVC 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, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: jet black (similar to RAL 9005)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

Nominal voltage	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
Testing voltage	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF31](http://www.igus.eu/CF31)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 5.5.2.1

### Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
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 1992)
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 ► <a href="http://www.igus.eu/CF31">www.igus.eu/CF31</a>
NFPA	Following NFPA 79-2018, chapter 12.9
EAC	Certificate No. RU C-DE.ME77.B.00863/20
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 2. The outer jacket material of this series complies with CF5.10.07 - tested by IPA according to standard DIN EN ISO 14644-1 Following 2014/35/EU
CE	
UKCA	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	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](http://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, quick handling, indoor cranes



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



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](http://www.igus.eu/ul-verified)

Example image

igus® chainflex® CF31



# Motor cable | PVC | chainflex® CF31

Strip cables 50% faster with CFRIP® tear strip



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]
CF31.15.04	(4G1.5)C	10.0	89	157
CF31.25.04	(4G2.5)C	11.5	133	221
CF31.25.05	(5G2.5)C	13.0	163	271
CF31.40.04	(4G4.0)C	13.0	203	300
CF31.40.05	(5G4.0)C	14.5	258	354
CF31.60.04	(4G6.0)C	16.0	288	455
CF31.60.05	(5G6.0)C	17.0	356	532
CF31.100.04	(4G10)C	18.5	468	670
CF31.100.05	(5G10)C	21.5	609	857
CF31.160.04	(4G16)C	23.0	738	1035
CF31.250.04	(4G25)C	27.5	1153	1586
CF31.350.04	(4G35)C	31.0	1592	2104
CF31.500.04	(4G50)C	36.5	2224	2902
CF31.700.04	(4G70)C	43.0	3203	4173

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

Order example: **CF31.15.04** – to your desired length (0.5m steps)  
CF31 chainflex® series .15 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF31](http://www.igus.eu/CF31)

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



### 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/cf-case](http://www.igus.eu/cf-case)



## Class 5.5.2.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee  
igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

CFRIP  
if  
design project file

UL LISTED

UL US

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UK CA



chainflex® CF31 motor cable in a fast picker

EPLAN download, configurators ► [www.igus.eu/CF31](http://www.igus.eu/CF31)

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

# Motor cable | iguPUR | chainflex® CF895

**36** 5 million  
Double strokes guaranteed

**15 x d**  
Bend radius, e-chain®

**10m**  
Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
<b>Core structure</b>	Cores wound with an optimised pitch length.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF895">www.igus.eu/CF895</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+70	15	16	17
+70/+80	17.5	18.5	19.5

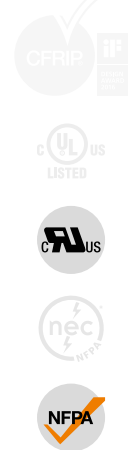
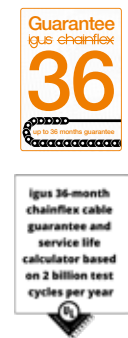
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For flexing applications, Class 3
- Especially 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

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]
CF895.15.04	4G1.5	8.0	67	101
CF895.25.04	4G2.5	10.0	110	153
CF895.40.04	4G4.0	11.5	175	239
CF895.60.04	4G6.0	13.5	262	353
CF895.100.04	4G10	17.0	436	543
CF895.160.04	4G16	20.0	653	824

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



Example image

EPLAN download, configurators ► [www.igus.eu/CF895](http://www.igus.eu/CF895)

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



# Motor cable | iguPUR | chainflex® CF896

- 36** 5,000,000 Double strokes guaranteed
- 15 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-20°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

## Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
<b>Core structure</b>	Cores wound with an optimised pitch length.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.3.1

- 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 1992)
- UL verified** 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/CF896](http://www.igus.eu/CF896)
- UL/CSA AWM**
- NFPA** Following NFPA 79-2018, chapter 12.9
- EAC** Certificate No. RU C-DE.ME77.B.00302/19
- REACH** In accordance with regulation (EC) No. 1907/2006 (REACH)
- Lead-free** Following 2011/65/EC (RoHS-II/RoHS-III)
- CE** Following 2014/35/EU
- UKCA** In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+70	15	16	17
+70/+80	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For flexing applications, Class 3
- Especially 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

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]
CF896.07.04	(4G0.75)C	7.5	52	79
CF896.15.04	(4G1.5)C	9.0	82	122
CF896.25.04	(4G2.5)C	10.5	132	173
CF896.40.04	(4G4.0)C	12.0	204	257
CF896.60.04	(4G6.0)C	14.5	306	378
CF896.100.04	(4G10)C	18.5	458	653
CF896.160.04	(4G16)C	21.0	709	835

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



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



Example image

EPLAN download, configurators ► [www.igus.eu/CF896](http://www.igus.eu/CF896)

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Motor cable | PUR | chainflex® CF270.UL.D

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
<b>a max.</b>		50m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

<b>Conductor</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with high tensile strength centre elements.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Intermediate layer</b>	Foil taping over the outer layer.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Example image

EPLAN download, configurators ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF270ULD">www.igus.eu/CF270ULD</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UK CA</b>	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	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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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

Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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](http://www.igus.eu/ul-verified)







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]
CF270.UL.07.04.D	(4G0.75)C	8.0	47	81
CF270.UL.10.06.D	(6G1.0)C	9.5	87	133
CF270.UL.15.04.D	(4G1.5)C	9.0	78	116
CF270.UL.25.04.D	(4G2.5)C	10.5	129	173
CF270.UL.40.04.D	(4G4.0)C	12.5	193	255
CF270.UL.60.04.D	(4G6.0)C	14.5	297	356
CF270.UL.100.04.D	(4G10)C	17.0	495	551
CF270.UL.160.04.D	(4G16)C	20.5	755	819
CF270.UL.250.04.D	(4G25)C	25.0	1117	1256
CF270.UL.350.04.D	(4G35)C	28.0	1597	1696

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

Order example: **CF270.UL.07.04.D** – to your desired length (0.5m steps)  
CF270.UL.D chainflex® series .07 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF270ULD](http://www.igus.eu/CF270ULD)

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



**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/cf-case](http://www.igus.eu/cf-case)



**cost down...**



...life up

**Reduce cost, improve technology, now!**

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF31 ...



chainflex® CF270.UL.D motor cable in a system for sharpening knives



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



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

# Motor cable | PUR | chainflex® CF27.D

- 36** 10 million Double strokes guaranteed
- 7.5 x d** Bend radius, e-chain®
- 100m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-25°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	5m/s
<b>a max.</b>		80m/s²
<b>Travel distance</b>		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound around a high tensile strength centre element.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L-
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3

## Class 6.5.3.1

<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF27D">www.igus.eu/CF27D</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003XA
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

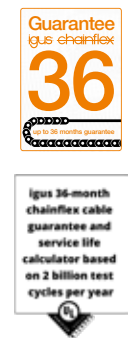
## Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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 number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

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





# Motor cable | PUR | chainflex® CF27.D

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF27.D

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]
CF27.07.04.D	(4G0.75)C	9.5	55	115
CF27.15.04.D	(4G1.5)C	11.0	90	165
CF27.25.04.D	(4G2.5)C	12.5	135	231
CF27.500.04.D	(4G50)C	37.0	2244	2817

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/cf-case](http://www.igus.eu/cf-case)



## Class 6.5.3.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

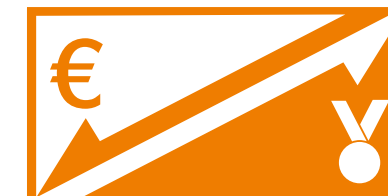
low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Order example: **CF27.07.04.D** – to your desired length (0.5m steps)  
CF27.D chainflex® series .07 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF27D](http://www.igus.eu/CF27D)

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

### cost down...



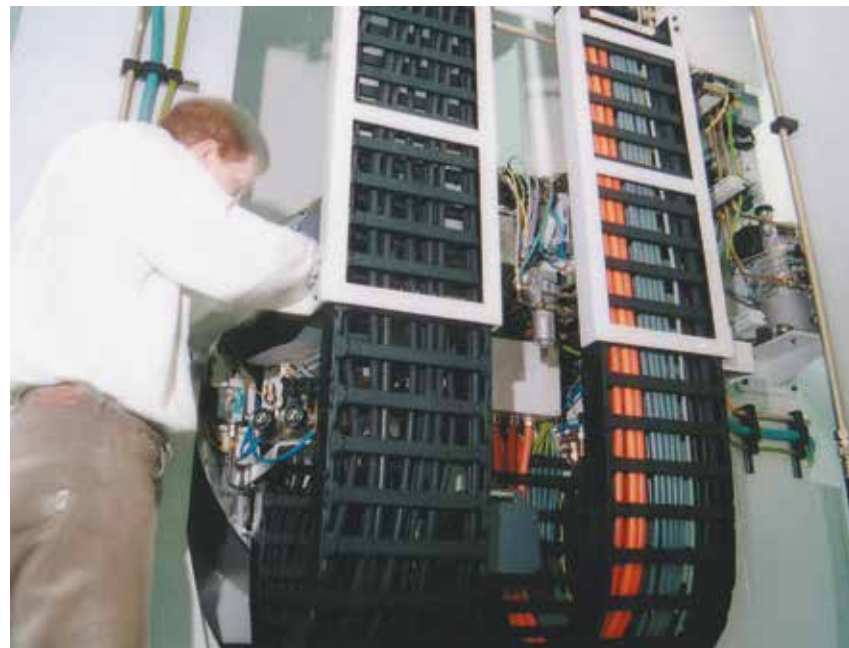
...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...

[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... here's an idea for you: highest abrasion resistance with CF38 ...



Modular design, easy to retrofit: igus® E4 e-chain® and chainflex® cables.

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



# Motor cable | TPE | chainflex® CF34.UL.D

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C -45°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

## Cable structure

<b>Conductor</b>	<b>Cores &lt;10mm<sup>2</sup></b> : Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228). <b>Cores ≥ 10mm<sup>2</sup></b> : Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Signal black (similar to RAL 9004)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Example image

EPLAN download, configurators ► [www.igus.eu/CF34ULD](http://www.igus.eu/CF34ULD)

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EU2023

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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.6.4.2

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF34ULD">www.igus.eu/CF34ULD</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003X9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Torsion ±90°, with 1m cable length, Class 2
- 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

Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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

UL

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

345

Guarantee igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL US

NEC

NFPA

CUA

DNV

EAC

REACH

RoHS

Cleanroom

DESINA

CE

UKCA



# Motor cable | TPE | chainflex® CF34.UL.D

Strip cables 50% faster with CFRIP® tear strip



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]
CF34.UL.15.04.D	4G1.5	8.0	61	102
CF34.UL.25.04.D	4G2.5	10.0	100	159
CF34.UL.40.04.D	4G4.0	11.5	163	236
CF34.UL.60.04.D	4G6.0	13.5	237	332
CF34.UL.60.05.D	5G6.0	15.0	297	406
CF34.UL.100.04.D	4G10	16.5	407	537
CF34.UL.100.05.D	5G10	19.5	515	670
CF34.UL.160.04.D	4G16	20.0	646	819
CF34.UL.160.05.D	5G16	22.5	815	1009
CF34.UL.250.04.D	4G25	24.5	1014	1271

**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/cf-case](http://www.igus.eu/cf-case)



## Class 6.6.4.2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	5	6	7	highest
none	1	2	3	4	5	6	7	±360°

**Order example: CF34.UL.15.04.D - to your desired length (0.5m steps)**  
CF34.UL.D chainflex® series .15 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF34ULD](http://www.igus.eu/CF34ULD)

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

### cost down...



...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: reduce cost with CF300.UL.D ...



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



EPLAN download, configurators ► [www.igus.eu/CF34ULD](http://www.igus.eu/CF34ULD)



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

# Motor cable | TPE | chainflex® CF35.UL

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

### Dynamic information

Bend radius	e-chain® linear	minimum 7.5 x d
	flexible	minimum 6 x d
	fixed	minimum 4 x d
Temperature	e-chain® linear	-35°C up to +90°C
	flexible	-45°C up to +90°C (following DIN EN 60811-504)
	fixed	-50°C up to +90°C (following DIN EN 50305)
v max.	unsupported	10m/s
	gliding	6m/s
a max.		80m/s²
Travel distance		Unsupported travels and up to 400m and more for gliding applications, Class 6

### Cable structure

Conductor	<b>Cores &lt;10mm²:</b> Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Cores ≥ 10mm²:</b> Conductor cable consisting of pre-leads (following DIN EN 60228).
Core insulation	Mechanically high-quality, especially low-capacitance XLPE mixture.
Core structure	Cores wound with a short pitch length around a high tensile strength centre element.
Core identification	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
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: Signal black (similar to RAL 9004)
CFRIP®	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

### Electrical information

Nominal voltage	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
Testing voltage	4,000V (following DIN EN 50395)

EPLAN download, configurators ► [www.igus.eu/CF35UL](http://www.igus.eu/CF35UL)

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

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.6.4.1

### 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
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 1992)
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 ► <a href="http://www.igus.eu/CF35UL">www.igus.eu/CF35UL</a>
NFPA	Following NFPA 79-2018, chapter 12.9
DNV	Type Approval Certificate TAE00003X9
EAC	Certificate No. RU C-DE.ME77.B.00863/20
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	Following 2011/65/EC (RoHS-II/RoHS-III)
Cleanroom	According to ISO Class 1. The outer jacket material of this series complies with CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1
CE	Following 2014/35/EU
UK CA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

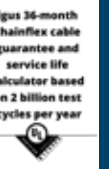
### Guaranteed service life (details see page 28-29)

Double strokes*	5 million	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	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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





# Motor cable | TPE | chainflex® CF35.UL

Strip cables 50% faster with CFRIP® tear strip

igus® chainflex® CF35.UL

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]
CF35.UL.05.04	(4G0.5)C	7.5	42	79
CF35.UL.07.04	(4G0.75)C	8.0	58	90
CF35.UL.15.04	(4G1.5)C	10.0	89	146
CF35.UL.25.04	(4G2.5)C	11.5	133	207
CF35.UL.40.04	(4G4.0)C	13.0	203	290
CF35.UL.60.04	(4G6.0)C	16.0	288	423
CF35.UL.100.04	(4G10)C	18.5	468	632
CF35.UL.160.04	(4G16)C	23.0	738	974
CF35.UL.250.04	(4G25)C	27.5	1153	1481
CF35.UL.60.03.O.PE <sup>11)</sup>	(3x6.0)C	14.5	229	344
CF35.UL.250.03.O.PE <sup>11)</sup>	(3x25)C	24.5	880	1163

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

**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/cf-case](http://www.igus.eu/cf-case)



## Class 6.6.4.1

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

Guarantee igus chainflex

# 36

up to 36 months guarantee

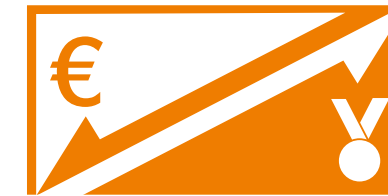
igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year

Order example: **CF35.UL.05.04** - to your desired length (0.5m steps)  
CF35.UL chainflex® series .05 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF35UL](http://www.igus.eu/CF35UL)

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

### cost down...



...life up

### Reduce cost, improve technology, now!

Do the chainflex® price check ...  
[www.igus.eu/cf-price-check](http://www.igus.eu/cf-price-check)

... for example: **reduce cost with CF310.UL ...**



EPLAN download, configurators ► [www.igus.eu/CF35UL](http://www.igus.eu/CF35UL)

# Motor cable | TPE | chainflex® CF37.D



**12.5 million**  
Double strokes guaranteed



**7.5 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C -50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6
<b>Torsion</b>		Torsion ±90°, with 1m cable length, Class 2

## Cable structure

<b>Conductor</b>	<b>Cores &lt;10mm<sup>2</sup>:</b> Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Cores ≥ 10mm<sup>2</sup>:</b> Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the outer jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

Example image



## Class 7.6.4.2

<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF37D">www.igus.eu/CF37D</a>
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- 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
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

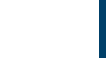
Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF37.15.04.D	4G1.5	8.0	61	95
CF37.25.04.D	4G2.5	10.0	100	149
CF37.40.04.D	4G4.0	11.5	163	221
CF37.60.04.D	4G6.0	13.5	237	317
CF37.60.05.D	5G6.0	15.0	297	387
CF37.100.04.D	4G10	16.5	407	503
CF37.100.05.D	5G10	19.0	515	634
CF37.160.04.D	4G16	20.0	646	773
CF37.160.05.D	5G16	22.5	815	963
CF37.250.04.D	4G25	24.0	1014	1203
CF37.500.03.O.PE.D <sup>1)</sup>	3x50	30.0	1530	1826

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

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			



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





# Motor cable | TPE | chainflex® CF38



**12.5 million**  
Double strokes guaranteed



**7.5 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		80m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

<b>Conductor</b>	<b>Cores &lt;10mm<sup>2</sup></b> : Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Cores ≥ 10mm<sup>2</sup></b> : Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
<b>Core structure</b>	Cores wound with a short pitch length around a high tensile strength centre element.
<b>Core identification</b>	Black cores with white numbers, one green-yellow core. 1. Core: U / L1 / C / L+ 2. Core: V / L2 3. Core: W / L3 / D / L- 4. Core: 4 / N
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)
<b>CFRIP®</b>	Strip cables faster: a tear strip is moulded into the inner jacket Video ► <a href="http://www.igus.eu/CFRIP">www.igus.eu/CFRIP</a>

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.6.4.1

<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF38">www.igus.eu/CF38</a>
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 7
- 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

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]
CF38.15.04	(4G1.5)C	10.0	89	140
CF38.25.04	(4G2.5)C	11.5	133	198
CF38.40.04	(4G4.0)C	13.0	203	280
CF38.60.04	(4G6.0)C	16.0	288	409
CF38.100.04	(4G10)C	18.5	468	613
CF38.160.04	(4G16)C	23.0	738	943
CF38.250.04	(4G25)C	27.0	1153	1432
CF38.100.03.O.PE	(3x10)C	17.0	358	494
CF38.160.03.O.PE	(3x16)C	20.5	565	762
CF38.500.03.O.PE	(3x50)C	33.0	1714	2129

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



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








# Spindle cable/Single core | PVC | chainflex® CF885




- 36** 5,000,000 Double strokes guaranteed
- 15 x d** Bend radius, e-chain®
- 10m** Travel distance, e-chain®

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



## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
 <b>Temperature</b>	<b>e-chain® linear</b>	+5°C up to +70°C
	<b>flexible</b>	-5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	3m/s
 <b>a max.</b>		20m/s²
 <b>Travel distance</b>		Unsupported travels up to 10m, Class 1








## Cable structure

 <b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality PVC mixture.
 <b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

## Electrical information

 <b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 600V (following UL)
 <b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF885">www.igus.eu/CF885</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 3.1.1.1

-  **Lead-free** Following 2011/65/EC (RoHS-II/RoHS-III)
-  **CE** Following 2014/35/EU
-  **UKCA** In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## 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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF885.40.01	1x4.0	7.5	41	78
CF885.60.01	1x6.0	8.0	61	100
CF885.100.01	1x10	9.5	100	157
CF885.160.01	1x16	11.5	159	237
CF885.250.01	1x25	12.5	248	325
CF885.350.01	1x35	15.0	347	474
CF885.500.01	1x50	16.5	495	644
CF885.700.01	1x70	18.5	686	844
CF885.950.01	1x95	20.5	931	1024

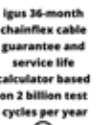
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



## 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/cf-case](http://www.igus.eu/cf-case)





# Spindle cable/Single core | PVC | chainflex® CF885.PE

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s²
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

### Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality PVC mixture.
<b>Core identification</b>	Green-yellow
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 600V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF885PE">www.igus.eu/CF885PE</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9

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Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 3.1.1.1

**EAC** EAC Certificate No. RU C-DE.ME77.B.00302/19

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

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

**CE** CE Following 2014/35/EU

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

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF885.PE.25.01	1G2.5	6.5	25	59
CF885.PE.40.01	1G4.0	7.5	61	83
CF885.PE.60.01	1G6.0	8.0	61	100
CF885.PE.100.01	1G10	9.5	100	155
CF885.PE.160.01	1G16	11.0	159	226
CF885.PE.250.01	1G25	12.5	248	342

**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/cf-case](http://www.igus.eu/cf-case)



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

UL

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



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



Example image

igus® chainflex® CF885.PE

# Spindle cable/Single core | PVC | chainflex® CF886

**36** 5,000,000 Double strokes guaranteed **15 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5°C up to +70°C -5°C up to +70°C (following DIN EN 60811-504)
	<b>fixed</b>	-15°C up to +70°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3m/s
<b>a max.</b>		20m/s²
<b>Travel distance</b>		Unsupported travels up to 10m, Class 1

### Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality PVC mixture.
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60% optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Pastel orange (similar to RAL 2003)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 600V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF886">www.igus.eu/CF886</a>

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 3.1.1.1

<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00302/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>CF886.160.01</b>	(1x16)C	11.5	186	262
<b>CF886.250.01</b>	(1x25)C	13.0	280	363
<b>CF886.350.01</b>	(1x35)C	15.5	394	535

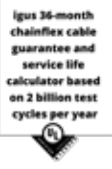
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



### 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/cf-case](http://www.igus.eu/cf-case)



Example image

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



# Spindle cable/Single core | PUR | chainflex® CF270.UL.D

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **10m** Travel distance, e-chain®

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

## Dynamic information

Bend radius	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
Temperature	<b>e-chain® linear</b>	-25°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
a max.		50m/s²
Travel distance		Unsupported travels and up to 10m for gliding applications, Class 2

## Cable structure

Conductor	Conductor cable consisting of pre-leads (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 55%, optical approx. 80%
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Pastel orange (similar to RAL 2003)

## Electrical information

Nominal voltage	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
Testing voltage	4,000V (following DIN EN 50395)

## Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2016
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 1992)
Halogen-free	Following DIN EN 60754

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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 4.2.3.1

- UL verified
- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- DESINA
- CE
- UKCA

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/CF270ULD](http://www.igus.eu/CF270ULD)

Following NFPA 79-2018, chapter 12.9

Certificate No. RU C-DE.ME77.B.00863/20

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

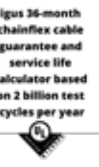
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For medium duty applications, Class 4
- Unsupported travels and up to 10m for gliding applications, Class 2
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct sun radiation
- Machining units/machine tools, low temperature applications

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF270.UL.60.01.D	(1x6.0)C	7.5	72	95
CF270.UL.100.01.D	(1x10)C	8.5	114	145
CF270.UL.160.01.D	(1x16)C	9.5	178	209
CF270.UL.250.01.D	(1x25)C	11.0	269	304
CF270.UL.350.01.D	(1x35)C	13.0	374	419
CF270.UL.500.01.D	(1x50)C	15.0	525	579
CF270.UL.700.01.D	(1x70)C	17.0	751	804

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



# Spindle cable/Single core | TPE | chainflex® CF300.UL.D

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-45°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Unsupported travels and up to 400m and more for gliding applications, Class 6	
<b>Torsion</b>	Torsion ±90°, with 1m cable length, Class 2	

### Cable structure

<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Signal black (similar to RAL 9004)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF300ULD">www.igus.eu/CF300ULD</a>

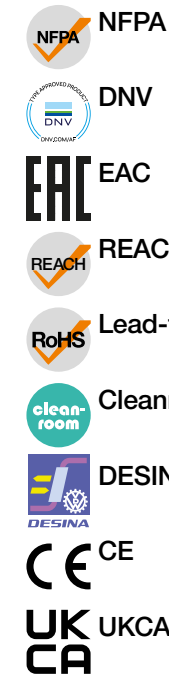
EPLAN download, configurators ► [www.igus.eu/CF300ULD](http://www.igus.eu/CF300ULD)

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## Class 6.6.4.2



Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

Following NFPA 79-2018, chapter 12.9

Type Approval Certificate TAE00003XC

Certificate No. RU C-DE.ME77.B.00863/20

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 CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1

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	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	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://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
- Torsion ±90°, with 1m cable length, Class 2
- 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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF300.UL.40.01.D	1x4.0	6.0	41	59
CF300.UL.60.01.D	1x6.0	7.0	61	83
CF300.UL.100.01.D	1x10	7.5	100	124
CF300.UL.160.01.D	1x16	9.5	159	195
CF300.UL.250.01.D	1x25	11.5	248	294
CF300.UL.350.01.D	1x35	12.5	347	395
CF300.UL.500.01.D	1x50	14.5	495	551
CF300.UL.700.01.D	1x70	16.5	710	769
CF300.UL.950.01.D	1x95	20.0	936	1042
CF300.UL.1200.01.D	1x120	21.5	1184	1295
CF300.UL.1500.01.D	1x150	23.5	1469	1579
CF300.UL.1850.01.D	1x185	26.5	1928	2052

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

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





# Spindle cable/Single core | TPE | chainflex® CFPE

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-45°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
<b>a max.</b>	<b>gliding</b>	6m/s
<b>Travel distance</b>	Unsupported travels and up to 400m and more for gliding applications, Class 6	
<b>Torsion</b>	Torsion ±90°, with 1m cable length, Class 2	

## Cable structure

<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core identification</b>	Green-yellow
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Signal black (similar to RAL 9004)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"

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

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



EU2023

## Class 6.6.4.2

<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFPEE">www.igus.eu/CFPEE</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>DNV</b>	Type Approval Certificate TAE00003XC
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

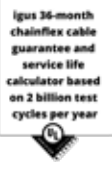
## Typical application areas

- 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
- Torsion ±90°, with 1m cable length, Class 2
- 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

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFPE.15.01	1G1.5	4.5	16	31
CFPE.25.01	1G2.5	5.5	25	42
CFPE.40.01	1G4.0	6.0	41	59
CFPE.60.01	1G6.0	7.0	61	83
CFPE.100.01	1G10	7.5	100	124
CFPE.160.01	1G16	9.5	159	195
CFPE.250.01	1G25	11.5	248	294
CFPE.350.01	1G35	12.5	347	395
CFPE.500.01	1G50	14.5	495	551
CFPE.700.01	1G70	16.5	725	813
CFPE.950.01	1G95	20.0	936	1080

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

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			



# Spindle cable/Single core | TPE | chainflex® CF310.UL

**36** 10 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-45°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		100m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

### Cable structure

<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Signal black (similar to RAL 9004)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF310UL">www.igus.eu/CF310UL</a>

EPLAN download, configurators ► [www.igus.eu/CF310UL](http://www.igus.eu/CF310UL)

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



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Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 6.6.4.1

NFPA  
 DNV  
 EAC  
 REACH  
 Lead-free  
 Cleanroom  
 CE  
 UKCA

Following NFPA 79-2018, chapter 12.9  
Type Approval Certificate TAE00003XC  
Certificate No. RU C-DE.ME77.B.00863/20  
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 CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1  
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	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	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

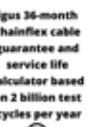
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### 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

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]
CF310.UL.25.01	(1x2.5)C	6.0	41	58
CF310.UL.40.01	(1x4.0)C	6.5	57	77
CF310.UL.60.01	(1x6.0)C	7.0	80	101
CF310.UL.100.01	(1x10)C	8.5	121	146
CF310.UL.160.01	(1x16)C	10.0	184	223
CF310.UL.250.01	(1x25)C	12.0	280	329
CF310.UL.350.01	(1x35)C	13.0	395	444
CF310.UL.500.01	(1x50)C	15.0	536	587
CF310.UL.700.01	(1x70)C	18.0	779	851
CF310.UL.950.01	(1x95)C	21.0	1015	1125
CF310.UL.1200.01	(1x120)C	22.0	1270	1378
CF310.UL.1500.01	(1x150)C	24.5	1592	1700
CF310.UL.1850.01	(1x185)C	27.5	2066	2189

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





# Spindle cable/Single core | TPE | chainflex® CF330.D



**12.5 million**  
Double strokes guaranteed



**7.5 x d**  
Bend radius, e-chain®



**400m**  
Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

**Now available  
with UL approval  
& 25% longer  
service life**

## Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
		<b>flexible</b>	minimum 6 x d
		<b>fixed</b>	minimum 4 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
		<b>flexible</b>	-50°C up to +90°C (following DIN EN 60811-504)
		<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>gliding</b>	6m/s
	<b>a max.</b>		100m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travels and up to 400m and more for gliding applications, Class 6	
	<b>Torsion</b>	Torsion ±90°, with 1m cable length, Class 2	

## Cable structure

	<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 7.6.4.2

	<b>UL AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF330D">www.igus.eu/CF330D</a>
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- 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
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

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]
CF330.60.01.D	1x6.0	7.0	61	77
CF330.100.01.D	1x10	7.5	100	119
CF330.160.01.D	1x16	9.5	159	181
CF330.250.01.D	1x25	11.5	248	284
CF330.350.01.D	1x35	12.5	347	385
CF330.500.01.D	1x50	14.5	495	534
CF330.700.01.D	1x70	16.5	710	754
CF330.950.01.D	1x95	20.0	936	1015
CF330.1200.01.D	1x120	21.5	1184	1265
CF330.1500.01.D	1x150	23.5	1469	1548
CF330.1850.01.D	1x185	26.5	1928	2016

**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



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



Example image

igus® chainflex® CF330.D

# Spindle cable/Single core | TPE | chainflex® CF340

**36** 12.5 million Double strokes guaranteed **7.5 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- For heaviest duty applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Now available with UL approval & 25% longer service life

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 7.5 x d
	<b>flexible</b>	minimum 6 x d
	<b>fixed</b>	minimum 4 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-35°C up to +90°C
	<b>flexible</b>	-50°C up to +90°C (following DIN EN 60811-504)
	<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		100m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

### Cable structure

<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

### Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 7.6.4.1

- UL AWM** See data sheet for details ► [www.igus.eu/CF340](http://www.igus.eu/CF340)
- EAC** Certificate No. RU C-DE.ME77.B.00863/20
- REACH** In accordance with regulation (EC) No. 1907/2006 (REACH)
- Lead-free** Following 2011/65/EC (RoHS-II/RoHS-III)
- Cleanroom** According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
- CE** Following 2014/35/EU
- UKCA** 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	7.5 million	12.5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	10	11	12
-25/+80	7.5	8.5	9.5
+80/+90	10	11	12

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heavy-duty applications, Class 7
- 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

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]
CF340.40.01	(1x4.0)C	6.5	57	73
CF340.160.01	(1x16)C	10.0	184	215
CF340.250.01	(1x25)C	12.0	280	319
CF340.350.01	(1x35)C	13.0	395	433
CF340.500.01	(1x50)C	15.0	536	574
CF340.700.01	(1x70)C	17.5	779	832
CF340.950.01	(1x95)C	21.0	1015	1093
CF340.1200.01	(1x120)C	22.0	1270	1341
CF340.1500.01	(1x150)C	24.5	1592	1642
CF340.1850.01	(1x185)C	27.5	2066	2157
CF340.2400.01	(1x240)C	30.5	2566	2731

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



Example image

igus® chainflex® CF340



# Medium voltage cable | PUR | chainflex® CFRANE.PUR

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- For maximum voltages and outputs
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C -25°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-30°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		50m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

### Cable structure

<b>Conductor</b>	Highly-flexible cable consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	Inner and outer semiconducting layer made of conductive rubber. Insulating sheath made of highly-quality, heat-resistant and ozone-proof ethylene propylene rubber (EPR).
<b>Overall shield</b>	Extremely bending-resistant wrapping made of tinned copper wires Coverage approx. 85% optical
<b>Outer jacket</b>	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

### Electrical information

<b>Nominal voltage</b>	6/10kV or 8.7/15kV (following DIN VDE 0250), further voltages upon request.
<b>Testing voltage</b>	24kV (following DIN VDE 0250, Part 813)

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.6.3.1

- Silicone-free**
- Halogen-free**
- UL verified**
- REACH**
- Lead-free**
- CE**
- UKCA**

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

Following DIN EN 60754

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

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

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

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	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	12.5	13.5	14.5
-10/+70	10	11	12
+70/+80	12.5	13.5	14.5

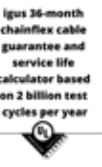
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For maximum voltages and outputs, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Ship to shore, crane applications, conveyor technology

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]
CFCRANE.PUR.350.01.6/10kV	(1x35/16)C	26.0	568	852
CFCRANE.PUR.500.01.6/10kV	(1x50/16)C	27.0	722	1025
CFCRANE.PUR.700.01.6/10kV	(1x70/16)C	29.0	941	1249
CFCRANE.PUR.950.01.6/10kV	(1x95/16)C	31.0	1166	1523

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



Example image

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

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



EU2023

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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Medium voltage cable | igupren | chainflex® CFCRANE

**36** 10 million Double strokes guaranteed **10 x d** Bend radius, e-chain® **400m** Travel distance, e-chain®

- For maximum voltages and outputs
- igupren outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C -25°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-30°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
<b>a max.</b>		50m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travels and up to 400m and more for gliding applications, Class 6

## Cable structure

<b>Conductor</b>	Highly-flexible cable consisting of tinned copper wires (following DIN EN 60228).
<b>Core insulation</b>	Inner and outer semiconducting layer made of conductive rubber. Insulating sheath made of highly-quality, heat-resistant and ozone-proof ethylene propylene rubber (EPR).
<b>Overall shield</b>	Extremely bending-resistant, tinned copper shield. Coverage approx. 95% optical
<b>Outer jacket</b>	Low-adhesion iguprene mixture, especially abrasion resistant, adapted to suit the requirements in e-chains® (following VDE 0207, Part 21). Colour: Red

## Electrical information

<b>Nominal voltage</b>	6/10kV (following DIN VDE 0250), other voltages upon request.
<b>Testing voltage</b>	17kV (following DIN VDE 0250, Part 813)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.6.3.1

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404)
<b>Flame-retardant</b>	According to IEC 60332-1-2
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	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	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	12.5	13.5	14.5
-10/+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](http://www.igus.eu/chainflexlife)

### Typical application areas

- For maximum voltages and outputs, Class 6
- Unsupported travels and up to 400m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications, UV-resistant
- Ship to shore, crane applications, conveyor technology

**i** This cable series will be individually manufactured for your special project. Due to this we do not have this cable on stock, but can offer it exactly for your special demands.

Medium voltage cables available from stock (CFCRANE.PUR) ► [Page 374](#)



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



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

Example image

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

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



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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)





# Twistable cables



chainflex® cable	Jacket	Shield	Bend radius e-chain® [factor x d]	Temperature e-chain® from/to [°C]	Approvals and standards	Oil-resistant	Torsion-resistant v max. [°/s] twisted	a max. [°/s²] twisted	Page	
<b>Twistable cables</b>										
<b>Information about twistable cables</b>									380	
<b>Control cables</b>										
CF77.UL.D	PUR		6.8	-25/+80		✓	✓	180	60	384
CFROBOT2	PUR	✓	10	-25/+80		✓	✓	180	60	388
<b>Data cable</b>										
CFROBOT3	PUR	✓	10	-25/+80		✓	✓	180	60	390
<b>Measuring system cable</b>										
CFROBOT4	PUR	✓	10	-25/+80		✓	✓	180	60	392
<b>Fibre Optic Cable</b>										
CFROBOT5	TPE		10	-35/+80		✓	✓	180	60	396
<b>Motor cables</b>										
CFROBOT6	PUR		10	-25/+80		✓	✓	180	60	398
CFROBOT7	PUR	✓	10	-25/+80		✓	✓	180	60	400
<b>Spindle cable/Single core</b>										
CFROBOT	TPE	✓	10	-35/+90		✓	✓	180	60	404
<b>Bus cables</b>										
CFROBOT8	PUR	✓	10	-25/+70		✓	✓	180	60	406
CFROBOT8.PLUS	PUR	✓	10	-25/+70		✓	✓	360	60	410 <b>New</b>
<b>Hybrid cable</b>										
CFROBOT9	PUR	✓	10	-25/+80		✓	✓			414

## 36-month chainflex® guarantee

Guaranteed service life for predictable reliability

► Selection table page 382

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:



[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



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





Ever more complex sequences of movements in industrial applications demand twistable or multi-axis flexible cables with a long service life, similar to the classic chainflex® cables for use in linear e-chain systems®. Stranding, structure, shields and jacket materials must compensate both for major changes in bending load and changes in diameter due to torsional movements. To achieve this, different “soft” structural elements e.g. rayon fibres, PTFE elements or filling elements that absorb torsion forces are used in chainflex® CFROBOT cables.

Special demands are made on the braided shielding in torsion cables. Torsion-optimised shield structures are chosen that allow compensatory movements thanks to special PTFE gliding films.

With twistable bus cables in particular, the transmission characteristics such as attenuation, cable capacitance and signal quality must remain within very tight tolerance ranges over the whole service life. This is achieved through the use of particularly torsion optimised insulating materials and mechanical attenuation elements with matching capacitance values.

The highly abrasion-resistant, halogen-free and flame-resistant PUR jacket material in motor, hybrid/control cables and bus cables protects the torsion-optimised stranded elements from possible damage.

The highly abrasion-resistant, halogen-free TPE jacket achieves the special requirements of the twistable FOC and individual as well as the single core cables.

Unlike cables for linear e-chain systems®, the mechanical stress on these cables is in the combination of bending, torsion and centrifugal forces that cannot usually be determined by design or during use by means of measurement. For this reason, and unlike the situation with linear e-chain® applications, a clear “yes/no” statement cannot be made about the use of a particular cable in torsion applications.

To enable evaluation to take place, based on sensible and comparable test results, the igus® “torsion test standard” was developed.

According to this standard, all chainflex® CFROBOT cables of a triflex® energy chain are twisted with a fixed point distance of one metre and a torsion of +/- 180° at least 3 million times.

In addition, a test is carried out on a test bench with a chain length of approx. 2,500mm with 270° torsion with an extreme load through centrifugal forces and heavy blows such as those that can occur on an industrial robot.



All the non-shielded, gusset-filled extruded standard chainflex® control cables of the series CF130.UL, CF5, CF9 and CF9.UL correspond to the above igus® standard and have been approved for use in torsion applications.

The following twistable CFROBOT cable types are currently available:

- Control cable (shielded and unshielded)
- Data and measuring system cables
- Fibre optic cables
- Motor and servo cables
- Bus cables
- Hybrid cables












We can also offer you chainflex® CFROBOT cables pre-harnessed with the connectors of your choice as a readycable®, or as a ready-to-install readychain® system.



Test data ► Page 51





chainflex® cables	Temperature, from/to [°C]	v max. [°/s] twisted	a max. [°/s <sup>2</sup> ] twisted	Minimum bend radius [factor x d]	Minimum bend radius [factor x d]	Minimum bend radius [factor x d]	Page
Twistable cables				5 million cycles *	7.5 million cycles *	10 million cycles *	
<b>Control cables</b>							
 CF77.UL.D	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	384
 CFROBOT2	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	388
<b>Data cable</b>							
 CFROBOT3	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	390
<b>Measuring system cable</b>							
 CFROBOT4	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	392
<b>Fibre Optic Cable</b>							
 CFROBOT5	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	396
<b>Motor cables</b>							
 CFROBOT6	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	398
 CFROBOT7	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	400
<b>Spindle cable/Single core</b>							
 CFROBOT	-35 / -25 -15 / +80 +80 / +90	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	404
<b>Bus cables</b>							
 CFROBOT8	-25 / -15 -15 / +60 +60 / +70	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	406
 CFROBOT8.PLUS <span style="background-color: orange; color: white; padding: 2px;">New!</span>	-25 / -15 -15 / +60 +60 / +70	360	60	±330 ±360 ±330	±240 ±270 ±240	±150 ±180 ±150	410
<b>Hybrid cable</b>							
 CFROBOT9	-25 / -15 -15 / +70 +70 / +80	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	414

# Control cable | PUR | chainflex® CF77.UL.D

**36** 10 million  
Cycles guaranteed

**6.8 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

	<b>Bend radius</b>	<b>flexible twisted</b>	minimum 6.8 x d
		<b>fixed</b>	minimum 4 x d
	<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>twisted</b>	180°/s
	<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
	<b>Travel distance</b>	Robots and 3D movements, Class 1	
	<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3 (except for 5-core types ≥ 4.0mm <sup>2</sup> ► <a href="#">Product range table</a> )	

## Cable structure

	<b>Conductor</b>	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core structure</b>	<b>Number of cores &lt; 12:</b> Cores wound in a layer with short pitch length. <b>Number of cores ≥ 12:</b> Cores wound in bundles which are then wound around a high tensile strength centre element, all with optimised short pitch lengths and directions. Especially low-torsion structure.
	<b>Core identification</b>	<b>Cores &lt; 0.5mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup>:</b> Black cores with white numbers, one green-yellow core. <b>CF77.UL.02.03.INI:</b> brown, blue, black <b>CF77.UL.03.04.INI:</b> brown, blue, black, white <b>CF77.UL.03.05.INI:</b> brown, blue, black, white, green-yellow
	<b>Outer jacket</b>	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) Variants ► <a href="#">Product range table</a>

## Electrical information

	<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) <b>Number of cores &lt; 12:</b> <b>Cores &lt; 0.5mm<sup>2</sup>:</b> 300V (following UL) <b>Cores ≥ 0.5mm<sup>2</sup>:</b> 1000V (following UL) <b>Number of cores ≥ 12:</b> 1000V (following UL)
	<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Properties and approvals

	<b>UV resistance</b>	Medium
--	----------------------	--------

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

## Class 5.1.3.3

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CF77ULD">www.igus.eu/CF77ULD</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>DNV</b>	Type Approval Certificate TAE00003X1
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to DIN EN ISO standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU
	<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

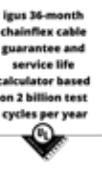
## Guaranteed service life (details see page 28-29)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heavy-duty applications, Class 5
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications with average sun radiation
- Robots, handling, spindle drives



Example image

igus® chainflex® CF77.UL.D



# Control cable | PUR | chainflex® CF77.UL.D

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CF77.UL.02.03.INI <sup>12)</sup>	3x0.25	5.0	9	29
CF77.UL.02.04.D	4x0.25	5.5	11	35
CF77.UL.02.05.D	5x0.25	6.0	13	39
CF77.UL.02.07.D	7x0.25	6.5	18	51
CF77.UL.02.12.D	12x0.25	9.0	32	78
CF77.UL.02.18.D	18x0.25	10.5	47	127
CF77.UL.02.25.D	25x0.25	11.5	63	155
CF77.UL.03.04.INI <sup>12)</sup>	4x0.34	6.0	14	37
CF77.UL.03.05.INI <sup>12)</sup>	5x0.34	6.0	18	36
CF77.UL.03.05.INI.D	5x0.34	6.0	18	36
CF77.UL.05.04.D	4G0.5	6.0	21	46
CF77.UL.05.05.D	5G0.5	6.5	26	53
CF77.UL.05.07.D	7G0.5	7.5	39	78
CF77.UL.05.12.D	12G0.5	10.0	63	130
CF77.UL.05.18.D	18G0.5	12.0	94	184
CF77.UL.05.25.D	25G0.5	14.0	129	243
CF77.UL.05.30.D	30G0.5	15.0	155	315
CF77.UL.07.03.D	3G0.75	6.5	23	52
CF77.UL.07.04.D	4G0.75	7.0	31	59
CF77.UL.07.05.D	5G0.75	7.5	38	71
CF77.UL.07.07.D	7G0.75	8.5	54	100
CF77.UL.07.12.D	12G0.75	12.0	91	180
CF77.UL.07.18.D	18G0.75	13.5	134	239
CF77.UL.07.20.D	20G0.75	14.5	149	269
CF77.UL.07.25.D	25G0.75	16.0	186	336
CF77.UL.07.36.D	36G0.75	19.0	279	506
CF77.UL.07.42.D	42G0.75	21.0	341	580
CF77.UL.10.02.D	2x1.0	6.5	21	51
CF77.UL.10.03.D	3G1.0	6.5	31	58
CF77.UL.10.04.D	4G1.0	7.0	41	73
CF77.UL.10.05.D	5G1.0	8.0	50	90
CF77.UL.10.07.D	7G1.0	9.0	71	120
CF77.UL.10.12.D	12G1.0	12.5	120	220
CF77.UL.10.18.D	18G1.0	15.0	179	314
CF77.UL.10.25.D	25G1.0	17.5	248	431
CF77.UL.10.42.D	42G1.0	22.5	433	699

<sup>12)</sup> Colour outer jacket: Colza yellow (similar to RAL 1021)

**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

## Class 5.1.3.3

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CF77.UL.15.03.D	3G1.5	7.0	46	71
CF77.UL.15.04.D	4G1.5	7.5	61	88
CF77.UL.15.05.D	5G1.5	8.0	75	105
CF77.UL.15.07.D <sup>17)</sup>	7G1.5	9.5	105	152
CF77.UL.15.12.D	12G1.5	13.0	179	297
CF77.UL.15.18.D	18G1.5	17.0	268	405
CF77.UL.15.25.D	25G1.5	19.5	297	564
CF77.UL.15.36.D	36G1.5	23.5	551	848
CF77.UL.25.03.D	3G2.5	8.5	75	132
CF77.UL.25.04.D	4G2.5	9.5	95	167
CF77.UL.25.05.D	5G2.5	10.0	124	196
CF77.UL.25.07.D <sup>17)</sup>	7G2.5	12.0	174	270
CF77.UL.25.12.D	12G2.5	17.0	297	479

<sup>17)</sup> When using the cables with "7G1.5mm<sup>2</sup>" and "7G2.5mm<sup>2</sup>" minimum bend radius must be 17.5xd with gliding travel distance ≥ 5m.

**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

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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



**Order example: CF77.UL.02.04.D - to your desired length (0.5m steps)**  
CF77.UL.D chainflex® series .02 Code nominal cross section .04 Number of cores

Order online ► [www.igus.eu/CF77ULD](http://www.igus.eu/CF77ULD)

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

EPLAN download, configurators ► [www.igus.eu/CF77ULD](http://www.igus.eu/CF77ULD)

**Guarantee**  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

CE LISTED

FULUS

nec

NFPA

CULPA

DNV

EAC

REACH

RoHS

clean-room

DESINA

CE

UK CA

**Guarantee**  
igus chainflex  
**36**  
up to 36 months guarantee

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

# Control cable | PUR | chainflex® CFROBOT2

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

	<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>twisted</b>	180°/s
	<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
	<b>Travel distance</b>	Robots and 3D movements, Class 1	
	<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core identification</b>	Black cores with white numbers, one green-yellow core.
	<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 85% optical
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

	<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
	<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754

EPLAN download, configurators ► [www.igus.eu/CFROBOT2](http://www.igus.eu/CFROBOT2)

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



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## Class 6.1.3.3

- UL verified
- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- CE
- UKCA

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

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/CFROBOT2](http://www.igus.eu/CFROBOT2)

Following NFPA 79-2018, chapter 12.9

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

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

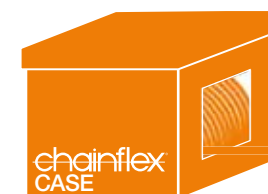
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

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]
CFROBOT2.07.04.C	(4G0.75)C	8.0	43	78
CFROBOT2.07.05.C	(5G0.75)C	8.5	51	90
CFROBOT2.07.07.C	(7G0.75)C	10.0	71	120
CFROBOT2.07.12.C	(12G0.75)C	14.0	122	214
CFROBOT2.07.18.C	(18G0.75)C	16.5	185	301

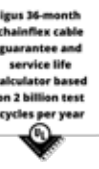
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



## Cables available in the chainflex® CASE

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# Data cable | PUR | chainflex® CFROBOT3

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b>	180°/s
<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
<b>Travel distance</b>	Robots and 3D movements, Class 1	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
<b>Core identification</b>	Colour code in accordance with DIN 47100.
<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 85% optical
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754

Example image

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



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## Class 6.1.3.3

- UL verified
- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- CE
- UKCA

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

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/CFROBOT3](http://www.igus.eu/CFROBOT3)

Following NFPA 79-2018, chapter 12.9

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

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

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]
CFROBOT3.02.03.02	(3x(2x0.25))C	9.0	33	84
CFROBOT3.02.04.02	(4x(2x0.25))C	10.5	38	103
CFROBOT3.02.06.02	(6x(2x0.25))C	11.5	52	127
CFROBOT3.02.08.02 <sup>11)</sup>	(8x(2x0.25))C	13.5	66	170
CFROBOT3.05.05.02	(5x(2x0.5))C	12.5	80	170

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

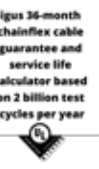
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



## Cables available in the chainflex® CASE

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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



# Measuring system cable | PUR | chainflex® CFROBOT4

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b>	180°/s
<b>a max.</b>	<b>twisted</b>	60°/s²
<b>Travel distance</b>	Robots and 3D movements, Class 1	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of tinned copper wires (following DIN EN 60228).	
<b>Core insulation</b>	Mechanically high-quality TPE mixture.	
<b>Core identification</b>	According to measuring system specification. ► <b>Product range table</b>	
<b>Element shield</b>	Extremely torsion-resistant tinned wound copper shield.	
<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 80% optical	
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011) Variants ► <b>Product range table</b>	

## Electrical information

<b>Nominal voltage</b>	50V 30V (following UL)
<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.3.3

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFROBOT4">www.igus.eu/CFROBOT4</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL

nec

NFPA

CE

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REACH

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up to 36 months guarantee

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

UL





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]
CFROBOT4.001	(3x(2x0.14)C + (4x0.14)+(2x0.5))C	10.5	62	115
CFROBOT4.006	(3x(2x0.14C+(4x0.14)+(4x0.22)+(2x0.5))C	11.5	74	135
CFROBOT4.009	(4x(2x0.25)+(2x0.5))C	9.0	48	90
CFROBOT4.015	(4x(2x0.14)+4x0.5)C	9.0	49	91
CFROBOT4.028 <sup>13)</sup>	(2x(2x0.20)+(2x0.38))C	7.5	44	72

<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® CASE**

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More on this on page 24/25 and online: [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



Part No.	Core group	Colour code
CFROBOT4.001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	4x0.14	grey/blue/white-yellow/white-black
	2x0.5	brown-red/brown-blue
CFROBOT4.006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	(4x0.14)	grey/blue/white-yellow/white-black
	(4x0.22)	yellow-brown/grey-brown/green-black/green-red
CFROBOT4.009	(2x0.5)	brown-red/brown-blue
	4x(2x0.25)	brown/green, blue/violet, grey/pink, red/black
CFROBOT4.015	2x0.5	white, brown
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CFROBOT4.015	4x0.5	blue, white, brown-green, white-green
	4x(2x0.14)	brown/green, yellow/violet, grey/pink, red/black
CFROBOT4.028 <sup>13)</sup>	2x(2x0.20)	green/yellow, pink/blue
	(2x0.38)	red/black

- Order example: CFROBOT4.009 – to your desired length (0.5m steps)**  
CFROBOT4 chainflex® series .009 Code measuring system type
- Order online ► [www.igus.eu/CFROBOT4](http://www.igus.eu/CFROBOT4)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.



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



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

# Fibre Optic Cable | TPE | chainflex® CFROBOT5

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

- For torsion applications
- TPE outer jacket
- Oil and bio-oil-resistant
- UV-resistant
- Low-temperature-flexible
- Hydrolysis and microbe-resistant
- PVC and halogen-free

## Dynamic information

<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
	<b>fixed</b>	-55°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b>	180°/s
<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
<b>Travel distance</b>	Robots and 3D movements, Class 1	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

<b>Conductor</b>	50/125µm, 62.5/125µm bending-resistant solid glass fibre optic cores, with aramid strain relief elements.
<b>Core structure</b>	FOC cores wound with high-tensile aramid dampers around a glass-fibre reinforced plastic central element.
<b>Core identification</b>	► <a href="#">Product range table</a>
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.4.3

Cleanroom  
 CE  
 UK UKCA CA

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 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)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-35/-25	±150	±90	±30
-25/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling

Part No.	Number of fibres/ Fibre diameter/ Conductor nominal cross section	Outer diameter (d) max. [mm]	Weight [kg/km]
CFROBOT5.500 <sup>11)</sup>	2x62.5/125	8.5	53
CFROBOT5.501	2x50/125	8.5	53

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

**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

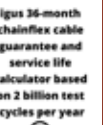
Part No.	Bandwidth [MHz x km] @ 650nm	Attenuation [dB/km] @ 650nm	Bandwidth [MHz x km] @ 850nm	Attenuation [dB/km] @ 850nm	Fibre identification
CFROBOT5.500 <sup>11)</sup>	≥ 200	≤ 3.0	≥ 500	≤ 0.7	orange with white numbers
CFROBOT5.501	≥ 500	≤ 2.5	≥ 500	≤ 0.7	blue with white numbers



## 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/cf-case](http://www.igus.eu/cf-case)



Example image

igus® chainflex® CFROBOT 5



# Motor cable | PUR | chainflex® CFROBOT6

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

	<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
		<b>fixed</b>	-55°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>twisted</b>	180°/s
	<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
	<b>Travel distance</b>	Robots and 3D movements, Class 1	
	<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core identification</b>	Black cores with white numbers 1-2, one green-yellow core.
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.3.3

- UL verified
- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- CE
- UKCA

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/CFROBOT6](http://www.igus.eu/CFROBOT6)

Following NFPA 79-2018, chapter 12.9

Certificate No. RU C-DE.ME77.B.00863/20

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

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]
CFROBOT6.160.03 <sup>1)</sup>	3G16	18.0	475	578
CFROBOT6.250.03 <sup>1)</sup>	3G25	22.0	737	896

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

**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

Guarantee  
igus chainflex  
**36**  
months

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

CFRIP

UL LISTED

UL US

NEC

NFPA

UL CA

DNV

EAC

REACH

RoHS

Cleanroom

IP

IP

CE

UKCA

Example image

EPLAN download, configurators ► [www.igus.eu/CFROBOT6](http://www.igus.eu/CFROBOT6)

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

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EU2023

EU2023

igus

UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

# Motor cable | PUR | chainflex® CFROBOT7

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

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

## Dynamic information

<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +80°C
	<b>fixed</b>	-55°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b>	180°/s
<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
<b>Travel distance</b>	Robots and 3D movements, Class 1	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core identification</b>	<b>Power cores:</b> Black cores with white numbers, one green-yellow core. <b>2 control pairs:</b> Black cores with white numbers. 1. Control core: 5 2. Control core: 6 3. Control core: 74. Control core: 8 <b>4 Control pairs:</b> Colour code in accordance with DIN 47100
<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 85% optical
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.3.3

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFROBOT7">www.igus.eu/CFROBOT7</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00863/20
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UK UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

LISTED

UL

nec

NFPA

CUA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UK CA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

UL

401

Example image

IGUS® CHAINFLEX® CF ROBOT 7

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UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)



low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
<b>2 control pairs</b>				
CFROBOT7.07.03.02.02.C <sup>11)</sup>	(4G0.75+2x(2x0.34)C)C	11.5	88	155
CFROBOT7.15.15.02.02.C	(4G1.5+2x(2x1.5)C)C	16.5	197	304
CFROBOT7.25.15.02.02.C	(4G2.5+2x(2x1.5)C)C	16.5	243	349
<b>4 control pairs</b>				
CFROBOT7.40.02.02.04.C	(4G4.0+4x(2x0.25)C)C	17.0	253	366
<b>without control pair</b>				
CFROBOT7.15.03.C	(3G1.5)C	8.5	61	98
CFROBOT7.15.04.C	(4G1.5)C	9.5	77	120
CFROBOT7.25.03.C	(3G2.5)C	10.0	93	142
CFROBOT7.25.04.C	(4G2.5)C	11.0	119	173
CFROBOT7.60.04.C	(4G6.0)C	15.0	278	374

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

**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/cf-case](http://www.igus.eu/cf-case)



**Order example: CFROBOT7.15.03.C – to your desired length (0.5m steps)**  
CFROBOT7 chainflex® series .15 Code nominal cross section .03 Number of cores

Order online ► [www.igus.eu/CFROBOT7](http://www.igus.eu/CFROBOT7)

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

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP  
UL LISTED  
UL  
nec  
NFPA  
CUPA  
DNV  
EAC  
REACH  
RoHS  
clean-room  
UL  
CE  
UK  
CA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

# Spindle cable/Single core | TPE | chainflex® CFROBOT

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

- For torsion applications
- TPE outer jacket
- Shielded
- Oil and bio-oil-resistant
- PVC-free
- UV-resistant
- Flame-retardant
- Hydrolysis and microbe-resistant

## Dynamic information

	<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>flexible twisted</b>	-35°C up to +90°C
		<b>fixed</b>	-50°C up to +100°C (following DIN EN 50305)
	<b>v max.</b>	<b>twisted</b>	180°/s
	<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
	<b>Travel distance</b>	Robots and 3D movements, Class 1	
	<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

	<b>Conductor</b>	Extremely bend-resistant cable.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Overall shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 90% optical
	<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: jet black (similar to RAL 9005)

## Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

## Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"

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

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



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Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	≥ 400m
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.4.3

- UL/CSA AWM
- NFPA
- EAC
- REACH
- Lead-free
- Cleanroom
- CE
- UKCA

See data sheet for details ► [www.igus.eu/CFROBOT](http://www.igus.eu/CFROBOT)

Following NFPA 79-2018, chapter 12.9

Certificate No. RU C-DE.ME77.B.00863/20

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 CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1

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)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-35/-25	±150	±90	±30
-25/+70	±180	±120	±60
+70/+80	±150	±90	±30

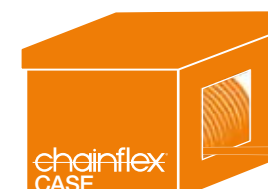
\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

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]
CFROBOT.035	(1x10)C	10.5	125	194
CFROBOT.036	(1x16)C	12.0	189	269
CFROBOT.037	(1x25)C	14.5	298	392
CFROBOT.038	(1x35)C	15.5	403	528

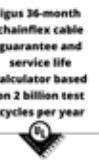
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core



## 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/cf-case](http://www.igus.eu/cf-case)





# Bus cable | PUR | chainflex® CFROBOT8







**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®








**±180°/m**  
Torsion angle

- For torsion applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-resistant
- Hydrolysis and microbe-resistant



## Dynamic information

 Bend radius	<b>flexible twisted</b>	minimum 10 x d
	<b>fixed</b>	minimum 5 x d
 Temperature	<b>flexible twisted</b>	-25°C up to +70°C
	<b>fixed</b>	-50°C up to +70°C (following DIN EN 50305)
 v max.	<b>twisted</b>	180°/s
 a max.	<b>twisted</b>	60°/s <sup>2</sup>
 Travel distance	Robots and 3D movements, Class 1	
 Torsion	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

 Conductor	Stranded conductor in especially bending-resistant version consisting of tinned or bare copper wires (following DIN EN 60228).
 Core insulation	According to bus specification.
 Core structure	According to bus specification.
 Core identification	According to bus specification. ▶ <a href="#">Product range table</a>
 Intermediate layer	Foil taping over the outer layer.
 Overall shield	Torsion resistant tinned braided copper shield. Coverage approx. 80% optical
 Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information












 Nominal voltage	50V 300V (following UL)
 Testing voltage	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.3.3

### Properties and approvals

 UV resistance	High
 Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
 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 1992)
 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 ▶ <a href="http://www.igus.eu/CFROBOT8">www.igus.eu/CFROBOT8</a>
 EAC	Certificate No. RU C-DE.ME77.B.00295/19
 REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
 RoHS	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
 CE	Following 2014/35/EU
 UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+60	±180	±120	±60
+60/+70	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ▶ [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

UL

igus® chainflex® CFROBOT 8

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]
<b>Profibus (1x2x0.64mm)</b>				
CFROBOT8.001	(2x0.35)C	8.0	28	63
<b>CAN-Bus</b>				
CFROBOT8.022	(4x0.5)C	7.5	41	78
<b>DeviceNet</b>				
CFROBOT8.030	(2xAWG24)C +(2xAWG22)C	9.5	31	77
<b>Ethernet/CAT5e/PoE</b>				
CFROBOT8.045	4x(2x0.15)C	9.5	48	96
<b>Ethernet/CAT6/PoE</b>				
CFROBOT8.049	4x(2x0.15)C	9.5	48	96
<b>Ethernet/CAT6a</b>				
CFROBOT8.050	4x(2x0.15)C	10.5	51	134
<b>Ethernet/CAT7</b>				
CFROBOT8.052	4x(2x0.15)C	10.5	51	134
<b>Profinet</b>				
CFROBOT8.060	(2x(2x0.34))C	8.5	34	74

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/cf-case](http://www.igus.eu/cf-case)



**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.

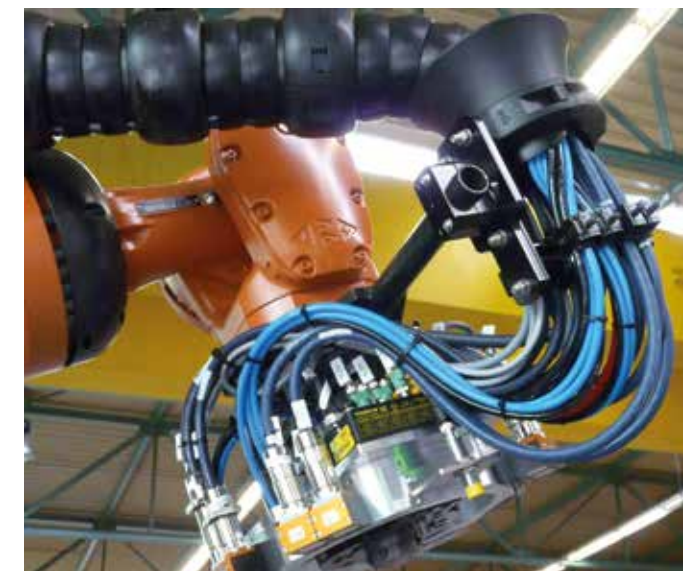
The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, that greater value is placed on a high degree of EMC reliability. It is also ensured that the electrical values remain stable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

**Class 6.1.3.3**

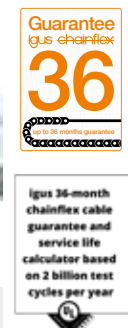
Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFROBOT8.001	150	(2x0.35)C	red, green
<b>CAN-Bus</b>			
CFROBOT8.022	120	(4x0.5)C	white, green, brown, yellow (star-quad)
<b>DeviceNet</b>			
CFROBOT8.030	120	(2xAWG24)C (2xAWG22)C	white/blue red/black
<b>Ethernet/CAT5e/PoE</b>			
CFROBOT8.045	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT6/PoE</b>			
CFROBOT8.049	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT6a</b>			
CFROBOT8.050	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT7</b>			
CFROBOT8.052	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Profinet</b>			
CFROBOT8.060	100	(2x(2x0.34))C	white/blue, yellow/orange



CFROBOT® cables used in robots for the automated systems in fuel tank production. These are supplied as fully harnessed readychain® systems.



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





# Bus cable | PUR | chainflex® CFROBOT8.PLUS

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±360°/m**  
Torsion angle

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

## Dynamic information

	<b>Bend radius</b>	<b>flexible twisted</b>	minimum 10 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>flexible twisted</b>	-25°C up to +70°C
		<b>fixed</b>	-50°C up to +70°C (following DIN EN 50305)
	<b>v max.</b>	<b>twisted</b>	360°/s
	<b>a max.</b>	<b>twisted</b>	60°/s <sup>2</sup>
	<b>Travel distance</b>	Robots and 3D movements, Class 1	
	<b>Torsion</b>	Torsion ±360°, with 1m cable length, Class 4	

## Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ► <a href="#">Product range table</a>
	<b>Intermediate layer</b>	Foil taping over the outer layer.
	<b>Overall shield</b>	Torsion resistant tinned braided copper shield. Coverage approx. 80% optical
	<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

	<b>Nominal voltage</b>	50V 30V (following UL)
	<b>Testing voltage</b>	500V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 6.1.3.4

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFROBOT8PLUS">www.igus.eu/CFROBOT8PLUS</a>
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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 Following 2014/35/EU
	<b>CE</b>	
	<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

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

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±330	±240	±150
-15/+60	±360	±270	±180
+60/+70	±330	±240	±150

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±360°, with 1m cable length, Class 4
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

UL

NEC

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

UL



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]
<b>Profibus (1x2x0.64mm)</b>				
CFROBOT8.PLUS.001	(2x0.25)C	9.0	30	80
<b>CAN-Bus</b>				
<b>New</b> CFROBOT8.PLUS.022	(4x0.5)C	9.5	47	103
<b>Ethernet/CAT5e/PoE</b>				
CFROBOT8.PLUS.045	(4x(2x0.15))C	7.5	32	67
<b>Ethernet/CAT6/PoE</b>				
<b>New</b> CFROBOT8.PLUS.049	(4x(2x0.15))C	7.5	32	67
<b>Ethernet/CAT6A</b>				
<b>New</b> CFROBOT8.PLUS.050	(4x(2x0.15))C	10.5	49	115
<b>Profinet</b>				
CFROBOT8.PLUS.060 <sup>2)</sup>	(4x0.34)C	7.0	32	64

The chainflex® types marked with <sup>2)</sup> 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

## Class 6.1.3.4

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Profibus (1x2x0.64mm)</b>			
CFROBOT8.PLUS.001	150	(2x0.25)C	red, green
<b>CAN-Bus</b>			
CFROBOT8.PLUS.022	120	(4x0.5)C	white, green, brown, yellow (star-quad)
<b>Ethernet/CAT5e/PoE</b>			
CFROBOT8.PLUS.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6/PoE</b>			
CFROBOT8.PLUS.049	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT6A</b>			
CFROBOT8.PLUS.050	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Profinet</b>			
CFROBOT8.PLUS.060 <sup>2)</sup>	100	(4x0.38)C	white, orange, blue, yellow (star-quad)



### 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/cf-case](http://www.igus.eu/cf-case)



### 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.

**Order example: CFROBOT8.PLUS.060 – to your desired length (0.5m steps)**  
CFROBOT8.PLUS chainflex® series .060 Code bus type

Order online ► [www.igus.eu/CFROBOT8PLUS](http://www.igus.eu/CFROBOT8PLUS)

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

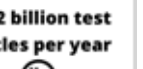
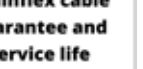
EPLAN download, configurators ► [www.igus.eu/CFROBOT8PLUS](http://www.igus.eu/CFROBOT8PLUS)



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



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





# Hybrid cable | PUR | chainflex® CFROBOT9

**36** 10 million  
Cycles guaranteed

**10 x d**  
Bend radius, e-chain®

**±180°/m**  
Torsion angle

- For torsion applications
- PUR outer jacket
- Unshielded/shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® twisted flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
<b>Temperature</b>	<b>e-chain® twisted flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b>	180°/s
<b>a max.</b>	<b>twisted</b>	60°/s²
<b>Travel distance</b>	Robots and 3D movements, Class 1	
<b>Torsion</b>	Torsion ±180°, with 1m cable length, Class 3	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	Mechanically high-quality TPE mixture.
<b>Core identification</b>	► <a href="#">Product range table</a>
<b>Element shield</b>	Extremely torsion-resistant tinned wound copper shield. Coverage approx. 85% optical
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: Steel blue (similar to RAL 5011)

## Electrical information

<b>Nominal voltage</b>	300/500V (following DIN VDE 0298-3) 300V (following UL)
<b>Testing voltage</b>	2,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

# Class 6.1.3.3

## Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFROBOT9">www.igus.eu/CFROBOT9</a>
<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.00300/19
<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
<b>Cleanroom</b>	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
<b>CE</b>	Following 2014/35/EU
<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

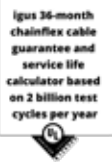
## Guaranteed service life (details see page 28-29)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+70	±180	±120	±60
+70/+80	±150	±90	±30

\* Higher number of double strokes? Service life calculation online ► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, Class 3
- Torsion ±180°, with 1m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives



Example image

igus® chainflex® CFROBOT 9

EPLAN download, configurators ► [www.igus.eu/CFROBOT9](http://www.igus.eu/CFROBOT9)

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



EU2023

EU2023



UL-verified chainflex® guarantee ... [www.igus.eu/ul-verified](http://www.igus.eu/ul-verified)

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			



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]
CFROBOT9.007 <sup>11)</sup>	(15x(2x0.25)C+(4x0.25)C)C	18.5	229	369
CFROBOT9.010 <sup>11)</sup>	(4x(2x0.25)C)C	10.5	63	116

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

**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.	Core group	Colour code
CFROBOT9.007 <sup>11)</sup>	15x(2x0.25)C (4x0.25)C	colour code in accordance with DIN 47100 white/green/brown/yellow (CAN-Bus)
CFROBOT9.010 <sup>11)</sup>	4x(2x0.25)C	white/brown, green/yellow, grey/pink, blue/red



**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/cf-case](http://www.igus.eu/cf-case)



igus® chainflex® cables in a triflex® R multi-dimensionally moving energy supply system for 6-axis robots



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



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





# Special cables



chainflex® cable		Approvals and standards	Page
<b>Special cables</b>			
CFTHERMO	Thermocouple cable	EAC REACH RoHS clean room CE UK CA	420
CFFLAT	Single core flat cable	EAC REACH RoHS clean room CE UK CA	422
CFSPECIAL.182	Bus cable for hanging applications	EAC REACH RoHS CE UK CA	424
CFSPECIAL.192	Hybrid cable for hanging applications	EAC REACH RoHS CE UK CA	426 <b>New</b>
CFSPECIAL.414	Control cable for rail vehicles	EAC REACH RoHS CE UK CA	428
CFSPECIAL.484	Bus cable for rail vehicles	EAC REACH RoHS CE UK CA	430
CFSPECIAL.532	Data cable for top drive applications	EAC REACH RoHS CE UK CA	432 <b>New</b>
CFSPECIAL.562.PE	Motor cable for top drive applications	EAC REACH RoHS CE UK CA	434 <b>New</b>
CFSPECIAL.572	Motor cable for top drive applications	EAC REACH RoHS CE UK CA	436 <b>New</b>
CFSPECIAL.592	Hybrid cable for top drive applications	EAC REACH RoHS CE UK CA	438 <b>New</b>
CFSPECIAL.792	Cable for axis 7 on robots	EAC REACH RoHS CE UK CA	440

The following chapter of special cables offers solutions for moving applications going beyond standard energy supply.

The constantly growing program of special cables is in response to our customer requirements.

At the same time this can be an inspiration for users. igus® can make cables for special applications using many different materials and production processes. Depending to the construction this is already possible from a length of 500m.

Use our comprehensive knowledge about cables plus the experience of 2 billion test cycles that are annually achieved in the company's chainflex® laboratory.

The technical and material details of the CFSPECIAL families are documented in data sheets and are available on the internet. The respective web links can be recalled on the summary pages of the CFSPECIAL cables.

We look forward to hearing about your requirements!

### chainflex® guarantee

As these are special cables for special applications, we ask you to contact us for information on the guaranteed lifetime:

Phone +49-2203 9649-0, info@igus.de



# Thermocouple cable | PUR | chainflex® CFTHERMO



- For heavy duty applications
- PUR outer jacket
- Oil-resistant and coolant-resistant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

Bend radius	<b>e-chain® linear flexible</b>	minimum 12.5 x d
	<b>fixed</b>	minimum 10 x d
Temperature	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
v max.	<b>unsupported</b>	2m/s
	<b>gliding</b>	1m/s
a max.		20m/s <sup>2</sup>
Travel distance		Unsupported travels and up to 50m for gliding applications, Class 4

## Cable structure

Conductor	Conductor consisting of a flexible special alloy. ▶ <a href="#">Product range table</a>
Core insulation	Mechanically high-quality TPE mixture.
Core structure	The individual cores are wound in layers with a short pitch length.
Core identification	According to thermo specification. ▶ <a href="#">Product range table</a>
Intermediate layer	Fleece taping over the external layer.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: According to thermo specification ▶ <a href="#">Product range table</a>

## Electrical information

Nominal voltage	300/300V (following DIN VDE 0298-3)
Testing voltage	1,500V

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	4	±360°			

# Class 5.4.3.1

## Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
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"
EAC	Certificate No. RU C-DE.ME77.B.00300/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
RoHS	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
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## Typical application areas

- For heavy-duty applications, Class 5
- 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

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]
CFTHERMO.J.001	(2x0.23)C	5.5	9	36
CFTHERMO.K.001	(2x0.23)C	5.5	9	37
CFTHERMO.K.002 *	(2x0.23)C+3G0.5	7.5	24	67

\* The cross-section of the copper conductor is equivalent to the electrically effective cross-section.

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.	Jacket colour	Thermo materials	Core group	Colour code
CFTHERMO.J.001 *	black	Fe-CuNi	(2x0.23)C	+ black, - white
CFTHERMO.K.001	green	NiCr-Ni	(2x0.23)C	+ green, - white
CFTHERMO.K.002	green	NiCr-Ni Cu	(2x0.23)C 3G0.5	+ green, - white brown, blue, yellow-green



Example image






# Single core flat cable | TPE | chainflex® CFFLAT

- For heaviest duty applications
- TPE outer jacket
- Oil and bio-oil-resistant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 5 x d minimum 4 x d
		<b>fixed</b>	minimum 3 x d
	<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35°C up to +90°C -50°C up to +90°C (following DIN EN 60811-504)
		<b>fixed</b>	-55°C up to +90°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
	<b>a max.</b>	<b>gliding</b>	6m/s 100m/s²
	<b>Travel distance</b>	Unsupported travels and up to 100m for gliding applications, Class 5	

### Cable structure

	<b>Conductor</b>	Highly flexible braided special conductor.
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	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












	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3)
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400m	
none	1	2	3	4	highest			
none	1	2	3	4	±360°			

## Class 7.5.4.1

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), bio-oil-resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	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.00863/20
	<b>EAC</b>	
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	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
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For heavy-duty applications, Class 7
- Unsupported travels and up to 100m for gliding applications, Class 5
- 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, for small installation spaces and bend radii, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, low-temperature applications

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer dimensions [mm]	Copper index [kg/km]	Weight [kg/km]
CFFLAT.40.01	1x4.0	14.0x5.5	48	117

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



# Bus cable for hanging applications | PUR








## chainflex® CFSPECIAL.182

- For high tensile loads
- 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	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
 Temperature	<b>e-chain® linear flexible</b>	-25°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
 a max.		100m/s <sup>2</sup>
 Travel distance		For hanging applications up to 50 m

### Cable structure

 Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 Core insulation	According to bus specification.
 Core structure	According to bus specification.
 Core identification	According to bus specification.
 Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
 Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 Outer jacket	<b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket. <b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in hanging applications (following DIN EN 50363-10-2). Colour: jet black (similar to RAL 9005)

### Electrical information

 Nominal voltage	50V 300V (following UL)
 Testing voltage	500V

Example image


igus® chainflex® CFSPECIAL.182.060

### Properties and approvals

 UV resistance	High
 Oil resistance	Oil-resistant (in accordance with DIN EN 50363-10-2)
 Offshore	MUD-resistant following NEK 606 - status 2016
 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 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 ► <a href="http://www.igus.eu/CFSPECIAK182">www.igus.eu/CFSPECIAK182</a>
 NFPA	Following NFPA 79-2018, chapter 12.9
 EAC	Certificate No. RU C-DE.ME77.B.00295/19
 REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
 Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
 CE	Following 2014/35/EU
 UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- For hanging applications up to 50 m
- Almost unlimited resistance to oil
- Storage and retrieval units, hanging control units, lifts

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]
<b>CFSPECIAL.182.045</b>	(4x(2x0.15))C	9.5	42	136
<b>CFSPECIAL.182.060</b> <sup>1) 13)</sup> 	(4x0.38)C	8.5	37	125

<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

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5e/PoE</b>			
<b>CFSPECIAL.182.045</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
<b>CFSPECIAL.182.060</b>	100	(4x0.38)C	white, orange, blue, yellow (star-quad)





# Hybrid cable for hanging applications | PUR

## chainflex® CFSPECIAL.192









- For high tensile loads
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

Especially for  
MOVILINK® DDI  
technology  
from SEW-  
EURODRIVE



### Dynamic information

 Bend radius	<b>e-chain® linear flexible</b>	minimum 10 x d minimum 8 x d
	<b>fixed</b>	minimum 5 x d
 Temperature	<b>e-chain® linear flexible</b>	-25°C up to +80°C -40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	2m/s
 a max.		50m/s <sup>2</sup>
 Travel distance		For hanging applications up to 50 m














### Cable structure

 Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 Core insulation	Mechanically high-quality, especially low-capacitance XLPE mixture. <b>HF50-0.9/2.95:</b> Special PE mixture.
 Core structure	Power cores and control pair elements wound with a short pitch length around a high tensile strength centre element.
 Core identification	According to Servo-Hybrid specification. Current data sheet ► <a href="http://www.igus.eu/CFSPECIAL192">www.igus.eu/CFSPECIAL192</a>
 Element shield	Bending-resistant braiding made of tinned copper wires.
 Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
 Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 Outer jacket	<b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket. <b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in hanging applications (following DIN EN 50363-10-2). Colour: Pastel orange (similar to RAL 2003)

### Electrical information

 Nominal voltage	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
 Testing voltage	4,000V (following DIN EN 50395)

### Properties and approvals

 Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
 Offshore	MUD-resistant following NEK 606 - status 2016
 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 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 ► <a href="http://www.igus.eu/CFSPECIAL192">www.igus.eu/CFSPECIAL192</a>
 NFPA	Following NFPA 79-2018, chapter 12.9
 REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
 Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
 DESINA	According to VDW, DESINA standardisation
 CE	Following 2014/35/EU
 UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- For hanging applications up to 50 m
- Almost unlimited resistance to oil
- Storage and retrieval units, hanging control units, lifts

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]
CFSPPECIAL.192.H207.15.04	(4G1.5+2x(2x1.0)C +HF50-0.9/2.95)C	17.0	199	377

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








# Control cable for rail vehicles

## chainflex® CFSPECIAL.414





- For heaviest duty applications in rail vehicles
- Special outer jacket
- PVC and halogen-free
- Oil-resistant
- Flame-retardant
- Self-extinguishing
- Low toxicity
- Low gas density

Especially for rail vehicles



### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d minimum 6 x d
	<b>fixed</b>	minimum 4 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C -25°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-30°C up to +80°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>		20m/s <sup>2</sup>
 <b>Travel distance</b>		For unsupported travel lengths up to 100m



### Cable structure











 <b>Conductor</b>	Fine-wire stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality special mixture.
 <b>Core identification</b>	Black cores with white numbers.
 <b>Outer jacket</b>	Special mixture adapted to suit the requirements in e-chains® (following DIN EN 50264-1 EM 104). Colour: jet black (similar to RAL 9005)

### Electrical information

 <b>Nominal voltage</b>	300/500V
 <b>Testing voltage</b>	2,000V

### Properties and approvals

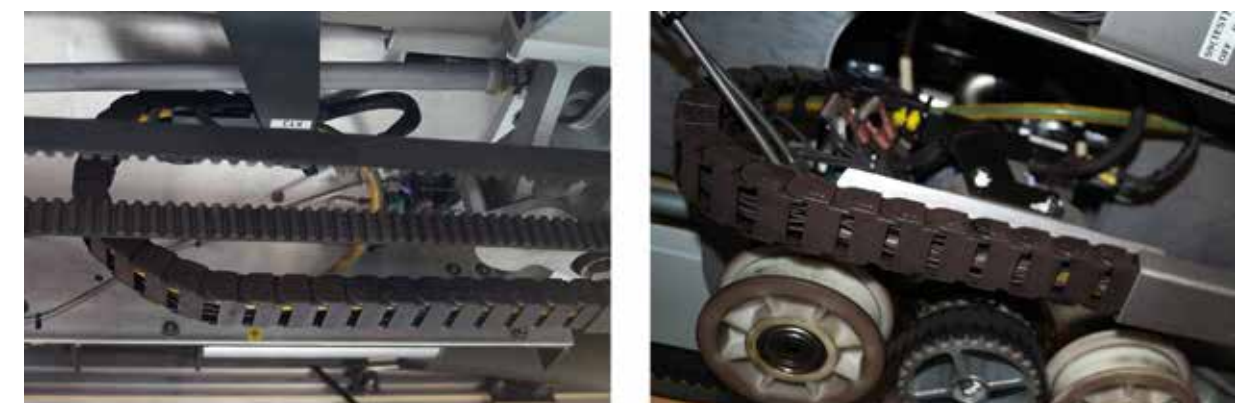
 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-2-1)

 <b>Flame-retardant</b>	Following DIN EN 45545-2 Fire safety class 3 (HL3)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	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
 <b>EAC</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>REACH</b>	
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
 <b>Toxicity</b>	Low toxicity according to EN 50305-9.2
 <b>Smoke gas density</b>	Low smoke gas density according to EN 61034-2

### Typical application areas

- Rail vehicles, automatic doors, buses, adjusting equipment

**i** This cable series will be individually manufactured for your special project. Due to this we do not have this cable on stock, but can offer it exactly for your special demands.



chainflex® CFSPECIAL.414 in automatic door systems for underground railway vehicles of VAG Verkehrs-Aktiengesellschaft Nürnberg, each approx. 70,000 opening and closing cycles per year. e-chain®: E2 micro series.







# Bus cable for rail vehicles

## chainflex® CFSPECIAL.484








- For heaviest duty applications in rail vehicles
- Special outer jacket
- PVC and halogen-free
- Oil-resistant
- Flame-retardant
- Self-extinguishing
- Low toxicity
- Low gas density

**Especially for rail vehicles**

### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d
	<b>fixed</b>	minimum 10 x d
	<b>e-chain® linear flexible</b>	minimum 7 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-20°C up to +80°C
	<b>fixed</b>	-25°C up to +80°C (following DIN EN 60811-504)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>		20m/s <sup>2</sup>
 <b>Travel distance</b>		For unsupported travel lengths up to 100m













### Cable structure

 <b>Conductor</b>	Fine-wire stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 <b>Core insulation</b>	According to bus specification.
 <b>Core structure</b>	According to bus specification.
 <b>Core identification</b>	According to bus specification.
 <b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer jacket</b>	Special mixture adapted to suit the requirements in e-chains® (following DIN EN 50264-1 EM 104). Colour: jet black (similar to RAL 9005)

### Electrical information

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

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-2-1)
 <b>Flame-retardant</b>	Following DIN EN 45545-2 Fire safety class 3 (HL3)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: "igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year"
 <b>EAC</b>	Certificate No. RU C-DE.ME77.B.00295/19
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)
 <b>Toxicity</b>	Low toxicity according to EN 50305-9.2
 <b>Smoke gas density</b>	Low smoke gas density according to EN 61034-2

### Typical application areas

- Rail vehicles, automatic doors, buses, adjusting equipment

**i** This cable series will be individually manufactured for your special project. Due to this we do not have this cable on stock, but can offer it exactly for your special demands.



Example image








# Data cable for top drive applications| PUR

## chainflex® CFSPECIAL.532






- For top drive applications
- For heavy duty applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Now with DNV approval for top drive hanging applications up to 50m



### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
	<b>e-chain® linear flexible</b>	minimum 5 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	10m/s
	<b>sliding</b>	2m/s
 <b>a max.</b>		50m/s <sup>2</sup>
 <b>Travel distance</b>		For top drive hanging applications up to 50m

### Cable structure

 <b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
 <b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
 <b>Core identification</b>	Black cores with white numbers.
 <b>Inner jacket</b>	Mechanically high-quality TPE mixture.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer jacket</b>	<b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket. <b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in top drive hanging applications (following DIN EN 50363-10-2). Colour: jet black (similar to RAL 9005)

### Electrical information

 <b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3)
 <b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (in accordance with DIN EN 50363-10-2)
 <b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFSPECIAL532">www.igus.eu/CFSPECIAL532</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>DNV</b>	Type Approval Certificate TAE00004G4
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- Almost unlimited resistance to oil
- For top drive hanging applications up to 50m

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]
<b>CFSPECIAL.532.15.08.02</b>	(8x(2x1.5)C)C	30.0	513	1014
<b>CFSPECIAL.532.15.16.02</b>	(16x(2x1.5)C)C	36.5	972	1669

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



Example image



# Motor cable for top drive applications | PUR

## chainflex® CFSPECIAL.562.PE

- For top drive applications
- For heavy duty applications
- PUR outer jacket
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Now with DNV approval for top drive hanging applications up to 50m

### Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 10 x d
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-25°C up to +80°C
		<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
		<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>sliding</b>	2m/s
	<b>a max.</b>		50m/s <sup>2</sup>
	<b>Travel distance</b>		For top drive hanging applications up to 50m

### Cable structure

	<b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
	<b>Core insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core identification</b>	Green-yellow
	<b>Outer jacket</b>	<p><b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®.</p> <p><b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket.</p> <p><b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in top drive hanging applications (following DIN EN 50363-10-2).</p> <p>Colour: jet black (similar to RAL 9005)</p>

### Electrical information

	<b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3)
	<b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (in accordance with DIN EN 50363-10-2)
	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
	<b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	<b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFSPECIAL562PE">www.igus.eu/CFSPECIAL562PE</a>
	<b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
	<b>DNV</b>	Type Approval Certificate TAE00004G3
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EU
	<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- Almost unlimited resistance to oil
- For top drive hanging applications up to 50m

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]
<b>CFSPECIAL.562.PE.700.01</b>	1G70	19.5	713	867

**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

igus® chainflex® CFSPECIAL.562.PE

Example image







# Motor cable for top drive applications | PUR

## chainflex® CFSPECIAL.572





- For top drive applications
- For heavy duty applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Now with DNV approval for top drive hanging applications up to 50m

### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>	<b>sliding</b>	2m/s
 <b>Travel distance</b>	For top drive hanging applications up to 50m	



### Cable structure

 <b>Conductor</b>	Conductor cable consisting of pre-leads (following DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality TPE mixture.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer jacket</b>	<b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket. <b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in top drive hanging applications (following DIN EN 50363-10-2). Colour: jet black (similar to RAL 9005)

### Electrical information

 <b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3)
 <b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (in accordance with DIN EN 50363-10-2)
 <b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFSPECIAL572">www.igus.eu/CFSPECIAL572</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>DNV</b>	Type Approval Certificate TAE00004G3
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- Almost unlimited resistance to oil
- For top drive hanging applications up to 50m

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>CFSPPECIAL.572.2400.01</b>	(1x240)C	34.5	2581	3081
<b>CFSPPECIAL.572.3000.01</b>	(1x300)C	37.5	3189	3799
<b>CFSPPECIAL.572.4000.01</b>	(1x400)C	42.0	4269	5007

**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



Example image










# Hybrid cable for top drive applications | PUR

## chainflex® CFSPECIAL.592






- For top drive applications
- For heavy duty applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- PVC and halogen-free
- UV-resistant
- Hydrolysis and microbe-resistant

Now with DNV approval for top drive hanging applications up to 50m

### Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
	<b>e-chain® linear flexible</b>	minimum 5 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +80°C (following DIN EN 60811-504)
 <b>v max.</b>	<b>unsupported</b>	10m/s
 <b>a max.</b>	<b>sliding</b>	2m/s
 <b>Travel distance</b>	For top drive hanging applications up to 50m	

### Cable structure

 <b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 <b>Core insulation</b>	Mechanically high-quality, especially low-capacitance XLPE mixture.
 <b>Inner jacket</b>	Mechanically high-quality TPE mixture.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer jacket</b>	<b>1. Outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile strength aramid braid embedded in the outer jacket. <b>2. Outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion and bending-resistant, adapted to suit the requirements in top drive hanging applications (following DIN EN 50363-10-2). Colour: jet black (similar to RAL 9005)

### Electrical information

 <b>Nominal voltage</b>	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
 <b>Testing voltage</b>	4,000V (following DIN EN 50395)

### Properties and approvals

 <b>UV resistance</b>	High
 <b>Oil resistance</b>	Oil-resistant (in accordance with DIN EN 50363-10-2)
 <b>Offshore</b>	MUD-resistant following NEK 606 - status 2016
 <b>Flame-retardant</b>	According to IEC 60332-1-2, Cable Flame, VW-1, FT1, FT2 / Horizontal Flame
 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
 <b>UL/CSA AWM</b>	See data sheet for details ► <a href="http://www.igus.eu/CFSPECIAL592">www.igus.eu/CFSPECIAL592</a>
 <b>NFPA</b>	Following NFPA 79-2018, chapter 12.9
 <b>DNV</b>	Type Approval Certificate TAE00004KR
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
 <b>CE</b>	Following 2014/35/EU
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For high tensile loads
- Almost unlimited resistance to oil
- For top drive hanging applications up to 50m

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]
<b>CFSPECIAL.592.001</b>	(30G4.0+4x(2x2.5)C)C	44.0	1,750	2630

**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



Example image



# Cable for axis 7 on robots | PUR | CFSPECIAL.792



- 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	<b>e-chain® linear</b>	minimum 10 x d
	<b>flexible</b>	minimum 8 x d
	<b>fixed</b>	minimum 5 x d
Temperature	<b>e-chain® linear</b>	-25°C up to +80°C
	<b>flexible</b>	-40°C up to +80°C (following DIN EN 60811-504)
	<b>fixed</b>	-50°C up to +80°C (following DIN EN 50305)
v max.	<b>unsupported</b>	3m/s
	<b>gliding</b>	2m/s
a max.		20m/s <sup>2</sup>
Travel distance		Unsupported travels and up to 100m for gliding applications, Class 5

## Cable structure

Conductor	Finely stranded conductor consisting of bare copper wires (following DIN EN 60228).
Core insulation	Mechanically high-quality TPE mixture.
Core identification	► <a href="#">Product range table</a>
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage linear approx. 50%, optical approx. 80%
Outer jacket	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2) Colour: jet black (similar to RAL 9005)

## Electrical information

Nominal voltage	600/1,000V (following DIN VDE 0298-3) 1,000V (following UL)
Testing voltage	4,000V (following DIN EN 50395)

## Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2016
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 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" See data sheet for details ► <a href="http://www.igus.eu/CFSPECIAL792">www.igus.eu/CFSPECIAL792</a>
UL/CSA AWM	
NFPA	Following NFPA 79-2018, chapter 12.9
EAC	Certificate No. RU C-DE.ME77.B.00302/19
REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
CE	Following 2014/35/EU
UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## Typical application areas

- Reliable e-chain® cable for the seventh robot axis
- Electrical properties in line with Kuka (.011/.013/.014), ABB (.012) and Fanuc (.015/.016)



Example image



# Cable for axis 7 on robots | PUR | CFSPECIAL.792

igus® chainflex® CFSPECIAL.792



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]
<b>ABB</b>				
CFSPECIAL.792.012	(18G2.5)C	25.5	545	882
<b>Fanuc</b>				
CFSPECIAL.792.015	(7x(6x2.0))C	36.5	999	1747
CFSPECIAL.792.016	(5x(4x0.25)+10x(3x0.75))C	26.5	422	877
<b>KUKA</b>				
CFSPECIAL.792.011	(5x(2x6.0+2x2.5)+2x(6x1.0)C)C	35.5	1250	2033
CFSPECIAL.792.013	((6x1.5)C+3x(3x4)+1G6)C	28.0	679	1220
CFSPECIAL.792.014	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5	1340	2122

**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.	Core group	Colour code
<b>ABB</b>		
CFSPECIAL.792.012	(18G2.5)C	Black cores with white numbers 1-17, one green-yellow core
<b>Fanuc</b>		
CFSPECIAL.792.015	(7x(6x2.0))C	Black cores with white numbers 1-29 Blue cores with white numbers 1-4 Yellow cores with black numbers 1-9
CFSPECIAL.792.016	5x(4x0.25) 10x(3x0.75)	(blue/violet/brown/green), (grey/violet/yellow/brown), (grey/blue/brown/green), (grey/blue/green/yellow), (green/violet/brown/yellow) Brown cores with white numbers 1, 7, 24 & 30 Black cores with white numbers 16-21 Blue cores with white numbers 2, 8 & 25 Green cores with black numbers 3, 9 & 26 Yellow cores with black numbers 5, 22 & 28 Red cores with white numbers 11-15 Violet cores with white numbers 4, 10 & 27 Grey cores with black numbers 6, 23 & 29
<b>KUKA</b>		
CFSPECIAL.792.011	10x6.0 10x2.5 2x(6x1.0)C	Black cores with white numbers 1-9, one green-yellow core Black cores with white numbers 10-18, one green-yellow core Black cores with white numbers 19-30
CFSPECIAL.792.013	(6x1.5)C 3x(3x4) 1G6	Black cores with white numbers 10-15 Black cores with white numbers 1-9 Green-yellow core
CFSPECIAL.792.014	2x(3x1.5)C 3x(3x10) 1G10	Black cores with white numbers 10-15 Black cores with white numbers 1-9 Green-yellow core



# CFCLEAN

Cables for cleanroom applications



chainflex® cable	Bend radius e-skin® flat [factor x d]	Temperature e-skin® flat from/to [°C]	Approvals and standards	v max. [m/s] unsupported	a max.	Page
<b>CFCLEAN elements for cleanroom applications</b>						
<b>Information about e-skin® flat with chainflex® CFCLEAN</b>						446
<b>Control elements</b>						
<b>CFCLEAN1</b>	70	-10/+80		2	40	450 <b>New</b>
<b>Coax elements</b>						
<b>CFCLEAN2</b>	70	-10/+80		2	40	452
<b>Data elements</b>						
<b>CFCLEAN3</b>	70	-10/+80		2	40	454 <b>New</b>
<b>Measuring system elements</b>						
<b>CFCLEAN4</b>	70	-10/+80		2	40	456 <b>New</b>
<b>Motor elements</b>						
<b>CFCLEAN7</b>	70	-10/+80		2	40	458 <b>New</b>
<b>Bus elements</b>						
<b>CFCLEAN8</b>	70	-10/+80		2	40	460

### chainflex® guarantee

These series are solutions for special applications, please contact igus® for information about the service life guarantee:

Phone +49-2203 9649-0, info@igus.de

Guarantee  
igus chainflex

# 36

up to 36 months guarantee

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



- ... increases your overall effectiveness
- ... generates higher production yields
- ... modular and compact
- ... resource- and maintenance-friendly
- ... [www.igus.eu/e-skin-flat](http://www.igus.eu/e-skin-flat)

clean-room

The main advantages of the e-skin® flat are its modularity and ease of maintenance. Unlike common solutions that use defined flat ribbon cables, in which stranded elements are firmly fixed, the e-skin® flat cable guide system is designed with an openable chamber. Flexible chainflex® CFCLEAN cable elements (with or without connectors), e-skin® flat with support chains, hoses, etc. can now be replaced or added in a few minutes.

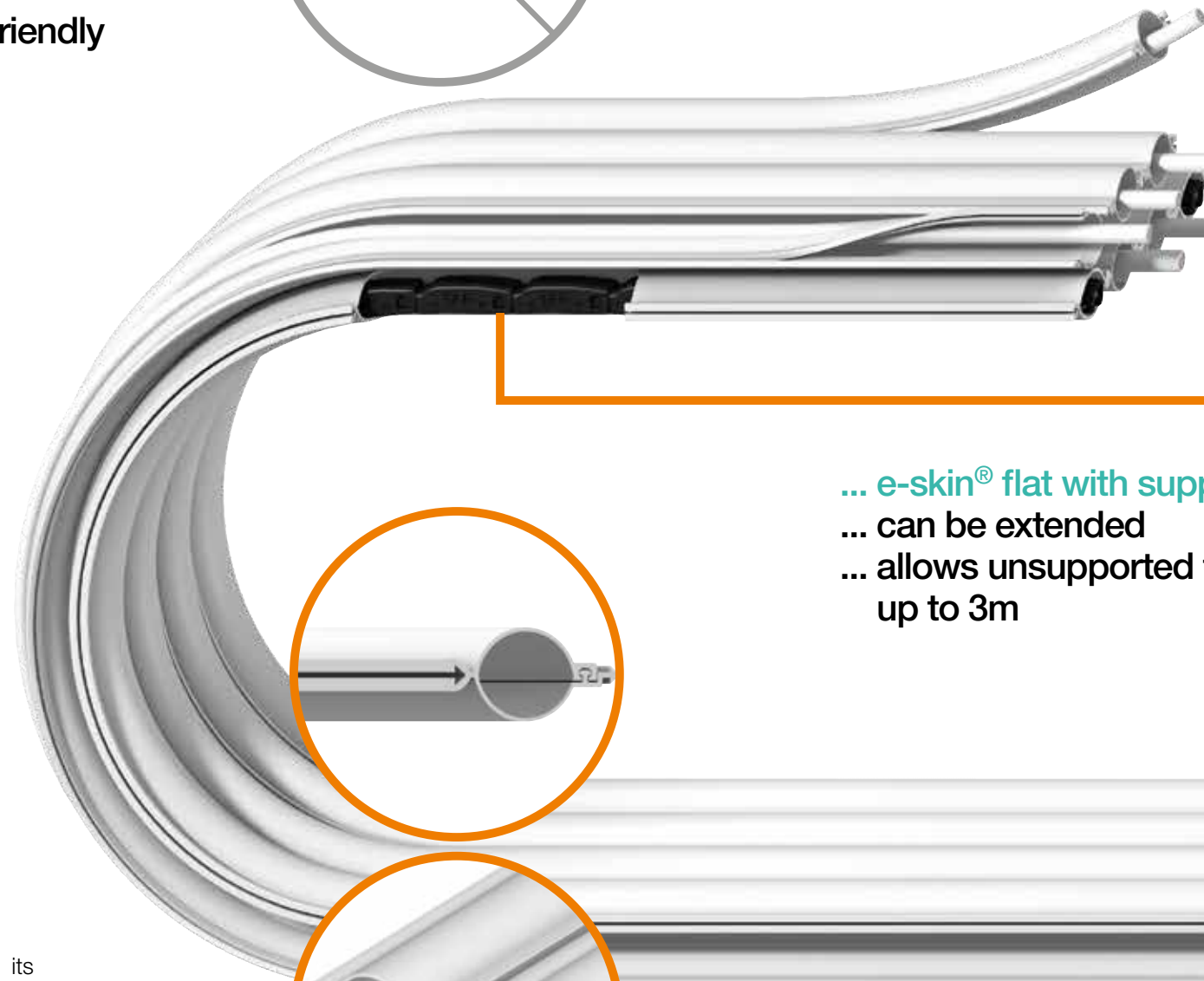
- Highly efficient in prototype phases
- Maximum availability due to easy replacement of individual elements
- Saving resources, as only individual elements are replaced in case of damage



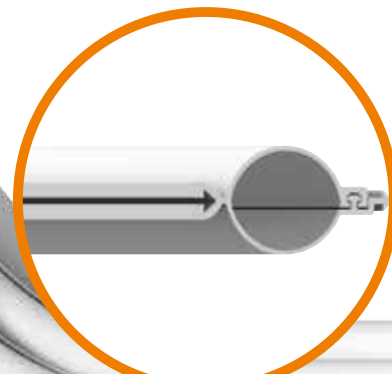
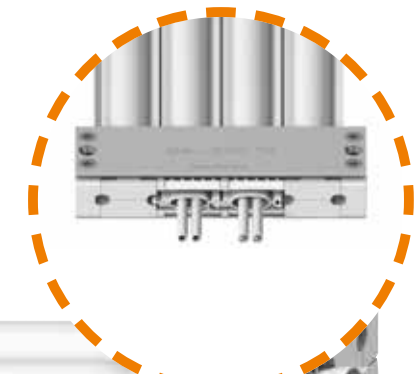
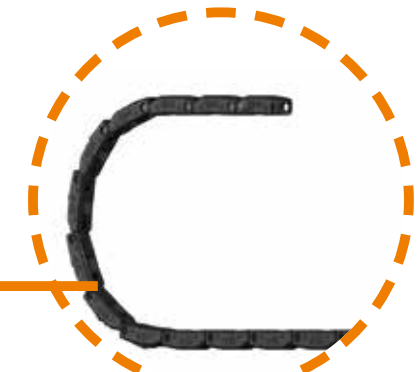
Commercially available ribbon cables with permanently integrated cable elements: the entire system must be replaced if damaged.



e-skin® flat system certified according to EN ISO Class 1 Report IG 2102-1212



- ... e-skin® flat with support chain SKF.S
- ... can be extended
- ... allows unsupported travel lengths of up to 3m

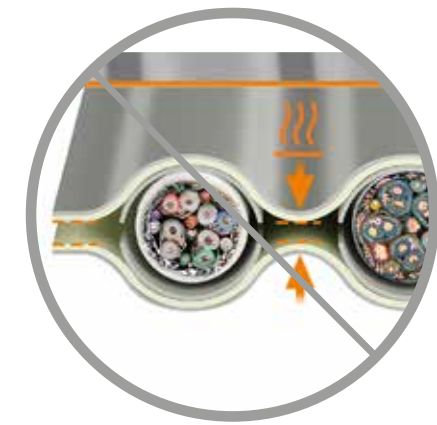


- ... combined with chainflex® CFCLEAN
- ... highest flexibility for machine development
- ... offers quick cable replacement
- ... replaces customer-specific flat ribbon cable
- ... cost-effective and sustainable
- ... available from stock
- ... minimum length 1m
- ... [www.igus.eu/cfclean](http://www.igus.eu/cfclean)



- ... made for the e-skin® flat
- ... great flexural strength thanks to special very finely stranded conductors
- ... protected by highly abrasion-resistant heat-sealed film
- ... no outer jacket, so it is small and lightweight
- ... for energy, bus and data
- ... available from stock ...
- ... [www.igus.eu/cfclean](http://www.igus.eu/cfclean)

Commercially available ribbon cables with permanently welded cable elements



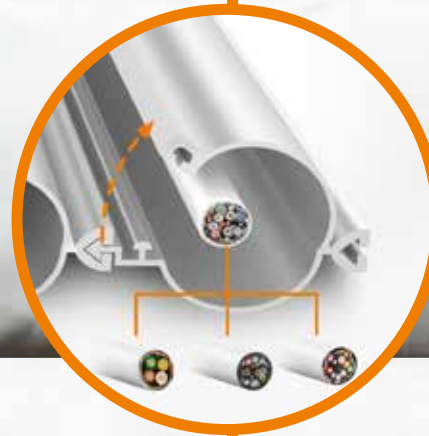
### CFCLEAN3 DATA ELEMENTS



### CFCLEAN8 BUS ELEMENTS



### CFCLEAN1 CONTROL ELEMENTS



### CFCLEAN7 MOTOR ELEMENTS



e-skin® flat cable guide systems combined with chainflex® CFCLEAN cables, constitute the further development of the conventional PTFE trackless cables for cables guides in the production environment of displays, semiconductors and OLEDs as well as in medical technology. The strengths of the PTFE ribbon cable have been enhanced and the intrinsic weaknesses eliminated. The new e-skin® flat cable guide system is the result of this refinement.

- Stiff cable jackets prevent system bending
- Low restoring forces:
  - ... due to highly flexible stranded structures
  - ... special conductors
  - ... no outer jacket required
- CFCLEAN chainflex® adapted to the application with up to 21% less weight than conventional cables
- About 16% smaller diameter than standard cables with jacket
- Minimum order length 1m
- All standard core/cross section combinations: data, bus, control, motor – available from stock, with a guarantee of up to 36 months





## Control elements | chainflex® CFCLEAN1

**36** 20 million  
Double strokes guaranteed






**Min. 70mm**  
bend radius e-skin® flat

**3m**  
travel distance e-skin® flat







- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free

Now with  
UL approval  
in combination  
with e-skin® flat



## Dynamic information

	Bend radius	e-skin® flat linear	min. 70mm (further radii in preparation, please see data sheet)
		fixed	minimum 3 x d
	Temperature	e-skin® linear	-10°C up to +80°C
		fixed	-25°C up to +90°C (following DIN EN 50305)
	v max.	unsupported	2m/s
	a max.		40m/s <sup>2</sup>
	Travel distance		Short, very fast applications with small radii and restricted installation space in an e-skin® flat









## Cable structure

	Conductor	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
	Core insulation	Mechanically high-quality FEP mixture.
	Core structure	Cores wound in a layer with especially short pitch length.
	Core identification	<b>Cores &lt; 0.5mm<sup>2</sup>:</b> Colour code in accordance with DIN 47100. <b>Cores ≥ 0.5mm<sup>2</sup>:</b> White cores with black numbers, one green-yellow core.
	Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	Outer film	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

## Electrical information

	Nominal voltage	300/300V 300V (following UL)
	Testing voltage	2,000V

## Properties and approvals

	Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	UL verified	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 ► <a href="http://www.igus.eu/CFCLEAN1">www.igus.eu/CFCLEAN1</a>
	UL AWM	
	REACH	In accordance with regulation (EC) No. 1907/2006 (REACH)
	Lead-free	Following 2011/65/EC (RoHS-II/RoHS-III)
	Cleanroom	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242 Following 2014/35/EU
	CE	
	UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the standards for wires and cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted in e-skin® flat.

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]
CFCLEAN1.02.04	(4x0.25)C	3.5	21	27
CFCLEAN1.03.02	(2x0.34)C	3.5	17	22
CFCLEAN1.03.07	(7x0.34)C	5.0	40	50
CFCLEAN1.05.04	(4G0.5)C	5.0	36	49
CFCLEAN1.07.04	(4G0.75)C	5.0	50	63
CFCLEAN1.07.05	(5G0.75)C	5.5	58	74
CFCLEAN1.10.02	(2x1.0)C	5.0	37	49

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

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

CE LISTED

UL

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

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






UL 451

## Coax elements | chainflex® CFCLEAN2







- 36** 20 million Double strokes guaranteed
- Min. 70mm** bend radius e-skin® flat
- 3m** travel distance e-skin® flat

- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free


## Dynamic information

	<b>Bend radius</b>	<b>e-skin® flat linear</b>	minimum 70mm (further radii in preparation, please see data sheet)
		<b>fixed</b>	minimum 3 x d
	<b>Temperature</b>	<b>e-skin® linear</b>	-10°C up to +80°C
		<b>fixed</b>	-25°C up to +90°C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	2m/s
	<b>a max.</b>		40m/s <sup>2</sup>
	<b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space in an e-skin® flat








## Cable structure

	<b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
	<b>Core insulation</b>	Mechanically high-quality PTFE mixture.
	<b>Core structure</b>	Cores wound in a layer with especially short pitch length.
	<b>Core identification</b>	White core with black imprint ► <a href="#">Product range table</a>
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	<b>Outer film</b>	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

## Electrical information

	<b>Nominal voltage</b>	300/300V
	<b>Testing voltage</b>	2,000V

## Properties and approvals

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL verified</b>	Certificate No. B129699: „igus 36-month chainflex cable guarantee and service life calculator based on 2 billion test cycles per year“
	<b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
	<b>Cleanroom</b>	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242
	<b>CE</b>	Following 2014/35/EU
	<b>UK CA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the normal standards for cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted inside e-skin® flat.

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]
CFCLEAN2.KOAX1.03	3xHF75-0.3/1.6	6.5	23	57

**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. [Ω]	Core identification
CFCLEAN2.KOAX1.03	75	Coax 75Ohm -1-, Coax 75Ohm -2-, Coax 75Ohm -3-

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

LISTED

UL

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

CE

UK CA

CE

UK CA

CE

UK CA

CE

UK CA

CE

UK CA

453








# Data elements | chainflex® CFCLEAN3

- 36** 20 million Double strokes guaranteed
- Min. 70mm** bend radius e-skin® flat
- 3m** travel distance e-skin® flat


- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free

Now with UL approval in combination with e-skin® flat



### Dynamic information

 <b>Bend radius</b>	<b>e-skin® flat linear</b>	minimum 70mm (further radii in preparation, please see data sheet)
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-skin® linear</b>	-10°C up to +80°C
	<b>fixed</b>	-25°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	2m/s
 <b>a max.</b>		40m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space in an e-skin® flat









### Cable structure

 <b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
 <b>Core insulation</b>	Mechanically high-quality FEP mixture.
 <b>Core structure</b>	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
 <b>Core identification</b>	► <a href="#">Product range table</a>
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer film</b>	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

### Electrical information

 <b>Nominal voltage</b>	300/300V 300V (following UL)
 <b>Testing voltage</b>	2,000V

### Properties and approvals

 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	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 ► <a href="http://www.igus.eu/CFCLEAN3">www.igus.eu/CFCLEAN3</a>
 <b>UL AWM</b>	
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242 Following 2014/35/EU
 <b>CE</b>	
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the normal standards for cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted inside e-skin® flat.

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]
CFCLEAN3.01.05.02	(5x(2x0.14))C	5.0	33	43
CFCLEAN3.01.06.02	(6x(2x0.14))C	5.5	36	50
CFCLEAN3.01.08.02	(8x(2x0.14))C	6.0	47	61
CFCLEAN3.02.03.02	(3x(2x0.25))C	5.0	34	44
CFCLEAN3.02.04.02	(4x(2x0.25))C	5.5	42	58
CFCLEAN3.02.05.02	(5x(2x0.25))C	5.5	50	63
CFCLEAN3.02.06.02	(6x(2x0.25))C	6.0	52	70

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.	Core identification
CFCLEAN3.01.05.02	brown/white, green/white, yellow/white, grey/white, pink/white
CFCLEAN3.01.06.02	brown/white, green/white, yellow/white, grey/white, pink/white, blue/white
CFCLEAN3.01.08.02	brown/white, green/white, yellow/white, grey/white, pink/white, blue/white, red/white, black/white
CFCLEAN3.02.03.02	brown/white, green/white, yellow/white
CFCLEAN3.02.04.02	brown/white, green/white, yellow/white, grey/white
CFCLEAN3.02.05.02	brown/white, green/white, yellow/white, grey/white, pink/white
CFCLEAN3.02.06.02	brown/white, green/white, yellow/white, grey/white, pink/white, blue/white



Example image






# Measuring system elements | chainflex® CFCLEAN4

- 36** 20 million Double strokes guaranteed
- Min. 70mm** bend radius e-skin® flat
- 3m** travel distance e-skin® flat







- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free

Now with UL approval in combination with e-skin® flat



### Dynamic information

 <b>Bend radius</b>	<b>e-skin® flat linear</b>	minimum 70mm (further radii in preparation, please see data sheet)
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-skin® linear</b>	-10°C up to +80°C
	<b>fixed</b>	-25°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	2m/s
 <b>a max.</b>		40m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space in an e-skin® flat









### Cable structure

 <b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
 <b>Core insulation</b>	Mechanically high-quality FEP mixture.
 <b>Core structure</b>	According to measuring system specification.
 <b>Core identification</b>	According to measuring system specification.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer film</b>	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

### Electrical information

 <b>Nominal voltage</b>	300/300V 300V (following UL)
 <b>Testing voltage</b>	2,000V

### Properties and approvals

 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	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 ► <a href="http://www.igus.eu/CFCLEAN4">www.igus.eu/CFCLEAN4</a>
 <b>UL AWM</b>	
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242 Following 2014/35/EU
 <b>CE</b>	
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the normal standards for cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted inside e-skin® flat.

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]
<b>CFCLEAN4.015</b>	(4x(2x0.14)+4x0.5)C	6.5	60	77

**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.	Core group	Colour code
<b>CFCLEAN4.015</b>	4x(2x0.14) 4x0.5	brown/green, yellow/violet, grey/pink, red/black blue, white, brown-green, white-green



Example image

igus® chainflex® CFCLEAN4



## Motor elements | chainflex® CFCLEAN7

**36** 20 million  
Double strokes guaranteed






**Min. 70mm**  
bend radius e-skin® flat

**3m**  
travel distance e-skin® flat







- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free

Now with  
UL approval  
in combination  
with e-skin® flat



## Dynamic information

 <b>Bend radius</b>	<b>e-skin® flat linear</b>	minimum 70mm (further radii in preparation, please see data sheet)
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-skin® linear</b>	-10°C up to +80°C
	<b>fixed</b>	-25°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	2m/s
 <b>a max.</b>		40m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space in an e-skin® flat









## Cable structure

 <b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
 <b>Core insulation</b>	Mechanically high-quality FEP mixture.
 <b>Core structure</b>	Cores wound in a layer with especially short pitch length.
 <b>Core identification</b>	<b>Power cores:</b> White cores with black numbers 1-3, one green-yellow core. <b>1 Control pair:</b> white, black
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer film</b>	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

## Electrical information

 <b>Nominal voltage</b>	600/1,000V 600V (following UL)
 <b>Testing voltage</b>	3,000V

## Properties and approvals

 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	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 ► <a href="http://www.igus.eu/CFCLEAN7">www.igus.eu/CFCLEAN7</a>
 <b>UL AWM</b>	
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242 Following 2014/35/EU
 <b>CE</b>	
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

## Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the normal standards for cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted inside e-skin® flat.

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]
<b>CFCLEAN7.15.03.02.01</b>	(4G1.5+(2x0.34)C)C	9.5	126	176
<b>CFCLEAN7.15.04</b>	(4G1.5)C	8.0	94	131
<b>CFCLEAN7.PE.25.01</b>	(1G2.5)C	4.5	41	73

**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

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

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

CFRIP

UL LISTED

RU

nec

NFPA

CUPA

DNV

EAC

REACH

RoHS

clean-room

UL

CE

UKCA

Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

igus 36-month  
chainflex cable  
guarantee and  
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on 2 billion test  
cycles per year






UL

# Bus elements | chainflex® CFCLEAN8







- 36** 20 million Double strokes guaranteed
- Min. 70mm** bend radius e-skin® flat
- 3m** travel distance e-skin® flat

- For heaviest duty applications in e-skin® flat
- PTFE foil wrap
- Shielded
- Highly abrasion-resistant
- PVC-free



### Dynamic information

 <b>Bend radius</b>	<b>e-skin® flat linear</b>	minimum 70mm (further radii in preparation, please see data sheet)
	<b>fixed</b>	minimum 3 x d
 <b>Temperature</b>	<b>e-skin® linear</b>	-10°C up to +80°C
	<b>fixed</b>	-25°C up to +90°C (following DIN EN 50305)
 <b>v max.</b>	<b>unsupported</b>	2m/s
 <b>a max.</b>		40m/s <sup>2</sup>
 <b>Travel distance</b>		Short, very fast applications with small radii and restricted installation space in an e-skin® flat









### Cable structure

 <b>Conductor</b>	Very finely stranded special conductors with especially soft and bending resistant design, made of bare copper wires.
 <b>Core insulation</b>	Mechanically high-quality FEP mixture.
 <b>Core structure</b>	According to bus specification.
 <b>Core identification</b>	According to bus specification. ► <b>Product range table</b>
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
 <b>Outer film</b>	Low-adhesion, extremely abrasion-resistant and highly flexible PTFE wrap, adapted to suit the requirements in e-skin® flat. Colour: White

### Electrical information

 <b>Nominal voltage</b>	300/300V
 <b>Testing voltage</b>	2,000V

### Properties and approvals

 <b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
 <b>UL verified</b>	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 ► <a href="http://www.igus.eu/CFCLEAN8">www.igus.eu/CFCLEAN8</a>
 <b>UL AWM</b>	
 <b>REACH</b>	In accordance with regulation (EC) No. 1907/2006 (REACH)
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II/RoHS-III)
 <b>Cleanroom</b>	Air Purity Class 1, material/stranded structure tested by IPA according to ISO 14644-14, test report IG 2107-1242 Following 2014/35/EU
 <b>CE</b>	
 <b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

### Typical application areas

- For heaviest duty applications and especially small radii in cleanroom with e-skin® flat
- Especially for short, very fast applications with small radii and restricted installation space
- Indoor applications with e-skin® flat
- Semi-conductor/OLED manufacturing, medical cleanroom



chainflex® CFCLEAN are not cables in the sense of the normal standards for cables. Due to the absence of the outer jacket in CFCLEAN, which provides mechanical protection for cables, the use of chainflex® CFCLEAN is only permitted inside e-skin® flat.

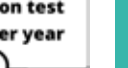
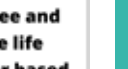
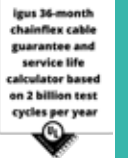
Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>Ethernet/CAT5e</b>				
<b>CFCLEAN8.045</b>	(4x(2x0.14))C	5.5	34	47

**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. [Ω]	Core group	Colour code
<b>Ethernet/CAT5e</b>			
<b>CFCLEAN8.045</b>	100	4x(2x0.14)	white/blue, white/orange, white/green, white/brown

igus® chainflex® CFCLEAN8





Example image





- For heaviest duty applications
- PUR hose
- Oil-resistant and coolant-resistant
- Abrasion-resistant
- Outside-toleranced
- PVC and halogen-free






Dynamic information

 Bend radius	<b>flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 7.5 x d
 Temperature	<b>flexible</b>	-25°C up to +80°C
	<b>fixed</b>	-40°C up to +85°C
 v max.	<b>unsupported</b>	10m/s
	<b>gliding</b>	6m/s
 a max.		50m/s <sup>2</sup>

Technical data

 Material	Abrasion-resistant polyurethane adapted to suit the requirements in e-chains®. Colour: Blue	
 Dimensions	Outside-toleranced	
 Operating pressure	12 bar at 20°C	
 Vacuum	-1 bar at 20°C	

Properties and approvals

 Oil resistance	Oil-resistant	
 Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)	
 Halogen-free	Following DIN EN 60754	
 Lead-free	Following 2011/65/EC (RoHS-II)	
 UKCA	In accordance with the valid regulations of the United Kingdom (as at 08/2021)	

Part No.	Max. package length [km]	Inner diameter [mm]	Wall thickness [mm]	Outer diameter (d) max. [mm]	Weight [g/m]
CAPU.A.04.0	1.0	2.7	0.65	4.0	8
CAPU.A.06.0	0.5	4.0	1.00	6.0	19
CAPU.A.08.0	0.5	5.7	1.15	8.0	30
CAPU.A.10.0	0.3	7.0	1.5	10.0	48
CAPU.A.12.0	0.2	8.0	2.00	12.0	76
CAPU.A.16.0	0.1	11.0	2.50	16.0	127



igus® chainflex® CFAir pneumatic hoses were tested over several million bending cycles in e-chains®. Their outstanding features include flexibility, high abrasion resistance and very good resistance to oil and coolants.



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/cf-case](http://www.igus.eu/cf-case)



Example image



- For heaviest duty applications
- PE hose
- Oil-resistant and coolant-resistant
- Highly abrasion-resistant
- Outside-toleranced
- PVC and halogen-free

**Dynamic information**

	<b>Bend radius</b>	<b>flexible</b>	minimum 10 x d
		<b>fixed</b>	minimum 7.5 x d
	<b>Temperature</b>	<b>flexible</b>	-25°C up to +60°C
		<b>fixed</b>	-30°C up to +65°C
	<b>v max.</b>	<b>unsupported</b>	10m/s
		<b>gliding</b>	6m/s
	<b>a max.</b>		50m/s <sup>2</sup>

**Technical data**

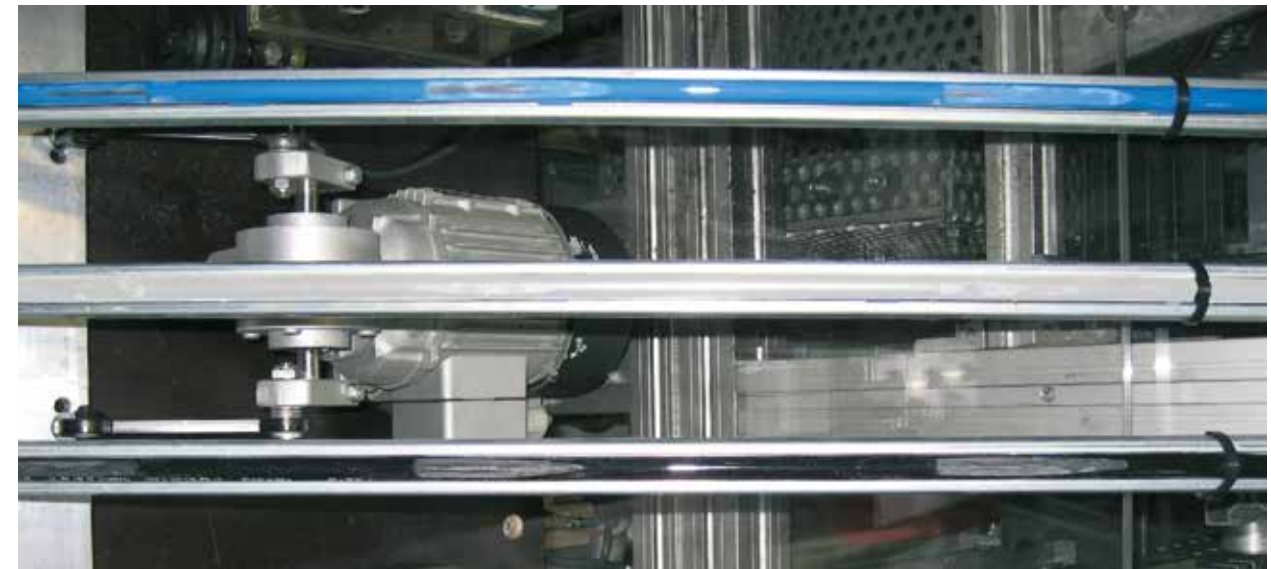
	<b>Material</b>	Highly abrasion-resistant polyurethane adapted to suit the requirements in e-chains®. Colour: White
	<b>Dimensions</b>	Outside-toleranced
	<b>Operating pressure</b>	10 bar at 20°C
	<b>Vacuum</b>	-0.95 bar at 20°C

**Properties and approvals**

	<b>Oil resistance</b>	Oil-resistant
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 60754
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1, material/hose tested by IPA according to DIN EN ISO standard 14644-1
	<b>UKCA</b>	In accordance with the valid regulations of the United Kingdom (as at 08/2021)

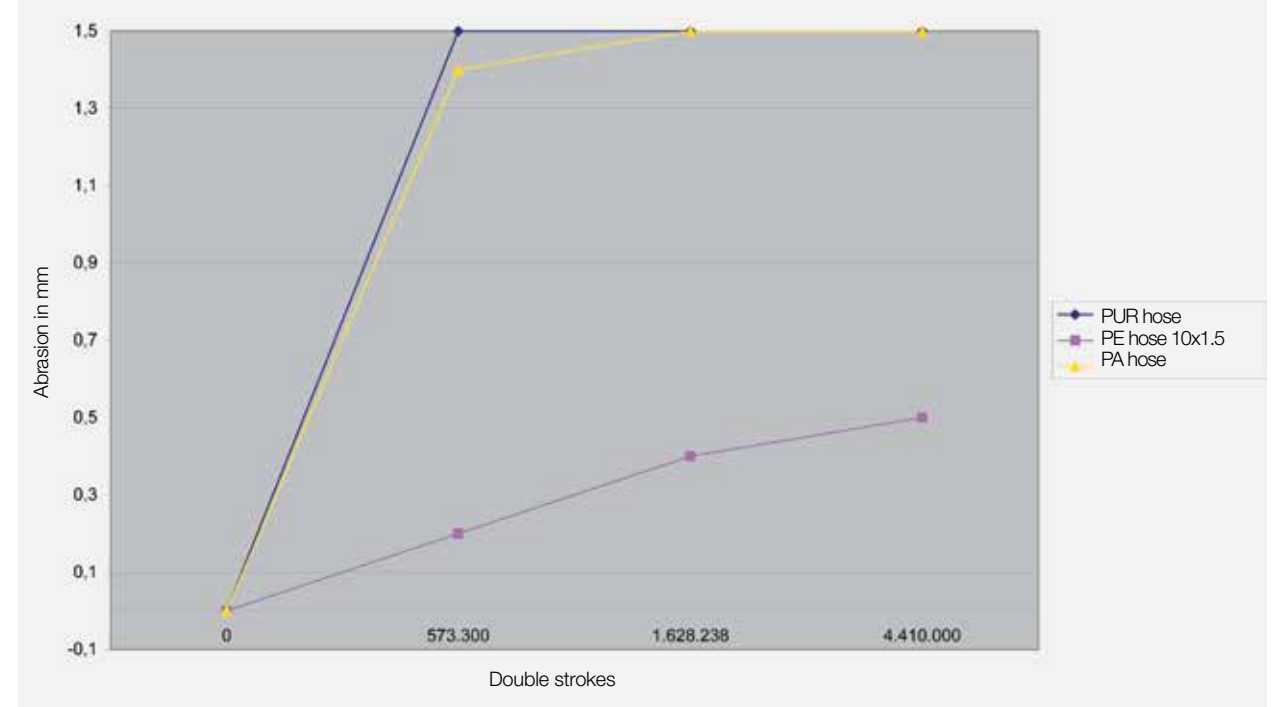
Example image

Part No.	Max. package length [km]	Inner diameter [mm]	Wall thickness [mm]	Outer diameter (d) max. [mm]	Weight [g/m]
CAPE.A.04.0	1.0	2.7	0.65	4.0	8
CAPE.A.06.0	0.5	4.0	1.00	6.0	15
CAPE.A.08.0	0.5	5.7	1.15	8.0	21
CAPE.A.10.0	0.3	7.0	1.5	10.0	38
CAPE.A.12.0	0.2	8.0	2.00	12.0	54
CAPE.A.16.0	0.1	11.0	2.50	16.0	90



igus® material abrasion test

Comparison: Abrasion of pneumatic hoses PUR, PE and PA in combination with igus® e-chain® (with crossbar 450.30)












# Camera

Video / vision / bus technology



## chainflex® readycable®

Cable type	Jacket	Page
<b>Harnessed bus cables</b>		
 FireWire	Pre-harnessed cable TPE	468
 USB 2.0	Pre-harnessed cable PVC/PUR/TPE	470
 USB 3.0	Pre-harnessed cable PVC/PUR	471
 GigE	Pre-harnessed cable PUR-ROBOT/TPE	472
 DVI-D/HDMI	Pre-harnessed cable TPE	473
<b>Harnessed coax cables</b>		
 Coax	Pre-harnessed cable (BNC/SMA) TPE	474
 VGA	Pre-harnessed cable TPE	477



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



# Harnessed bus cable | FireWire

\* Technical information on the cable quality:

TPE









Page 204

Harnessed bus cables, FireWire, to your required length					
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Bend radius [x d]
<b>Socket A/Socket A</b>					
Pre-harnessed at both ends					
TPE	MAT9048160	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Socket A/Pin A</b>					
Pre-harnessed at both ends					
TPE	MAT9048621	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Socket A/Socket B</b>					
Pre-harnessed at both ends					
TPE	MAT9048623	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Socket A/Pin B</b>					
Pre-harnessed at both ends					
TPE	MAT9048625	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Pin B/Pin B</b>					
Pre-harnessed at both ends					
TPE	MAT9048627	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Pin A/Pin A</b>					
Pre-harnessed at both ends					
TPE	MAT9048620	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Pin A/Socket B</b>					
Pre-harnessed at both ends					
TPE	MAT9048622	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

Harnessed bus cables, FireWire, to your required length					
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Bend radius [x d]
<b>Pin A/Pin B</b>					
Pre-harnessed at both ends					
TPE	MAT9048624	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Socket B/Socket B</b>					
Pre-harnessed at both ends					
TPE	MAT9048626	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5
<b>Socket B/Pin B</b>					
Pre-harnessed at both ends					
TPE	MAT9048628	CFBUS.055	2x(2x0.15)C+2x(0.34)C	8.0	12.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
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igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

Harnessed with these connectors		
Socket A (connector body), with clip		
Pin A (pin body), with clip		
Socket B (moulded connector), without clip		
Pin B (Moulded connector), without clip		

**i** Maximum transmission length: 10m



## Harnessed bus cables | USB 2.0

\* Technical information on the cable quality:

TPE

Page 204

Harnessed bus cables, USB 2.0, to your required length					
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section	Ø	Bend radius
			[mm²]	[mm]	[x d]

### USB type A/open cable end

Pre-harnessed at one end



TPE	USB9040001	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040201 <sup>1)</sup>	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5

### USB type A/A

Pre-harnessed at both ends



TPE	USB9040010	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040210 <sup>1)</sup>	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	12.5

### USB type B/open cable end

Pre-harnessed at one end



TPE	USB9040020	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040220 <sup>1)</sup>	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	12.5

### USB type B/B

Pre-harnessed at both ends



TPE	USB9040030	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040230 <sup>1)</sup>	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	12.5

### USB type A/B

Pre-harnessed at both ends



TPE	USB9040040	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040240 <sup>1)</sup>	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	12.5

### USB type A/A (socket)

Pre-harnessed at both ends



TPE	USB9040060	CFBUS.065	((2xAWG28)+2xAWG20)C	5.5	12.5
TPE	USB9040260 <sup>1)</sup>	CFBUS.066	((2xAWG24)+2xAWG20)C	6.5	12.5

<sup>1)</sup>CFBUS.066 is delivered with heat shrink tubing over USB housing.

**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

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

#### Harnessed with these connectors

USB 2.0 type A



USB 2.0 type B



USB 2.0 type A (socket)



**i** Maximum transmission length: 5m (CFBUS.065), 10m (CFBUS.066)

## Harnessed bus cables | USB 3.0

\* Technical information on the cable quality:

PVC OIL

PUR

Page 192

Page 200

Harnessed bus cables, USB 3.0, in fixed lengths						
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section	Ø	Bend radius	Cable length
			[mm²]	[mm]	[x d]	[m]

### USB 3.0 type A/open cable end

Pre-harnessed at one end



PVC, oil-res.	USB9640200	CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	3
PVC, oil-res.	USB9640201	CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	5
PVC, oil-res.	USB9640202	CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	7
PUR	USB9540200	CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	3
PUR	USB9540201	CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	5
PUR	USB9540202	CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	7

### USB 3.0 type A/USB 3.0 micro-B

Pre-harnessed at both ends



PVC, oil-res.	USB9640203	CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	2.5
PUR	USB9540203	CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	7.0	12.5	2.5

**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

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



Maximum transmission length: 3m

\*igus® GmbH was able to successfully implement customer applications with excess length. Try us out!

#### Harnessed with these connectors

USB 3.0 type A



USB 3.0 type micro-B



## Harnessed bus cables | GigE

\* Technical information on the cable quality:

**PUR-ROBOT TPE**

Page 410 Page 204

Harnessed bus cables, GigE, to your required length					
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section	Ø	Bend radius
<b>RJ45 metal/RJ45 metal</b>					
Pre-harnessed at both ends					
TPE	GIG9040001	CFBUS.045	(4x(2x0.15))C	8.5	10
PUR-ROBOT	GIG9045001	CFROBOT8.045	4x(2x0.15)C	9.5	10
<b>RJ45 metal/RJ45 plastic</b>					
Pre-harnessed at both ends					
TPE	GIG9040002	CFBUS.045	(4x(2x0.15))C	8.5	10
PUR-ROBOT	GIG9045002	CFROBOT8.045	4x(2x0.15)C	9.5	10

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

## Harnessed DVI-D/HDMI cables | DVI/HDMI

\* Technical information on the cable quality:

**TPE**

Page 204

Harnessed DVI-D/HDMI cables, to your required length					
Cable quality	Part No.	chainflex® cable	Number of cores and conductor nominal cross section	Ø	Bend radius
<b>DVI-D Pin/ DVI-D Pin</b>					
Pre-harnessed at both ends					
TPE	MAT90455657	CFBUS.070	(4x(2xAWG28)C+(2xAWG28)+3xAWG28)C	9.0	12.5
<b>DVI-D Pin/HDMI Pin</b>					
Pre-harnessed at both ends					
TPE	MAT90478691	CFBUS.070	(4x(2xAWG28)C+(2xAWG28)+3xAWG28)C	9.0	12.5
<b>HDMI Pin/HDMI Pin</b>					
Pre-harnessed at both ends					
TPE	MAT90478692	CFBUS.070	(4x(2xAWG28)C+(2xAWG28)+3xAWG28)C	9.0	12.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

### Harnessed with these connectors

RJ45 metal



RJ45 plastic, knurled screws



**i** Maximum transmission length: 50m

### Harnessed with these connectors

DVI-D Pin



HDMI Pin



**i** Video transmission only (no audio signals)  
Maximum transmission length: 7.5m



# Harnessed coax cable | CFKoax

\* Technical information on the cable quality:

TPE





Page 176

Harnessed coax cables, CFKoax 50Ω, to your required length						
Cable quality	Part No.	chainflex® cable	Coax type	Number of cores and conductor nominal cross section [mm²]	∅ [mm]	Bend radius [x d]
<b>BNC Connector/Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90455662	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Connector/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90455663	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Socket/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90455664	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Connector/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90455665	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Socket/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90455666	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>SMA Connector/Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90455667	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>SMA Connector/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90455668	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>SMA Socket/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90455669	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>SMA Connector/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90455670	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>SMA Socket/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90455671	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10

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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

Harnessed coax cables, CFKoax 50Ω, to your required length						
Cable quality	Part No.	chainflex® cable	Coax type	Number of cores and conductor nominal cross section [mm²]	∅ [mm]	Bend radius [x d]
<b>BNC Connector/SMA Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90478758	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Connector/SMA Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90478759	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Socket/SMA Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90478760	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10
<b>BNC Socket/SMA Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90478761	CFKoax2.01	RG58	1xHF50-0.9/2.95	5.5	10

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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

Harnessed with these connectors	
BNC Connector	
BNC Socket	
SMA Connector	
SMA Socket	

 Maximum transmission length: 50m

# Harnessed coax cable | CFKoax

\* Technical information on the cable quality:

**TPE**





Page 176

Harnessed Coax cables, CFKoax 75Ω, to your required length						
Cable quality	Part No.	Base article	Coax type	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>BNC Connector/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90423400	CFKoax1.01	RG179	1xHF75-0.3/1.6	4.5	10
<b>BNC Connector/Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90423401	CFKoax1.01	RG179	1xHF75-0.3/1.6	4.5	10
<b>BNC Socket/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90423402	CFKoax1.01	RG179	1xHF75-0.3/1.6	4.5	10
<b>BNC Connector/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90423403	CFKoax1.01	RG179	1xHF75-0.3/1.6	4.5	10
<b>BNC Socket/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90423404	CFKoax1.01	RG179	1xHF75-0.3/1.6	4.5	10
<b>BNC Connector/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90423405	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>BNC Connector/Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90423406	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>BNC Socket/Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90423407	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>BNC Connector/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90423408	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>BNC Socket/open cable end</b>						
Pre-harnessed at one end						
TPE	MAT90423409	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

Harnessed coax cables, CFKoax 75Ω, VGA/SUB-D, to your required length						
Cable quality	Part No.	Base article	Coax type	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>SUB-D Pin/SUB-D Pin</b>						
Pre-harnessed at both ends						
TPE	MAT90455658	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>SUB-D Pin/ SUB-D Socket</b>						
Pre-harnessed at both ends						
TPE	MAT90455659	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>SUB-D Pin/BNC Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90455660	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10
<b>SUB-D Socket/BNC Connector</b>						
Pre-harnessed at both ends						
TPE	MAT90455661	CFKoax1.05	RG179	5xHF75-0.3/1.6	10.0	10

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

Harnessed with these connectors	
BNC Connector	
BNC Socket	
SUB-D Pin	
SUB-D Socket	

**i** Maximum transmission length: 50m











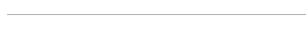








# Network

Network / Ethernet / Fieldbus



## chainflex® readycable®

Series	Jacket	Page
<b>Harnessed Ethernet cables</b>		
 CAT5 Straight	PVC/PUR/TPE	481
 SPE Single Pair Ethernet	PUR	481
 CAT5e Straight	PVC/PUR/TPE	482
 CAT5e Straight	PVC/PUR/TPE	485
 CAT5e Crossover	PVC/PUR/TPE	486
 CAT5e with 615 connectors	PVC/PUR/TPE	487
 CAT5e with angled connectors (L/T angle)	PVC/PUR/TPE	488
 CAT6 Straight	PVC/PUR/TPE	492
 CAT6 Straight/Crossover	TPE	494
 CAT6A with M12 connectors	PVC/PUR/TPE	495
 CAT7 Straight	PUR/TPE	497
 Industrial Ethernet moulded	PVC/PUR	498
<b>Harnessed Profibus cables</b>		
 Profibus	PVC/PUR/TPE	500
<b>Harnessed Profinet cables</b>		
 Profinet	PVC/PUR/TPE	506
 Industrial Profinet moulded	PVC/PUR	510
 Profinet with moulded connectors	PVC/PUR/TPE	512
<b>Harnessed DevicNet cable</b>		
 DeviceNet with Binder M12 a-coded	TPE	513 <b>New</b>



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

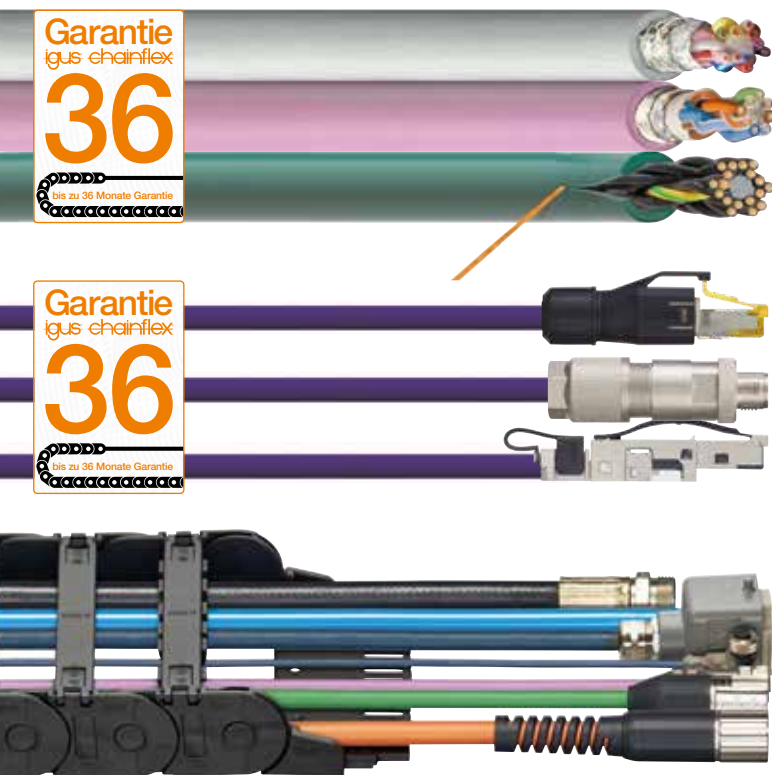


# chainflex® Ethernet cables | Overview

Electrical performance

CAT7 10GBit 600MHz	chainflex® CFBUS.PVC.052 Page 194	chainflex® CFBUS.PUR.052 Page 202	chainflex® CFBUS.052 Page 208	chainflex® CFROBOT8.052 Page 408					
CAT6A 10GBit 500MHz	chainflex® CFBUS.PVC.050 Page 194	chainflex® CFBUS.PUR.050 Page 202	chainflex® CFBUS.050 Page 208	chainflex® CFROBOT8.050 Page 408	chainflex® CFROBOT8. PLUS.050 Page 412				
CAT6 1GBit 250MHz	chainflex® CFBUS.PVC.049 Page 194	chainflex® CFBUS.PUR.049 Page 202	chainflex® CFBUS.049 Page 208	chainflex® CFBUS.LB.049 Page 212	chainflex® CFROBOT8.049 Page 408	chainflex® CFROBOT8. PLUS.049 Page 412	chainflex® CFSPECIAL. 484.049 Page 430		
CAT5e 1GBit 100MHz	chainflex® CF888.045 Page 190	chainflex® CFBUS.PVC.045 Page 194	chainflex® CF898.045 Page 198	chainflex® CFBUS.PUR.045 Page 202	chainflex® CFBUS.045 Page 208	chainflex® CFBUS.LB.045 Page 212	chainflex® CFROBOT8.045 Page 408	chainflex® CFROBOT8. PLUS.045 Page 412	CFSPECIAL. 182.045 p. 424 CFCLEAN8.045 Page 460
SPE 1GBit 600MHz			chainflex® CFBUS.PUR.042 Page 202						
Profinet 100MBit 100MHz	chainflex® CF888.060 Page 190	chainflex® CFBUS.PVC.060 Page 194	CF898.060 Page 198 CF898.061.FC Page 198	chainflex® CFBUS.PUR.060 Page 202	chainflex® CFBUS.060 Page 208	chainflex® CFBUS.LB.060 Page 212	chainflex® CFROBOT8.060 Page 408	chainflex® CFROBOT8. PLUS.060 Page 412	
CAT5 100MBit 100MHz	chainflex® CFBUS.PVC.040 Page 194		chainflex® CFBUS.PUR.040 Page 202	chainflex® CFBUS.040 Page 208	chainflex® CFBUS.LB.040 Page 212				
	CF888 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	CFBUS.LB TPE Hal 7.5 x d	CFROBOT8 PUR ± 180°/m	CFROBOT8.PLUS PUR ± 360°/m	Special cables

Mechanical performance



- Highly flexible chainflex® cables**
- More than 1,350 cables from stock
  - Tested, and in seven jacket materials
  - No cutting charges, from 1m
  - 36-month or 10 million double stroke guarantee\*
  - Approvals and certificates
- Harnessed cables readycable®**
- More than 400 harnessed Ethernet cables
  - In seven jacket materials
  - 36-month or 10 million double stroke guarantee\*
  - Shipped in 24hrs\*\*
  - To your desired length, with centimetre accuracy
- harnessed e-chain® systems readychain®**
- Customised and ready-to-connect to your specifications
  - From the basic solution to complex systems
  - Optional assembly rack
  - From batch size 1 to series production
  - Installation service

\* Whichever is first. Up to 5 million double strokes for the highly affordable chainflex® M cables. The number of double strokes depends on installation and cable quality. This is described in the current catalogue, in the data sheets and in the service life calculator at [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife).  
\*\* Means time until shipping of goods.

# Harnessed Ethernet cables | CAT5

\* Technical information on the cable quality:  
**PVC, oil-res.** Page 192  
**PUR** Page 200  
**TPE** Page 204

Harnessed Ethernet cables, CAT5, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Bend radius [x d]
<b>Harting RJ45 (CAT5)/ Harting RJ45 (CAT5)</b>				
PVC, oil-res.	CAT9311001	(4x0.25)C	6.5	12.5
PUR	CAT9411001	(4x0.25)C	6.5	12.5
TPE	CAT9511001	(4x0.25)C	7.0	10
<b>Harting Han3A RJ45 (CAT6)/ Harting Han3A RJ45 (CAT6)</b>				
PVC, oil-res.	CAT9311002	(4x0.25)C	6.5	12.5
PUR	CAT9411002	(4x0.25)C	6.5	12.5
TPE	CAT9511002	(4x0.25)C	7.0	10

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  
 Harnessing RJ45 at both ends ► TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ► TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed Single Pair Ethernet cable | SPE

\* Technical information on the cable quality:  
**PUR**  
 Page 196

Harnessed Single Pair Ethernet (SPE) cable, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Bend radius [x d]
<b>Harting T1 Single Pair Ethernet Connector/ Harting T1 Single Pair Ethernet Connector</b>				
PUR	CAT9471001	(2x0.15)C	5.5	12.5

**SPE** Single Pair Ethernet is the infrastructure foundation that makes IIoT and Industry 4.0 possible. In order to promote Single Pair Ethernet technology for the rapidly growing IIoT market, igus is participating in the SPE Industrial Partner Networks with other established partners such as HARTING and TE Connectivity.

More information: [www.igus.eu/info/n20-single-pair-ethernet-spe](http://www.igus.eu/info/n20-single-pair-ethernet-spe)



## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC</b> Page 188	<b>PVC, oil-res.</b> Page 192	<b>iguPUR</b> Page 196	<b>PUR</b> Page 200	<b>PUR-ROBOT</b> Page 410	<b>PUR-SPECIAL</b> Page 428	<b>TPE</b> Page 204
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### Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
---------------	----------	---------------------------------------------------------------------------	-----------	----------------------

Telegärtner RJ45 (CAT6A)/  
Telegärtner RJ45 (CAT6A)



<b>PVC</b>	<b>CAT9121002</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321002</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221002</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421002</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621002</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721001</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521002</b>	(4x(2x0.15))C	8.5	10

Harting RJ45 (CAT6A)/  
Harting RJ45 (CAT6A)



<b>PVC</b>	<b>CAT9121003</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321003</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221003</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421003</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621003</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721002</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521003</b>	(4x(2x0.15))C	8.5	10

Telegärtner RJ45 (CAT6)/  
Telegärtner RJ45 (CAT6)



<b>PVC</b>	<b>CAT9121004</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321004</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221004</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421004</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621004</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721003</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521004</b>	(4x(2x0.15))C	8.5	10

**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

Harnessing **RJ45 at both ends** ▶ TIA56A

Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC</b> Page 188	<b>PVC, oil-res.</b> Page 192	<b>iguPUR</b> Page 196	<b>PUR</b> Page 200	<b>PUR-ROBOT</b> Page 410	<b>PUR-SPECIAL</b> Page 428	<b>TPE</b> Page 204
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### Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
---------------	----------	---------------------------------------------------------------------------	-----------	----------------------

Telegärtner RJ45 (CAT6)/  
Telegärtner RJ45 angled (CAT6A)



<b>PVC</b>	<b>CAT9121005</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321005</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221005</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421005</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621005</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721004</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521005</b>	(4x(2x0.15))C	8.5	10

Telegärtner RJ45 (CAT6)/  
Telegärtner M12 x-coded (CAT6)



<b>PVC</b>	<b>CAT9121006</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321006</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221006</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421006</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621006</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721005</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521006</b>	(4x(2x0.15))C	8.5	10

Telegärtner M12 x-coded (CAT6A)/  
Telegärtner M12 x-coded (CAT6A)



<b>PVC</b>	<b>CAT9121007</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321007</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221007</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421007</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621007</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721006</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521007</b>	(4x(2x0.15))C	8.5	10

**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

Harnessing **RJ45 at both ends** ▶ TIA56A

Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC</b>	<b>PVC, oil-res.</b>	<b>iguPUR</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>PUR-SPECIAL</b>	<b>TPE</b>
Page 188	Page 192	Page 196	Page 200	Page 410	Page 428	Page 204

### Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
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Phoenix Contact RJ45 (CAT6A)/  
Phoenix Contact RJ45 (CAT6A)



<b>PVC</b>	<b>CAT9121010</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321010</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221010</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421010</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621010</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9521010</b>	(4x(2x0.15))C	8.5	10

Phoenix Contact M12 x-coded (CAT6A)/  
Phoenix Contact M12 x-coded (CAT6A)



<b>PVC</b>	<b>CAT9121013</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321013</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221013</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421013</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621013</b>	4x(2x0.15)C	9.5	10
<b>PUR-SPECIAL</b>	<b>CAT9721011</b>	(4x(2x0.15))C	9.5	10
<b>TPE</b>	<b>CAT9521013</b>	(4x(2x0.15))C	8.5	10

Harting M12 x-coded Socket (CAT6A)/  
Harting M12 x-coded Pin (CAT6A)



<b>PVC</b>	<b>CAT9121014</b>	(4x(2x0.14))C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9321014</b>	(4x(2x0.15))C	7.5	12.5
<b>iguPUR</b>	<b>CAT9221014</b>	(4x(2x0.14))C	7.0	15
<b>PUR</b>	<b>CAT9421014</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9621014</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9521014</b>	(4x(2x0.15))C	8.5	10

**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC, oil-res.</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 192	Page 200	Page 410	Page 204

### Harnessed Ethernet cables, CAT5e Straight, 4 and 8-pole, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
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Harting RJ45 (CAT5)/  
Harting RJ45 (CAT5)



<b>TPE</b>	<b>CAT9040001</b>	(4x0.25)C	7.0	10
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Harting RJ45 (CAT5e)/  
Harting RJ45 (CAT5e)



<b>PVC, oil-res.</b>	<b>CAT9340020</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240020</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440020</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9040020</b>	(4x(2x0.15))C	8.5	10

Yamaichi RJ45 (CAT5)/  
Yamaichi RJ45 (CAT5)



<b>PVC, oil-res.</b>	<b>CAT9340060</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240060</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440060</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9040060</b>	(4x(2x0.15))C	8.5	10

Phoenix Contact RJ45 (CAT5e)/  
Phoenix Contact RJ45 (CAT5e)



<b>PVC, oil-res.</b>	<b>CAT9340100</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240100</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440100</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9040100</b>	(4x(2x0.15))C	8.5	10

Yamaichi RJ45 (CAT5) in Hummel M23 housing/  
Yamaichi RJ45 (CAT5) in Hummel M23 housing



<b>PVC, oil-res.</b>	<b>CAT9340140</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240140</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440140</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9040140</b>	(4x(2x0.15))C	8.5	10

Yamaichi RJ45 (CAT5) in Hummel M23 housing/  
Yamaichi RJ45 (CAT5) in Hummel M23 coupling housing



<b>PVC, oil-res.</b>	<b>CAT9340180</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240180</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440180</b>	4x(2x0.15)C	9.5	10
<b>TPE</b>	<b>CAT9040180</b>	(4x(2x0.15))C	8.5	10

**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

**PVC, oil-res.** **PUR** **PUR-ROBOT** **TPE**  
Page 192 Page 200 Page 410 Page 204

Harnessed Ethernet cables, CAT5e Crossover, 8-pole, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Harting RJ45 (CAT5e)/ Harting RJ45 (CAT5e)</b>				
PVC, oil-res.	CAT9340040	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240040	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440040	4x(2x0.15)C	9.5	10
TPE	CAT9040040	(4x(2x0.15))C	8.5	10
<b>Yamaichi RJ45 (CAT5)/ Yamaichi RJ45 (CAT5)</b>				
PVC, oil-res.	CAT9340080	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240080	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440080	4x(2x0.15)C	9.5	10
TPE	CAT9040080	(4x(2x0.15))C	8.5	10
<b>Phoenix Contact RJ45 (CAT5e)/ Phoenix Contact RJ45 (CAT5e)</b>				
PVC, oil-res.	CAT9340120	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240120	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440120	4x(2x0.15)C	9.5	10
TPE	CAT9040120	(4x(2x0.15))C	8.5	10
<b>Yamaichi RJ45 (CAT5) in Hummel M23 housing/Yamaichi RJ45 (CAT5) in Hummel M23 housing</b>				
PVC, oil-res.	CAT9340160	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240160	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440160	4x(2x0.15)C	9.5	10
TPE	CAT9040160	(4x(2x0.15))C	8.5	10
<b>Yamaichi RJ45 (CAT5) in Hummel M23 housing/Yamaichi RJ45 (CAT5) in Hummel M23 coupling housing</b>				
PVC, oil-res.	CAT9340200	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440200	4x(2x0.15)C	9.5	10
TPE	CAT9040200	(4x(2x0.15))C	8.5	10
PUR	CAT9240200	(4x(2x0.15))C	7.5	12.5

**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  
Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

**PVC, oil-res.** **PUR** **PUR-ROBOT** **TPE**  
Page 192 Page 200 Page 410 Page 204

Harnessed Ethernet cables, CAT5e, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Hirose RJ45 (CAT5e)/ TE Intercontec 615 signal connector</b>				
PVC, oil-res.	CAT9340800	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240800	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440800	4x(2x0.15)C	9.5	10
TPE	CAT9040800	(4x(2x0.15))C	8.5	10
<b>TE Intercontec 615 signal coupling/ TE Intercontec 615 signal connector</b>				
PVC, oil-res.	CAT9340810	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240810	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440810	4x(2x0.15)C	9.5	10
TPE	CAT9040810	(4x(2x0.15))C	8.5	10
<b>TE Intercontec 615 signal coupling/ Hirose RJ45 (CAT5e)</b>				
PVC, oil-res.	CAT9340820	(4x(2x0.15))C	7.5	12.5
PUR	CAT9240820	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9440820	4x(2x0.15)C	9.5	10
TPE	CAT9040820	(4x(2x0.15))C	8.5	10

**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  
Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed Ethernet cables | CAT5e

## PVC oil-res. with Hirose connectors

\* Technical information on the cable quality:

**PVC, oil-res.**

Page 192

Harnessed Ethernet cables, CAT5e, PVC, with Hirose connectors, 8-pole, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Straight</b>				
1   2	CAT9340380	(4x(2x0.15))C	7.5	12.5
1   3	CAT9340540	(4x(2x0.15))C	7.5	12.5
1   4	CAT9340560	(4x(2x0.15))C	7.5	12.5
1   5	CAT9340320	(4x(2x0.15))C	7.5	12.5
2   1	CAT9340360	(4x(2x0.15))C	7.5	12.5
2   2	CAT9340340	(4x(2x0.15))C	7.5	12.5
2   3	CAT9340500	(4x(2x0.15))C	7.5	12.5
2   4	CAT9340520	(4x(2x0.15))C	7.5	12.5
2   5	CAT9340300	(4x(2x0.15))C	7.5	12.5
3   3	CAT9340440	(4x(2x0.15))C	7.5	12.5
3   4	CAT9340480	(4x(2x0.15))C	7.5	12.5
3   5	CAT9340400	(4x(2x0.15))C	7.5	12.5
4   4	CAT9340460	(4x(2x0.15))C	7.5	12.5
4   5	CAT9340420	(4x(2x0.15))C	7.5	12.5
<b>Crossover</b>				
1   2	CAT9340390	(4x(2x0.15))C	7.5	12.5
1   3	CAT9340550	(4x(2x0.15))C	7.5	12.5
1   4	CAT9340570	(4x(2x0.15))C	7.5	12.5
1   5	CAT9340330	(4x(2x0.15))C	7.5	12.5
2   1	CAT9340370	(4x(2x0.15))C	7.5	12.5
2   2	CAT9340350	(4x(2x0.15))C	7.5	12.5
2   3	CAT9340510	(4x(2x0.15))C	7.5	12.5
2   4	CAT9340530	(4x(2x0.15))C	7.5	12.5
2   5	CAT9340310	(4x(2x0.15))C	7.5	12.5
3   3	CAT9340450	(4x(2x0.15))C	7.5	12.5
3   4	CAT9340490	(4x(2x0.15))C	7.5	12.5
3   5	CAT9340410	(4x(2x0.15))C	7.5	12.5
4   4	CAT9340470	(4x(2x0.15))C	7.5	12.5
4   5	CAT9340430	(4x(2x0.15))C	7.5	12.5

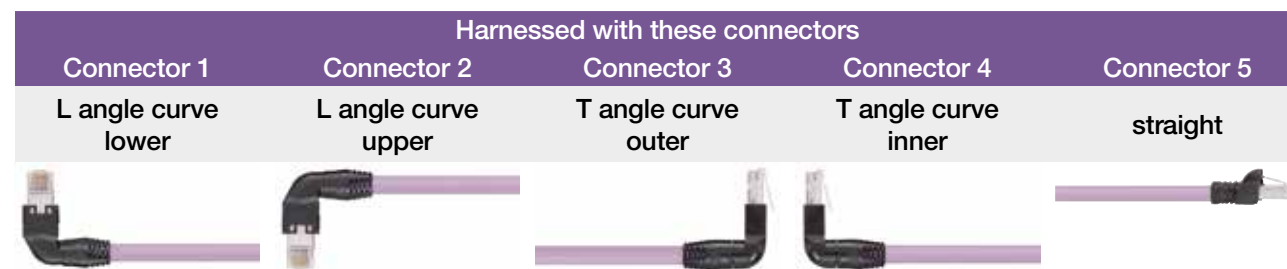
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.

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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed Ethernet cables | CAT5e

## PUR with Hirose connector

\* Technical information on the cable quality:

**PUR**

Page 200

Harnessed Ethernet cables, CAT5e, PUR, with Hirose connectors, 8-pole, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Straight</b>				
1   2	CAT9240380	(4x(2x0.15))C	7.5	12.5
1   3	CAT9240540	(4x(2x0.15))C	7.5	12.5
1   4	CAT9240560	(4x(2x0.15))C	7.5	12.5
1   5	CAT9240320	(4x(2x0.15))C	7.5	12.5
2   1	CAT9240360	(4x(2x0.15))C	7.5	12.5
2   2	CAT9240340	(4x(2x0.15))C	7.5	12.5
2   3	CAT9240500	(4x(2x0.15))C	7.5	12.5
2   4	CAT9240520	(4x(2x0.15))C	7.5	12.5
2   5	CAT9240300	(4x(2x0.15))C	7.5	12.5
3   3	CAT9240440	(4x(2x0.15))C	7.5	12.5
3   4	CAT9240480	(4x(2x0.15))C	7.5	12.5
3   5	CAT9240400	(4x(2x0.15))C	7.5	12.5
4   4	CAT9240460	(4x(2x0.15))C	7.5	12.5
4   5	CAT9240420	(4x(2x0.15))C	7.5	12.5
<b>Crossover</b>				
1   2	CAT9240390	(4x(2x0.15))C	7.5	12.5
1   3	CAT9240550	(4x(2x0.15))C	7.5	12.5
1   4	CAT9240570	(4x(2x0.15))C	7.5	12.5
1   5	CAT9240330	(4x(2x0.15))C	7.5	12.5
2   1	CAT9240370	(4x(2x0.15))C	7.5	12.5
2   2	CAT9240350	(4x(2x0.15))C	7.5	12.5
2   3	CAT9240510	(4x(2x0.15))C	7.5	12.5
2   4	CAT9240530	(4x(2x0.15))C	7.5	12.5
2   5	CAT9240310	(4x(2x0.15))C	7.5	12.5
3   3	CAT9240450	(4x(2x0.15))C	7.5	12.5
3   4	CAT9240490	(4x(2x0.15))C	7.5	12.5
3   5	CAT9240410	(4x(2x0.15))C	7.5	12.5
4   4	CAT9240470	(4x(2x0.15))C	7.5	12.5
4   5	CAT9240430	(4x(2x0.15))C	7.5	12.5

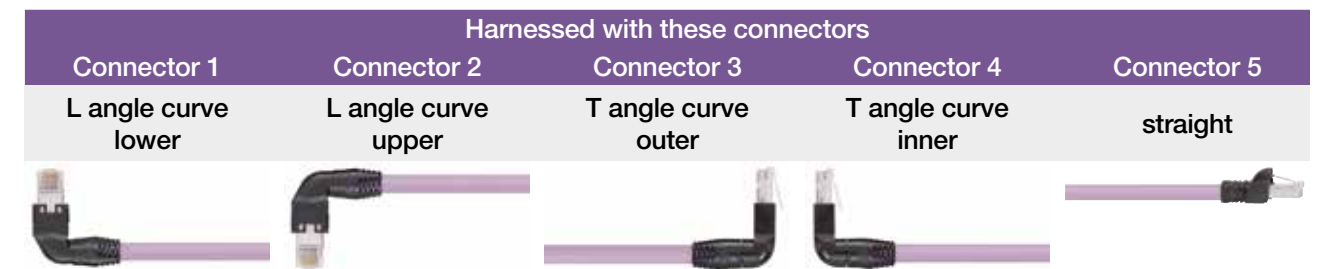
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.

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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961





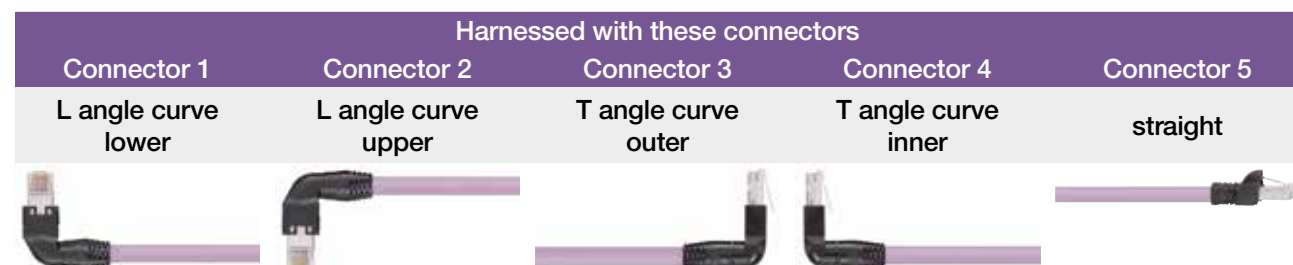
\* Technical information on the cable quality:

**PUR-ROBOT**

Page 410

Harnessed Ethernet cables, CAT5e, PUR-ROBOT, with Hirose connectors, 8-pole, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Straight</b>				
1   2	CAT9440380	4x(2x0.15)C	9.5	10
1   3	CAT9440540	4x(2x0.15)C	9.5	10
1   4	CAT9440560	4x(2x0.15)C	9.5	10
1   5	CAT9440320	4x(2x0.15)C	9.5	10
2   1	CAT9440360	4x(2x0.15)C	9.5	10
2   2	CAT9440340	4x(2x0.15)C	9.5	10
2   3	CAT9440500	4x(2x0.15)C	9.5	10
2   4	CAT9440520	4x(2x0.15)C	9.5	10
2   5	CAT9440300	4x(2x0.15)C	9.5	10
3   3	CAT9440440	4x(2x0.15)C	9.5	10
3   4	CAT9440480	4x(2x0.15)C	9.5	10
3   5	CAT9440400	4x(2x0.15)C	9.5	10
4   4	CAT9440460	4x(2x0.15)C	9.5	10
4   5	CAT9440420	4x(2x0.15)C	9.5	10
<b>Crossover</b>				
1   2	CAT9440390	4x(2x0.15)C	9.5	10
1   3	CAT9440550	4x(2x0.15)C	9.5	10
1   4	CAT9440570	4x(2x0.15)C	9.5	10
1   5	CAT9440330	4x(2x0.15)C	9.5	10
2   1	CAT9440370	4x(2x0.15)C	9.5	10
2   2	CAT9440350	4x(2x0.15)C	9.5	10
2   3	CAT9440510	4x(2x0.15)C	9.5	10
2   4	CAT9440530	4x(2x0.15)C	9.5	10
2   5	CAT9440310	4x(2x0.15)C	9.5	10
3   3	CAT9440450	4x(2x0.15)C	9.5	10
3   4	CAT9440490	4x(2x0.15)C	9.5	10
3   5	CAT9440410	4x(2x0.15)C	9.5	10
4   4	CAT9440470	4x(2x0.15)C	9.5	10
4   5	CAT9440430	4x(2x0.15)C	9.5	10

**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  
 Harnessing RJ45 at both ends ▶ TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



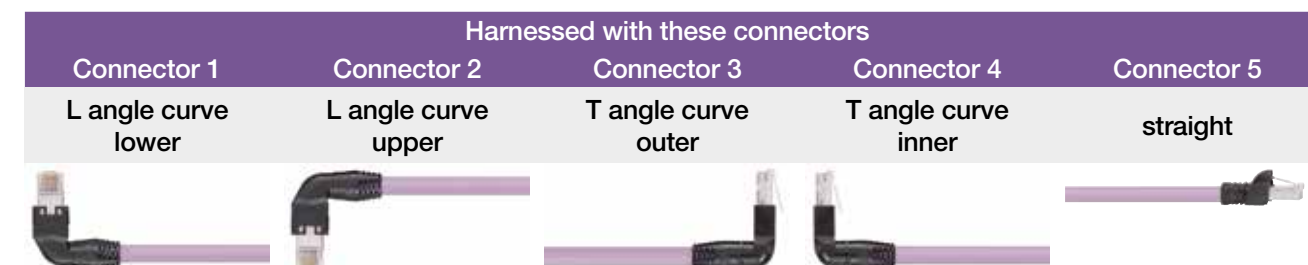
\* Technical information on the cable quality:

**TPE**

Page 204

Harnessed Ethernet cables, CAT5e, TPE, with Hirose connectors, 8-pole, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Straight</b>				
1   2	CAT9040380	(4x(2x0.15))C	8.5	10
1   3	CAT9040540	(4x(2x0.15))C	8.5	10
1   4	CAT9040560	(4x(2x0.15))C	8.5	10
1   5	CAT9040320	(4x(2x0.15))C	8.5	10
2   1	CAT9040360	(4x(2x0.15))C	8.5	10
2   2	CAT9040340	(4x(2x0.15))C	8.5	10
2   3	CAT9040500	(4x(2x0.15))C	8.5	10
2   4	CAT9040520	(4x(2x0.15))C	8.5	10
2   5	CAT9040300	(4x(2x0.15))C	8.5	10
3   3	CAT9040440	(4x(2x0.15))C	8.5	10
3   4	CAT9040480	(4x(2x0.15))C	8.5	10
3   5	CAT9040400	(4x(2x0.15))C	8.5	10
4   4	CAT9040460	(4x(2x0.15))C	8.5	10
4   5	CAT9040420	(4x(2x0.15))C	8.5	10
<b>Crossover</b>				
1   2	CAT9040390	(4x(2x0.15))C	8.5	10
1   3	CAT9040550	(4x(2x0.15))C	8.5	10
1   4	CAT9040570	(4x(2x0.15))C	8.5	10
1   5	CAT9040330	(4x(2x0.15))C	8.5	10
2   1	CAT9040370	(4x(2x0.15))C	8.5	10
2   2	CAT9040350	(4x(2x0.15))C	8.5	10
2   3	CAT9040510	(4x(2x0.15))C	8.5	10
2   4	CAT9040530	(4x(2x0.15))C	8.5	10
2   5	CAT9040310	(4x(2x0.15))C	8.5	10
3   3	CAT9040450	(4x(2x0.15))C	8.5	10
3   4	CAT9040490	(4x(2x0.15))C	8.5	10
3   5	CAT9040410	(4x(2x0.15))C	8.5	10
4   4	CAT9040470	(4x(2x0.15))C	8.5	10
4   5	CAT9040430	(4x(2x0.15))C	8.5	10

**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  
 Harnessing RJ45 at both ends ▶ TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



## Harnessed Ethernet cables | CAT6

\* Technical information on the cable quality:

**PVC, oil-res.** **PUR** **TPE**  
Page 192 Page 200 Page 204

Harnessed Ethernet cables, CAT6, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 (CAT6A)</b>				
PVC, oil-res.	CAT9331002	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431002	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531002	(4x(2x0.15))C	8.5	10
<b>Harting RJ45 (CAT6A)/ Harting RJ45 (CAT6A)</b>				
PVC, oil-res.	CAT9331003	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431003	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531003	(4x(2x0.15))C	8.5	10
<b>Telegärtner RJ45 (CAT6)/ Telegärtner RJ45 (CAT6)</b>				
PVC, oil-res.	CAT9331004	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431004	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531004	(4x(2x0.15))C	8.5	10
<b>Telegärtner RJ45 (CAT6)/ Telegärtner M12 x-coded</b>				
PVC, oil-res.	CAT9331005	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431005	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531005	(4x(2x0.15))C	8.5	10
<b>Telegärtner RJ45 (CAT6)/ Telegärtner RJ45 angled (CAT6A)</b>				
PVC, oil-res.	CAT9331006	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431006	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531006	(4x(2x0.15))C	8.5	10

**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT6

\* Technical information on the cable quality:

**PVC, oil-res.** **PUR** **TPE**  
Page 192 Page 200 Page 204

Harnessed Ethernet cables, CAT6, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Phoenix Contact RJ45 (CAT6A)/ Phoenix Contact RJ45 (CAT6A)</b>				
PVC, oil-res.	CAT9331009	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431009	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531009	(4x(2x0.15))C	8.5	10
<b>Phoenix Contact M12 x-coded (CAT6A)/ Phoenix Contact M12 x-coded (CAT6A)</b>				
PVC, oil-res.	CAT9331012	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431012	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531012	(4x(2x0.15))C	8.5	10

**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



## Harnessed Ethernet cables | CAT6

\* Technical information on the cable quality:

TPE  
Page 204

Harnessed Ethernet cables, CAT6, 8-pole, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Straight</b>				
Hirose RJ45 (CAT6A)/ Hirose RJ45 (CAT6A)				
TPE	CAT9040600	(4x(2x0.15)C)C	10.5	12.5
Metz RJ45 E-DAT IP67/ Metz RJ45 E-DAT IP67				
TPE	CAT9040640	(4x(2x0.15)C)C	10.5	12.5
Harting Han3A RJ45 (CAT6)/ Harting Han3A RJ45 (CAT6)				
TPE	CAT9040680	(4x(2x0.15)C)C	10.5	12.5
<b>Crossover</b>				
Hirose RJ45 (CAT6A)/ Hirose RJ45 (CAT6A)				
TPE	CAT9040620	(4x(2x0.15)C)C	10.5	12.5
Metz RJ45 E-DAT IP67/ Metz RJ45 E-DAT IP67				
TPE	CAT9040660	(4x(2x0.15)C)C	10.5	12.5
Harting Han3A RJ45 (CAT6)/ Harting Han3A RJ45 (CAT6)				
TPE	CAT9040700	(4x(2x0.15)C)C	10.5	12.5
<b>M12 x-coded</b>				
Telegärtner M12 x-coded (CAT6A)/ Telegärtner M12 x-coded (CAT6A)				
TPE	CAT9040720	(4x(2x0.15)C)C	10.5	12.5
Telegärtner M12 x-coded (CAT6A)/ open cable end				
TPE	CAT9040760	(4x(2x0.15)C)C	10.5	12.5

**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  
 Harnessing RJ45 at both ends ▶ TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT6A

\* Technical information on the cable quality:

PVC, oil-res. PUR PUR-ROBOT TPE  
Page 192 Page 200 Page 410 Page 204

Harnessed Ethernet cables, CAT6A, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 (CAT6A)				
PUR-ROBOT	CAT9641001	4x(2x0.15)C	10.5	10
TPE	CAT9541001	(4x(2x0.15)C)C	10.5	12.5
Harting RJ45 (CAT6A)/ Harting RJ45 (CAT6A)				
PUR-ROBOT	CAT9641002	4x(2x0.15)C	10.5	10
TPE	CAT9541002	(4x(2x0.15)C)C	10.5	12.5
Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 (CAT6A)				
PVC, oil-res.	CAT9341016	4x(2x0.20)C	10.0	12.5
PUR	CAT9441016	4x(2x0.20)C	10.0	12.5
PUR-ROBOT	CAT9641015	4x(2x0.15)C	10.5	10
TPE	CAT9541015	(4x(2x0.15)C)C	10.5	12.5
Telegärtner RJ45 (CAT6A)/ Telegärtner M12 x-coded				
PVC, oil-res.	CAT9341017	4x(2x0.20)C	10.0	12.5
PUR	CAT9441017	4x(2x0.20)C	10.0	12.5
PUR-ROBOT	CAT9641016	4x(2x0.15)C	10.5	10
TPE	CAT9541016	(4x(2x0.15)C)C	10.5	12.5
Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 angled (CAT6A)				
PVC, oil-res.	CAT9341018	4x(2x0.20)C	10.0	12.5
PUR	CAT9441018	4x(2x0.20)C	10.0	12.5
PUR-ROBOT	CAT9641017	4x(2x0.15)C	10.5	10
TPE	CAT9541017	(4x(2x0.15)C)C	10.5	12.5

**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  
 Harnessing RJ45 at both ends ▶ TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT6A

\* Technical information on the cable quality:

PVC, oil-res. PUR PUR-ROBOT TPE  
Page 192 Page 200 Page 410 Page 204

Harnessed Ethernet cables, CAT6A, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Phoenix Contact M12 x-coded (CAT6A)/ Phoenix Contact M12 x-coded (CAT6A)</b>				
PVC, oil-res.	CAT9341010	4x(2x0.20)C	10.0	12.5
PUR	CAT9441010	4x(2x0.20)C	10.0	12.5
PUR-ROBOT	CAT9641009	4x(2x0.15)C	10.5	10
TPE	CAT9541009	(4x(2x0.15)C)C	10.5	12.5
<b>Harting M12 x-coded Socket (CAT6A)/ Harting M12 x-coded Pin (CAT6A)</b>				
PVC, oil-res.	CAT9341019	4x(2x0.20)C	10.0	12.5
PUR	CAT9441019	4x(2x0.20)C	10.0	12.5

**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  
Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Ethernet cables | CAT7

\* Technical information on the cable quality:

PUR-ROBOT TPE  
Page 410 Page 204

Harnessed Ethernet cables, CAT7, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 (CAT6A)</b>				
PUR-ROBOT	CAT9651002	4x(2x0.15)C	10.5	10
TPE	CAT9551002	(4x(2x0.15)C)C	10.5	12.5
<b>Harting RJ45 (CAT6A)/ Harting RJ45 (CAT6A)</b>				
PUR-ROBOT	CAT9651003	4x(2x0.15)C	10.5	10
TPE	CAT9551003 <sup>1)</sup>	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 (CAT6A)</b>				
PUR-ROBOT	CAT9651004	4x(2x0.15)C	10.5	10
TPE	CAT9551004	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner RJ45 (CAT6A)/ Telegärtner RJ45 angled (CAT6A)</b>				
PUR-ROBOT	CAT9651005	4x(2x0.15)C	10.5	10
TPE	CAT9551005	(4x(2x0.15)C)C	10.5	12.5
<b>Phoenix Contact M12 x-coded (CAT6A)/ Phoenix Contact M12 x-coded (CAT6A)</b>				
PUR-ROBOT	CAT9651009	4x(2x0.15)C	10.5	10
TPE	CAT9551009	(4x(2x0.15)C)C	10.5	12.5
<b>Dätwyler Module PS-TERA (CAT7A)/ Dätwyler Connector PS-TERA (CAT7A)</b>				
PUR-ROBOT	CAT9651010	4x(2x0.15)C	10.5	10
TPE	CAT9551010	(4x(2x0.15)C)C	10.5	12.5
<b>Dätwyler Module PS-TERA (CAT7A)/ Dätwyler Connector PS-TERA (CAT7A)</b>				
PUR-ROBOT	CAT9651011	4x(2x0.15)C	10.5	10
TPE	CAT9551011	(4x(2x0.15)C)C	10.5	12.5

<sup>1)</sup> This cable must be stripped before the connector and covered with a shrink-on tube so that the patch plug can be fitted.

**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  
Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Industrial Ethernet moulded

\* Technical information on the cable quality:

PVC, oil-res. PUR  
Page 192 Page 200

Industrial Ethernet moulded, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>M8 cable socket/ M8 cable connector</b>				
PVC, oil-res.	MAT904125450	(4x0.25)C	6.5	12.5
PUR	MAT904125410	(4x0.25)C	6.5	12.5
<b>M8 cable connector/ M8 cable connector</b>				
PVC, oil-res.	MAT904125451	(4x0.25)C	6.5	12.5
PUR	MAT904125411	(4x0.25)C	6.5	12.5
<b>M8 angled socket/ open cable end</b>				
PVC, oil-res.	MAT904125452	(4x0.25)C	6.5	12.5
PUR	MAT904125412	(4x0.25)C	6.5	12.5
<b>M8 cable socket/ RJ45 straight</b>				
PVC, oil-res.	MAT904125453	(4x0.25)C	6.5	12.5
PUR	MAT904125413	(4x0.25)C	6.5	12.5
<b>M12 cable connector d-coded/ M12 cable connector d-coded</b>				
PVC, oil-res.	MAT904125454	(4x0.25)C	6.5	12.5
PUR	MAT904125414	(4x0.25)C	6.5	12.5
<b>M12 angled connector d-coded Pin/ open cable end</b>				
PVC, oil-res.	MAT904125455	(4x0.25)C	6.5	12.5
PUR	MAT904125415	(4x0.25)C	6.5	12.5
<b>M12 cable connector d-coded/ open cable end</b>				
PVC, oil-res.	MAT904125456	(4x0.25)C	6.5	12.5
PUR	MAT904125416	(4x0.25)C	6.5	12.5

Special production cables ► delivery time upon request  
**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  
 Harnessing RJ45 at both ends ► TIA56A  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Industrial Ethernet moulded

\* Technical information on the cable quality:

PVC, oil-res. PUR  
Page 192 Page 200

Industrial Ethernet moulded, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>M12 cable connector d-coded/ RJ45 straight</b>				
PVC, oil-res.	MAT904125457	(4x0.25)C	6.5	12.5
PUR	MAT904125417	(4x0.25)C	6.5	12.5
<b>M12 angled connector d-coded RJ45 straight</b>				
PVC, oil-res.	MAT904125458	(4x0.25)C	6.5	12.5
PUR	MAT904125418	(4x0.25)C	6.5	12.5
<b>M12 cable connector d-coded/ M8 cable connector</b>				
PVC, oil-res.	MAT904125459	(4x0.25)C	6.5	12.5
PUR	MAT904125419	(4x0.25)C	6.5	12.5
<b>RJ45 straight/ RJ45 straight</b>				
PVC, oil-res.	MAT904125460	(4x0.25)C	6.5	12.5
PUR	MAT904125420	(4x0.25)C	6.5	12.5
<b>RJ45 straight/ open cable end</b>				
PVC, oil-res.	MAT904125461	(4x0.25)C	6.5	12.5
PUR	MAT904125421	(4x0.25)C	6.5	12.5
<b>M12 cable socket d-coded/ M12 cable connector d-coded</b>				
PVC, oil-res.	MAT904125462	(4x0.25)C	6.5	12.5
PUR	MAT904125422	(4x0.25)C	6.5	12.5
<b>M12 cable socket d-coded/ M12 angled connector d-coded</b>				
PVC, oil-res.	MAT904125463	(4x0.25)C	6.5	12.5
PUR	MAT904125423	(4x0.25)C	6.5	12.5

Special production cables ► delivery time upon request  
**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  
 Harnessing RJ45 at both ends ► TIA56A  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed Profibus cables | PVC

\* Technical information on the cable quality:














**PVC, oil-res.**

Page 192

Harnessed Profibus cables, PVC, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
1   1	BUS9041004	(2x0.25)C	8.5	12.5
1   2	BUS9041001	(2x0.25)C	8.5	12.5
1   5	BUS9041011	(2x0.25)C	8.5	12.5
1   6	BUS9041006	(2x0.25)C	8.5	12.5
1   13	BUS9041005	(2x0.25)C	8.5	12.5
2   2	BUS9041002	(2x0.25)C	8.5	12.5
2   5	BUS9041013	(2x0.25)C	8.5	12.5
2   6	BUS9041007	(2x0.25)C	8.5	12.5
2   7	BUS9041054	(2x0.25)C	8.5	12.5
2   8	BUS9041059	(2x0.25)C	8.5	12.5
2   9	BUS9041062	(2x0.25)C	8.5	12.5
2   10	BUS9041055	(2x0.25)C	8.5	12.5
2   13	BUS9041003	(2x0.25)C	8.5	12.5
3   4	BUS9041066	(2x0.25)C	8.5	12.5
3   13	BUS9041064	(2x0.25)C	8.5	12.5
4   13	BUS9041065	(2x0.25)C	8.5	12.5
5   5	BUS9041014	(2x0.25)C	8.5	12.5
5   6	BUS9041010	(2x0.25)C	8.5	12.5
5   13	BUS9041012	(2x0.25)C	8.5	12.5
6   6	BUS9041009	(2x0.25)C	8.5	12.5
6   13	BUS9041008	(2x0.25)C	8.5	12.5
7   2	BUS9041053 <sup>1)</sup>	(2x0.25)C	8.5	12.5
7   13	BUS9041056	(2x0.25)C	8.5	12.5
8   2	BUS9041061 <sup>1)</sup>	(2x0.25)C	8.5	12.5
9   2	BUS9041060 <sup>1)</sup>	(2x0.25)C	8.5	12.5
9   13	BUS9041063	(2x0.25)C	8.5	12.5
10   2	BUS9041052 <sup>1)</sup>	(2x0.25)C	8.5	12.5
10   13	BUS9041057	(2x0.25)C	8.5	12.5
11   13	BUS9041058 <sup>1)</sup>	(2x0.25)C	8.5	12.5
12   2	BUS9041051 <sup>1)</sup>	(2x0.25)C	8.5	12.5

<sup>1)</sup>For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.

**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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

Connector 1	Connector 2	Connector 3	Connector 4	Connector 5
M12, 5 poles, Socket, straight	M12, 5 poles, Pin, straight	M12, 5 poles, Pin, angled	M12, 5 poles, Socket, angled	M12, 5 poles, Socket, angled
				
Connector 6	Connector 7	Connector 8	Connector 9	Connector 10
M12, 5 poles, Pin, angled	SUB-D, 9 poles, Pin, straight	SUB-D, 9 poles, Pin, end plug, 90°	SUB-D, 9 poles, Pin, 45°, IP67	SUB-D, 9 poles, Pin, end plug, 45°
				
Connector 11	Connector 12	Connector 13		
SUB-D, 9 poles, Socket/Pin, pass, angled 45°	SUB-D, 9 poles, Socket/Pin, pass, angled 90°	open cable end		
				

\* For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.



# Harnessed Profibus cables | PUR

\* Technical information on the cable quality:














**PUR**

Page 200

Harnessed Profibus cables, PUR, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
1   1	BUS9041104	(2x0.25)C	8.5	12.5
1   2	BUS9041101	(2x0.25)C	8.5	12.5
1   5	BUS9041111	(2x0.25)C	8.5	12.5
1   6	BUS9041106	(2x0.25)C	8.5	12.5
1   13	BUS9041105	(2x0.25)C	8.5	12.5
2   2	BUS9041102	(2x0.25)C	8.5	12.5
2   5	BUS9041113	(2x0.25)C	8.5	12.5
2   6	BUS9041107	(2x0.25)C	8.5	12.5
2   7	BUS9041154	(2x0.25)C	8.5	12.5
2   8	BUS9041159	(2x0.25)C	8.5	12.5
2   9	BUS9041162	(2x0.25)C	8.5	12.5
2   10	BUS9041155	(2x0.25)C	8.5	12.5
2   13	BUS9041103	(2x0.25)C	8.5	12.5
3   4	BUS9041166	(2x0.25)C	8.5	12.5
3   13	BUS9041164	(2x0.25)C	8.5	12.5
4   13	BUS9041165	(2x0.25)C	8.5	12.5
5   5	BUS9041114	(2x0.25)C	8.5	12.5
5   6	BUS9041110	(2x0.25)C	8.5	12.5
5   13	BUS9041112	(2x0.25)C	8.5	12.5
6   6	BUS9041109	(2x0.25)C	8.5	12.5
6   13	BUS9041108	(2x0.25)C	8.5	12.5
7   2	BUS9041153 <sup>1)</sup>	(2x0.25)C	8.5	12.5
7   13	BUS9041156	(2x0.25)C	8.5	12.5
8   2	BUS9041161 <sup>1)</sup>	(2x0.25)C	8.5	12.5
9   2	BUS9041160 <sup>1)</sup>	(2x0.25)C	8.5	12.5
9   13	BUS9041163	(2x0.25)C	8.5	12.5
10   2	BUS9041152 <sup>1)</sup>	(2x0.25)C	8.5	12.5
10   13	BUS9041157	(2x0.25)C	8.5	12.5
11   13	BUS9041158 <sup>1)</sup>	(2x0.25)C	8.5	12.5
12   2	BUS9041151 <sup>1)</sup>	(2x0.25)C	8.5	12.5

<sup>1)</sup>For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

Connector 1	Connector 2	Connector 3	Connector 4	Connector 5
M12, 5 poles, Socket, straight	M12, 5 poles, Pin, straight	M12, 5 poles, Pin, angled	M12, 5 poles, Socket, angled	M12, 5 poles, Socket, angled
				
Connector 6	Connector 7	Connector 8	Connector 9	Connector 10
M12, 5 poles, Pin, angled	SUB-D, 9 poles, Pin, straight	SUB-D, 9 poles, Pin, end plug, 90°	SUB-D, 9 poles, Pin, 45°, IP67	SUB-D, 9 poles, Pin, end plug, 45°
				
Connector 11	Connector 12	Connector 13		
SUB-D, 9 poles, Socket/Pin, pass, angled 45°	SUB-D, 9 poles, Socket/Pin, pass, angled 90°	open cable end		
				

\* For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.

# Harnessed Profibus cables | TPE

\* Technical information on the cable quality:

TPE

Page 204

Harnessed Profibus cables, TPE, to your required length				
Harnessing with connector combination	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
1   1	BUS9041204	(2x0.25)C	9.0	10
1   2	BUS9041201	(2x0.25)C	9.0	10
1   5	BUS9041211	(2x0.25)C	9.0	10
1   6	BUS9041206	(2x0.25)C	9.0	10
1   13	BUS9041205	(2x0.25)C	9.0	10
2   2	BUS9041202	(2x0.25)C	9.0	10
2   5	BUS9041213	(2x0.25)C	9.0	10
2   6	BUS9041207	(2x0.25)C	9.0	10
2   7	BUS9041254	(2x0.25)C	9.0	10
2   8	BUS9041259	(2x0.25)C	9.0	10
2   9	BUS9041262	(2x0.25)C	9.0	10
2   10	BUS9041255	(2x0.25)C	9.0	10
2   13	BUS9041203	(2x0.25)C	9.0	10
3   4	BUS9041266	(2x0.25)C	9.0	10
3   13	BUS9041264	(2x0.25)C	9.0	10
4   13	BUS9041265	(2x0.25)C	9.0	10
5   5	BUS9041214	(2x0.25)C	9.0	10
5   6	BUS9041210	(2x0.25)C	9.0	10
5   13	BUS9041212	(2x0.25)C	9.0	10
6   6	BUS9041209	(2x0.25)C	9.0	10
6   13	BUS9041208	(2x0.25)C	9.0	10
7   2	BUS9041253 <sup>1)</sup>	(2x0.25)C	9.0	10
7   13	BUS9041256	(2x0.25)C	9.0	10
8   2	BUS9041261 <sup>1)</sup>	(2x0.25)C	9.0	10
9   2	BUS9041260 <sup>1)</sup>	(2x0.25)C	9.0	10
9   13	BUS9041263	(2x0.25)C	9.0	10
10   2	BUS9041252 <sup>1)</sup>	(2x0.25)C	9.0	10
10   13	BUS9041257	(2x0.25)C	9.0	10
11   13	BUS9041258 <sup>1)</sup>	(2x0.25)C	9.0	10
12   2	BUS9041251 <sup>1)</sup>	(2x0.25)C	9.0	10

<sup>1)</sup>For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.

**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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

Connector 1	Connector 2	Connector 3	Connector 4	Connector 5
M12, 5 poles, Socket, straight	M12, 5 poles, Pin, straight	M12, 5 poles, Pin, angled	M12, 5 poles, Socket, angled	M12, 5 poles, Socket, angled



Connector 6	Connector 7	Connector 8	Connector 9	Connector 10
M12, 5 poles, Pin, angled	SUB-D, 9 poles, Pin, straight	SUB-D, 9 poles, Pin, end plug, 90°	SUB-D, 9 poles, Pin, 45°, IP67	SUB-D, 9 poles, Pin, end plug, 45°



Connector 11	Connector 12	Connector 13
SUB-D, 9 poles, Socket/Pin, pass, angled 45°	SUB-D, 9 poles, Socket/Pin, pass, angled 90°	open cable end



\* For connectors with IN and OUT connection, the connection is always made on the IN side when the cable is connected. Other configurations upon request.



## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b>	<b>PVC, oil-res.</b>	<b>iguPUR</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 188	Page 192	Page 196	Page 200	Page 410	Page 204

### Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
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#### Yamaichi RJ45 (Profinet)/ Yamaichi RJ45 (Profinet)



<b>PVC</b>	<b>CAT9161001</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361001</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261001</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461001</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661001</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561001</b>	(4x0.38)C	7.5	10

#### Harting Han3A RJ45 (Profinet)/ Harting Han3A RJ45 (Profinet)



<b>PVC</b>	<b>CAT9161002</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361002</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261002</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461002</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661002</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561002</b>	(4x0.38)C	7.5	10

#### Harting RJ45 (Profinet)/ Harting RJ45 (Profinet)



<b>PVC</b>	<b>CAT9161003</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361003</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261003</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461003</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661003</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561003</b>	(4x0.38)C	7.5	10

#### Telegärtner RJ45 (Profinet)/ Telegärtner RJ45 (Profinet)



<b>PVC</b>	<b>CAT9161004</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361004</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261004</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461004</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661004</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561004</b>	(4x0.38)C	7.5	10

**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

Harnessing **RJ45 at both ends** ▶ TIA56A

Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b>	<b>PVC, oil-res.</b>	<b>iguPUR</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 188	Page 192	Page 196	Page 200	Page 410	Page 204

### Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
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#### Telegärtner RJ45 (Profinet)/ Telegärtner RJ45 (Profinet)



<b>PVC</b>	<b>CAT9161005</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361005</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261005</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461005</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661005</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561005</b>	(4x0.38)C	7.5	10

#### Telegärtner RJ45 (Profinet)/ Telegärtner M12 x-coded (Profinet)



<b>PVC</b>	<b>CAT9161006</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361006</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261006</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461006</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661006</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561006</b>	(4x0.38)C	7.5	10

#### Telegärtner M12 x-coded (Profinet)/ Telegärtner M12 x-coded (Profinet)



<b>PVC</b>	<b>CAT9161007</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361007</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261007</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461007</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661007</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561007</b>	(4x0.38)C	7.5	10

#### Telegärtner RJ45 (Profinet)/ Binder M12 d-coded (Profinet)



<b>PVC</b>	<b>CAT9161008</b>	(4x0.34)C	7.0	15
<b>PVC, oil-res.</b>	<b>CAT9361008</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261008</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461008</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661008</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561008</b>	(4x0.38)C	7.5	10

**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

Harnessing **RJ45 at both ends** ▶ TIA56A

Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 188	<b>PVC, oil-res.</b> Page 192	<b>iguPUR</b> Page 196	<b>PUR</b> Page 200	<b>PUR-ROBOT</b> Page 410	<b>TPE</b> Page 204
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Telegärtner RJ45 (Profinet)/ Binder M12 d-coded angled (Profinet)</b>				
PVC	CAT9161009	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361009	(4x0.38)C	7.0	12.5
iguPUR	CAT9261009	(4x0.34)C	7.0	15
PUR	CAT9461009	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661009	(2x(2x0.34))C	8.5	10
TPE	CAT9561009	(4x0.38)C	7.5	10
<b>Phoenix Contact RJ45 (Profinet)/ Phoenix Contact RJ45 (Profinet)</b>				
PVC	CAT9161012	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361012	(4x0.38)C	7.0	12.5
iguPUR	CAT9261012	(4x0.34)C	7.0	15
PUR	CAT9461012	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661012	(2x(2x0.34))C	8.5	10
TPE	CAT9561012	(4x0.38)C	7.5	10
<b>Phoenix Contact M12 x-coded (Profinet)/Phoenix Contact M12 x-coded (Profinet)</b>				
PVC	CAT9161014	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361014	(4x0.38)C	7.0	12.5
iguPUR	CAT9261014	(4x0.34)C	7.0	15
PUR	CAT9461014	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661014	(2x(2x0.34))C	8.5	10
TPE	CAT9561014	(4x0.38)C	7.5	10
<b>Siemens RJ45 (Profinet)/ Siemens RJ45 (Profinet)</b>				
PVC	CAT9161015	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361015	(4x0.38)C	7.0	12.5
iguPUR	CAT9261015	(4x0.34)C	7.0	15
PUR	CAT9461015	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661015	(2x(2x0.34))C	8.5	10
TPE	CAT9561015	(4x0.38)C	7.5	10

**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  
 Harnessing **RJ45 at both ends** ▶ TIA56A  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 188	<b>PVC, oil-res.</b> Page 192	<b>iguPUR</b> Page 196	<b>PUR</b> Page 200	<b>PUR-ROBOT</b> Page 410	<b>TPE</b> Page 204
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>Siemens RJ45 (Profinet)/ Siemens RJ45 angled (Profinet)</b>				
PVC	CAT9161016	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361016	(4x0.38)C	7.0	12.5
iguPUR	CAT9261016	(4x0.34)C	7.0	15
PUR	CAT9461016	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661016	(2x(2x0.34))C	8.5	10
TPE	CAT9561016	(4x0.38)C	7.5	10
<b>Binder M12 cable connector d-coded/ Binder M12 cable connector d-coded</b>				
PVC	CAT9161017	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361017	(4x0.38)C	7.0	12.5
iguPUR	CAT9261017	(4x0.34)C	7.0	15
PUR	CAT9461017	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661017	(2x(2x0.34))C	8.5	10
TPE	CAT9561017	(4x0.38)C	7.5	10
<b>Binder cable connector M12 d-coded/ Binder cable socket M12 d-coded</b>				
PVC	CAT9161018	(4x0.34)C	7.0	15
PVC, oil-res.	CAT9361018	(4x0.38)C	7.0	12.5
iguPUR	CAT9261018	(4x0.34)C	7.0	15
PUR	CAT9461018	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661018	(2x(2x0.34))C	8.5	10
TPE	CAT9561018	(4x0.38)C	7.5	10

**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  
 Harnessing **RJ45 at both ends** ▶ TIA56A  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Industrial Profinet cables with moulded connectors

\* Technical information on the cable quality:

PVC, oil-res. PUR  
Page 192 Page 200

Industrial Profinet moulded, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>M8 cable socket/ M8 cable connector</b>				
PVC, oil-res.	MAT904125470	(4x0.38)C	7.0	12.5
PUR	MAT904125430	(4x0.38)C	7.0	12.5
<b>M8 cable connector/ M8 cable connector</b>				
PVC, oil-res.	MAT904125471	(4x0.38)C	7.0	12.5
PUR	MAT904125431	(4x0.38)C	7.0	12.5
<b>M8 angled socket/ open cable end</b>				
PVC, oil-res.	MAT904125472	(4x0.38)C	7.0	12.5
PUR	MAT904125432	(4x0.38)C	7.0	12.5
<b>M8 cable socket/ RJ45 straight</b>				
PVC, oil-res.	MAT904125473	(4x0.38)C	7.0	12.5
PUR	MAT904125433	(4x0.38)C	7.0	12.5
<b>M12 cable connector d-coded/ M12 cable connector d-coded</b>				
PVC, oil-res.	MAT904125474	(4x0.38)C	7.0	12.5
PUR	MAT904125434	(4x0.38)C	7.0	12.5
<b>M12 angled connector d-coded/ open cable end</b>				
PVC, oil-res.	MAT904125475	(4x0.38)C	7.0	12.5
PUR	MAT904125435	(4x0.38)C	7.0	12.5
<b>M12 cable connector d-coded/ open cable end</b>				
PVC, oil-res.	MAT904125476	(4x0.38)C	7.0	12.5
PUR	MAT904125436	(4x0.38)C	7.0	12.5

Special production cables ► delivery time upon request

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

Harnessing RJ45 at both ends ► TIA56A

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Industrial Profinet cables moulded

\* Technical information on the cable quality:

PVC, oil-res. PUR  
Page 192 Page 200

Industrial Profinet moulded, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]
<b>M12 cable connector d-coded/ RJ45 straight</b>				
PVC, oil-res.	MAT904125477	(4x0.38)C	7.0	12.5
PUR	MAT904125437	(4x0.38)C	7.0	12.5
<b>M12 angled connector d-coded RJ45 straight</b>				
PVC, oil-res.	MAT904125478	(4x0.38)C	7.0	12.5
PUR	MAT904125438	(4x0.38)C	7.0	12.5
<b>M12 cable connector d-coded/ M8 cable connector</b>				
PVC, oil-res.	MAT904125479	(4x0.38)C	7.0	12.5
PUR	MAT904125439	(4x0.38)C	7.0	12.5
<b>RJ45 straight/ RJ45 straight</b>				
PVC, oil-res.	MAT904125480	(4x0.38)C	7.0	12.5
PUR	MAT904125440	(4x0.38)C	7.0	12.5
<b>RJ45 straight/ open cable end</b>				
PVC, oil-res.	MAT904125481	(4x0.38)C	7.0	12.5
PUR	MAT904125441	(4x0.38)C	7.0	12.5
<b>M12 cable socket d-coded/ M12 cable connector d-coded</b>				
PVC, oil-res.	MAT904125482	(4x0.38)C	7.0	12.5
PUR	MAT904125442	(4x0.38)C	7.0	12.5
<b>M12 cable socket d-coded/ M12 cable connector d-coded</b>				
PVC, oil-res.	MAT904125483	(4x0.38)C	7.0	12.5
PUR	MAT904125443	(4x0.38)C	7.0	12.5

Special production cables ► delivery time upon request

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

Harnessing RJ45 at both ends ► TIA56A

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed Profinet cables with moulded connectors

\* Technical information on the cable quality:

<b>PVC</b>	<b>PVC, oil-res.</b>	<b>iguPUR</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 188	Page 192	Page 196	Page 200	Page 410	Page 204

Harnessed Profinet cables with moulded M12 connectors, in fixed lengths					
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]	Cable length [m]

M12 cable connector d-coded/  
M12 cable connector d-coded



PVC, oil-res.	BUS9041070	(4x0.38)C	7.0	12.5	3
PVC, oil-res.	BUS9041071	(4x0.38)C	7.0	12.5	5
PUR	BUS9041170	(4x0.38)C	7.0	12.5	3
PUR	BUS9041171	(4x0.38)C	7.0	12.5	5
TPE	BUS9041270	(4x0.38)C	7.5	10	3
TPE	BUS9041271	(4x0.38)C	7.5	10	5

M12 cable connector d-coded/  
open cable end



PVC, oil-res.	BUS9041072	(4x0.38)C	7.0	12.5	3
PVC, oil-res.	BUS9041073	(4x0.38)C	7.0	12.5	5
PUR	BUS9041172	(4x0.38)C	7.0	12.5	3
PUR	BUS9041173	(4x0.38)C	7.0	12.5	5
TPE	BUS9041272	(4x0.38)C	7.5	10	3
TPE	BUS9041273	(4x0.38)C	7.5	10	5

**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed DeviceNet cable with Binder M12 A-coded

\* Technical information on the cable quality:

<b>TPE</b>
Page 204

Harnessed DeviceNet cable, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Bend radius [x d]

Binder cable connector M12 A-coded/  
Binder cable socket M12 A-coded



TPE	CAT9581001 <b>New</b>	((2xAWG24)C+2xAWG22)C	7.0	10
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**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

Harnessing RJ45 at both ends ▶ TIA56A

Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

















igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



		igus® Part No.	Manufacturer	Cable diameter mm	Protection class	Number of contacts	Connection method	Bus type	Conductor cross section [mm <sup>2</sup> ]	Cable quality	matching chainflex® cables	Maximum cable diameter mm	Number of cores and conductor nominal cross section								
		MAT01717352	HARTING	4.5-9.0	IP20	8	Cutting clamps	CAT6	0.14-0.34	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C								
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C								
										TPE	CFBUS.049	8.5	(4x(2x0.15))C								
										PUR-Robot	CFROBOT8.049	8.5	4x(2x0.14)C								
		MAT01713662	HARTING	6.0-6.9	IP20	8	Hand tool needed	CAT6	0.09-0.25	PVC	CFBUS.PVC.049*	7.5	(4x(2x0.15))C								
										PUR	CFBUS.PUR.049*	7.5	(4x(2x0.15))C								
		MAT0176869	Phoenix Contact	4.5-8.0	IP20	8	Cutting clamps	CAT5e	0.14-0.25	PVC	CF888.045	7.5	(4x(2x0.15))C								
										PVC	CFBUS.PVC.045	7.5	(4x(2x0.15))C								
										iguPUR	CF898.045	7.5	(4x(2x0.15))C								
										PUR	CFBUS.PUR.045	7.5	(4x(2x0.15))C								
										TPE	CFBUS.045*	8.5	(4x(2x0.15))C								
										PUR-Robot	CFROBOT8.045*	8.5	4x(2x0.14)C								
		MAT01733149	Telegärtner	5.5-7.3	IP20	8	Hand tool needed	CAT6A CAT6	0.14-0.25	TPE	CFBUS.050*	10.5	4x(2x0.15)C)C								
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C								
		MAT01733150	Telegärtner	max. 7.0	IP20	-	-	-	-	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C								
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C								
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C								
										PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C								
		MAT0176370	Yamaichi	-	IP20	8	Hand tool needed	CAT6	0.14-0.25	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C								
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C								
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C								
		MAT0176371	Yamaichi	max. 7.5	IP20	-	-	-	-	PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C								
										MAT0176372	Yamaichi	-	-	-	-	-	-	-	-	-	-
												MAT01717477	WEIDMÜLLER	5.5-8.5	IP20	8	Cutting clamps	Cat.6 (CAT6A acc. to data sheet)	0.14-0.34	PVC	CFBUS.PVC.049
PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C																		
TPE	CFBUS.049	8.5	(4x(2x0.15))C																		
PUR-Robot	CFROBOT8.049	8.5	4x(2x0.14)C																		
		MAT01730294	Telegärtner	5.5-10.0	IP20	8	Cutting clamps	CAT6A	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C								
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C								
										TPE	CFBUS.050*	10.5	(4x(2x0.15))C)C								
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C								
		MAT0173509	HARTING	6.0-7.0	IP20	4	Cutting clamps	CAT5/ Profinet	0.14-0.34	PVC	CF888.060	7	(4x0.38)C								
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C								
										PVC	CFBUS.PVC.060	7	(4x0.38)C								
										iguPUR	CF898.060	7	(4x0.38)C								
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C								
										PUR	CFBUS.PUR.060	7	(4x0.38)C								
										TPE	CFBUS.040	7	(4x0.25)C								
										TPE	CFBUS.060*	7.5	(4x0.38)C								
										PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C								
										PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15))C)C								
PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15))C)C																		
TPE	CFBUS.052*	10.5	(4x(2x0.15))C)C																		
PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C																		
		MAT01733547	Dätwyler	max. 8.9	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15))C)C								
										PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15))C)C								
										TPE	CFBUS.052*	10.5	(4x(2x0.15))C)C								
										PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C								
		MAT01733548	Dätwyler	max. 6.3	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15))C)C								
										PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15))C)C								
										TPE	CFBUS.052*	10.5	(4x(2x0.15))C)C								
										PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C								
		MAT0179875	Binder	6.0-8.0	IP67	4	Screw clamps	CAT5/ Profinet	max. 0.75	PVC	CF888.060	7	(4x0.38)C								
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C								
										PVC	CFBUS.PVC.060	7	(4x0.38)C								
										iguPUR	CF898.060	7	(4x0.38)C								
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C								
										PUR	CFBUS.PUR.060	7	(4x0.38)C								
										TPE	CFBUS.040	7	(4x0.25)C								
										TPE	CFBUS.060	7.5	(4x0.38)C								
										PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C								

All connectors are downward compatible. Please note the outer diameter of the cable and the conductor cross section.

\* According to data sheet, the connectors do not match these cables but the cables can nevertheless be manually modified/tapered.

igus® Part No.		Manufacturer	Cable diameter mm	Protection class	Number of contacts	Connection method	Bus type	Conductor cross section [mm²]	Cable quality	matching chainflex® cables	Maximum cable diameter mm	Number of cores and conductor nominal cross section	
		Series 615 connector, socket	TE/Intercontec	4.5-10.5 (plastic clamp ring) 4.5-12mm (metal clamp ring)	IP67	12	Hand tool needed	CAT5e/Profinet	0.05-0.75	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C										
		615 Coupling	TE/Intercontec	4.5-10.5 (plastic clamp ring) 4.5-12mm (metal clamp ring)	IP67	12	Hand tool needed	CAT5e/Profinet	0.05-0.75	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C										
		MAT01733199	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/Ethernet	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C
										TPE	CFBUS.050*	10.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
		MAT01733200	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/Profinet	0.25-0.5	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060	8.5	(2x(2x0.34))C										
		MAT01734849	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/Ethernet	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C
										TPE	CFBUS.050*	10.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
		MAT01735081	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/Profinet	0.25-0.5	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060	8.5	(2x(2x0.34))C										
		MAT01716619	Siemens	6.5-6.5	IP20	4	Cutting clamps	CAT5/Profinet	0.14-0.38	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060*	7.5	(4x0.38)C
		MAT01721074	Siemens	8.0-8.0	IP20	8	Cutting clamps	CAT6	0.14-0.25	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C

All connectors are downward compatible. Please note the outer diameter of the cable and the conductor cross section.

\* According to data sheet, the connectors do not match these cables but the cables can nevertheless be manually modified/tapered.







# FOC

## Harnessed Fibre Optic Cables



# chainflex® readycable®

	Material	Page
Harnessed Fibre Optic Cables for video		
 FOC 2 fibres	PVC/TPE	520
 FOC 4 fibres	TPE	521
Harnessed Fibre Optic Cables for network		
 FOC 6 fibres	TPE	522
 FOC 12 fibres	TPE	522



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



## Harnessed Fibre Optic Cables for video

\* Technical information on the cable quality:

**PVC** From page 222  
**TPE** From page 228  
**TPE-ROBOT** From page 410

Harnessed Fibre Optic Cables, glass-fibre, 2 fibres, to your required length						
Cable quality	Part No.	chainflex® cable	No. of fibres	Fibre diameter	Ø	Bend radius
					[mm]	[x d]

### ST/ST Connector

Pre-harnessed at both ends



PVC	LWL99230001	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230002	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5
TPE H*	LWL90412394	CFLG.2LB.50/125	2	50/125	8.5	5
TPE H*	LWL90412397	CFLG.2LB.62.5/125	2	62.5/125	8.5	5
TPE H*	LWL9040086	CFLG.4LB.50/125	4	50/125	9.0	5
TPE H*	LWL9040085	CFLG.4LB.62.5/125	4	62.5/125	9.0	5
TPE Robot	LWL90422492	CFROBOT5.501	2	50/125	8.5	10
TPE Robot	LWL90422495	CFROBOT5.500	2	62.5/125	8.5	10

### ST/LC Connector

Pre-harnessed at both ends



PVC	LWL99230007	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230008	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5
TPE H*	LWL90412393 <sup>1)</sup>	CFLG.2LB.50/125	2	50/125	8.5	5
TPE H*	LWL90412396 <sup>1)</sup>	CFLG.2LB.62.5/125	2	62.5/125	8.5	5
TPE H*	LWL9040093	CFLG.4LB.50/125	4	50/125	9.0	5
TPE H*	LWL9040094	CFLG.4LB.62.5/125	4	62.5/125	9.0	5
TPE Robot	LWL90422491 <sup>1)</sup>	CFROBOT5.501	2	50/125	8.5	10
TPE Robot	LWL90422494	CFROBOT5.500	2	62.5/125	8.5	10

### LC/LC Connector

Pre-harnessed at both ends



PVC	LWL99230005	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230006	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5
TPE H*	LWL90412395	CFLG.2LB.50/125	2	50/125	8.5	5
TPE H*	LWL90412398	CFLG.2LB.62.5/125	2	62.5/125	8.5	5
TPE H*	LWL90425050	CFLG.4LB.50/125	4	50/125	9.0	5
TPE H*	LWL9040092	CFLG.4LB.62.5/125	4	62.5/125	9.0	5
TPE Robot	LWL90422493	CFROBOT5.501	2	50/125	8.5	10
TPE Robot	LWL90422496	CFROBOT5.500	2	62.5/125	8.5	10

<sup>1)</sup>When installing this cable as an extension, 2 ST connectors (MAT0176314) must also be ordered.

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed Fibre Optic Cables for video

\* Technical information on the cable quality:

**PVC** From page 222  
**TPE** From page 228  
**TPE-ROBOT** From page 410

Harnessed Fibre Optic Cables, glass-fibre, 2 fibres, to your required length						
Cable quality	Part No.	chainflex® cable	No. of fibres	Fibre diameter	Ø	Bend radius
					[mm]	[x d]

### SC/SC Connector

Pre-harnessed at both ends



PVC	LWL99230003	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230004	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5

### ST/SC Connector

Pre-harnessed at both ends



PVC	LWL99230009	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230010	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5

### LC/SC Connector

Pre-harnessed at both ends



PVC	LWL99230011	CFLG88.2.50/125	2	50/125	7.0	7.5
PVC	LWL99230012	CFLG88.2.62.5/125	2	62.5/125	7.0	7.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

### Harnessed with these connectors



### Tube sinking

#### Tube sinking



LWL90428935

Closed corrugated tube to feed in Fibre Optic Cables  
(shown cut open)



## Harnessed Fibre Optic Cables for network | TPE

\* Technical information on the cable quality:

**TPE**

From page 228

Harnessed Fibre Optic Cables, glass-fibre, 6/12 fibres, to your required length					
Cable quality	Part No.	No. of fibres	Fibre diameter	Ø	Bend radius
				[mm]	[x d]

### ST/ST Connector



Pre-harnessed at both ends

TPE H*	LWL9040091	6	50/125	11.0	5
TPE H*	LWL9040090	6	62.5/125	11.0	5
TPE H*	LWL90428938	12	50/125	14.0	5
TPE H*	LWL90428937	12	62.5/125	14.0	5

### LC/LC Connector



Pre-harnessed at both ends

TPE H*	LWL90428946	6	50/125	11.0	5
TPE H*	LWL90428945	6	62.5/125	11.0	5
TPE H*	LWL90428942	12	50/125	14.0	5
TPE H*	LWL90428941	12	62.5/125	14.0	5

### SC/SC Connector



Pre-harnessed at both ends

TPE H*	LWL90428944	6	50/125	11.0	5
TPE H*	LWL90428943	6	62.5/125	11.0	5
TPE H*	LWL90428940	12	50/125	14.0	5
TPE H*	LWL90428939	12	62.5/125	14.0	5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example images. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

### Harnessed with these connectors



### Tube sinking



LWL90428935

Closed corrugated tube to feed in Fibre Optic Cables (shown cut open)

## Harnessed Fibre Optic Cables for network | TPE

\* Technical information on the cable quality:

**TPE**

From page 228

Harnessed Fibre Optic Cables, glass-fibre, 6/12 fibres, to your required length					
Cable quality	Part No.	No. of fibres	Fibre diameter	Ø	Bend radius
				[mm]	[x d]

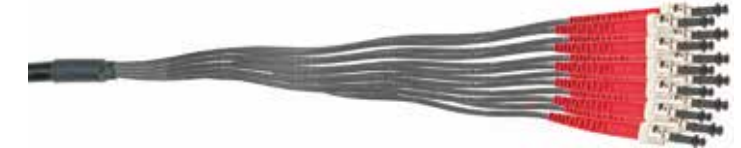
### ST/ST Connector



Pre-harnessed at both ends

	LWL9040030	6	50/125	10.0	10
	LWL9040045	6	62.5/125	10.0	10
incl. conversion to SC	LWL9040032	6	50/125	10.0	10
incl. conversion to SC	LWL9040047	6	62.5/125	10.0	10
incl. conversion to LC	LWL9040031	6	50/125	10.0	10
incl. conversion to LC	LWL9040046	6	62.5/125	10.0	10

### ST/ST Connector



Pre-harnessed at both ends

	LWL9040060	12	50/125	10.0	10
	LWL9040075	12	62.5/125	10.0	10
incl. conversion to SC	LWL9040062	12	50/125	10.0	10
incl. conversion to SC	LWL9040077	12	62.5/125	10.0	10
incl. conversion to LC	LWL9040061	12	50/125	10.0	10
incl. conversion to LC	LWL9040076	12	62.5/125	10.0	10

**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

### Harnessed with these connectors



### Tube sinking

### Tube sinking



LWL90428936

Closed corrugated tube to feed in Fibre Optic Cables (shown cut open)

### Fibre identification

Part No.	Fibre identification	Hollow core identification
CFLG.6G.62,5/125.TC	ecru, yellow, green, red, violet, blue	orange
CFLG.6G.50/125.TC	ecru, yellow, green, red, violet, blue	blue
CFLG.12G.62,5/125.TC	ecru, yellow, green, red, violet, blue, light blue, grey, brown, black, orange, pink	orange
CFLG.12G.50/125.TC	ecru, yellow, green, red, violet, blue, light blue, grey, brown, black, orange, pink	blue

# CF.INI

Sensor/actuator



## chainflex® readycable®



Cable type		Jacket	Page
<b>Sensor/actuator CF9 - CF.INI (minimum bend radius 5 x d)</b>			
		Connection cable M12 x 1, straight/angled	TPE 527
		Linking cable M12 x 1, straight/angled	TPE 527
		Connection cable M12 x 1, straight/angled, LED	TPE 529
		Connection cable M8 x 1, straight/angled	TPE 531
		Linking cable M8 x 1, straight/angled	TPE 531
		Connection cable M8 x 1, angled, LED	TPE 533
<b>Sensor/actuator CF10 - CF.INI (minimum bend radius 5 x d) 360° shielded</b>			
		Connection cable M12 x 1, straight/angled	TPE 535
		Linking cable M12 x 1, straight/angled	TPE 535
<b>Sensor/actuator CF98 - CF.INI (minimum bend radius 4 x d)</b>			
		Connection cable M12 x 1, straight/angled	TPE 537
		Linking cable M12 x 1, straight/angled	TPE 537
		Connection cable M8 x 1, straight/angled	TPE 539
		Linking cable M8 x 1, straight/angled	TPE 539
<b>chainflex® cables for actuator/sensor distribution box</b>			
		Connection cable M23, straight	TPE 540
		Linking cable M23, straight/angled	TPE 540
		Connection cable M12, straight	TPE 541



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





# Harnessed sensor/actuator cables

## Connection and Linking cables M12 x 1 Bend radius, e-chain®: minimum 5 x d

### Electrical information

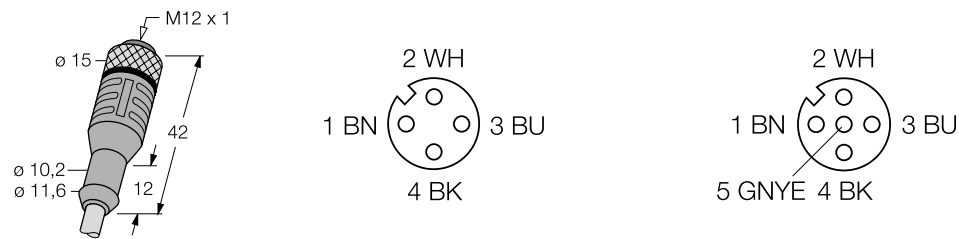
Number of poles	5-pole	4-pole
Ampacity	4A	4A
Rated voltage	60V	250V
Insulating resistance	≥ 10 <sup>9</sup> Ω	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ	≤ 5mΩ
Pollution degree	3/2	3/2
Ambient temperature	-35°C up to +105°C	-35°C up to +105°C
Protection class	IP69K, in screwed state	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles	max. 100 insertion cycles

### Technical data

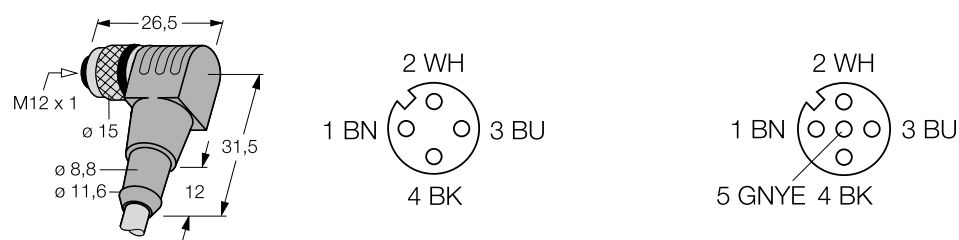
Design	Coupling	Connector
Connector	Coupling, M12 x 1	Connector, M12 x 1
Handle base	Plastic, PP, black	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated	Metal, CuZn, nickel-plated
Contact base	Plastic, PP, black	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)	

#### Harnessed with these connectors

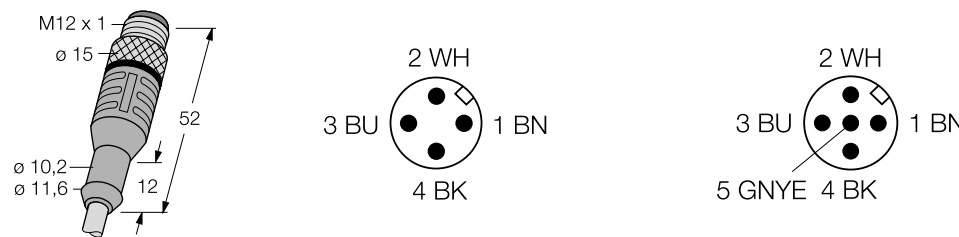
#### Cable socket M12-BG



#### Angled socket M12-BW



#### Cable connector M12-SG



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
------	----------	------------------------------------------------------------------------	--------	------------------

#### Connection cable M12

#### Cable socket M12/ open cable end



CF.INI-P4-M12-BG-3	MAT9043700	4x0.34	5.0	3
CF.INI-P4-M12-BG-5	MAT9043701	4x0.34	5.0	5
CF.INI-P4-M12-BG-7	MAT9043702	4x0.34	5.0	7
CF.INI-P4-M12-BG-10	MAT9043703	4x0.34	5.0	10
CF.INI-P4-M12-BG-15	MAT9049426	4x0.34	5.0	15
CF.INI-P5-M12-BG-3	MAT9043737	5x0.34	5.5	3
CF.INI-P5-M12-BG-5	MAT9043738	5x0.34	5.5	5
CF.INI-P5-M12-BG-7	MAT9043739	5x0.34	5.5	7
CF.INI-P5-M12-BG-10	MAT9043740	5x0.34	5.5	10
CF.INI-P5-M12-BG-15	MAT90410077	5x0.34	5.5	15

#### Angled socket M21/ open cable end



CF.INI-P4-M12-BW-3	MAT9043704	4x0.34	5.0	3
CF.INI-P4-M12-BW-5	MAT9043705	4x0.34	5.0	5
CF.INI-P4-M12-BW-7	MAT9043706	4x0.34	5.0	7
CF.INI-P4-M12-BW-10	MAT9043707	4x0.34	5.0	10
CF.INI-P4-M12-BW-15	MAT9049430	4x0.34	5.0	15
CF.INI-P5-M12-BW-3	MAT9043742	5x0.34	5.5	3
CF.INI-P5-M12-BW-5	MAT9043743	5x0.34	5.5	5
CF.INI-P5-M12-BW-7	MAT9043744	5x0.34	5.5	7
CF.INI-P5-M12-BW-10	MAT9043745	5x0.34	5.5	10
CF.INI-P5-M12-BW-15	MAT90410078	5x0.34	5.5	15

#### Linking cable M12

#### Cable socket M12/ cable connector M12



CF.INI-P4-M12-BG/M12-SG-2	MAT90410312 <sup>1)</sup>	4x0.34	5.0	2
CF.INI-P4-M12-BG/M12-SG-5	MAT90410313 <sup>1)</sup>	4x0.34	5.0	5
CF.INI-P4-M12-BG/M12-SG-10	MAT90410314 <sup>1)</sup>	4x0.34	5.0	10
CF.INI-P5-M12-BG/M12-SG-2	MAT90410339 <sup>1)</sup>	5x0.34	5.5	2
CF.INI-P5-M12-BG/M12-SG-5	MAT90410340 <sup>1)</sup>	5x0.34	5.5	5
CF.INI-P5-M12-BG/M12-SG-10	MAT90410341 <sup>1)</sup>	5x0.34	5.5	10

#### Cable socket M12/ cable connector M12



CF.INI-P4-M12-BW/M12-SG-2	MAT90410315 <sup>1)</sup>	4x0.34	5.0	2
CF.INI-P4-M12-BW/M12-SG-5	MAT90410316 <sup>1)</sup>	4x0.34	5.0	5
CF.INI-P4-M12-BW/M12-SG-10	MAT90410317 <sup>1)</sup>	4x0.34	5.0	10
CF.INI-P5-M12-BW/M12-SG-2	MAT90410342 <sup>1)</sup>	5x0.34	5.5	2
CF.INI-P5-M12-BW/M12-SG-5	MAT90410343 <sup>1)</sup>	5x0.34	5.5	5
CF.INI-P5-M12-BW/M12-SG-10	MAT90410344 <sup>1)</sup>	5x0.34	5.5	10

<sup>1)</sup>Delivery time upon request

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed sensor/actuator cables

## Connection cable with LED M12 x 1: Bend radius, e-chain®: minimum 5 x d

### Electrical information

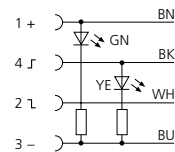
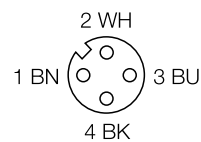
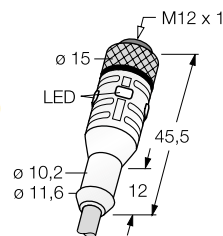
Number of poles	<b>4-pole</b>
Ampacity	4A
Rated voltage	30V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ
Pollution degree	3/2
Operating voltage display	LED green
Switching state display	LED yellow/yellow
Switching function	pnp
Ambient temperature	-35°C up to +105°C
Protection class	IP66, in screwed state
Mechanical service life	max. 100 insertion cycles

### Technical data

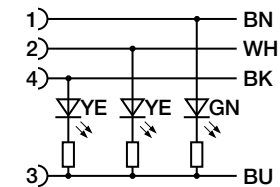
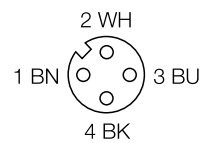
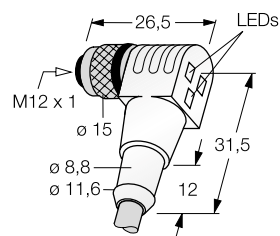
Design	<b>Coupling</b>
Connector	Coupling, M12 x 1
Handle base	Plastic, TPU, transparent
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, PA6GF, transparent
Contacts	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)

### Harnessed with these connectors

#### Cable socket with LED M12-BGL



#### Angled socket with LED M12-BWL



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M12</b>				

#### Cable socket M12 with LED/ open cable end



CF.INI-P4-M12-BGL2-3	MAT9043708	4x0.34	5.0	3
CF.INI-P4-M12-BGL2-5	MAT9043709	4x0.34	5.0	5
CF.INI-P4-M12-BGL2-7	MAT9043710	4x0.34	5.0	7
CF.INI-P4-M12-BGL2-10	MAT9043711	4x0.34	5.0	10
CF.INI-P4-M12-BGL2-15	MAT90410087	4x0.34	5.0	15

#### Angled socket M12 with LED/ open cable end



CF.INI-P4-M12-BWL3-3	MAT9043712	4x0.34	5.0	3
CF.INI-P4-M12-BWL3-5	MAT9043713	4x0.34	5.0	5
CF.INI-P4-M12-BWL3-7	MAT9043714	4x0.34	5.0	7
CF.INI-P4-M12-BWL3-10	MAT9043715	4x0.34	5.0	10
CF.INI-P4-M12-BWL3-15	MAT90410088	4x0.34	5.0	15

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed sensor/actuator cables

## Connection and linking cables M8 x 1: Bend radius, e-chain®: minimum 5 x d

### Electrical information

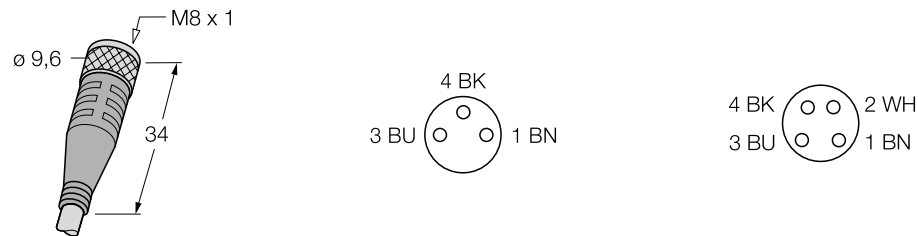
	3-pole	4-pole
Number of poles	3	4
Ampacity	4A	4A
Rated voltage	60V	30V
Insulating resistance	≥ 10 <sup>9</sup> Ω	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ	≤ 5mΩ
Pollution degree	3/2	3/2
Ambient temperature	-35°C up to +105°C	-35°C up to +105°C
Protection class	IP69K, in screwed state	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles	max. 100 insertion cycles

### Technical data

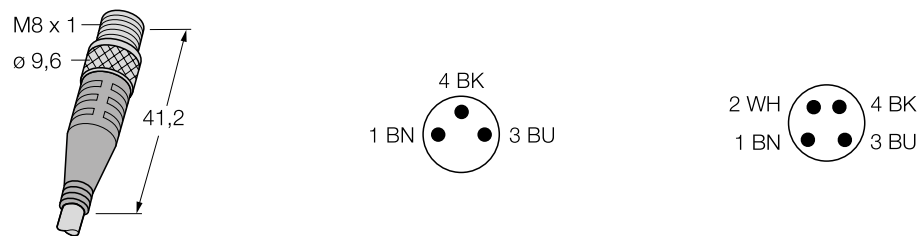
	Coupling	Connector
Design	Coupling, M8 x 1	Connector, M8 x 1
Connector	Plastic, PP, black	Plastic, PP, black
Handle base	Plastic, PP, black	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated	Metal, CuZn, nickel-plated
Contact base	Plastic, PP, black	Plastic, PP, black
Contacts	Metal, CuZn, gold-plated	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)	Metal, CuZn, gold-plated

#### Harnessed with these connectors

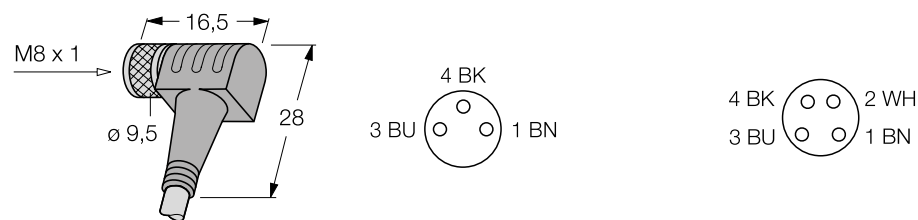
#### Cable socket M8-BG



#### Cable connector M8-SG



#### Angled socket M8-BW



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M8</b>				

#### Cable socket M8/ open cable end



CF.INI-P3-M8-BG-3	MAT9043716	3x0.25	4.5	3
CF.INI-P3-M8-BG-5	MAT9043717	3x0.25	4.5	5
CF.INI-P3-M8-BG-7	MAT9043718	3x0.25	4.5	7
CF.INI-P3-M8-BG-10	MAT9043719	3x0.25	4.5	10
CF.INI-P3-M8-BG-15	MAT9049416	3x0.25	4.5	15
CF.INI-P4-M8-BG-3	MAT9043728	4x0.34	5.0	3
CF.INI-P4-M8-BG-5	MAT9043729	4x0.34	5.0	5
CF.INI-P4-M8-BG-7	MAT9043730	4x0.34	5.0	7
CF.INI-P4-M8-BG-10	MAT9043731	4x0.34	5.0	10
CF.INI-P4-M8-BG-15	MAT9049466	4x0.34	5.0	15

#### Angled socket M8/ open cable end



CF.INI-P3-M8-BW-3	MAT9043724	3x0.25	4.5	3
CF.INI-P3-M8-BW-5	MAT9043725	3x0.25	4.5	5
CF.INI-P3-M8-BW-7	MAT9043726	3x0.25	4.5	7
CF.INI-P3-M8-BW-10	MAT9043727	3x0.25	4.5	10
CF.INI-P3-M8-BW-15	MAT9049419	3x0.25	4.5	15
CF.INI-P4-M8-BW-3	MAT9043732	4x0.34	5.0	3
CF.INI-P4-M8-BW-5	MAT9043733	4x0.34	5.0	5
CF.INI-P4-M8-BW-7	MAT9043734	4x0.34	5.0	7
CF.INI-P4-M8-BW-10	MAT9043735	4x0.34	5.0	10
CF.INI-P4-M8-BW-15	MAT9049467	4x0.34	5.0	15

#### Linking cable M8

#### M8 cable socket/ M8 cable connector



CF.INI-P3-M8-BG/M8-SG-2	MAT90410324 <sup>1)</sup>	3x0.25	4.5	2
CF.INI-P3-M8-BG/M8-SG-5	MAT90410325 <sup>1)</sup>	3x0.25	4.5	5
CF.INI-P3-M8-BG/M8-SG-10	MAT90410326 <sup>1)</sup>	3x0.25	4.5	10
CF.INI-P4-M8-BG/M8-SG-2	MAT90410333 <sup>1)</sup>	4x0.34	5.0	2
CF.INI-P4-M8-BG/M8-SG-5	MAT90410334 <sup>1)</sup>	4x0.34	5.0	5
CF.INI-P4-M8-BG/M8-SG-10	MAT90410335 <sup>1)</sup>	4x0.34	5.0	10

#### Angled socket M8/ cable connector M8



CF.INI-P3-M8-BW/M8-SG-2	MAT90410330 <sup>1)</sup>	3x0.25	4.5	2
CF.INI-P3-M8-BW/M8-SG-5	MAT90410331 <sup>1)</sup>	3x0.25	4.5	5
CF.INI-P3-M8-BW/M8-SG-10	MAT90410332 <sup>1)</sup>	3x0.25	4.5	10
CF.INI-P4-M8-BW/M8-SG-2	MAT90410336 <sup>1)</sup>	4x0.34	5.0	2
CF.INI-P4-M8-BW/M8-SG-5	MAT90410337 <sup>1)</sup>	4x0.34	5.0	5
CF.INI-P4-M8-BW/M8-SG-10	MAT90410338 <sup>1)</sup>	4x0.34	5.0	10

<sup>1)</sup>Delivery time upon request

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed sensor/actuator cables

Connection cables with LED M8 x 1:  
Bend radius, e-chain®: minimum 5 x d

### Electrical information

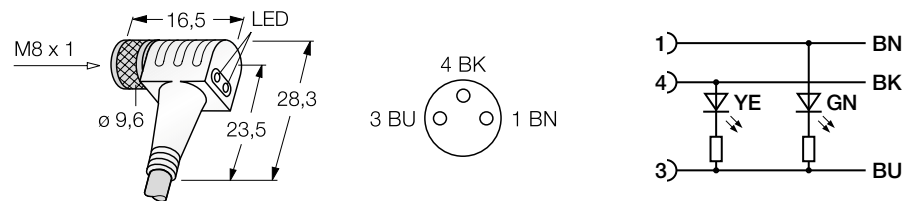
Number of poles	<b>3-pole</b>
Ampacity	4A
Rated voltage	30V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ
Pollution degree	3/2
Operating voltage display	LED green
Switching state display	LED yellow/yellow
Switching function	pnp
Ambient temperature	-35°C up to +105°C
Protection class	IP66, in screwed state
Mechanical service life	max. 100 insertion cycles

### Technical data

Design	<b>Coupling</b>
Connector	Coupling, M8 x 1
Handle base	Plastic, TPU, transparent
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, PA6GF, black
Contacts	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)

### Harnessed with these connectors

Angled socket  
with LED  
M8-BWL



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M8</b>				

Angled socket M8 with LED/  
open cable end



CF.INI-P3-M8-BWL2-3	MAT9043720	3x0.25	4.5	3
CF.INI-P3-M8-BWL2-5	MAT9043721	3x0.25	4.5	5
CF.INI-P3-M8-BWL2-7	MAT9043722	3x0.25	4.5	7
CF.INI-P3-M8-BWL2-10	MAT9043723	3x0.25	4.5	10
CF.INI-P3-M8-BWL2-15	MAT90410196	3x0.25	4.5	15

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed sensor/actuator cables

Connection and linking cables 360° shielded, M12 x 1:  
Bend radius, e-chain®: minimum 5 x d

## Electrical information

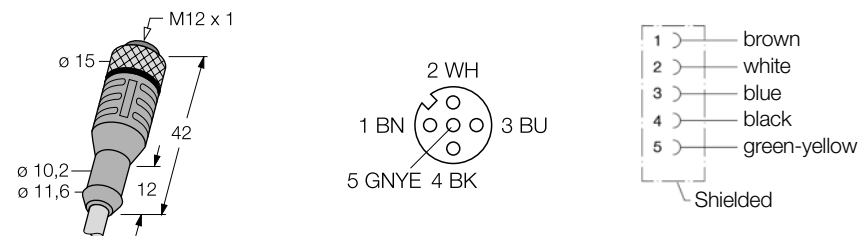
Number of poles	<b>5-pole (4-pole + PE)</b>
Ampacity	4A
Rated voltage	60V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ
Pollution degree	3/2
Ambient temperature	-35°C up to +105°C
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles

## Technical data

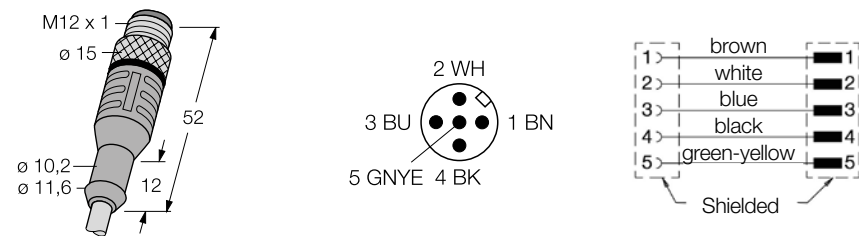
Design	<b>Coupling</b>
Connector	Coupling, M12 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, PP, black
Contacts	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)

### Harnessed with these connectors

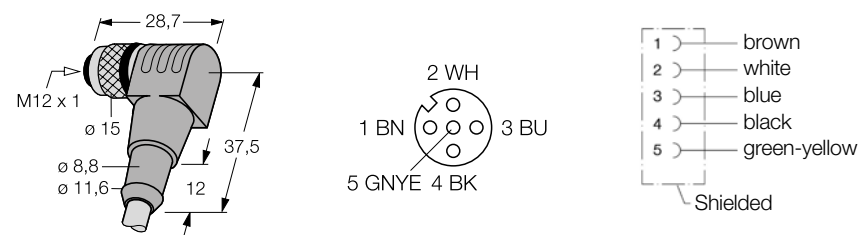
#### Cable socket M12-BG



#### Cable connector M12-SG



#### Angled socket M12-BW



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M12</b>				

#### Cable socket M12/ open cable end



CF10.INI-P5-C-M12-BG-3	MAT90424072	(5x0.34)C	7.0	3
CF10.INI-P5-C-M12-BG-5	MAT90424073	(5x0.34)C	7.0	5
CF10.INI-P5-C-M12-BG-7	MAT90424074	(5x0.34)C	7.0	7
CF10.INI-P5-C-M12-BG-7	MAT90424075	(5x0.34)C	7.0	10
CF10.INI-P5-C-M12-BG-15	MAT90424076	(5x0.34)C	7.0	15

#### Angled socket M21/ open cable end



CF10.INI-P5-C-M12-BW-3	MAT90424077	(5x0.34)C	7.0	3
CF10.INI-P5-C-M12-BW-5	MAT90424078	(5x0.34)C	7.0	5
CF10.INI-P5-C-M12-BW-7	MAT90424079	(5x0.34)C	7.0	7
CF10.INI-P5-C-M12-BW-10	MAT90424080	(5x0.34)C	7.0	10
CF10.INI-P5-C-M12-BW-15	MAT90424081	(5x0.34)C	7.0	15

### Linking cable M12

#### Cable socket M12/ cable connector M12



CF10.INI-P5-C-M12-BG/M12-SG-2	MAT90424082 <sup>1)</sup>	(5x0.34)C	7.0	2
CF10.INI-P5-C-M12-BG/M12-SG-5	MAT90424083 <sup>1)</sup>	(5x0.34)C	7.0	5
CF10.INI-P5-C-M12-BG/M12-SG-10	MAT90424084 <sup>1)</sup>	(5x0.34)C	7.0	10

#### Cable socket M12/ cable connector M12



CF10.INI-P5-C-M12-BW/M12-SG-2	MAT90424085 <sup>1)</sup>	(5x0.34)C	7.0	2
CF10.INI-P5-C-M12-BW/M12-SG-5	MAT90424086 <sup>1)</sup>	(5x0.34)C	7.0	5
CF10.INI-P5-C-M12-BW/M12-SG-10	MAT90424087 <sup>1)</sup>	(5x0.34)C	7.0	10

<sup>1)</sup>Delivery time upon request

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed sensor/actuator cables

## Connection and linking cables M12 x 1: Bend radius, e-chain®: minimum 4 x d

### Electrical information

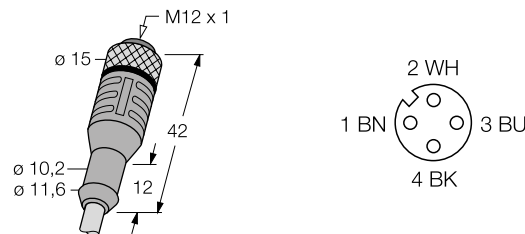
Number of poles	<b>4-pole</b>
Ampacity	4A
Rated voltage	250V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ
Pollution degree	3/2
Ambient temperature	-35°C up to +105°C
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles

### Technical data

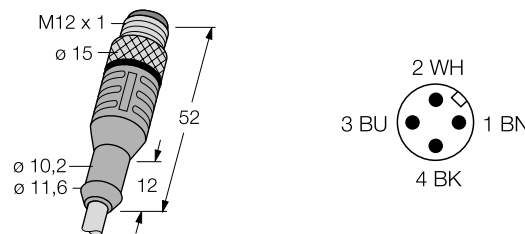
Design	<b>Coupling</b>	<b>Connector</b>
Connector	Coupling, M12 x 1	Connector, M12x1
Handle base	Plastic, PP, black	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)	

### Harnessed with these connectors

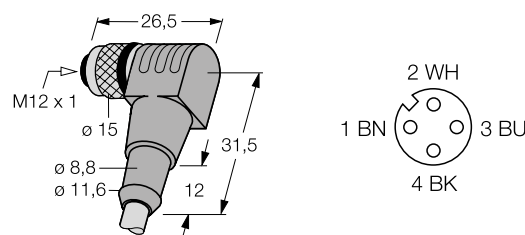
#### Cable socket M12-BG



#### Cable connector M12-SG



#### Angled socket M12-BW



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M12</b>				

#### Cable socket M12/ open cable end



CF98.INI-P4-M12-BG-3	MAT90410235 <sup>1)</sup>	4x0.34	6.0	3
CF98.INI-P4-M12-BG-5	MAT90410236 <sup>1)</sup>	4x0.34	6.0	5
CF98.INI-P4-M12-BG-7	MAT90410237 <sup>1)</sup>	4x0.34	6.0	7
CF98.INI-P4-M12-BG-10	MAT90410238 <sup>1)</sup>	4x0.34	6.0	10
CF98.INI-P4-M12-BG-15	MAT90410239 <sup>1)</sup>	4x0.34	6.0	15

#### Angled socket M21/ open cable end



CF98.INI-P4-M12-BW-3	MAT90410240 <sup>1)</sup>	4x0.34	6.0	3
CF98.INI-P4-M12-BW-5	MAT90410241 <sup>1)</sup>	4x0.34	6.0	5
CF98.INI-P4-M12-BW-7	MAT90410242 <sup>1)</sup>	4x0.34	6.0	7
CF98.INI-P4-M12-BW-10	MAT90410243 <sup>1)</sup>	4x0.34	6.0	10
CF98.INI-P4-M12-BW-15	MAT90410244 <sup>1)</sup>	4x0.34	6.0	15

### Linking cable M12

#### Cable socket M12/ cable connector M12



CF98.INI-P4-M12-BG/M12-SG-2	MAT90410300 <sup>1)</sup>	4x0.34	6.0	2
CF98.INI-P4-M12-BG/M12-SG-5	MAT90410301 <sup>1)</sup>	4x0.34	6.0	5
CF98.INI-P4-M12-BG/M12-SG-10	MAT90410302 <sup>1)</sup>	4x0.34	6.0	10

#### Cable socket M12/ cable connector M12



CF98.INI-P4-M12-BW/M12-SG-2	MAT90410303 <sup>1)</sup>	4x0.34	6.0	2
CF98.INI-P4-M12-BW/M12-SG-5	MAT90410304 <sup>1)</sup>	4x0.34	6.0	5
CF98.INI-P4-M12-BW/M12-SG-10	MAT90410305 <sup>1)</sup>	4x0.34	6.0	10

<sup>1)</sup> Delivery time upon request

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed sensor/actuator cables

## Connection and linking cables M8 x 1: Bend radius, e-chain®: minimum 4 x d

### Electrical information

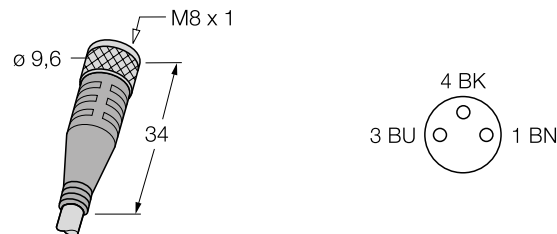
Number of poles	<b>3-pole</b>
Ampacity	4A
Rated voltage	60V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5mΩ
Pollution degree	3/2
Ambient temperature	-35°C up to +105°C
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles

### Technical data

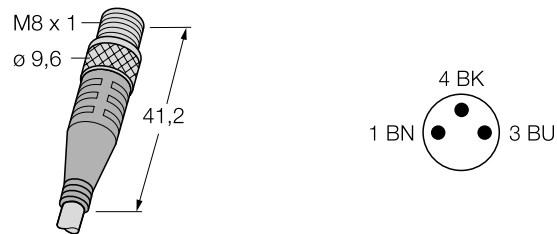
Design	<b>Coupling</b>	<b>Connector</b>
Connector	Coupling, M8 x 1	Connector, M8x1
Handle base	Plastic, PP, black	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)	

### Harnessed with these connectors

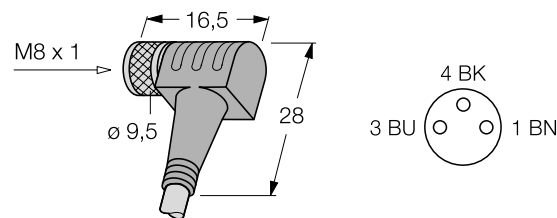
#### Cable socket M8-BG



#### Cable connector M8-SG



#### Angled socket M8-BW



Type	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Cable length [m]
<b>Connection cable M8</b>				

#### Cable socket M8/ open cable end



CF98.INI-P3-M8-BG-3	MAT90410245 <sup>1)</sup>	3x0.25	5.0	3
CF98.INI-P3-M8-BG-5	MAT90410246 <sup>1)</sup>	3x0.25	5.0	5
CF98.INI-P3-M8-BG-7	MAT90410247 <sup>1)</sup>	3x0.25	5.0	7
CF98.INI-P3-M8-BG-10	MAT90410248 <sup>1)</sup>	3x0.25	5.0	10
CF98.INI-P3-M8-BG-15	MAT90410249 <sup>1)</sup>	3x0.25	5.0	15

#### Angled socket M8/ open cable end



CF98.INI-P3-M8-BW-3	MAT90410250 <sup>1)</sup>	3x0.25	5.0	3
CF98.INI-P3-M8-BW-5	MAT90410251 <sup>1)</sup>	3x0.25	5.0	5
CF98.INI-P3-M8-BW-7	MAT90410252 <sup>1)</sup>	3x0.25	5.0	7
CF98.INI-P3-M8-BW-10	MAT90410253 <sup>1)</sup>	3x0.25	5.0	10
CF98.INI-P3-M8-BW-15	MAT90410254 <sup>1)</sup>	3x0.25	5.0	15

### Linking cable M8

#### M8 cable socket/ M8 cable connector



CF98.INI-P3-M8-BG/M8-SG-2	MAT90410306 <sup>1)</sup>	3x0.25	5.0	2
CF98.INI-P3-M8-BG/M8-SG-5	MAT90410307 <sup>1)</sup>	3x0.25	5.0	5
CF98.INI-P3-M8-BG/M8-SG-10	MAT90410308 <sup>1)</sup>	3x0.25	5.0	10

#### Angled socket M8/ cable connector M8



CF98.INI-P3-M8-BW/M8-SG-2	MAT90410309 <sup>1)</sup>	3x0.25	5.0	2
CF98.INI-P3-M8-BW/M8-SG-5	MAT90410310 <sup>1)</sup>	3x0.25	5.0	5
CF98.INI-P3-M8-BW/M8-SG-10	MAT90410311 <sup>1)</sup>	3x0.25	5.0	10





<sup>1)</sup> Delivery time upon request

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Also sold by the meter to your required length, unassembled. igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Sensor/actuator distribution box

To connect sensor/actuator distribution boxes

### Connection cable M23: Socket/Pin at the cable front, cable ends cut

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]
<b>Connection cable M23</b>		
<b>Socket M23/ open cable end</b>		
<b>MAT90436630</b> <sup>1)</sup>	16x0.34+3x0.75	11.0
<b>Connector M23/ open cable end</b>		
<b>MAT90436631</b> <sup>1)</sup>	16x0.34+3x0.75	11.0
<b>Connection cable M23</b>		
<b>Connector M23/ angled socket M23</b>		
<b>MAT90436629</b>	16x0.34+3x0.75	11.0
<b>Connector M23/ socket M23</b>		
<b>MAT90436628</b>	16x0.34+3x0.75	11.0

<sup>1)</sup>igus® gladly pre-harnesses the cable according to your technical guidelines.

All cables available to your required length.






**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example images.  
\* igus® gladly pre-harnesses the cable according to your technical guidelines.  
G = with green-yellow earth core x = without earth core  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

## Sensor/actuator distribution box

To connect sensor/actuator distribution boxes

### Connection cable M12: Socket at the cable front, Pin at the cable end

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]
<b>Connection cable M12</b>		
<b>Socket M12, A-coded/ Connector M12, A-coded</b>		
<b>MAT90478773</b>	8x0.25	6.5
<b>MAT90478776</b>	12x0.25	8.0
<b>Socket M12, A-coded/ open cable end</b>		
<b>MAT90478774</b>	8x0.25	6.5
<b>MAT90478777</b>	12x0.25	8.0
<b>Connector M12, A-coded/ open cable end</b>		
<b>MAT90478775</b>	8x0.25	6.5
<b>MAT90478778</b>	12x0.25	8.0

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example images.  
G = with green-yellow earth core x = without earth core  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961













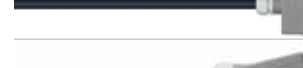
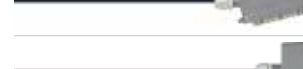
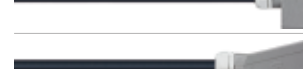



# Industry

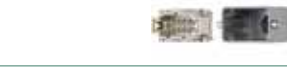

chainflex® cables with industrial connectors



## chainflex® readycable®

Cable type		Page	
<b>chainflex® cables with industrial connectors</b>			
	Han 6B	Harnessed cable, single locking lever at both ends, straight	544
	Han 6B	Harnessed cable, single locking lever at both ends, angled	544
	Han 10B	Harnessed cable, single locking lever at both ends, straight	546
	Han 10B	Harnessed cable, single locking lever at both ends, angled	546
	Han 10B	Harnessed cable, double locking lever at both ends, straight	546
	Han 10B	Harnessed cable, double locking lever at both ends, angled	546
	Han 16B	Harnessed cable, single locking lever at both ends, straight	548
	Han 16B	Harnessed cable, single locking lever at both ends, angled	548
	Han 16B	Harnessed cable, double locking lever at both ends, straight	548
	Han 16B	Harnessed cable, double locking lever at both ends, angled	548
	Han 24B	Harnessed cable, single locking lever at both ends, straight	550
	Han 24B	Harnessed cable, single locking lever at both ends, angled	550
	Han 24B	Harnessed cable, double locking lever at both ends, straight	550
	Han 24B	Harnessed cable, double locking lever at both ends, angled	550

### HARTING Connector sets (Connectors chapter page 786)

	Connector sets with pin inserts	836
	Connector sets Premium (pin + socket)	838




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

# Harnessed control cables | HARTING Han 6B

## Harnessed control cables, HARTING Han 6B, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Copper index	Weight	Bend radius [x d]	chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
<p><b>Han 6B connector housing (pin) to Han 6B connector housing (socket), single locking lever at both ends, straight</b></p> 											
PVC	MAT90489360	7G1.5	10.0	109	167	12.5	CF880.15.07	09330062702	19300061440	09330062602	19300061440
PVC	MAT90489361	7G1.5	10.5	105	166	7.5	CF130.15.07.UL	09330062702	19300061440	09330062602	19300061440
PVC, oil-res.	MAT90489362	7G1.5	10.5	105	180	6.8	CF5.15.07	09330062702	19300061440	09330062602	19300061440
iguPUR	MAT90489363	7G1.5	10.0	109	163	12.5	CF890.15.07	09330062702	19300061440	09330062602	19300061440
PUR	MAT90489364	7G1.5	9.5	105	152	6.8	CF77.UL.15.07.D	09330062702	19300061440	09330062602	19300061440
PUR-ROBOT	MAT90489367	5G1.0+(2x1.0)C	10.0	82	136	10	CFROBOT9.001	09330062702	19300061440	09330062602	19300061440
TPE H*	MAT90489365	7G1.5	9.5	107	157	5	CF9.15.07	09330062702	19300061440	09330062602	19300061440
TPE F	MAT90489366	7G1.5	10.0	104	167	5	CF9.UL.15.07	09330062702	19300061440	09330062602	19300061440

## Han 6B connector housing (pin) to Han 6B connector housing (socket), single locking lever at both ends, angled

											
PVC	MAT90489368	7G1.5	10.0	109	167	12.5	CF880.15.07	09330062702	19300061541	09330062602	19300061541
PVC	MAT90489369	7G1.5	10.5	105	166	7.5	CF130.15.07.UL	09330062702	19300061540	09330062602	19300061540
PVC, oil-res.	MAT90489370	7G1.5	10.5	105	180	6.8	CF5.15.07	09330062702	19300061540	09330062602	19300061540
iguPUR	MAT90489371	7G1.5	10.0	109	163	12.5	CF890.15.07	09330062702	19300061541	09330062602	19300061541
PUR	MAT90489372	7G1.5	10.0	109	163	6.8	CF77.UL.15.07.D	09330062702	19300061540	09330062602	19300061540
PUR-ROBOT	MAT90489375	5G1.0+(2x1.0)C	10.0	82	136	10	CFROBOT9.001	09330062702	19300061540	09330062602	19300061540
TPE H*	MAT90489373	7G1.5	9.5	107	157	5	CF9.15.07	09330062702	19300061540	09330062602	19300061540
TPE F	MAT90489374	7G1.5	10.0	104	167	5	CF9.UL.15.07	09330062702	19300061540	09330062602	19300061540

**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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed control cables | HARTING Han 10B




## Harnessed control cables, Harting Han 10B, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Copper index	Weight	Bend radius [x d]	chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
<b>Han 10B connector housing (pin) to Han 10B connector housing (socket), single locking lever at both ends, straight</b>											
PVC	MAT90489376	12G1.5	12.0	186	260	12.5	CF880.15.12	09330102702	19300101441	09330102602	19300101441
PVC	MAT90489377	12G1.5	13.0	179	288	7.5	CF130.15.12.UL	09330102702	19300101441	09330102602	19300101441
PVC, oil-res.	MAT90489378	12G1.5	13.0	179	288	7.5	CF130.15.12.UL	09330102702	19300101441	09330102602	19300101441
iguPUR	MAT90489379	12G1.5	12.0	186	256	12.5	CF890.15.12	09330102702	19300101441	09330102602	19300101441
PUR	MAT90489380	12G1.5	13.0	179	297	6.8	CF77.UL.15.12.D	09330102702	19300101441	09330102602	19300101441
PUR-ROBOT	MAT90489383	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330102702	19300101441	09330102602	19300101441
TPE H*	MAT90489381	12G1.5	13.0	179	284	5	CF9.15.12	09330102702	19300101441	09330102602	19300101441
TPE F	MAT90489382	12G1.5	13.5	178	307	5	CF9.UL.15.12	09330102702	19300101441	09330102602	19300101441
<b>Han 10B connector housing (pin) to Han 10B connector housing (socket), single locking lever at both ends, angled</b>											
PVC	MAT90489384	12G1.5	12.0	186	260	12.5	CF880.15.12	09330102702	19300101541	09330102602	19300101541
PVC	MAT90489385	12G1.5	13.0	179	288	7.5	CF130.15.12.UL	09330102702	19300101541	09330102602	19300101541
PVC, oil-res.	MAT90489386	12G0.5	11.0	61	131	6.8	CF130.15.12.UL	09330102702	19300101541	09330102602	19300101541
iguPUR	MAT90489387	12G1.5	12.0	186	256	12.5	CF890.15.12	09330102702	19300101541	09330102602	19300101541
PUR	MAT90489388	12G1.5	13.0	179	297	6.8	CF77.UL.15.12.D	09330102702	19300101541	09330102602	19300101541
PUR-ROBOT	MAT90489391	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330102702	19300101541	09330102602	19300101541
TPE H*	MAT90489389	12G1.5	13.0	179	284	5	CF9.15.12	09330102702	19300101541	09330102602	19300101541
TPE F	MAT90489390	12G1.5	13.5	178	307	5	CF9.UL.15.12	09330102702	19300101541	09330102602	19300101541
<b>Han 10B connector housing (pin) to Han 10B connector housing (socket), double locking lever at both ends, straight</b>											
PVC	MAT90489392	12G1.5	12.0	186	260	12.5	CF880.15.12	09330102702	19300101421	09330102602	19300101421
PVC	MAT90489393	12G1.5	13.0	179	288	7.5	CF130.15.12.UL	09330102702	19300101421	09330102602	19300101421
PVC, oil-res.	MAT90489394	12G1.5	15.0	179	264	6.8	CF130.15.12.UL	09330102702	19300101421	09330102602	19300101421
iguPUR	MAT90489395	12G1.5	12.0	186	256	12.5	CF890.15.12	09330102702	19300101421	09330102602	19300101421
PUR	MAT90489396	12G1.5	13.0	179	297	6.8	CF77.UL.15.12.D	09330102702	19300101421	09330102602	19300101421
PUR-ROBOT	MAT90489399	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330102702	19300101421	09330102602	19300101421
TPE H*	MAT90489397	12G1.5	13.0	179	284	5	CF9.15.12	09330102702	19300101421	09330102602	19300101421
TPE F	MAT90489398	12G1.5	13.5	178	307	5	CF9.UL.15.12	09330102702	19300101421	09330102602	19300101421
<b>Han 10B connector housing (pin) to Han 10B connector housing (socket), double locking lever at both ends, angled</b>											
PVC	MAT90489400	12G1.5	12.0	186	260	12.5	CF880.15.12	09330102702	19300101521	09330102602	19300101521
PVC	MAT90489401	12G1.5	13.0	179	288	7.5	CF130.15.12.UL	09330102702	19300101521	09330102602	19300101521
PVC, oil-res.	MAT90489402	12G1.5	15.0	179	264	6.8	CF130.15.12.UL	09330102702	19300101521	09330102602	19300101521
iguPUR	MAT90489403	12G1.5	12.0	186	256	12.5	CF890.15.12	09330102702	19300101521	09330102602	19300101521
PUR	MAT90489404	12G1.5	13.0	179	297	6.8	CF77.UL.15.12.D	09330102702	19300101521	09330102602	19300101521
PUR-ROBOT	MAT90489407	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330102702	19300101521	09330102602	19300101521
TPE H*	MAT90489405	12G1.5	13.0	179	284	5	CF9.15.12	09330102702	19300101521	09330102602	19300101521
TPE F	MAT90489406	12G1.5	13.5	178	307	5	CF9.UL.15.12	09330102702	19300101521	09330102602	19300101521



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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed control cables | HARTING Han 16B

Harnessed control cables, Harting Han 16B, to your required length											
Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Copper index	Weight	Bend radius [x d]	chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
PVC	MAT90489408	18G1.5	14.5	279	370	12.5	CF880.15.18	09330162702	19300161442	09330162602	19300161442
PVC	MAT90489409	18G1.5	17.0	268	438	7.5	CF130.15.18.UL	09330162702	19300161442	09330162602	19300161442
PVC, oil-res.	MAT90489410	18G1.5	19.5	267	478	6.8	CF5.15.18	09330162702	19300161442	09330162602	19300161442
iguPUR	MAT90489411	18G1.5	14.5	279	362	12.5	CF890.15.18	09330162702	19300161442	09330162602	19300161442
PUR	MAT90489412	18G1.5	17.0	268	405	6.8	CF77.UL.15.18.D	09330162702	19300161442	09330162602	19300161442
PUR-ROBOT	MAT90489415	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330162702	19300161442	09330162602	19300161442
TPE H*	MAT90489413	18G1.5	16.0	268	422	5	CF9.15.18	09330162702	19300161442	09330162602	19300161442
TPE F	MAT90489414	18G1.5	16.0	267	448	5	CF9.UL.15.18	09330162702	19300161442	09330162602	19300161442
<p><b>Han 16B connector housing (pin) to Han 16B connector housing (socket), single locking lever at both ends, angled</b></p> 											
PVC	MAT90489416	18G1.5	14.5	279	370	12.5	CF880.15.18	09330162702	19300161542	09330162602	19300161542
PVC	MAT90489417	18G1.5	17.0	268	438	7.5	CF130.15.18.UL	09330162702	19300161542	09330162602	19300161542
PVC, oil-res.	MAT90489418	18G1.5	19.5	267	478	6.8	CF5.15.18	09330162702	19300161542	09330162602	19300161542
iguPUR	MAT90489419	18G1.5	14.5	279	362	12.5	CF890.15.18	09330162702	19300161542	09330162602	19300161542
PUR	MAT90489420	18G1.5	17.0	268	405	6.8	CF77.UL.15.18.D	09330162702	19300161542	09330162602	19300161542
PUR-ROBOT	MAT90489423	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330162702	19300161542	09330162602	19300161542
TPE H*	MAT90489421	18G1.5	16.0	268	422	5	CF9.15.18	09330162702	19300161542	09330162602	19300161542
TPE F	MAT90489422	18G1.5	16.0	267	448	5	CF9.UL.15.18	09330162702	19300161542	09330162602	19300161542
<p><b>Han 16B connector housing (pin) to Han 16B connector housing (socket), double locking lever at both ends, straight</b></p> 											
PVC	MAT90489424	18G1.5	14.5	279	370	12.5	CF880.15.18	09330162702	19300161422	09330162602	19300161422
PVC	MAT90489425	18G1.5	17.0	268	438	7.5	CF130.15.18.UL	09330162702	19300161422	09330162602	19300161422
PVC, oil-res.	MAT90489426	18G1.5	19.5	267	478	6.8	CF5.15.18	09330162702	19300161422	09330162602	19300161422
iguPUR	MAT90489427	18G1.5	14.5	279	362	12.5	CF890.15.18	09330162702	19300161422	09330162602	19300161422
PUR	MAT90489428	18G1.5	17.0	268	405	6.8	CF77.UL.15.18.D	09330162702	19300161422	09330162602	19300161422
PUR-ROBOT	MAT90489431	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330162702	19300161422	09330162602	19300161422
TPE H*	MAT90489429	18G1.5	16.0	268	422	5	CF9.15.18	09330162702	19300161422	09330162602	19300161422
TPE F	MAT90489430	18G1.5	16.0	267	448	5	CF9.UL.15.18	09330162702	19300161422	09330162602	19300161422
<p><b>Han 16B connector housing (pin) to Han 16B connector housing (socket), double locking lever at both ends, angled</b></p> 											
PVC	MAT90489432	18G1.5	14.5	279	370	12.5	CF880.15.18	09330162702	19300161522	09330162602	19300161522
PVC	MAT90489433	18G1.5	17.0	268	438	7.5	CF130.15.18.UL	09330162702	19300161522	09330162602	19300161522
PVC, oil-res.	MAT90489434	18G1.5	19.5	267	478	6.8	CF5.15.18	09330162702	19300161522	09330162602	19300161522
iguPUR	MAT90489435	18G1.5	14.5	279	362	12.5	CF890.15.18	09330162702	19300161522	09330162602	19300161522
PUR	MAT90489436	18G1.5	17.0	268	405	6.8	CF77.UL.15.18.D	09330162702	19300161522	09330162602	19300161522
PUR-ROBOT	MAT90489439	16G1.0+(2x1.0)C	15.5	194	307	10	CFROBOT9.004	09330162702	19300161522	09330162602	19300161522
TPE H*	MAT90489437	18G1.5	16.0	268	422	5	CF9.15.18	09330162702	19300161522	09330162602	19300161522
TPE F	MAT90489438	18G1.5	16.0	267	448	5	CF9.UL.15.18	09330162702	19300161522	09330162602	19300161522

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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed control cables | HARTING Han 24B

## Harnessed control cables, Harting Han 24B, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	Copper index	Weight	Bend radius [x d]	chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
<b>Han 24B connector housing (pin) to Han 24B connector housing (socket), single locking lever at both ends, straight</b> 											
PVC	MAT90489440	25G1.5	17.5	387	514	12.5	CF880.15.25	09330242702	19300241442	09330242602	19300241442
PVC	MAT90489441	25G1.5	19.5	371	563	7.5	CF130.15.25.UL	09330242702	19300241442	09330242602	19300241442
PVC, oil-res.	MAT90489442	25G1.5	21.5	371	645	6.8	CF5.15.25	09330242702	19300241442	09330242602	19300241442
iguPUR	MAT90489443	25G1.5	17.5	387	502	12.5	CF890.15.25	09330242702	19300241442	09330242602	19300241442
PUR	MAT90489444	25G1.5	19.5	297	564	6.8	CF77.UL.15.25.D	09330242702	19300241442	09330242602	19300241442
PUR-ROBOT	MAT90489447	23G1.0+(2x1.0)C	19.5	268	444	10	CFROBOT9.005	09330242702	19300241442	09330242602	19300241442
TPE H*	MAT90489445	25G1.5	19.0	371	600	5	CF9.15.25	09330242702	19300241442	09330242602	19300241442
TPE F	MAT90489446	25G1.5	19.0	371	652	5	CF9.UL.15.25	09330242702	19300241442	09330242602	19300241442
<b>Han 24B connector housing (pin) to Han 24B connector housing (socket), single locking lever at both ends, angled</b> 											
PVC	MAT90489448	25G1.5	17.5	387	514	12.5	CF880.15.25	09330242702	19300241542	09330242602	19300241542
PVC	MAT90489449	25G1.5	19.5	371	563	7.5	CF130.15.25.UL	09330242702	19300241542	09330242602	19300241542
PVC, oil-res.	MAT90489450	25G1.5	21.5	371	645	6.8	CF5.15.25	09330242702	19300241542	09330242602	19300241542
iguPUR	MAT90489451	25G1.5	17.5	387	502	12.5	CF890.15.25	09330242702	19300241542	09330242602	19300241542
PUR	MAT90489452	25G1.5	19.5	297	564	6.8	CF77.UL.15.25.D	09330242702	19300241542	09330242602	19300241542
PUR-ROBOT	MAT90489455	23G1.0+(2x1.0)C	19.5	268	444	10	CFROBOT9.005	09330242702	19300241542	09330242602	19300241542
TPE H*	MAT90489453	25G1.5	19.0	371	600	5	CF9.15.25	09330242702	19300241542	09330242602	19300241542
TPE F	MAT90489454	25G1.5	19.0	371	652	5	CF9.UL.15.25	09330242702	19300241542	09330242602	19300241542
<b>Han 24B connector housing (pin) to Han 24B connector housing (socket), double locking lever at both ends, straight</b> 											
PVC	MAT90489456	25G1.5	17.5	387	514	12.5	CF880.15.25	09330242702	19300241422	09330242602	19300241422
PVC	MAT90489457	25G1.5	19.5	371	563	7.5	CF130.15.25.UL	09330242702	19300241422	09330242602	19300241422
PVC, oil-res.	MAT90489458	25G1.5	21.5	371	645	6.8	CF5.15.25	09330242702	19300241422	09330242602	19300241422
iguPUR	MAT90489459	25G1.5	17.5	387	502	12.5	CF890.15.25	09330242702	19300241422	09330242602	19300241422
PUR	MAT90489460	25G1.5	19.5	297	564	6.8	CF77.UL.15.25.D	09330242702	19300241422	09330242602	19300241422
PUR-ROBOT	MAT90489463	23G1.0+(2x1.0)C	19.5	268	444	10	CFROBOT9.005	09330242702	19300241422	09330242602	19300241422
TPE H*	MAT90489461	25G1.5	19.0	371	600	5	CF9.15.25	09330242702	19300241422	09330242602	19300241422
TPE F	MAT90489462	25G1.5	19.0	371	652	5	CF9.UL.15.25	09330242702	19300241422	09330242602	19300241422
<b>Han 24B connector housing (pin) to Han 24B connector housing (socket), double locking lever at both ends, angled</b> 											
PVC	MAT90489464	25G1.5	17.5	387	514	12.5	CF880.15.25	09330242702	19300241522	09330242602	19300241522
PVC	MAT90489465	25G1.5	19.5	371	563	7.5	CF130.15.25.UL	09330242702	19300241522	09330242602	19300241522
PVC, oil-res.	MAT90489466	25G1.5	21.5	371	645	6.8	CF5.15.25	09330242702	19300241522	09330242602	19300241522
iguPUR	MAT90489467	25G1.5	17.5	387	502	12.5	CF890.15.25	09330242702	19300241522	09330242602	19300241522
PUR	MAT90489468	25G1.5	19.5	297	564	6.8	CF77.UL.15.25.D	09330242702	19300241522	09330242602	19300241522
PUR-ROBOT	MAT90489471	23G1.0+(2x1.0)C	19.5	268	444	10	CFROBOT9.005	09330242702	19300241522	09330242602	19300241522
TPE H*	MAT90489469	25G1.5	19.0	371	600	5	CF9.15.25	09330242702	19300241522	09330242602	19300241522
TPE F	MAT90489470	25G1.5	19.0	371	652	5	CF9.UL.15.25	09330242702	19300241522	09330242602	19300241522

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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961









# Robot

Harnessed dress packs and cables for robots



## chainflex® readycable®



Cable type	Page
<b>Dress packs for robots</b>	
 readychain® Robot	Harnessed dress packs for welding robots 554
<b>Harnessed cables for robots</b>	
 readycable® Kuka	Harnessed cables for KUKA robots 556
 readycable® Fanuc	Harnessed cables for Fanuc robots 562
 readycable® ABB	Harnessed cables for ABB robots 566
<b>Direct connection cables for robots</b>	
 readycable® Kuka	Direct connection cables for KUKA robots 557
 readycable® Fanuc	Direct connection cables for Fanuc robots 563
 readycable® ABB	Direct connection cables for ABB robots 567
<b>Cables according to AIDA specifications</b>	
 readycable® AIDA	Harnessed cables according to AIDA specifications 572



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



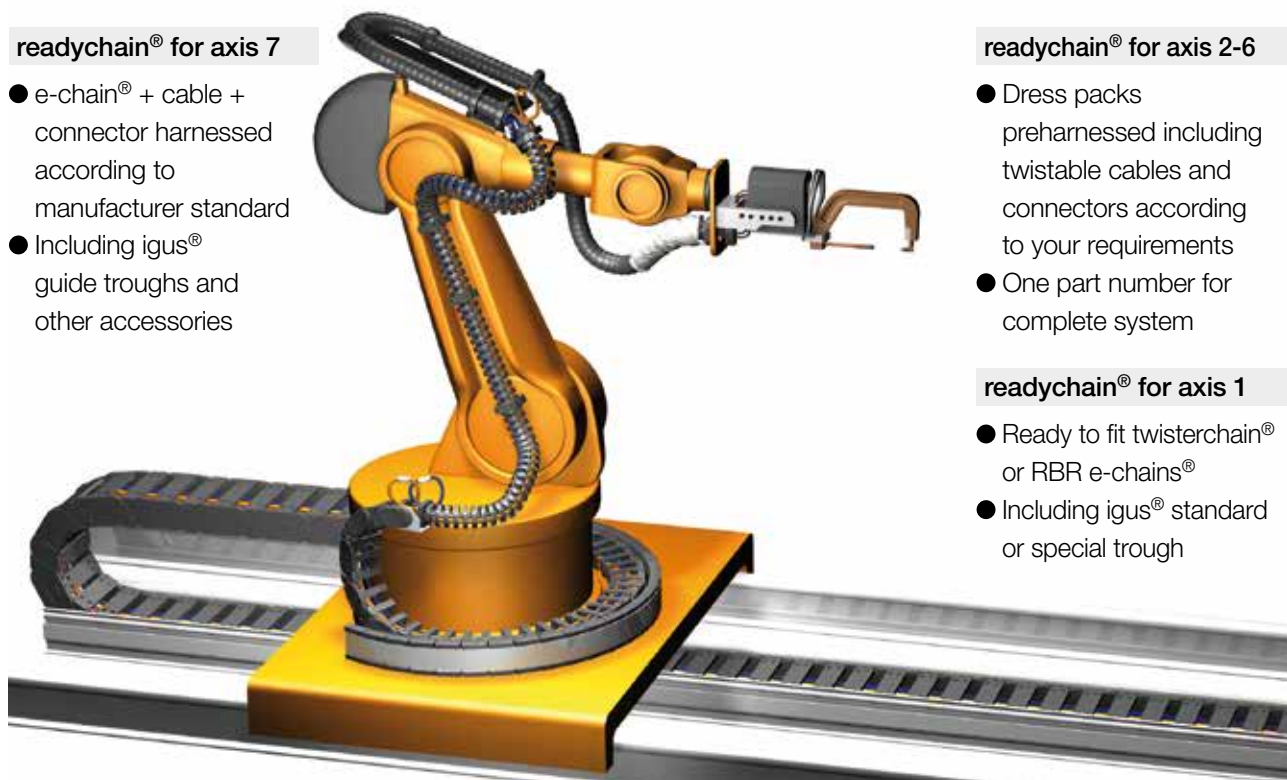


Ready-to-install harnessed e-chain systems<sup>®</sup> for robots

**Assembled energy supply systems, connectors and cables from igus<sup>®</sup>. Everything from one source. Directly from the manufacturer. Quick delivery to your robot, delivered in 1-10 days**

### readychain<sup>®</sup> for axis 7

- e-chain<sup>®</sup> + cable + connector harnessed according to manufacturer standard
- Including igus<sup>®</sup> guide troughs and other accessories



### readychain<sup>®</sup> for axis 2-6

- Dress packs preharnessed including twistable cables and connectors according to your requirements
- One part number for complete system

### readychain<sup>®</sup> for axis 1

- Ready to fit twisterchain<sup>®</sup> or RBR e-chains<sup>®</sup>
- Including igus<sup>®</sup> standard or special trough

### Additional services for you

- Survey of existing systems on your robot by our sales engineers
- Optional system guarantee
- Worldwide readychain<sup>®</sup> specialists and 11 production sites for fast maintenance and spare part support

### Moving energy made easy – even for robot applications

The modular igus<sup>®</sup> robot construction kit comprises over 5,000 different items. We can offer you the optimum, customised solution for almost any robot application. Our "Quick Robot" online tool can be used to create the ideal configuration in seconds – try it for yourself:

[www.igus.eu/quickrobot](http://www.igus.eu/quickrobot)

All igus<sup>®</sup> robotic components are tested in our laboratory and have already been reliably used in real applications for many years. Our primary aim is to design a reliable energy supply system for your robot. We do not simply focus on mechanical protection but instead look at the entire application including the cables that have been specially developed for use on the robot. We will gladly find a solution for your application too – and look forward to receiving your enquiry.



**Matthias Meyer**

Head of Industry Management  
Automotive & Robotics  
Phone.: +49-2203 9649-161  
mmeyer@igus.de

Product range dress packs for welding robots	
Product range Part No.	Dress pack

### Welding axis 1-3

(1 m projection/side + 1 m e-chain<sup>®</sup> for each)



#### RRC.S.001

- Consisting of:
- 1m TRLF.85.135.0, including mounting brackets
  - Welding cable (2x35mm<sup>2</sup> + 1x25mm<sup>2</sup>) including multicontact TSB and TSS welding connector
  - Control cable (18x0.75mm<sup>2</sup> + 5x0.75mm<sup>2</sup>) including rectangular connector on both ends
  - Welding control cable (5x2x0.5mm<sup>2</sup>) including rectangular connector on both ends
  - 3x hoses - DN12 red, green, blue - including fixture at both ends

### Welding axis 3-6

(1 m projection/side + 1 m e-chain<sup>®</sup> for each)










#### RRC.S.002

- Consisting of:
- 1m TRC.85.135.0 including protectors and mounting brackets
  - Welding cable (2x35mm<sup>2</sup> + 1x25mm<sup>2</sup>) including multicontact TSB and TSS welding connector
  - Control cable (18x0.75mm<sup>2</sup> + 5x0.75mm<sup>2</sup>) including round connector and rectangular connector
  - Welding control cable (5x2x0.5mm<sup>2</sup>) including rectangular connector on both ends
  - 3x hoses - DN12 red, green, blue - including fixture at both ends

igus<sup>®</sup> GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed cables for robots




## KUKA Quantec

Harnessed cables for KUKA Quantec, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (straight socket)</b>				
MAT904105003	CFSPECIAL.792.011	X30/X30.1	(5x(2x6.0+2x2.5)+2x(6x1.0)C)C	35.5
<b>Motor cable (angled socket)</b>				
MAT904105004	CFSPECIAL.792.011	X30/X30.1	(5x(2x6.0+2x2.5)+2x(6x1.0)C)C	35.5
<b>Data cable</b>				
MAT904105005	CFBUS.PUR.H01.060	X31/X31.1	((4x0.38)C+4x1.5)C	11.5
<b>Motor cable single axis (axis 7)</b>				
MAT904105006	CF270.UL.25.15.02.01.D	XM.../X...	(4G2.5+(2x1.5)C)C	14.0
MAT904105007	CF270.UL.40.15.02.01.D	XM.../X...	(4G4.0+(2x1.5)C)C	15.0
<b>Motor cable single axis (axis 7)</b>				
MAT904105008	CF270.UL.60.15.02.01.D	XM.../X...	(4G6.0+(2x1.5)C)C	16.5
<b>Control cable (axis 7)</b>				
MAT904105009	CF112.02.04.02	Control cable single axis	(4x(2x0.25)C)C	11.0
<b>Earth-core</b>				
MAT904105010	CFPE.160.01	Connector plate/robot	1G16	9.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Direct connection cables for robots

## KUKA Quantec

Direct connection cables for KUKA Quantec, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (direct connection cable)</b>				
MAT904141225	CFSPECIAL.792.011		(5x(2x6.0+2x2.5)+2x(6x1.0)C)C	35.5
<b>Motor cable (direct connection cable)</b>				
MAT904141226	CFSPECIAL.792.011		(5x(2x6.0+2x2.5)+2x(6x1.0)C)C	35.5
<b>Signal cable (direct connection cable)</b>				
MAT904141227	CFBUS.PUR.H01.060		((4x0.38)C+4x1.5)C	11.5







**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
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igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



# Harnessed cables for robots

## KUKA Fortec

### Harnessed cables for KUKA Fortec, to your required length

Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (angled socket)</b>				
				
MAT904105011	CFSPECIAL.792.014	X30.1/X30.1.1	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904105012	CFSPECIAL.792.013	X30.4/X30.4.1	((6x1.5)C+3x(3x4)+1G6)C	28.0
<b>Data cable</b>				
				
MAT904105005	CFBUS.PUR.H01.060	X31/X31.1	((4x0.38)C+4x1.5)C	11.5
<b>Motor cable single axis (axis 7)</b>				
				
MAT904105006	CF270.UL.25.15.02.01.D	XM.../X...	(4G2.5+(2x1.5)C)C	14.0
MAT904105007	CF270.UL.40.15.02.01.D	XM.../X...	(4G4.0+(2x1.5)C)C	15.0
<b>Motor cable single axis (axis 7)</b>				
				
MAT904105008	CF270.UL.60.15.02.01.D	XM.../X...	(4G6.0+(2x1.5)C)C	16.5
<b>Control cable (axis 7)</b>				
				
MAT904105013	CF112.02.04.02	Control cable single axis	(4x(2x0.25)C)C	11.0
<b>Earth-core</b>				
				
MAT904105010	CFPE.160.01	Connector plate/robot	1G16	9.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Direct connection cables for robots

## KUKA Fortec

### Direct connection cables for KUKA Fortec, to your required length

Part No.	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (direct connection cable)</b>			
			
MAT904141228	CFSPECIAL.792.014	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904141229	CFSPECIAL.792.013	((6x1.5)C+3x(3x4)+1G6)C	28.0
<b>Signal cable (direct connection cable)</b>			
			
MAT904141227	CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	11.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Harnessed cables for robots KUKA Titan

## Harnessed cables for KUKA Titan, to your required length

Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
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### Motor cable (angled socket)



MAT904105011	CFSPECIAL.792.014	X30.1/X30.1.1	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904105014	CFSPECIAL.792.014	X30.2/X30.2.1	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904105015	CFSPECIAL.792.014	X30.3/X30.3.1	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5

### Data cable



MAT904105005	CFBUS.PUR.H01.060	X31/X31.1	((4x0.38)C+4x1.5)C	11.5
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### Motor cable single axis (axis 7)



MAT904105006	CF270.UL.25.15.02.01.D	XM.../X...	(4G2.5+(2x1.5)C)C	14.0
MAT904105007	CF270.UL.40.15.02.01.D	XM.../X...	(4G4.0+(2x1.5)C)C	15.0

### Motor cable single axis (axis 7)



MAT904105008	CF270.UL.60.15.02.01.D	XM.../X...	(4G6.0+(2x1.5)C)C	16.5
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### Control cable (axis 7)



MAT904105013	CF112.02.04.02	Control cable single axis	(4x(2x0.25)C)C	11.0
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### Earth-core



MAT904105010	CFPE.160.01	Connector plate/robot	1G16	9.5
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**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

# Direct connection cables for robots KUKA Titan

## Direct connection cables for KUKA Titan, to your required length

Part No.	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
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### Motor cable (direct connection cable)



MAT904141228	CFSPECIAL.792.014	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904141230	CFSPECIAL.792.014	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5
MAT904141231	CFSPECIAL.792.014	(2x(3x1.5)C+3x(3x10)+1G10)C	35.5

### Signal cable (direct connection cable)



MAT904141227	CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	11.5
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**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed cables for robots Fanuc M-900iB

Harnessed cables for Fanuc M-900iB, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (Extension cable axis 7)</b>				
MAT904117141	CFSPECIAL.792.015	RM1.2	(7x(6x2.0))C	36.5
<b>Motor cable (Extension cable axis 7)</b>				
MAT904117142	CFSPECIAL.792.015	RM2.2	(7x(6x2.0))C	36.5
<b>Pulse encoder (Extension cable axis 7)</b>				
MAT904117143	CFSPECIAL.792.016	RP1.2	(5x(4x0.25)+10x(3x0.75))C	26.5
<b>Earth-core (Extension cable axis 7)</b>				
MAT904117144	CFPE.160.01	Earth-core	1G16	9.5
<b>Earth-core (Extension cable axis 7)</b>				
MAT904117145	CFPE.60.01	Earth-core	1G6.0	7.0
<b>Motor cable single axis (axis 7)</b>				
MAT904117146	CF270.UL.60.15.02.01.D	RM7.2	(4G6.0+(2x1.5))C	16.5
<b>Pulse encoder single axis (axis 7)</b>				
MAT904117147	CF240.PUR.03.03	RP7.2	(3x0.34)C	5.0

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Direct connection cables for robots Fanuc M-900iB

Direct connection cables for Fanuc M-900iB, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (direct connection cable)</b>				
MAT904141222	CFSPECIAL.792.015		(7x(6x2.0))C	36.5
MAT904141223	CFSPECIAL.792.015		(7x(6x2.0))C	36.5
<b>Pulse encoder (direct connection cable)</b>				
MAT904141224	CFSPECIAL.792.016		(5x(4x0.25)+10x(3x0.75))C	26.5

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



## Harnessed cables for robots Fanuc R-2000iC

Harnessed cables for Fanuc R-2000iC, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (Extension cable axis 7)</b>				
MAT904117141	CFSPECIAL.792.015	RM1.2	(7x(6x2.0))C	36.5
<b>Pulse encoder (Extension cable axis 7)</b>				
MAT904117143	CFSPECIAL.792.016	RP1.2	(5x(4x0.25)+10x(3x0.75))C	26.5
<b>Earth-core (Extension cable axis 7)</b>				
MAT904117144	CFPE.160.01	Earth-core	1G16	9.5
<b>Earth-core (Extension cable axis 7)</b>				
MAT904117145	CFPE.60.01	Earth-core	1G6.0	7.0
<b>Motor cable single axis (axis 7)</b>				
MAT904117146	CF270.UL.60.15.02.01.D	RM7.2	(4G6.0+(2x1.5)C)C	16.5
<b>Pulse encoder single axis (axis 7)</b>				
MAT904117147	CF240.PUR.03.03	RP7.2	(3x0.34)C	5.0

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Direct connection cables for robots Fanuc R-2000iC

Direct connection cables for Fanuc R-2000iC, to your required length				
Part No.	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	
<b>Motor cable (direct connection cable)</b>				
MAT904141222	CFSPECIAL.792.015	(7x(6x2.0))C	36.5	
<b>Pulse encoder (direct connection cable)</b>				
MAT904141224	CFSPECIAL.792.016	(5x(4x0.25)+10x(3x0.75))C	26.5	

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed cables for robots

ABB IRB 6620, IRB 6640, IRB 6650S, IRB 7600

Harnessed cables for ABB IRB 6620, IRB 6640, IRB 6650S, IRB 7600, to your desired length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Power cable</b>				
MAT904128539	CFSPECIAL.792.012	R1MP	(18G2.5)C	25.5
<b>Signal cable</b>				
MAT904128540	CF211.PUR.02.06.02	R1.SMB	(6x(2x0.25))C	9.0
<b>Power cable</b>				
MAT904128547	CF270.UL.40.15.02.02.D		(4G4.0+2x(2x1.5))C	17.0
<b>Resolver cable</b>				
MAT904128548	CF211.PUR.02.03.02		(3x(2x0.25))C	7.0
<b>Earth-core (Extension cable axis 7)</b>				
MAT904117144	CFPE.160.01	Earth-core	1G16	9.5

**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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Direct connection cables for robots

ABB IRB 6620, IRB 6640, IRB 6650S, IRB 7600

Direct connection cable for ABB IRB 6620, IRB 6640, IRB 6650S, IRB 7600, to your required length				
Part No.	chainflex® cable		Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>Motor cable (direct connection cable)</b>				
MAT904141219	CFSPECIAL.792.012		(18G2.5)C	25.5
<b>Signal cable (direct connection cable)</b>				
MAT904141220	CF211.PUR.02.06.02		(6x(2x0.25))C	9.0

**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  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Harnessed cables for robots ABB IRB 6700

Harnessed cables for ABB IRB 6700, to your desired length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]

### Power cable



MAT904128539	CFSPECIAL.792.012	R1MP	(18G2.5)C	25.5
--------------	-------------------	------	-----------	------

### Signal cable



MAT904128541	CF211.PUR.02.06.02	R1.SMB	(6x(2x0.25))C	9.0
--------------	--------------------	--------	---------------	-----

### Power cable



MAT904128547	CF270.UL.40.15.02.02.D		(4G4.0+2x(2x1.5))C	17.0
--------------	------------------------	--	--------------------	------

### Resolver cable



MAT904128548	CF211.PUR.02.03.02		(3x(2x0.25))C	7.0
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### Earth-core (Extension cable axis 7)



MAT904117144	CFPE.160.01	Earth-core	1G16	9.5
--------------	-------------	------------	------	-----

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Direct connection cables for robots ABB IRB 6700

Direct connection cable for ABB IRB 6700, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]

### Motor cable (direct connection cable)



MAT904141219	CFSPECIAL.792.012		(18G2.5)C	25.5
--------------	-------------------	--	-----------	------

### Signal cable (direct connection cable)



MAT904141221	CF211.PUR.02.06.02		(6x(2x0.25))C	9.0
--------------	--------------------	--	---------------	-----

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



## Harnessed cables for robots ABB IRB 8700

Harnessed cables for ABB IRB 8700, to your desired length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]

### Power cable



MAT904128542	CFSPECIAL.792.012	R1MP-A	(18G2.5)C	25.5
MAT904128543	CFSPECIAL.792.012	R1MP-B	(18G2.5)C	25.5

### Signal cable



MAT904128541	CF211.PUR.02.06.02	R1.SMB	(6x(2x0.25))C	9.0
--------------	--------------------	--------	---------------	-----

### Power cable



MAT904128547	CF270.UL.40.15.02.02.D		(4G4.0+2x(2x1.5))C	17.0
--------------	------------------------	--	--------------------	------

### Resolver cable



MAT904128548	CF211.PUR.02.03.02		(3x(2x0.25))C	7.0
--------------	--------------------	--	---------------	-----

### Earth-core (Extension cable axis 7)



MAT904117144	CFPE.160.01	Earth-core	1G16	9.5
--------------	-------------	------------	------	-----

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Direct connection cables for robots ABB IRB 8700

Direct connection cable for ABB IRB 8700, to your required length				
Part No.	chainflex® cable	Manufacturer description	Number of cores and conductor nominal cross section [mm²]	Ø [mm]

### Motor cable (direct connection cable)



MAT904145759	CFSPECIAL.792.012		(18G2.5)C	25.5
MAT904145760	CFSPECIAL.792.012		(18G2.5)C	25.5

### Signal cable (direct connection cable)



MAT904141221	CF211.PUR.02.06.02		(6x(2x0.25))C	9.0
--------------	--------------------	--	---------------	-----

**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  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

## Cables according to AIDA specifications\*

\* AIDA = AutomatisierungsInitiative Deutscher Automobilhersteller (Automation Initiative of German Domestic Automobile manufacturers)

Technical information on cable quality:

<b>CFBUS.PUR</b>	<b>CFLK</b>	<b>CF77.UL.D</b>	<b>CF211.PUR</b>
From page 200	from page 220	From page 102	From page 158

### Harnessed cables according to AIDA specifications, to your required length

Part No.	Robot axis	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>AIDA Profinet – RJ45 Pin/ AIDA Profinet – RJ45 Pin</b>				
<b>MAT904117091</b>	<b>Axis 7</b>	<b>CFBUS.PUR.060</b>	(4x0.38)C	7.0
<b>MAT904117095</b>	<b>Axis 1-6</b>	<b>CFROBOT8.060</b>	(2x(2x0.34))C	8.5
<b>AIDA Profinet FOC/ AIDA Profinet FOC</b>				
<b>MAT904117092</b>	<b>Axis 7</b>	<b>CFLK.L1.02</b>	1x980/1,000µm	7.0
<b>upon request <sup>1)</sup></b>	<b>Axis 1-6</b>	<b>CFLK.L1.02</b>	1x980/1,000µm	7.0
<b>AIDA Power Pin/ AIDA Power Pin</b>				
<b>MAT904117093</b>	<b>Axis 7</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.5
<b>MAT904117097</b>	<b>Axis 1-6</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.5
<b>AIDA Signal Pin/ AIDA Signal Pin</b>				
<b>MAT904117094</b>	<b>Axis 7</b>	<b>CF211.PUR.05.05.02</b>	(5x(2x0.5))C	10.5
<b>MAT904117098</b>	<b>Axis 1-6</b>	<b>CFROBOT3.05.05.02</b>	(5x(2x0.5))C	12.5

<sup>1)</sup> Offer made only after technical clarification of the application

**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

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

## Cables according to AIDA specifications\*

\* AIDA = AutomatisierungsInitiative Deutscher Automobilhersteller (Automation Initiative of German Domestic Automobile manufacturers)

Technical information on cable quality:

<b>CFBUS.PUR</b>	<b>CFLK</b>	<b>CF77.UL.D</b>	<b>CF211.PUR</b>
From page 200	from page 220	From page 102	From page 158

### Harnessed extension cables according to AIDA specifications, to your required length

Part No.	Robot axis	chainflex® cable	Number of cores and conductor nominal cross section [mm²]	Ø [mm]
<b>AIDA Profinet – RJ45 Socket/ AIDA Profinet – RJ45 Pin</b>				
<b>MAT904152118</b>	<b>Axis 7</b>	<b>CFBUS.PUR.060</b>	(4x0.38)C	7.0
<b>MAT904152121</b>	<b>Axis 1-6</b>	<b>CFROBOT8.060</b>	(2x(2x0.34))C	8.5
<b>AIDA Profinet – RJ45 Socket/ AIDA Profinet – RJ45 Socket</b>				
<b>MAT904151684</b>	<b>Axis 7</b>	<b>CFBUS.PUR.060</b>	(4x0.38)C	7.0
<b>MAT904151687</b>	<b>Axis 1-6</b>	<b>CFROBOT8.060</b>	(2x(2x0.34))C	8.5
<b>AIDA Power Socket/ AIDA Power Pin</b>				
<b>MAT904152119</b>	<b>Axis 7</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.0
<b>MAT904152122</b>	<b>Axis 1-6</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.0
<b>AIDA Power Socket/ AIDA Power Socket</b>				
<b>MAT904151685</b>	<b>Axis 7</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.0
<b>MAT904151688</b>	<b>Axis 1-6</b>	<b>CF77.UL.25.05.D</b>	5G2.5	10.0
<b>AIDA Signal Socket/ AIDA Signal Pin</b>				
<b>MAT904152120</b>	<b>Axis 7</b>	<b>CF211.PUR.05.05.02</b>	5x(2x0.5))C	11.0
<b>MAT904152123</b>	<b>Axis 1-6</b>	<b>CFROBOT3.05.05.02</b>	5x(2x0.5))C	11.0
<b>AIDA Signal Socket/ AIDA Signal Socket</b>				
<b>MAT904151686</b>	<b>Axis 7</b>	<b>CF211.PUR.05.05.02</b>	5x(2x0.5))C	11.0
<b>MAT904151689</b>	<b>Axis 1-6</b>	<b>CFROBOT3.05.05.02</b>	5x(2x0.5))C	11.0

**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

igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



... harnessed cables for drive technology ...













## chainflex® readycable® ▶▶

Selection according to manufacturer

Jacket

Page

### Harnessed cables for drive technology

Manufacturer	Cable Types	Jacket	Page
 <b>Allen Bradley/ Rockwell</b>	Motor cables		<b>584</b>
	Servo cables		
	Hybrid servo cables	PVC/PUR/TPE	
	Brake cables		
	Feedback cables		
 <b>B&amp;R</b>	Adapter cables (transition cable)		<b>585</b>
	Motor cables		
	Servo cables		
	EnDat cables	PVC/PUR/TPE	
	Encoder cables		
 <b>Baumüller</b>	Resolver cables	PVC/PUR/TPE	<b>585</b>
	Pulse encoder cable		
	Servo cables		
 <b>Baumüller, SpeedTec</b> <span style="background-color: orange; color: white; padding: 2px;">New!</span>	Servo cables, SpeedTec		<b>588</b>
	Resolver cables, SpeedTec	PVC/PUR/TPE	
	Pulse encoder cables, SpeedTec		
 <b>Beckhoff</b>	Motor cables		<b>590</b>
	Servo cables		
	Hybrid servo cables		
	Encoder cables	PVC/PUR/TPE	
	Thermal protection cables		
	Resolver cables		
 <b>Berger Lahr</b>	Network cables EtherCAT		<b>590</b>
	Servo cables	PVC/PUR/TPE	
 <b>Bosch Rexroth</b>	Resolver cables		<b>590</b>
	Motor cables		
	Servo cables	PVC/PUR/TPE	
	Hybrid servo cables		
 <b>ELAU/ Schneider Electric</b>	Encoder cables		<b>593</b>
	Servo cables		
	Hybrid servo cables	PVC/PUR/TPE	
 <b>FAGOR</b>	Encoder cables		<b>593</b>
 <b>Fanuc</b>	Path measuring cables	PUR/TPE	<b>593</b>
	Motor cables		
	Servo cables	PVC/PUR/TPE	
	Brake cables		
 <b>Festo</b>	Signal cables		<b>594</b>
	Servo cables		
	Control cables		
	Encoder cables	PVC/PUR/TPE	
 <b>Heidenhain</b>	Data cables		<b>594</b>
	Bus cables		
	Servo cables	PVC/PUR/TPE	
	Adapter cables		<b>594</b>














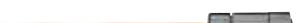




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Selection according to manufacturer Jacket Page

## Harnessed cables for drive technology

	<b>Jetter</b>	Motor cables Servo cables Resolver cables	PVC/PUR/TPE	<b>595</b>
	<b>Kollmorgen/ Danaher Motion</b>	Motor cables Servo cables Signal cables	PVC/PUR/TPE	<b>595</b>
	<b>Lenze</b>	Servo cables Fan cables Decoder cables Encoder cables Feedback cables Resolver cables	PVC/PUR/TPE	<b>598</b>
	<b>LinMot</b>	Motor cables Servo cables	PVC/PUR	<b>599</b>
	<b>LTi DRIVES</b>	Servo cables Encoder cables	PVC/PUR/TPE	<b>599</b>
	<b>Mitsubishi Electric</b>	Motor cables Encoder cables	PVC/PUR	<b>599</b>
	<b>Nidec/Control Techniques</b>	Motor cables Servo cables Encoder cables	PVC/PUR/TPE	<b>599</b>
	<b>NUM</b>	Power cables Servo cables Fan cables Encoder cables	PVC/PUR/TPE	<b>601</b>
	<b>Omron</b>	Motor cables Control cables Encoder cables	PVC/PUR/TPE	<b>601</b>
	<b>Parker</b>	Motor cables Resolver cables	PVC/PUR/TPE	<b>601</b>
	<b>SEW</b>	Motor cables Servo cables Hybrid servo cables Control cables Encoder cables	PVC/PUR/TPE	<b>602</b>
	<b>Siemens</b>	Power cables Servo cables Signal cables Signal cables DriveCliq	PVC/PUR/TPE	<b>603</b>
	<b>Siemens, SpeedTec</b>	Power cables, SpeedTec Servo cables, SpeedTec Signal cables, SpeedTec	PVC/PUR/TPE	<b>606</b>
	<b>Stöber</b>	Servo cables Encoder cables	PVC/PUR/TPE	<b>607</b>

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## Harnessed cables for drive technology

Example: chainflex® PVC cables for the woodworking industry



### Typical application areas – PVC

- For heavy duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 5°C
- Unsupported travel distances and up to 100m for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, woodworking

Example: chainflex® PUR cables for the machine tools industry



### Typical application areas – PUR

- For heaviest duty applications
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and up to 100m for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, outdoor cranes, low-temperature applications

Example: chainflex® TPE cables for outdoor use



### Typical application areas – TPE

- For heaviest duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travels and up to 400m and more for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, cleanroom, semiconductor insertion, ship to shore, outdoor cranes, low-temperature applications

Our product engineers will be happy to advise you in your choice of application-specific cables.

# chainflex® readycable®

Selection chart for igus® chainflex® cables (you can find the green number on

# chainflex® readycable®

the product pages of the respective manufacturers)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
chainflex® series	CF31	CF35.UL	CF38	CF210.UL	CF21.UL	CF270.UL.D	CF27.D	CF211 Mess	CF111.D	CF113.D	CF11.D	CFBUS	CF240.PUR	CF211	CF211.PUR	CF11
Class	5.5.2.1	6.6.4.1	7.6.4.1	4.2.2.1	5.5.2.1	4.2.3.1	6.5.3.1	4.2.2.1	4.2.3.1	6.5.3.1	6.6.4.1	6.6.4.1	4.4.3.1	5.5.2.1	5.5.3.1	6.6.4.1
Outer jacket	PVC	TPE	TPE	PVC	PVC	PUR	PUR	PVC	PUR	PUR	TPE	TPE	PUR	PVC	PUR	TPE
Shielded	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Minimum bend radius	7.5 x d	7.5 x d	7.5 x d	10 x d	7.5 x d	10 x d	7.5 x d	10 x d	10 x d	7.5 x d	7.5 x d	10 - 12.5 x d	10 x d	7.5 x d	7.5 x d	6.8 x d
Travel distance [m]	≤ 100	≤ 400	≤ 400	≤ 10	≤ 100	≤ 10	≤ 100	≤ 10	≤ 10	≤ 100	≤ 400	≤ 400	≤ 50	≤ 100	≤ 100	≤ 400
Oil-resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil-/coolant-resistant						✓	✓		✓	✓			✓		✓	
Flame-retardant	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Halogen-free			✓			✓	✓		✓	✓	✓		✓			✓
Notch-resistant						✓	✓		✓	✓			✓		✓	
Hydrolysis and microbe-resistant		✓	✓			✓	✓		✓	✓	✓	✓	✓		✓	✓
Temperature, from/to [°C]	-5/+70	-35/+90	-35/+90	+5/+70	+5/+70	-25/+80	-25/+80	+5/+70	-25/+80	-25/+80	-35/+90	-35/+70	-25/+80	+5/+70	-25/+80	-35/+100
Nominal voltage [V]	600/1,000	600/1,000	600/1,000	600/1,000	600/1,000	600/1,000	600/1,000	50	50	50	50	50	300/300	300/300	300/300	300/300
Colour	Jet black	Signal black	Jet black	Pastel orange	Moss green	Pastel orange	Pastel orange	Yellow-green	Yellow-green	Yellow-green	Yellow-green	Red lilac	Silver grey	Silver grey	Silver grey	Steel blue
CE/UKCA																
REACH/RoHS																
Cleanroom																
EAC																
UL/CSA + NFPA																
Desina																
More information																
► Catalogue page	328	348	354	282	286	292	296	246	256	262	268	204	150	154	158	162
www.igus.eu/	CF31	CF35UL	CF38	CF210UL	CF21UL	CF270ULD	CF27D	CF211M	CF111D	CF113D	CF11D	CFBUS	CF240PUR	CF211	CF211PUR	CF11

# chainflex® readycable®

Selection chart for igus® chainflex® cables (you can find the green number on

# chainflex® readycable®

the product pages of the respective manufacturers)

	17	18	19	20	21	22	23		24	25	26	27	28	29	30	31
chainflex® series	CF130.UL	CF140.UL	CF5	CF6	CF77.UL.D	CF78.UL	CF9		CF10	CF9.UL	CF220.UL.H	CF280.UL.H	CFBUS.PVC	CFBUS.PUR	CF240	CF29.D
Class	4.4.1.1	4.4.1.1	5.5.2.1	5.5.2.1	5.5.3.1	5.5.3.1	7.6.4.2		7.6.4.1	6.6.4.2	4.2.2.1	4.2.3.1	4.3.2.1	4.3.3.1	4.4.2.1	7.6.4.1
Outer jacket	PVC	PVC	PVC	PVC	PUR	PUR	TPE		TPE	TPE	PVC	PUR	PVC	PUR	PVC	TPE
Shielded		✓		✓		✓			✓		✓	✓	✓	✓	✓	✓
Minimum bend radius	7.5 x d	7.5 x d	6.8 x d	6.8 x d	6.8 x d	6.8 x d	5 x d		5 x d	5 x d	10 x d	10 x d	12.5 x d	12.5 x d	10 x d	6.8 x d
Travel distance [m]	≤ 50	≤ 50	≤ 50	≤ 50	≤ 100	≤ 100	> 400		> 400	> 400	≤ 10	≤ 10	≤ 20	≤ 20	≤ 50	≤ 400
Oil-resistant			✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Oil-/coolant-resistant					✓	✓						✓		✓		✓
Flame-retardant	✓	✓	✓	✓	✓	✓				✓	✓	✓	✓	✓	✓	
Halogen-free					✓	✓	✓		✓			✓		✓		✓
Notch-resistant					✓	✓						✓		✓		
Hydrolysis and microbe-resistant					✓	✓	✓		✓	✓		✓		✓		✓
Temperature, from/to [°C]	+5/+70	+5/+70	+5/+70	+5/+70	-25/+80	-25/+80	-35/+100		-35/+100	-35/+100	+5/+70	-25/+80	+5/+70	-20/+70	-15/+70	-55/+100
Nominal voltage [V]	300/500	300/500	300/500	300/500	300/500	300/500	300/500		300/500	300/500	600/1,000	600/1,000	50	50	300/300	600/1,000
Colour	Silver grey	Silver grey	Moss green	Moss green	Window grey	Window grey	Steel blue		Steel blue	Slate grey	Pastel orange	Pastel orange	Red lilac	Red lilac	Silver grey	Pastel orange
CE/UKCA																
REACH/RoHS																
Cleanroom																
EAC																
UL/CSA + NFPA																
Desina																
More information																
► Catalogue page	66	70	82	86	102	106	114		118	122	302	306	192	200	146	300
www.igus.eu/	CF130	CF140	CF5	CF6	CF77	CF78	CF9		CF10	CF9UL	CF220ULH	CF280ULH	CFBUSPVC	CFBUSPUR	CF240	CF29.D



# ... plan quickly ... directly in CAE ...

## ... EPLAN macros



Load our readycable® quickly and easily via the EPLAN data portal into your electrical design using EPLAN macros. These macros already contain parts lists and assignment diagrams.

Siemens, SEW, Bosch Rexroth are now followed by five other well-known manufacturers. With **Allen Bradley, Beckhoff, B&R, Heidenhain and Fanuc**, we are expanding our online range with 2,046 more datasets.

This means that with the new macros, the customer can already bring **complete readycable® product data** into their EPLAN during the electrical design phase and complete their parts list.

While the electrical details are being worked out in the design department, the user can go **online to the EPLAN data portal** and filter for e.g. 0198 9308 and find all igus® cables in the known qualities, which can

then be selected according to their application and use in their personal product range.

- Automatic generation of cable plan, parts list and further design documents in CAE system
- 7 qualities per cable directly available in EPLAN
- Select cables, calculate service life and order online: [www.igus.eu/readycable](http://www.igus.eu/readycable)
- Reduce design time by 50% with ready-to-use EPLAN macros
- Easily designed digitally & can be ordered online immediately
- No minimum quantity surcharges, no cutting charges
- 36-month guarantee on cables sold by the metre
- Prefabricated modules or macros directly usable in EPLAN as can be seen in the video tutorial: [www.igus.eu/eplan-macro](http://www.igus.eu/eplan-macro)

EPLAN macros are available for readycable® drive cables suitable for eight manufacturers:

**Allen Bradley ▶ Page 584**

**B&R ▶ Page 585**

**Beckhoff ▶ Page 590**

**Bosch Rexroth ▶ Page 590**

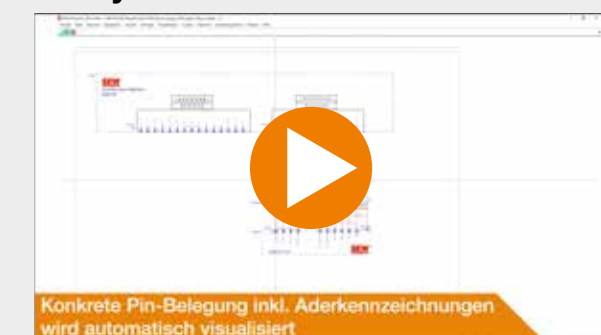
**Fanuc ▶ Page 593**

**Heidenhain ▶ Page 594**

**SEW ▶ Page 602**

**Siemens ▶ Page 604**

### Tutorial on new EPLAN macros for readycable® suitable to SEW



Konkrete Pin-Belegung inkl. Aderkennzeichnungen wird automatisch visualisiert



[www.igus.eu/eplan-macro](http://www.igus.eu/eplan-macro)

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Allen-Bradley/Rockwell</b>					
<b>Motor cables</b>					
2090-CPWM4DF-08AFxx	PVC/PUR/TPE	608			
2090-CPWM4DF-10AFxx	PVC/PUR/TPE	608			
2090-CPWM4DF-12AFxx	PVC/PUR/TPE	608			
2090-CPWM4DF-14AFxx	PVC/PUR/TPE	608			
2090-CPWM4DF-16AFxx	PVC/PUR/TPE	608			
2090-CPWM7DF-02AF	PVC/PUR	608			
2090-CPWM7DF-04AF	PVC/PUR/TPE	608			
2090-CPWM7DF-06AF	PVC/PUR/TPE	608			
2090-CPWM7DF-08AFxx	PVC/PUR/TPE	609	2090-CPWM7E7-08AF	PUR	610
2090-CPWM7DF-10AFxx	PVC/PUR/TPE	609	2090-CPWM7E7-10AF	PUR	610
2090-CPWM7DF-12AFxx	PVC/PUR/TPE	609	2090-CPWM7E7-12AF	PUR	610
2090-CPWM7DF-14AFxx	PVC/PUR/TPE	609	2090-CPWM7E7-14AF	PUR	610
2090-CPWM7DF-16AFxx	PVC/PUR/TPE	609	2090-CPWM7E7-16AF	PUR	610
2090-XX_PMP-10SXX	PVC/TPE/PUR	609			
2090-XX_PMP-14SXX	PVC/PUR/TPE	609			
2090-XX_PMP-16SXX	PVC/PUR/TPE	610			
<b>Servo cables</b>					
2090-CPBM4DF-08AFxx	PVC/PUR	610			
2090-CPBM4DF-10AFxx	PVC/PUR	610			
2090-CPBM4DF-12AFxx	PVC/PUR	611			
2090-CPBM4DF-14AFxx	PVC/PUR	611			
2090-CPBM4DF-16AFxx	PVC/PUR	611			
2090-CPBM7DF-02AF	PUR	611			
2090-CPBM7DF-04AF	PUR	611			
2090-CPBM7DF-06AF	PUR	611			
2090-CPBM7DF-08AFxx	PVC/PUR	611	2090-CPBM7E7-08AFxx	PVC/PUR	612
2090-CPBM7DF-10AFxx	PVC/PUR	612	2090-CPBM7E7-10AFxx	PVC/PUR	613
2090-CPBM7DF-12AFxx	PVC/PUR	612	2090-CPBM7E7-12AFxx	PVC/PUR	613
2090-CPBM7DF-14AFxx	PVC/PUR	612	2090-CPBM7E7-14AFxx	PVC/PUR	613
2090-CPBM7DF-16AFxx	PVC/PUR	612	2090-CPBM7E7-16AFxx	PVC/PUR	613
2090-XX_PMF-10SXX	PVC/PUR	612			
2090-XX_PMF-14SXX	PVC/PUR	612			
2090-XX_PMF-16SXX	PVC/PUR	612			
<b>Hybrid servo cables</b>					
2090-CSBM1DE-10AF	PUR	613			
2090-CSBM1DE-14AF	PVC/PUR	613			
2090-CSBM1DE-18AF	PVC/PUR	613			
2090-CSBM1DF-10AF	PUR	614			
2090-CSBM1DF-14AF	PVC/PUR	614			
2090-CSBM1DF-18AF	PVC/PUR	614			
2090-CSBM1DG-10AF	PUR	614			
2090-CSBM1DG-14AF	PVC/PUR	614			
2090-CSBM1DG-18AF	PVC/PUR	614			
2090-CSWM1DE-10AF	PUR	615			
2090-CSWM1DE-14AF	PVC/PUR	615			
2090-CSWM1DE-18AF	PVC/PUR	615			
2090-CSWM1DF-10AF	PUR	615			
2090-CSWM1DF-14AF	PVC/PUR	615			
2090-CSWM1DF-18AF	PVC/PUR	615			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
2090-CSWM1DG-10AF	PUR	615			
2090-CSWM1DG-14AF	PVC/PUR	615			
2090-CSWM1DG-18AF	PVC/PUR	616			
<b>Brake cables</b>					
2090-UX_BMP-18SXX	PVC/PUR	616			
<b>Feedback cables</b>					
2090-CFBM4DF-CDAFxx	PUR/TPE	616			
2090-CFBM4DF-CEAFxx	PUR/TPE	617			
2090-CFBM7DD-CDAFxx	PUR	617			
2090-CFBM7DD-CEAFxx	PUR	617			
2090-CFBM7DF-CDAFxx	PUR/TPE	617	2090-CFBM7E7-CDAFxx	PUR/TPE	620
2090-CFBM7DF-CEAFxx	PUR/TPE	617	2090-CFBM7E7-CEAFxx	PUR/TPE	620
2090-XX_FMF-Sxx	PUR/TPE	617			
2090-XX_FMP-Sxx	PUR/TPE	617			
<b>Adapter cables (transition cables)</b>					
2090-CFBM4E2-CATR	PUR	618			
2090-CPWM4E2-14TR	PUR	618			
<b>B&amp;R</b>					
<b>Motor cables</b>					
8BCMxxxx.1011A-0	PUR/PVC	618			
8BCMxxxx.1034C-0	PUR/PVC	618			
8BCMxxxx.1312A-0	PUR/PVC	618			
8BCMxxxx.1322A-0	PUR/PVC	619			
8CMxxx.12-0	PUR/PVC	619			
<b>Servo cables</b>					
8BCMxxxx.1111A-0	PUR/PVC	619			
8BCMxxxx.1311A-0	PUR/PVC	619			
8CMxxx.12-1	PUR/PVC	619			
8CMxxx.12-3	PUR/PVC	619			
8CMxxx.12-5	PUR/PVC	619			
<b>Hybrid servo cables</b>					
8BCHxxxx.1111A-0	PUR	620			
8BCHxxxx.1312A-0	PUR	620			
8CHxxxx.1111A-0	PUR	620			
8ECHxxxx.1111A-0	PUR	620	8ECH00xx.11140-0	PUR	620
<b>EnDat cables</b>					
8BCExxxx.1111A-0	TPE/PVC/PUR	620			
8CExxx.12-1	TPE/PVC/PUR	620			
<b>Encoder cables</b>					
8BCFxxxx.1221B-0	PVC/PUR	620			
8BCRxxxx.1121A-0	TPE/PVC/PUR	621			
8BCSxxxx.1111A-0	TPE/PVC/PUR	621			
<b>Resolver cables</b>					
8BCRxxx.1111A-0	TPE/PVC/PUR	621			
8CRxxx.12-1	TPE/PVC/PUR	621			
<b>Bus cables</b>					
X20CA3E61.xxxx	PVC/PUR/TPE	621			
X67CA0E41.xxxx	PVC/PUR/TPE	621			
<b>Baumüller</b>					
<b>Servo cables</b>					
324781 (5m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	625



Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Baumüller</b>					
<b>Servo cables</b>					
324782 (7m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	625
324783 (10m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	625
324784 (15m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	625
324785 (20m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	625
324786 (25m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	623
324787 (30m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	623
324788 (35m)	PVC/PUR	622	324781 (5m) (ext.)	PVC/PUR	623
324789 (40m)	PVC/PUR	623	324781 (5m) (ext.)	PVC/PUR	623
324790 (50m)	PVC/PUR	623	324781 (5m) (ext.)	PVC/PUR	623
324791 (75m)	PVC/PUR	623	324781 (5m) (ext.)	PVC/PUR	623
324792 (100m)	PVC/PUR	623	324781 (5m) (ext.)	PVC/PUR	623
326577 (5m)	PVC/PUR	625	326577 (5m) (ext.)	PVC/PUR	627
326578 (7m)	PVC/PUR	625	326577 (5m) (ext.)	PVC/PUR	627
326579 (10m)	PVC/PUR	625	326577 (5m) (ext.)	PVC/PUR	627
326580 (15m)	PVC/PUR	625	326577 (5m) (ext.)	PVC/PUR	627
326581 (20m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326582 (25m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326583 (30m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326584 (35m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326585 (40m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326586 (50m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326587 (75m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326588 (100m)	PVC/PUR	626	326577 (5m) (ext.)	PVC/PUR	627
326589 (5m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326591 (7m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326592 (10m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326593 (15m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326594 (20m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326596 (25m)	PVC/PUR	627	326589 (5m) (ext.)	PVC/PUR	628
326597 (30m)	PVC/PUR	628	326589 (5m) (ext.)	PVC/PUR	628
326598 (35m)	PVC/PUR	628	326589 (5m) (ext.)	PVC/PUR	628
326599 (40m)	PVC/PUR	628	326589 (5m) (ext.)	PVC/PUR	628
326600 (5m)	PVC/PUR	628	326600 (5m) (ext.)	PVC/PUR	629
326601 (7m)	PVC/PUR	628	326600 (5m) (ext.)	PVC/PUR	629
326602 (10m)	PVC/PUR	628	326600 (5m) (ext.)	PVC/PUR	629
326603 (15m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326604 (20m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326605 (25m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326606 (30m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326607 (35m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326608 (40m)	PVC/PUR	629	326600 (5m) (ext.)	PVC/PUR	629
326609 (5m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326610 (7m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326611 (10m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326612 (15m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326613 (20m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326614 (25m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326615 (30m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
326616 (35m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631

Basic cables	Jacket	Page	Extension cables	Jacket	Page
326617 (40m)	PVC/PUR	630	326609 (5m) (ext.)	PVC/PUR	631
380967 (7m)	PVC/PUR	623	414840 (5m) (ext.)	PVC/PUR	625
413410 (10m)	PVC/PUR	623	414840 (5m) (ext.)	PVC/PUR	625
414840 (5m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414841 (15m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414842 (20m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414843 (25m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414846 (30m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414848 (35m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414849 (40m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414850 (50m)	PVC/PUR	624	414840 (5m) (ext.)	PVC/PUR	625
414851 (75m)	PVC/PUR	625	414840 (5m) (ext.)	PVC/PUR	625
414852 (100m)	PVC/PUR	625	414840 (5m) (ext.)	PVC/PUR	625
<b>Resolver cables</b>					
239540 (5m)	PVC/TPE/PUR	631	246658 (3m) (ext.)	PVC/TPE/PUR	633
239541 (8m)	PVC/TPE/PUR	631	246658 (3m) (ext.)	PVC/TPE/PUR	633
239542 (10m)	PVC/TPE/PUR	631	246658 (3m) (ext.)	PVC/TPE/PUR	633
239543 (15m)	PVC/TPE/PUR	631	246658 (3m) (ext.)	PVC/TPE/PUR	633
239544 (20m)	PUR	631	246658 (3m) (ext.)	PUR	633
239544 (20m)	PVC/TPE	631	246658 (3m) (ext.)	PVC/TPE	633
239545 (25m)	PVC/TPE/PUR	631	246658 (3m) (ext.)	PVC/TPE/PUR	633
239546 (30m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
239547 (35m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
240520 (40m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
240521 (45m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
240522 (50m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
242954 (6m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
243379 (4m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
244033 (55m)	PVC/TPE/PUR	632	246658 (3m) (ext.)	PVC/TPE/PUR	633
245484 (60m)	PVC/TPE/PUR	633	246658 (3m) (ext.)	PVC/TPE/PUR	633
246658 (3m)	PVC/TPE/PUR	633	246658 (3m) (ext.)	PVC/TPE/PUR	633
<b>Pulse encoder cable</b>					
198962 (3m)	PVC/TPE/PUR	633	198962 (3m) (ext.)	PVC/TPE/PUR	634
198963 (5m)	PVC/TPE/PUR	633	198962 (3m) (ext.)	PVC/TPE/PUR	634
198964 (8m)	PVC/TPE/PUR	633	198962 (3m) (ext.)	PVC/TPE/PUR	634
198965 (10m)	PVC/TPE/PUR	633	198962 (3m) (ext.)	PVC/TPE/PUR	634
198966 (15m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
198967 (20m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
198968 (25m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
198969 (30m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
208829 (40m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
225360 (35m)	PVC/TPE/PUR	634	198962 (3m) (ext.)	PVC/TPE/PUR	634
369864 (3m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
371494 (20m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
378022 (50m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
380358 (35m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
382005 (45m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
389807 (7m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637
389808 (9m)	PVC/TPE	635	393889 (2m) (ext.)	PVC/TPE	637
389808 (9m)	PUR	635	393889 (2m) (ext.)	PUR	637
391216 (40m)	PVC/TPE/PUR	635	393889 (2m) (ext.)	PVC/TPE/PUR	637



Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Baumüller</b>					
<b>Pulse encoder cable</b>					
393889 (2m)	PVC/TPE	636	393889 (2m) (ext.)	PVC/TPE	637
393889 (2m)	PUR	636	393889 (2m) (ext.)	PUR	637
393890 (8m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
393891 (10m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
393892 (15m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
393893 (25m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
393894 (30m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
394014 (5m)	PVC/TPE/PUR	636	393889 (2m) (ext.)	PVC/TPE/PUR	637
<b>Baumüller, SpeedTec</b>					
<b>Servo cables, SpeedTec</b>					
445872	PVC/PUR	638	445872	PVC/PUR	639
445887	PVC/PUR	638	445872	PVC/PUR	639
445889	PVC/PUR	638	445872	PVC/PUR	639
447675	PVC/PUR	638	445872	PVC/PUR	639
447676	PVC/PUR	638	445872	PVC/PUR	639
447677	PVC/PUR	638	445872	PVC/PUR	639
447678	PVC/PUR	638	445872	PVC/PUR	639
447679	PVC/PUR	638	445872	PVC/PUR	639
447680	PVC/PUR	639	445872	PVC/PUR	639
447681	PVC/PUR	639	445872	PVC/PUR	639
447682	PVC/PUR	639	445872	PVC/PUR	639
447683	PVC/PUR	639	445872	PVC/PUR	639
447684	PVC/PUR	639	445872	PVC/PUR	639
447687	PVC/PUR	639	445872	PVC/PUR	639
447688	PVC/PUR	640	447684	PVC/PUR	641
447692	PVC/PUR	640	447684	PVC/PUR	641
447698	PVC/PUR	640	447684	PVC/PUR	641
447852	PVC/PUR	640	447684	PVC/PUR	641
447853	PVC/PUR	640	447684	PVC/PUR	641
447854	PVC/PUR	640	447684	PVC/PUR	641
447855	PVC/PUR	640	447684	PVC/PUR	641
447856	PVC/PUR	640	447684	PVC/PUR	641
447857	PVC/PUR	641	447684	PVC/PUR	641
447858	PVC/PUR	641	447684	PVC/PUR	641
447686	PVC/PUR	641	447686	PVC/PUR	643
447689	PVC/PUR	641	447686	PVC/PUR	643
447690	PVC/PUR	641	447686	PVC/PUR	643
447691	PVC/PUR	641	447686	PVC/PUR	643
447693	PVC/PUR	642	447686	PVC/PUR	643
447694	PVC/PUR	642	447686	PVC/PUR	643
447695	PVC/PUR	642	447686	PVC/PUR	643
447696	PVC/PUR	642	447686	PVC/PUR	643
447697	PVC/PUR	642	447686	PVC/PUR	643
447699	PVC/PUR	642	447686	PVC/PUR	643
448060	PVC/PUR	642	447686	PVC/PUR	643
448061	PVC/PUR	642	447686	PVC/PUR	643
448063	PVC/PUR	643	448063	PVC/PUR	644
448064	PVC/PUR	643	448063	PVC/PUR	644
448065	PVC/PUR	643	448063	PVC/PUR	644

Basic cables	Jacket	Page	Extension cables	Jacket	Page
448066	PVC/PUR	643	448063	PVC/PUR	644
448067	PVC/PUR	643	448063	PVC/PUR	644
448069	PVC/PUR	643	448063	PVC/PUR	644
448070	PVC/PUR	644	448063	PVC/PUR	644
448071	PVC/PUR	644	448063	PVC/PUR	644
448072	PVC/PUR	644	448063	PVC/PUR	644
448080	PVC/PUR	644	448080	PVC/PUR	645
448118	PVC/PUR	644	448080	PVC/PUR	645
448119	PVC/PUR	645	448080	PVC/PUR	645
448120	PVC/PUR	645	448080	PVC/PUR	645
448121	PVC/PUR	645	448080	PVC/PUR	645
448122	PVC/PUR	645	448080	PVC/PUR	645
448123	PVC/PUR	645	448080	PVC/PUR	645
448124	PVC/PUR	645	448080	PVC/PUR	645
448125	PVC/PUR	645	448080	PVC/PUR	645
448129	PVC/PUR	646	448129	PVC/PUR	647
448131	PVC/PUR	646	448129	PVC/PUR	647
448132	PVC/PUR	646	448129	PVC/PUR	647
448133	PVC/PUR	646	448129	PVC/PUR	647
448134	PVC/PUR	646	448129	PVC/PUR	647
448135	PVC/PUR	646	448129	PVC/PUR	647
448136	PVC/PUR	646	448129	PVC/PUR	647
448137	PVC/PUR	646	448129	PVC/PUR	647
448138	PVC/PUR	646	448129	PVC/PUR	647
<b>Resolver cables, SpeedTec</b>					
448944	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448945	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448946	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448948	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448949	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448956	PVC/PUR/TPE	647	448944	PVC/PUR/TPE	649
448962	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448967	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448970	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448971	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448973	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448976	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448978	PVC/PUR/TPE	648	448944	PVC/PUR/TPE	649
448980	PVC/PUR/TPE	649	448944	PVC/PUR/TPE	649
448981	PVC/PUR/TPE	649	448944	PVC/PUR/TPE	649
448982	PVC/PUR/TPE	649	448944	PVC/PUR/TPE	649
<b>Pulse encoder cables, SpeedTec</b>					
448816	PVC/PUR/TPE	649	448816	PVC/PUR/TPE	651
448817	PVC/PUR/TPE	649	448816	PVC/PUR/TPE	651
448818	PVC/PUR/TPE	649	448816	PVC/PUR/TPE	651
448819	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448820	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448821	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448822	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448823	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448824	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651
448826	PVC/PUR/TPE	650	448816	PVC/PUR/TPE	651

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Baumüller, SpeedTec</b>					
Pulse encoder cables, SpeedTec					
448827	PVC/PUR/TPE	651	448816	PVC/PUR/TPE	651
448828	PVC/PUR/TPE	651	448816	PVC/PUR/TPE	651
448830	PVC/PUR/TPE	651	448816	PVC/PUR/TPE	651
448832	PVC/PUR/TPE	651	448816	PVC/PUR/TPE	651
<b>Beckhoff</b>					
Motor cables					
ZK4500-8015-xxx	PUR	652			
ZK4500-8024-xxx	PVC/PUR	652			
ZK4501-8024-xxx	PVC/PUR	652			
ZK4530-8110-xxxx	PVC/PUR	652			
Servo cables					
ZK4000-2111-xxxx	PVC/PUR	652			
ZK4000-2112-xxxx	PVC/PUR	652			
ZK4000-2711-xxxx	PVC/PUR	653			
ZK4500-0023-xxxx	PVC/PUR	653	ZK4501-0023-xxxx	PVC/PUR	653
ZK4500-0024-xxxx	PVC/PUR	653	ZK4501-0024-xxxx	PVC/PUR	653
Hybrid servo cables					
ZK4500-8022-xxxx	PVC/PUR	654	ZK4501-8022-xxxx	PVC/PUR	654
ZK4500-8023-xxxx	PVC/PUR	654	ZK4501-8023-xxxx	PVC/PUR	654
ZK4704-0421-xxxx	PVC/PUR	654			
Encoder cables					
ZK4000-2410-xxxx	PVC/PUR	654			
ZK4000-2610-xxxx	PVC/PUR	654			
ZK4510-0020-xxxx	PVC/PUR	655	ZK4511-0020-xxxx	PVC/PUR	655
ZK4520-0020-xxxx	PVC/PUR	655			
Thermal protection cables					
ZK4000-2510-xxxx	PVC/TPE	655			
Resolver cables					
ZK4000-2210-xxxx	PVC/PUR/TPE	655			
ZK4530-0010-xxxx	PVC/PUR/TPE	655	ZK4531-0020-xxxx	PVC/PUR/TPE	656
ZK4530-8010-xxxx	PVC/PUR/TPE	656	ZK4724-0410-xxxx	PVC/PUR/TPE	656
Network cables EtherCAT					
ZK1090-9191-xxxx	TPE	656			
<b>Berger Lahr</b>					
Servo cables					
VW3M5101Rxxx	PUR/PVC	657			
VW3M5102Rxxx	PUR/PVC	657			
Resolver cables					
VW3M8101Rxxx	TPE/PUR/PVC	657			
<b>Bosch Rexroth</b>					
Power cables					
IKG0331	PUR/PVC	658	IKG0332	PUR/PVC	667
IKG4008	PUR/PVC	658	IKG4006	PUR/PVC	667
IKG4009	PUR/PVC	658	IKG4006	PUR/PVC	667
IKG4017	PUR/PVC	658	IKG4006	PUR/PVC	667
IKG4018	PUR/PVC	658			
IKG4020	PUR/PVC	658			
IKG4055	PUR/PVC	658			
IKG4060	PUR/PVC	658			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
IKG4067	PUR/PVC	658	IKG4061	PUR/PVC	667
IKG4070	PUR/PVC	659	IKG4061	PUR/PVC	667
IKG4072	PUR/PVC	659	IKG4074	PUR/PVC	667
IKG4087	PUR/PVC	659	IKG4081	PUR/PVC	667
IKG4090	PUR/PVC	659	IKG4081	PUR/PVC	667
IKG4100	PUR/PVC	659			
IKG4103	PUR/PVC	659			
IKG4107	PUR/PVC	659			
IKG4118	PUR/PVC	659			
IKG4119	PUR/PVC	660			
IKG4147	PUR/PVC	660	IKG4141	PUR/PVC	667
IKG4150	PUR/PVC	660	IKG4141	PUR/PVC	667
IKG4155	PUR/PVC	660	IKG4141	PUR/PVC	667
IKG4164	PUR/PVC	660			
IKG4167	PUR/PVC	660	IKG4161	PUR/PVC	667
IKG4172	PUR/PVC	660			
IKG4173	PUR/PVC	660			
IKG4186	PUR/PVC	661			
IKG4200	PUR/PVC	661			
IKG4204	PUR/PVC	661			
IKL0001	PUR/PVC	661	IKL0003	PUR/PVC	667
IKL0002	PVC/PUR	661			
IKL0006	PUR/PVC	661			
IKL0011	PUR/PVC	661			
IKL0012	PVC/PUR	661			
IKL0021	PUR/PVC	661	IKL0023	PUR/PVC	668
IKL0022	PVC/PUR	661			
IKL0041	PUR/PVC	662			
IKL0042	PUR/PVC	662			
IKL0061	PUR/PVC	662			
IKL0081	PUR/PVC	662	IKL0089	PUR/PVC	668
IKL0101	PUR/PVC	662			
IKL0121	PUR/PVC	662			
IKL0161	PUR/PVC	662	IKL0168	PUR/PVC	668
RKL0006	PVC/PUR	663			
RKL0013	PVC/PUR	663			
RKL0014	PVC/PUR	663			
RKL0019	PVC/PUR	663			
RKL0053	PVC/PUR	663			
RKL0054	PVC/PUR	663			
RKL4300	PUR/PVC	663	RKL4304	PUR/PVC	668
RKL4301	PUR/PVC	663	RKL4304	PUR/PVC	668
RKL4302	PUR/PVC	663	RKL4305	PUR/PVC	668
RKL4303	PUR/PVC	664	RKL4305	PUR/PVC	668
RKL4306	PUR/PVC	664	RKL4311	PUR/PVC	668
RKL4307	PUR/PVC	664	RKL4311	PUR/PVC	668
RKL4308	PUR/PVC	664			
RKL4309	PUR/PVC	664			
RKL4310	PUR/PVC	664	RKL4312	PUR/PVC	668
RKL4313	PUR/PVC	664	RKL4316	PUR/PVC	669
RKL4314	PUR/PVC	664	RKL4316	PUR/PVC	669

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Bosch Rexroth</b>					
<b>Power cables</b>					
RKL4315	PUR/PVC	665	RKL4316	PUR/PVC	669
RKL4317	PUR/PVC	665	RKL4319	PUR/PVC	669
RKL4318	PUR/PVC	665	RKL4319	PUR/PVC	669
RKL4320	PUR/PVC	665			
RKL4321	PUR/PVC	665	RKL4336	PUR/PVC	669
RKL4322	PUR/PVC	665			
RKL4323	PUR/PVC	665	RKL4338	PUR/PVC	669
RKL4324	PUR/PVC	665			
RKL4325	PUR/PVC	665			
RKL4326	PUR/PVC	666	RKL4336	PUR/PVC	669
RKL4327	PUR/PVC	666			
RKL4328	PUR/PVC	666	RKL4338	PUR/PVC	669
RKL4329	PUR/PVC	666			
RKL4330	PUR/PVC	666	RKL4340	PUR/PVC	669
RKL4331	PUR/PVC	666	RKL4341	PUR/PVC	669
RKL4332	PVC/PUR	666			
RKL4343	PVC/PUR	666			
RKL4344	PVC/PUR	666			
<b>Servo cables</b>					
RL2-002CBB-NN-xxx,x	PVC/PUR	670	RL2-500CBB-NN-xxx,x	PVC/PUR	670
RL2-022CBB-NN-xxx,x	PVC/PUR	670	RL2-521CBB-NN-xxx,x	PVC/PUR	670
RL2-045EBB-NN-xxx,x	PVC/PUR	670	RL2-542EBB-NN-xxx,x	PVC/PUR	670
<b>Hybrid servo cables</b>					
RH2-021DBB-NN	PUR	670			
RH2-022DBB-NN	PUR	670			
RH2-023DBB-NN	PUR	670			
RKH0101	PUR	671			
RKH0900	PUR	671			
<b>Encoder cables</b>					
IKS0230	TPE/PVC/PUR	671	IKS0232	TPE/PVC/PUR	674
IKS0251	TPE	671	IKS0255	TPE	674
IKS0253	TPE	671	IKS0255	TPE	674
IKS0259	TPE	671			
IKS0262	TPE	671			
IKS0301	TPE/PVC/PUR	671	IKS0303	TPE/PVC/PUR	674
IKS0315	TPE/PVC/PUR	671			
IKS0374	TPE/PVC/PUR	671			
IKS4001	TPE/PVC/PUR	672			
IKS4002	TPE/PVC/PUR	672			
IKS4020	TPE/PVC/PUR	672	IKS4376	TPE/PVC/PUR	675
IKS4038	TPE/PVC/PUR	672			
IKS4041	TPE/PVC/PUR	672			
IKS4042	TPE/PVC/PUR	672	IKS4151	TPE/PVC/PUR	674
IKS4066	TPE/PVC/PUR	672			
IKS4103	TPE/PVC/PUR	672	IKS4322	TPE/PVC/PUR	675
IKS4142	TPE/PVC/PUR	673	IKS4376	TPE/PVC/PUR	675
IKS4314	TPE/PVC/PUR	673			
IKS4374	TPE/PVC/PUR	673			
IKS4375	TPE/PVC/PUR	673			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
IKS4384	TPE/PVC/PUR	673			
IKS4389	TPE/PVC/PUR	673			
RG2-002AAB-NN-xxx,x	PVC/TPE	673	RG2-510AAB-NN-xxx,x	PVC/TPE	675
RKG0014	TPE/PVC/PUR	673			
RKG0020	TPE/PVC/PUR	673			
RKG0026	TPE/PVC/PUR	674			
RKG0028	TPE/PVC/PUR	674			
RKG4200	TPE/PVC/PUR	674	RKG4201	TPE/PVC/PUR	675
<b>Elau/Schneider Electric</b>					
<b>Servo cables</b>					
E-MO-067	PVC/PUR	676			
E-MO-087	PVC/PUR	676			
E-MO-092	PVC/PUR	676			
E-MO-111 SH-Motor 1.5	PVC/PUR	676			
E-MO-113 SH-Motor 2.5	PVC/PUR	676			
<b>Hybrid servo cables</b>					
E-MO-109, VW3E1109Rxxx	PUR	677			
E-MO-117, VW3E1117Rxxx	PUR	677			
E-MO-118, VW3E1118Rxxx	PUR	677			
E-MO-119, VW3E1119Rxxx	PUR	677			
E-MO-120, VW3E1120Rxxx	PUR	677			
E-MO-121, VW3E1121Rxxx	PUR	677			
E-MO-124, VW3E1124Rxxx	PUR	677			
E-MO-125, VW3E1125Rxxx	PUR	677			
E-MO-126, VW3E1126Rxxx	PUR	677			
E-MO-127, VW3E1127Rxxx	PUR	677			
<b>Encoder cables</b>					
E-FB-060	PVC/TPE	677			
E-FB-071	PVC/TPE/PUR	677			
E-FB-080	PVC/TPE/PUR	677			
<b>Fagor</b>					
<b>Path measuring cables</b>					
			iEEC-x	PUR/TPE	678
			iXC-C2-D	PUR/TPE	678
			iXC-C2-FN2	PUR/TPE	678
			iXC-C2-H	PUR/TPE	678
			iXC-C4-D	PUR/TPE	678
			iXC-C8-F-C9	PUR/TPE	678
			iXC-C8-F-D	PUR/TPE	679
			iXC-C8-FN	PUR/TPE	679
<b>Fanuc</b>					
<b>Power cables</b>					
LX660-8077-T261	PUR/PVC/TPE	680			
LX660-8077-T264	PUR/PVC/TPE	680			
LX660-8077-T265	PUR/PVC/TPE	680			
LX660-8077-T266	PUR/PVC/TPE	680			
LX660-8077-T267	PUR/PVC/TPE	680			
LX660-8077-T270	PUR/PVC/TPE	680			
LX660-8077-T271	PUR/PVC/TPE	681			
LX660-8077-T272	PUR/PVC/TPE	681			
LX660-8077-T273	PUR/PVC/TPE	681			



## ... Fanuc ... Festo ... Heidenhain ...

Selection by manufacturer part number

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Fanuc</b>					
<b>Power cables</b>					
LX660-8077-T291	PUR/PVC/TPE	681			
LX660-8077-T292	PUR/PVC/TPE	681			
LX660-8077-T293	PUR/PVC/TPE	681			
LX660-8077-T296	PUR/PVC/TPE	682			
LX660-8077-T298	PUR/PVC/TPE	682			
LX660-8077-T300	PUR/PVC/TPE	682			
<b>Servo cables</b>					
LX660-8077-T259	PUR	682			
LX660-8077-T274	PUR	682			
LX660-8077-T416	PUR	682			
LX660-8077-T451	PUR	682			
LX660-8077-T470	PUR	683			
LX660-8077-T471	PUR	683			
<b>Brake cables</b>					
LX660-8077-T311	PUR	683			
<b>Signal cables</b>					
LX660-2018-T015	PVC	683			
LX660-4077-T296	PUR/TPE	683			
LX660-4077-T297	PUR/TPE	683			
LX660-4077-T302	PUR/TPE	683			
LX660-4077-T303	PUR/TPE	684			
LX660-4077-T310	TPE	684			
LX660-4077-T319	PUR/TPE	684			
<b>Festo</b>					
<b>Servo cables</b>					
NEBM-M16G8-E-xxx-Q7-LE8	PUR	685			
NEBM-M23G6-E-xxx-N-LE7	PVC/PUR	685			
NEBM-M23G8-E-xxx-N-LE8	PVC/PUR	685			
NEBM-M40G8-E-xxx-N-LE7	PVC/PUR	685			
<b>Control cables</b>					
KPWR-MC-1-SUB-9HC-xxx	PVC/PUR	685			
<b>Encoder cables</b>					
NEBM-M23G12-E-xxx-N-S1G9	PVC/PUR/TPE	685			
<b>Data cables</b>					
KDI-MC-M8-SUB-9-xxx	PVC/PUR	686			
KES-MC-1-SUB-9-xxx	PVC/PUR	686			
NEBM-M12G8-E-xxx-N-S1G15	PVC/PUR/TPE	686			
NEBM-M12G8-E-xxx-S1G9	PVC/PUR/TPE	686			
NEBM-M12W8-E-xxx-N-S1G15	PVC/PUR/TPE	686			
NEBM-S1G15-E-xxx-LE6	PVC/PUR/TPE	687			
NEBM-S1G9-E-xxx-LE6	PVC/PUR	687			
<b>Bus cables</b>					
FBA-CO-SUB-9-M12	PVC/PUR/TPE	687			
<b>Heidenhain</b>					
<b>Servo cables</b>					
352 960-xx	PVC/PUR	688			
352 962-xx	PVC/PUR	688			
352 963-xx	PVC/PUR	688			

## Heidenhain ... Jetter ... Kollmorgen/Danaher Motion ...

Selection by manufacturer part number

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Adapter cables</b>					
298 401-xx	PVC/PUR/TPE	688			
333 164-xx	PVC/PUR/TPE	688			
368 330-xx	PVC/PUR	688			
524 599-xx	PVC/PUR/TPE	689			
534 855-xx	PVC/PUR/TPE	689			
605 424-xx	PVC/PUR/TPE	689			
289 440-xx	PVC/PUR/TPE	689			
298 399-xx	PVC/PUR/TPE	689			
298 400-xx	PVC/PUR/TPE	689			
309 783-xx	PVC/PUR/TPE	689			
336 376-xx	PVC/PUR/TPE	690			
604 419-xx	PUR/TPE	690			
298 402-xx	PUR/TPE	690			
309 738-xx	PUR/TPE	690			
309 774-xx	PUR/TPE	690			
368 172-xx	PVC/PUR/TPE	690			
309 777-xx	PUR/TPE	691			
309 778-xx	PUR/TPE	691			
533 627-xx	PUR/TPE	691			
310 193-xx	PUR/TPE	691			
310 197-xx	PUR/TPE	691			
310 199-xx	PUR/TPE	691			
323 897-xx	PUR/TPE	691			
324 544-xx	PUR/TPE	692			
332 115-xx	PUR/TPE	692			
335 077-xx	PUR/TPE	692			
354 411-xx	PUR/TPE	692			
355 398-xx	PUR/TPE	692			
360 472-xx	PUR/TPE	692			
309 779-xx	PUR/TPE	692			
309 780-xx	PUR/TPE	693			
354 770-xx	PUR/TPE	693			
<b>Jetter</b>					
<b>Motor cables</b>					
Cable No. 201	PVC/PUR/TPE	694			
Cable No. 203	PVC/PUR/TPE	694			
Cable No. 26.1	PVC/PUR/TPE	694			
<b>Servo cables</b>					
Cable No. 202	PVC/PUR	694			
Cable No. 204	PVC/PUR	694			
Cable No. 24.1	PVC/PUR	694			
<b>Resolver cables</b>					
Cable No. 23	PVC/PUR/TPE	695			
Cable No. 423	PVC/PUR/TPE	695			
Cable No. 523	PVC/PUR/TPE	695			
Cable No. 723	PVC/PUR/TPE	695			
<b>Kollmorgen/Danaher Motion</b>					
<b>Motor cables</b>					
88959 (5m)	TPE	696			
88960 (10m)	TPE	696			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Kollmorgen/Danaher Motion</b>					
<b>Motor cables</b>					
88962 (15m)	TPE	696			
88964 (20m)	TPE	696			
88966 (25m)	TPE	696			
89918 (5m)	PVC/TPE	696			
89952 (10m)	PVC/TPE	696			
89953 (15m)	PVC/TPE	696			
89954 (20m)	PVC/TPE	696			
89956 (25m)	PVC/TPE	696			
89959 (5m)	PVC/TPE	696			
89960 (10m)	PVC/TPE	696			
89962 (15m)	PVC/TPE	696			
89964 (20m)	PVC/TPE	697			
89966 (25m)	PVC/TPE	697			
90083 (5m)	PVC/TPE	697			
90084 (10m)	PVC/TPE	697			
90085 (15m)	PVC/TPE	697			
90086 (20m)	PVC/TPE	697			
90087 (25m)	PVC/TPE	697			
102575 (5m)	PVC/TPE	697			
102576 (10m)	PVC/TPE	697			
102806 (15m)	PVC/TPE	697			
102807 (20m)	PVC/TPE	698			
102808 (25m)	PVC/TPE	698			
107473 (5m)	PVC/TPE	698			
107474 (10m)	PVC/TPE	698			
107475 (15m)	PVC/TPE	698			
107476 (20m)	PVC/TPE	698			
107477 (25m)	PVC/TPE	698			
107485 (5m)	PVC/TPE	698			
107486 (10m)	PVC/TPE	699			
107487 (15m)	PVC/TPE	699			
107488 (20m)	PVC/TPE	699			
107489 (25m)	PVC/TPE	699			
200456 (5m)	PVC/TPE	699			
200457 (10m)	PVC/TPE	699			
200458 (15m)	PVC/TPE	699			
200459 (20m)	PVC/TPE	699			
200460 (25m)	PVC/TPE	699			
200468 (5m)	PVC/TPE	699			
200469 (10m)	PVC/TPE	700			
200470 (15m)	PVC/TPE	700			
200471 (20m)	PVC/TPE	700			
200472 (25m)	PVC/TPE	700			
200618 (5m)	PVC/TPE	700			
200619 (10m)	PVC/TPE	700			
200620 (15m)	PVC/TPE	700			
200621 (20m)	PVC/TPE	700			
200622 (25m)	PVC/TPE	700			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Servo cables</b>					
89957 (5m)	PVC/PUR	701			
89961 (10m)	PVC/PUR	701			
89963 (15m)	PVC/PUR	701			
89965 (20m)	PVC/PUR	701			
89967 (25m)	PVC/PUR	701			
89968 (5m)	PVC/PUR	701			
89969 (25m)	PVC/PUR	701			
89970 (10m)	PVC/PUR	701			
89971 (15m)	PVC/PUR	702			
89972 (20m)	PVC/PUR	702			
90088 (5m)	PVC/PUR	702			
90089 (10m)	PVC/PUR	702			
90090 (15m)	PVC/PUR	702			
90091 (20m)	PVC/PUR	702			
90092 (25m)	PVC/PUR	702			
102579 (5m)	PVC/PUR	703			
102580 (10m)	PVC/PUR	703			
102809 (15m)	PVC/PUR	703			
102810 (20m)	PVC/PUR	703			
102811 (25m)	PVC/PUR	703			
107479 (5m)	PVC/PUR	703			
107480 (10m)	PVC/PUR	703			
107481 (15m)	PVC/PUR	704			
107482 (20m)	PVC/PUR	704			
107483 (25m)	PVC/PUR	704			
107491 (5m)	PVC/PUR	704			
107492 (10m)	PVC/PUR	704			
107493 (15m)	PVC/PUR	704			
107494 (20m)	PVC/PUR	704			
107495 (25m)	PVC/PUR	705			
200462 (5m)	PVC/PUR	705			
200463 (10m)	PVC/PUR	705			
200464 (15m)	PVC/PUR	705			
200465 (20m)	PVC/PUR	705			
200466 (25m)	PVC/PUR	705			
200474 (5m)	PVC/PUR	705			
200475 (10m)	PVC/PUR	705			
200476 (15m)	PVC/PUR	706			
200477 (20m)	PVC/PUR	706			
200478 (25m)	PVC/PUR	706			
200623 (5m)	PVC/PUR	706			
200624 (10m)	PVC/PUR	706			
200625 (15m)	PVC/PUR	706			
200626 (20m)	PVC/PUR	706			
200627 (25m)	PVC/PUR	706			
<b>Signal cables</b>					
84972 (5m)	PVC/TPE/PUR	707			
84973 (10m)	PVC/TPE/PUR	707			
84974 (15m)	PVC/TPE/PUR	707			
84975 (20m)	PVC/TPE/PUR	707			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Kollmorgen/Danaher Motion</b>					
<b>Signal cables</b>					
85034 (5m)	PVC/TPE/PUR	708			
85035 (10m)	PVC/TPE/PUR	708			
85036 (15m)	PVC/TPE/PUR	708			
85037 (20m)	PVC/TPE/PUR	708			
85039 (5m)	PVC/TPE/PUR	709			
85040 (10m)	PVC/TPE/PUR	709			
85041 (15m)	PVC/TPE/PUR	709			
85042 (20m)	PVC/TPE/PUR	709			
87655 (25m)	PVC/TPE/PUR	707			
90287 (5m)	PVC/TPE	707			
91019 (10m)	PVC/TPE	707			
91807 (20m)	PVC/TPE	708			
91811 (15m)	PVC/TPE	708			
92205 (25m)	PVC/TPE	708			
107915 (5m)	PVC/TPE	708			
107916 (10m)	PVC/TPE	708			
107917 (15m)	PVC/TPE	708			
107918 (20m)	PVC/TPE	708			
107919 (25m)	PVC/TPE	708			
<b>Lenze</b>					
<b>Servo cables</b>					
EWLMxxxGMS-015C	PUR/PVC	710	EWLMxxxZM-015C	PUR/PVC	712
EWLMxxxGMS-025	PUR/PVC	710	EWLMxxxZM-025	PUR/PVC	712
EWLMxxxGMS-040I	PVC/PUR	710			
EYP0010AxxxxA00P01	PUR/PVC	710	EYP0010VxxxxM01P01	PUR/PVC	712
EYP0010AxxxxM01A00	PUR/PVC	710	EYP0010VxxxxM01P01	PUR/PVC	712
EYP0011AxxxxA00P01	PUR/PVC	710	EYP0011VxxxxM01P01	PUR/PVC	712
EYP0011AxxxxM01A00	PUR/PVC	710	EYP0011VxxxxM01P01	PUR/PVC	712
EYP0012AxxxxA00P01	PUR/PVC	710	EYP0012VxxxxM01P01	PUR/PVC	712
EYP0012AxxxxA00P02	PUR/PVC	711	EYP0012VxxxxM02P02	PUR/PVC	712
EYP0012AxxxxM01A00	PUR/PVC	711	EYP0012VxxxxM01P01	PUR/PVC	712
EYP0012AxxxxM02A00	PUR/PVC	711	EYP0012VxxxxM02P02	PUR/PVC	712
EYP0013AxxxxA00P02	PUR/PVC	711	EYP0013VxxxxM02P02	PUR/PVC	713
EYP0013AxxxxM02A00	PUR/PVC	711	EYP0013VxxxxM02P02	PUR/PVC	713
EYP0014AxxxxA00P03	PUR/PVC	711	EYP0014VxxxxM03P03	PUR/PVC	713
EYP0014AxxxxM03A00	PUR/PVC	711	EYP0014VxxxxM03P03	PUR/PVC	713
EYP0015AxxxxA00P03	PUR/PVC	711	EYP0015VxxxxM03P03	PUR/PVC	713
EYP0015AxxxxM03A00	PUR/PVC	711	EYP0015VxxxxM03P03	PUR/PVC	713
EYP0016AxxxxA00P03	PUR/PVC	712	EYP0016VxxxxM03P03	PUR/PVC	713
EYP0016AxxxxM03A00	PUR/PVC	712	EYP0016VxxxxM03P03	PUR/PVC	713
<b>Fan cables</b>					
EWLLxxxGMS	TPE/PVC	713	EWLLxxxZM	TPE/PVC	713
EYL002AxxxxL01A00	TPE/PVC	713	EYL002VxxxxL01J01	TPE/PVC	713
EYL002AxxxxL02A00	TPE/PVC	713	EYL002VxxxxL02J02	TPE/PVC	714
<b>Encoder cables</b>					
EWLExxxGM-T	TPE/PVC/PUR	715	EWLExxxZMST	TPE/PVC/PUR	715
EWLExxxGX-T	TPE/PVC/PUR	715			
<b>Feedback cables</b>					
EYF0017AxxxxA00W02	PUR	715			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
EYF0018AxxxxA00S03	TPE/PUR/PVC	715			
EYF0018AxxxxA00W02	TPE/PVC	715			
EYF0018AxxxxF02S03	TPE/PVC	716			
EYF0018AxxxxF02W02	TPE/PUR/PVC	716			
EYF0019AxxxxF02S03	PUR	716	EYF0019VxxxxA00G02	PUR	718
EYF0020AxxxxA00S04	TPE/PUR/PVC	716			
EYF0020AxxxxA00S05	TPE/PUR/PVC	716			
EYF0020AxxxxF01S04	TPE/PUR/PVC	716			
EYF0020AxxxxF01S05	TPE/PUR/PVC	717			
EYF0021AxxxxA00S03	TPE/PUR	717			
EYF0021AxxxxF03S03	TPE/PUR	717			
EYF0021AxxxxF07S03	PUR/TPE	717			
<b>Resolver cables</b>					
EWLRxxxGM-T	TPE/PVC/PUR	718	EWLRxxxZMST	TPE/PVC/PUR	718
EWLRxxxGX-T	TPE/PVC/PUR	718			
<b>LinMot</b>					
<b>Motor cables</b>					
P10-70x...-D01/D02-MS	PVC/PUR	719			
<b>Servo cables</b>					
P10-70x...-D03-MS	PVC/PUR	719			
<b>LTI DRIVES</b>					
<b>Servo cables</b>					
KM3-KSxxx	PUR/PVC	720	KM3-KSxxx (ext.)	PUR/PVC	720
KM3-KSxxx-24A	PUR/PVC	720	KM3-KSxxx-24A (ext.)	PUR/PVC	720
KM3-KSxxx-63A	PUR/PVC	720	KM3-KSxxx-63A (ext.)	PUR/PVC	720
<b>Encoder cables</b>					
KGH2-KSxxx	TPE/PVC	721	KGH2-KSxxx (ext.)	TPE/PVC	719
KGH3-KSxxx	TPE/PVC	721	KGH3-KSxxx (ext.)	TPE/PVC	719
KGS2-KSxxx	TPE/PUR	721	KGS2-KSxxx (ext.)	TPE/PUR	719
KRY2-CDF-KSxxx	TPE/PUR/PVC	721	KRY2-CDF-KSxxx (ext.)	TPE/PUR/PVC	719
KRY2-KSxxx	TPE/PUR/PVC	721	KRY2-KSxxx (ext.)	TPE/PUR/PVC	719
<b>Mitsubishi Electric</b>					
<b>Motor cables</b>					
MR-BKS1CBL-xxx-A1-H	PVC/PUR	722			
MR-BKS1CBL-xxx-A2-H	PVC/PUR	722			
MR-PWS1CBL-xxx-A1-H	PVC/PUR	722			
MR-PWS1CBL-xxx-A2-H	PVC/PUR	722			
PCS015N-xxx-0-0C4	PVC/PUR	722			
PCS025N-xxx-0-0C5	PVC/PUR	722			
PCS025N-xxx-C4	PVC/PUR	722			
PCS040N-xxx-0-0C4	PVC/PUR/TPE	722			
PCS040N-xxx-0-0C5	PVC/PUR/TPE	722			
PCS060N-xxx-0-0C5	PVC/PUR/TPE	723			
<b>Encoder cables</b>					
MR-J3ENCBL-xxx-A1-H	PVC/PUR	723			
MR-J3ENCBL-xxx-A2-H	PVC/PUR	723			
MR-J3ENCBL-xxx-H	PVC/PUR	723			
<b>Nidec/Control Techniques</b>					
<b>Motor cables</b>					
PS B A A A XXX	TPE/PVC	724			
PS B A A B XXX	TPE/PVC	724			



Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Nidec/Control Techniques</b>					
<b>Motor cables</b>					
PS B A B B XXX	TPE/PVC	724			
PS B A F A XXX	TPE/PVC	724			
PS B A F B XXX	TPE/PVC	724			
PS B B A A XXX	TPE/PVC	724			
PS B B A B XXX	TPE/PVC	725			
PS B B B B XXX	TPE/PVC	725			
PS B B F A XXX	TPE/PVC	724			
PS B B F B XXX	TPE/PVC	725			
PS B C A B XXX	TPE/PVC	725			
PS B C B B XXX	TPE/PVC	725			
PS B C F B XXX	TPE/PVC	725			
PS B D A B XXX	TPE/PVC	725			
PS B D B B XXX	TPE/PVC	725			
PS B D F B XXX	TPE/PVC	725			
PS B E A B XXX	TPE/PVC	726			
PS B E B B XXX	TPE/PVC	726			
PS B E F B XXX	TPE/PVC	726			
PS B G A A XXX	TPE/PVC	724			
PS B G A B XXX	TPE/PVC	726			
PS B G B B XXX	TPE/PVC	726			
PS B G F A XXX	TPE/PVC	724			
PS B G F B XXX	TPE/PVC	726			
<b>Servo cables</b>					
PB B A A A XXX	PUR/PVC	726			
PB B A A B XXX	PUR/PVC	727			
PB B A B B XXX	PUR/PVC	727			
PB B A F A XXX	PUR/PVC	726			
PB B A F B XXX	PUR/PVC	727			
PB B A G B XXX	PUR/PVC	727			
PB B B A A XXX	PUR/PVC	726			
PB B B A B XXX	PUR/PVC	727			
PB B B B B XXX	PUR/PVC	727			
PB B B F A XXX	PUR/PVC	727			
PB B B F B XXX	PUR/PVC	727			
PB B B G B XXX	PUR/PVC	728			
PB B C A B XXX	PUR/PVC	728			
PB B C B B XXX	PUR/PVC	728			
PB B C F B XXX	PUR/PVC	728			
PB B C G B XXX	PUR/PVC	728			
PB B D A B XXX	PUR/PVC	728			
PB B D B B XXX	PUR/PVC	728			
PB B D F B XXX	PUR/PVC	728			
PB B D G B XXX	PUR/PVC	728			
PB B E A B XXX	PUR/PVC	728			
PB B E B B XXX	PUR/PVC	728			
PB B E F B XXX	PUR/PVC	729			
PB B E G B XXX	PUR/PVC	729			
PB B G A A XXX	PUR/PVC	727			
PB B G A B XXX	PUR/PVC	729			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>NUM</b>					
<b>Power cables</b>					
AGOFRU018LMxxx	PVC/TPE	730	AGOFRU018LMxxx (ext.)	PVC/TPE	730
AGOFRU019LMxxx	PVC/TPE	730	AGOFRU019LMxxx (ext.)	PVC/TPE	730
<b>Servo cables</b>					
AGOFRU018Mxxx	PVC/PUR	730	AGOFRU018Mxxx (ext.)	PVC/PUR	731
AGOFRU019Mxxx	PVC/PUR	730	AGOFRU019Mxxx (ext.)	PVC/PUR	731
AGOFRU020Mxxx	PVC/PUR	730	AGOFRU020Mxxx (ext.)	PVC/PUR	731
<b>Fan cables</b>					
AGOFRU012Mxxx	PVC/TPE	731	AGOFRU012Mxxx (ext.)	PVC/TPE	731
<b>Encoder cables</b>					
AGOFRU029Mxxx	PVC/TPE	731	AGOFRU029Mxxx (ext.)	PVC/TPE	732
AGOFRU030Mxxx	PVC/TPE	731	AGOFRU030Mxxx (ext.)	PVC/TPE	732
<b>Omron</b>					
<b>Motor cables</b>					
R88A-CAWA-xxxS-DE	TPE	733			
R88A-CAWCxxx	PVC/TPE	733			
R88A-CAWCxxxS-E	PVC/TPE	733			
R88A-CAWDxxxS	PVC/TPE	733			
R88A-CAWDxxxS-E	PVC/TPE	733			
R88A-CAWFxxxS-E	PVC/TPE	733			
<b>Control cables</b>					
JZSP-CHM000-xx-E	PVC/PUR/TPE	733			
JZSP-CHM000-xx-ME	PVC/PUR/TPE	733			
JZSP-CHM030-xx-E	PVC/PUR/TPE	734			
JZSP-CHM030-xx-ME	PVC/PUR/TPE	734			
JZSP-CSM22-xx-E-G1	PVC/PUR/TPE	734			
R88A-CAWCxxxB-E	PVC/PUR/TPE	734			
R88A-CAWExxxB	PVC/PUR/TPE	734			
<b>Encoder cables</b>					
JZSP-CHP800-xx-E	PVC/TPE/PUR	735			
JZSP-CHP800-xx-ME	PVC/TPE/PUR	735			
JZSP-CSP21-xx-E-G1	PVC/TPE/PUR	735			
R88A-CRWA-xxxC-DE	PVC/TPE/PUR	735			
R88A-CRWBxxxN	PVC/TPE/PUR	735			
R88A-CRWBxxxN-E	PVC/TPE/PUR	735			
<b>Parker</b>					
<b>Motor cables</b>					
iMOK42	PVC/PUR	736			
iMOK43	PUR/PVC	736			
iMOK44	PUR/PVC	736			
iMOK45	PUR/PVC	736			
iMOK54	PVC/PUR	736			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Parker</b>					
<b>Motor cables</b>					
iMOK55	PVC/PUR	736			
iMOK56	PVC/PUR	736			
iMOK57	PUR/PVC	736			
<b>Resolver cables</b>					
iREK32	PVC/PUR/TPE	737			
iREK33	PVC/PUR/TPE	737			
iREK41	PVC/PUR/TPE	737			
iREK42	PVC/PUR/TPE	737			
<b>SEW</b>					
<b>Motor cables</b>					
0590 4773	TPE/PVC/PUR	738	0590 3610	TPE/PVC/PUR	740
0590 4803	PVC/PUR/TPE	738			
0590 6245	PVC/PUR/TPE	738			
0590 6253	PVC/PUR/TPE	738			
1335 0293	PVC/PUR/TPE	739	1335 0021	PVC/PUR/TPE	740
1335 0307	PVC/PUR/TPE	739	1335 0048	PVC/PUR/TPE	740
1335 0315	PVC/PUR/TPE	739	1335 0056	PVC/PUR/TPE	740
<b>Servo cables</b>					
1332 4861	PUR/PVC	741	0593 6500	PUR/PVC	744
1333 1221	PVC/PUR/TPE	742			
1333 2155	PVC/PUR/TPE	742			
1335 0153	PVC/PUR	742	1335 0099	PVC/PUR	745
1335 0161	PVC/PUR	742	1335 0102	PVC/PUR	745
1335 0188	PVC/PUR	742	1335 0110	PVC/PUR	745
1335 0234	PVC/PUR	742	1335 4221	PUR	745
1335 0242	PVC/PUR	742	1335 4248	PVC/PUR	745
1335 0250	PVC/PUR	743			
1335 4302	PUR	743			
1335 4310	PVC/PUR	743			
1335 4329	PVC/PUR	743	1335 4337	PVC/PUR	745
1335 4388	PUR	743			
1335 4396	PUR	743			
<b>Hybrid servo cables</b>					
0186 725 3	PUR	746			
0187 889 5	PUR	746			
0593 278 5	PUR	746			
0593 755 8	PUR	746			
0816 208 5	PUR	746			
0816 325 1	PUR	746			
0816 326 X	PUR	746			
0817 886 0	PUR	746			
0817 887 9	PUR	746			
0817 888 7	PUR	746			
0817 948 4	PUR	746			
1811 8119	PUR	746			
<b>Control cables</b>					
0199 560x	PVC/PUR/TPE	747			
<b>Encoder cables</b>					
0198 9308	PUR	747			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
0199 3194	PUR	747	0199 5413	PVC/PUR	747
0199 4875	PVC	747			
0595 1518	PVC/PUR/TPE	747			
1332 4535	PVC	747	0199 5405	PVC/PUR	747
1332 4551	PUR	747	0199 5405	PVC/PUR	747
1332 7429	PVC	747			
1332 7437	PUR	747			
<b>Siemens</b>					
<b>Power cables</b>					
6FX8002-5CN06	PVC/PUR/TPE	748			
6FX8002-5CN16	PVC/PUR/TPE	748			
6FX8002-5CN26	PVC/PUR/TPE	748			
6FX8002-5CN36	PVC/PUR/TPE	748			
6FX8002-5CN46	PVC/PUR/TPE	748			
6FX8002-5CN56	PVC/PUR/TPE	748			
6FX8002-5CS06	PVC/PUR/TPE	748			
6FX_002-5CA01	TPE/PVC/PUR	749	6FX_002-5CA05	TPE/PVC/PUR	755
6FX_002-5CA11	TPE/PVC/PUR	749	6FX_002-5CA15	TPE/PVC/PUR	755
6FX_002-5CA13	TPE/PVC/PUR	749			
6FX_002-5CA21	TPE/PVC/PUR	749	6FX_002-5CA28	TPE/PVC/PUR	755
6FX_002-5CA23	TPE/PVC/PUR	749	6FX_002-5CX28	TPE/PVC/PUR	755
6FX_002-5CA31	TPE/PVC/PUR	749	6FX_002-5CA38	TPE/PVC/PUR	755
6FX_002-5CA41	TPE/PVC/PUR	749	6FX_002-5CA48	TPE/PVC/PUR	755
6FX_002-5CA51	TPE/PVC/PUR	750	6FX_002-5CA58	TPE/PVC/PUR	756
6FX_002-5CA61	TPE/PVC/PUR	750	6FX_002-5CA68	TPE/PVC/PUR	756
6FX_002-5CG01	PVC/PUR/TPE	750			
6FX_002-5CG11	PVC/PUR/TPE	750	6FX_002-5CA15	PVC/PUR/TPE	755
6FX_002-5CG13	PVC/PUR/TPE	750	6FX_002-5CX18	PVC/PUR/TPE	756
6FX_002-5CG21	PVC/PUR/TPE	750	6FX_002-5CA28	PVC/PUR/TPE	756
6FX_002-5CG23	PVC/PUR/TPE	751	6FX_002-5CX28	PVC/PUR/TPE	756
6FX_002-5CG31	PVC/PUR/TPE	751			
6FX_002-5CG41	PVC/PUR/TPE	751			
6FX_002-5CG51	PVC/PUR/TPE	751			
6FX_002-5CG61	PVC/PUR/TPE	751			
6FX_002-5CK01	PUR/TPE	751			
6FX_002-5CL01	PVC/PUR/TPE	751			
6FX_002-5CL02	PVC/PUR/TPE	752			
6FX_002-5CL12	PVC/PUR/TPE	752			
6FX_002-5CS01	TPE/PVC/PUR	752			
6FX_002-5CS02	PVC/PUR/TPE	752			
6FX_002-5CS11	PVC/PUR/TPE	752	6FX_002-5CA15	PVC/PUR/TPE	755
6FX_002-5CS12	PVC/PUR/TPE	753			
6FX_002-5CS13	PVC/PUR/TPE	753	6FX_002-5CX18	PVC/PUR/TPE	756
6FX_002-5CS21	TPE/PVC/PUR	753			
6FX_002-5CS23	PVC/PUR/TPE	753	6FX_002-5CX28	PVC/PUR/TPE	756
6FX_002-5CS24	PVC/PUR/TPE	753			
6FX_002-5CS31	TPE/PVC/PUR	753			
6FX_002-5CS41	TPE/PVC/PUR	754	6FX_002-5CA48	TPE/PVC/PUR	755
6FX_002-5CS42	PVC/PUR/TPE	754			
6FX_002-5CS51	TPE/PVC/PUR	754	6FX_002-5CA58	TPE/PVC/PUR	756
6FX_002-5CS52	PVC/PUR/TPE	754			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Siemens</b>					
<b>Power cables</b>					
6FX_002-5CS54	PVC/PUR/TPE	754	6FX_002-5CA68	PVC/PUR/TPE	756
6FX_002-5CS61	PVC/PUR/TPE	754	6FX_002-5CA68	PVC/PUR/TPE	756
6FX_002-5CS62	PVC/PUR/TPE	755			
6FX_002-5CS64	PVC/PUR/TPE	755	6FX_002-5CX18	PVC/PUR/TPE	756
<b>Servo cables</b>					
6FX_002-5DA01	PUR/PVC	756	6FX_002-5DA05	PUR/PVC	763
6FX_002-5DA11	PUR/PVC	756	6FX_002-5DA15	PUR/PVC	763
6FX_002-5DA21	PUR/PVC	757	6FX_002-5DA28	PUR/PVC	764
6FX_002-5DA23	PUR/PVC	757	6FX_002-5DX28	PUR/PVC	764
6FX_002-5DA30	PVC/PUR	757			
6FX_002-5DA31	PUR/PVC	757	6FX_002-5DA38	PUR/PVC	764
6FX_002-5DA33	PUR/PVC	757	6FX_002-5DX38	PUR/PVC	764
6FX_002-5DA41	PUR/PVC	757	6FX_002-5DA48	PUR/PVC	764
6FX_002-5DA43	PUR/PVC	758	6FX_002-5DX48	PUR/PVC	764
6FX_002-5DA51	PUR/PVC	758	6FX_002-5DA58	PUR/PVC	764
6FX_002-5DA61	PUR/PVC	758	6FX_002-5DA68	PUR/PVC	764
6FX_002-5DG01	PVC/PUR	758	6FX_002-5DA05	PVC/PUR	763
6FX_002-5DG11	PVC/PUR	758	6FX_002-5DA15	PVC/PUR	763
6FX_002-5DG13	PVC/PUR	758			
6FX_002-5DG21	PVC/PUR	759			
6FX_002-5DG23	PUR	759			
6FX_002-5DG31	PVC/PUR	759			
6FX_002-5DG33	PUR	759			
6FX_002-5DG41	PVC/PUR	759	6FX_002-5DA48	PVC/PUR	764
6FX_002-5DG43	PUR	759			
6FX_002-5DG51	PVC/PUR	759			
6FX_002-5DG61	PVC/PUR	760			
6FX_002-5DN06	PVC/PUR	760			
6FX_002-5DN16	PVC/PUR	760			
6FX_002-5DN26	PVC/PUR	760			
6FX_002-5DN30	PUR/PVC	760			
6FX_002-5DN46	PVC/PUR	761			
6FX_002-5DN56	PVC/PUR	761			
6FX_002-5DS01	PUR/PVC	761			
6FX_002-5DS06	PVC/PUR	761			
6FX_002-5DS11	PVC/PUR	761	6FX_002-5DA15	PVC/PUR	763
6FX_002-5DS13	PVC/PUR	762			
6FX_002-5DS21	PUR/PVC	762			
6FX_002-5DS23	PUR	762			
6FX_002-5DS33	PUR	762			
6FX_002-5DS36	PVC/PUR	762			
6FX_002-5DS41	PVC/PUR	762	6FX_002-5DA48	PVC/PUR	764
6FX_002-5DS43	PUR	762			
6FX_002-5DS51	PVC/PUR	763			
6FX_002-5DS54	PVC/PUR	763			
6FX_002-5DS61	PUR/PVC	763			
6FX_002-5DS64	PVC/PUR	763			

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Hybrid servo cables</b>					
6FX_002-8QN04 Neu!	PUR	765	6FX_002-8QE04 New!	PUR	765
6FX_002-8QN08 New!	PUR	765	6FX_002-8QE08 New!	PUR	765
6FX_002-8QN11	PUR	765	6FX_002-8QE11	PUR	765
6FX_002-8QN21	PUR	765	6FX_002-8QE21	PUR	765
<b>Signal cables</b>					
6FX8002-2CF20	PVC/PUR/TPE	766			
6FX8002-2CQ31	PVC/PUR/TPE	766	6FX8002-2CQ34	PVC/PUR/TPE	771
6FX8002-2DC40	PVC/PUR	766			
6FX8002-2DC42	PVC/PUR	766			
6FX_002-1DC00	PUR/PVC	766	6FX_002-2DC34	PUR/PVC	772
6FX_002-2AD00	TPE/PVC/PUR	766	6FX_002-2AD04	TPE/PVC/PUR	771
6FX_002-2AH00	TPE/PVC/PUR	767	6FX_002-2AH04	TPE/PVC/PUR	771
6FX_002-2AH11	PVC/PUR/TPE	767			
6FX_002-2CA11	TPE/PVC/PUR	767	6FX_002-2CB54	TPE/PVC/PUR	772
6FX_002-2CA15	TPE/PVC/PUR	767	6FX_002-2CA54	TPE/PVC/PUR	772
6FX_002-2CA31	TPE/PVC/PUR	767	6FX_002-2CA34	TPE/PVC/PUR	771
6FX_002-2CA51	TPE/PVC/PUR	767	6FX_002-2CA54	TPE/PVC/PUR	771
6FX_002-2CA71	TPE/PVC/PUR	768			
6FX_002-2CB31	TPE/PUR	768			
6FX_002-2CB51	TPE/PVC/PUR	768	6FX_002-2CC14	TPE/PVC/PUR	772
6FX_002-2CC11	TPE/PVC/PUR	768	6FX_002-2CB54	TPE/PVC/PUR	772
6FX_002-2CD01	TPE/PVC/PUR	768	6FX_002-2CB54	TPE/PVC/PUR	772
6FX_002-2CF01	TPE/PVC/PUR	768			
6FX_002-2CF02	TPE/PVC/PUR	768	6FX_002-2CF04	TPE/PVC/PUR	772
6FX_002-2CG00	TPE/PVC/PUR	768	6FX_002-2CB54	TPE/PVC/PUR	772
6FX_002-2CH00	TPE/PVC/PUR	769	6FX_002-2AD04	TPE/PVC/PUR	771
6FX_002-2CK00	TPE/PVC/PUR	769			
6FX_002-2CL00	TPE/PVC/PUR	769			
6FX_002-2CR00	PVC/PUR/TPE	769			
6FX_002-2CT12	PVC/PUR/TPE	769			
6FX_002-2DB10	PUR	769			
6FX_002-2DC10	PUR/PVC	770	6FX_002-2DC34	PUR/PVC	772
6FX_002-2DC20	PUR/PVC	770	6FX_002-2DC34	PUR/PVC	772
6FX_002-2DC36	PVC/PUR	770			
6FX_002-2EQ00	TPE/PVC/PUR	770			
6FX_002-2EQ10	TPE/PVC/PUR	770	6FX_002-2EQ14	TPE/PVC/PUR	772
6FX_002-2EQ20	PVC/PUR/TPE	770			
6FX_002-2EQ31	PVC/PUR/TPE	770			
6FX_002-5BL03	PVC/PUR	771			
6fx3002-2CT10	PVC/PUR/TPE	771			
<b>Signal cables DriveCliq</b>					
6FX8002-2DC30-1AD0(3m)	PUR	773	6FX8002-2DC34-1DA0(30m)	PUR	773
6FX8002-2DC30-1AF0(5m)	PUR	773	6FX8002-2DC34-1AF0(5m)	PUR	773
6FX8002-2DC30-1BA0(10m)	PUR	773	6FX8002-2DC34-1BA0(10m)	PUR	773
6FX8002-2DC30-1BF0(15m)	PUR	773	6FX8002-2DC34-1BF0(15m)	PUR	773
6FX8002-2DC30-1CA0(20m)	PUR	773	6FX8002-2DC34-1CA0(20m)	PUR	773
6FX8002-2DC30-1CF0(25m)	PUR	773	6FX8002-2DC34-1CF0(25m)	PUR	773
6FX8002-2DC30-1DA0(30m)	PUR	773	6FX8002-2DC34-1DA0(30m)	PUR	773



Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Siemens, SpeedTec</b>					
<b>Power cables, SpeedTec</b>					
6FX_002-5CG10	PVC/PUR/TPE	774			
6FX_002-5CG12	PVC/PUR/TPE	774			
6FX_002-5CG22	PVC/PUR/TPE	774			
6FX_002-5CG32	PVC/PUR/TPE	774	6FX_002-5CQ38	PVC/PUR/TPE	777
6FX_002-5CG42	PVC/PUR/TPE	774			
6FX_002-5CG52	PVC/PUR/TPE	774			
6FX_002-5CG62	PVC/PUR/TPE	774	6FX_002-5CQ68	PVC/PUR/TPE	777
6FX_002-5CN01	PVC/PUR/TPE	775			
6FX_002-5CN11	PVC/PUR/TPE	775			
6FX_002-5CN21	PVC/PUR/TPE	775			
6FX_002-5CN31	PVC/PUR/TPE	775	6FX_002-5CQ38	PVC/PUR/TPE	777
6FX_002-5CN41	PVC/PUR/TPE	775			
6FX_002-5CN51	PVC/PUR/TPE	775			
6FX_002-5CN54	PVC/PUR/TPE	775			
6FX_002-5CN61	PVC/PUR/TPE	776	6FX_002-5CQ68	PVC/PUR/TPE	777
6FX_002-5CN64	PVC/PUR/TPE	776	6FX_002-5CQ68	PVC/PUR/TPE	777
6FX_002-5CQ01	PVC/PUR/TPE	776			
6FX_002-5CQ11	PVC/PUR/TPE	776			
6FX_002-5CQ21	PVC/PUR/TPE	776			
6FX_002-5CQ31	PVC/PUR/TPE	776	6FX_002-5CQ38	PVC/PUR/TPE	777
6FX_002-5CQ41	PVC/PUR/TPE	776			
6FX_002-5CQ51	PVC/PUR/TPE	777			
6FX_002-5CQ61	PVC/PUR/TPE	777	6FX_002-5CQ68	PVC/PUR/TPE	777
<b>Servo cables, SpeedTec</b>					
6FX_002-5DG10	PVC/PUR	778	6FX_002-5DN05	PVC/PUR	782
6FX_002-5DG11	PVC/PUR	778	6FX_002-5DN15	PVC/PUR	782
6FX_002-5DG12	PVC/PUR	778	6FX_002-5DN15	PVC/PUR	782
6FX_002-5DG22	PVC/PUR	778	6FX_002-5DQ28	PVC/PUR	782
6FX_002-5DG32	PVC/PUR	778	6FX_002-5DQ38	PVC/PUR	782
6FX_002-5DG42	PVC/PUR	778	6FX_002-5DQ48	PVC/PUR	782
6FX_002-5DG52	PVC/PUR	778	6FX_002-5DQ58	PVC/PUR	782
6FX_002-5DG62	PVC/PUR	778	6FX_002-5DQ68	PVC/PUR	782
6FX_002-5DN01	PVC/PUR	779	6FX_002-5DN05	PVC/PUR	782
6FX_002-5DN11	PVC/PUR	779	6FX_002-5DN15	PVC/PUR	782
6FX_002-5DN21	PVC/PUR	779	6FX_002-5DQ28	PVC/PUR	782
6FX_002-5DN27	PVC/PUR	779			
6FX_002-5DN31	PVC/PUR	779	6FX_002-5DQ38	PVC/PUR	782
6FX_002-5DN41	PVC/PUR	779	6FX_002-5DQ48	PVC/PUR	782
6FX_002-5DN51	PVC/PUR	780			
6FX_002-5DN54	PVC/PUR	780	6FX_002-5DQ58	PVC/PUR	782
6FX_002-5DN61	PVC/PUR	780	6FX_002-5DQ68	PVC/PUR	782
6FX_002-5DN64	PVC/PUR	780	6FX_002-5DQ68	PVC/PUR	782
6FX_002-5DQ01	PVC/PUR	781	6FX_002-5DN05	PVC/PUR	782
6FX_002-5DQ11	PVC/PUR	781	6FX_002-5DN15	PVC/PUR	782
6FX_002-5DQ21	PVC/PUR	781	6FX_002-5DQ28	PVC/PUR	782
6FX_002-5DQ31	PVC/PUR	781	6FX_002-5DQ38	PVC/PUR	782
6FX_002-5DQ41	PVC/PUR	781	6FX_002-5DQ48	PVC/PUR	782
6FX_002-5DQ51	PVC/PUR	781	6FX_002-5DQ58	PVC/PUR	782
6FX_002-5DQ61	PVC/PUR	781	6FX_002-5DQ68	PVC/PUR	782

Basic cables	Jacket	Page	Extension cables	Jacket	Page
<b>Stöber</b>					
<b>Servo cables</b>					
Gr.1,5-Motor-10,0mm <sup>2</sup>	PUR/PVC	783			
Gr.1,5-Motor-4,0mm <sup>2</sup>	PUR/PVC	783			
Gr.1,5-Motor-6,0mm <sup>2</sup>	PUR/PVC	783			
Gr.1-Motor-1,0mm <sup>2</sup>	PUR/PVC	783			
Gr.1-Motor-1,5mm <sup>2</sup>	PUR/PVC	783			
Gr.1-Motor-2,5mm <sup>2</sup>	PUR/PVC	783			
Gr.1-Motor-4,0mm <sup>2</sup>	PUR/PVC	783			
<b>Encoder cables</b>					
Encoder ED/EK iSDS4000	TPE/PVC/PUR	784			
Encoder ES iSDS4000	TPE/PUR	784			
Encoder HTL	TPE/PVC/PUR	784			
Encoder iMDS5000	TPE/PVC/PUR	784			
Resolver iMDS5000	TPE/PVC/PUR	784			
Resolver iSDS4000	TPE/PVC/PUR	784			

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\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Allen-Bradley/Rockwell Motor cables

## Basic cable



## 2090-CPWM4DF-08AFxx

PVC M.I.	<b>01</b>	MAT9761795	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861793	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961791	(4G10)C	18.5	7.5
TPE H*	<b>03</b>	MAT9961790	(4G10)C	18.5	7.5

## 2090-CPWM4DF-10AFxx

PVC M.I.	<b>01</b>	MAT9761796	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861794	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961793	(4G6.0)C	16.0	7.5
TPE H*	<b>03</b>	MAT9961792	(4G6.0)C	16.0	7.5

## Basic cable



## 2090-CPWM4DF-12AFxx

PVC M.I.	<b>01</b>	MAT9761797	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861795	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9961795	(4G4.0)C	13.0	7.5
TPE H*	<b>03</b>	MAT9961794	(4G4.0)C	13.0	7.5

## 2090-CPWM4DF-14AFxx

PVC M.I.	<b>01</b>	MAT9761798	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861796	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861798	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961797	(4G2.5)C	11.5	7.5
TPE H*	<b>03</b>	MAT9961796	(4G2.5)C	11.5	7.5

## 2090-CPWM4DF-16AFxx

PVC M.I.	<b>01</b>	MAT9761799	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861797	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861799	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961799	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9961798	(4G1.5)C	10.0	7.5

## Basic cable



## 2090-CPWM7DF-02AF

PVC M.I.	<b>01</b>	MAT9761715	(4G35)C	31.0	7.5
PUR O.I.	<b>06</b>	MAT9861711	(4G35)C	28.0	10

## 2090-CPWM7DF-04AF

PVC M.I.	<b>01</b>	MAT9761714	(4G25)C	27.5	7.5
PUR O.I.	<b>06</b>	MAT9861710	(4G25)C	25.0	10
TPE F	<b>02</b>	MAT9961725	(4G25)C	27.5	7.5
TPE H*	<b>03</b>	MAT9961726	(4G25)C	27.0	7.5

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

igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core

\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Allen-Bradley/Rockwell Motor cables

## 2090-CPWM7DF-06AF

PVC M.I.	<b>01</b>	MAT9761713	(4G16)C	23.0	7.5
PUR O.I.	<b>06</b>	MAT9861709	(4G16)C	20.5	10
TPE F	<b>02</b>	MAT9961723	(4G16)C	23.0	7.5
TPE H*	<b>03</b>	MAT9961724	(4G16)C	23.0	7.5

## 2090-CPWM7DF-08AFxx

PVC M.I.	<b>01</b>	MAT9761704	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861706	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961707	(4G10)C	18.5	7.5
TPE H*	<b>03</b>	MAT9961708	(4G10)C	18.5	7.5

## 2090-CPWM7DF-10AFxx

PVC M.I.	<b>01</b>	MAT9761703	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861705	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961705	(4G6.0)C	16.0	7.5
TPE H*	<b>03</b>	MAT9961706	(4G6.0)C	16.0	7.5

## Basic cable



## 2090-CPWM7DF-12AFxx

PVC M.I.	<b>01</b>	MAT9761702	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861704	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9961709	(4G4.0)C	13.0	7.5
TPE H*	<b>03</b>	MAT9961704	(4G4.0)C	13.0	7.5

## 2090-CPWM7DF-14AFxx

PVC M.I.	<b>01</b>	MAT9761701	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861703	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861702	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961710	(4G2.5)C	11.5	7.5
TPE H*	<b>03</b>	MAT9961711	(4G2.5)C	11.5	7.5

## 2090-CPWM7DF-16AFxx

PVC M.I.	<b>01</b>	MAT9761758	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861760	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861759	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961761	(4G1.5)C	10.0	7.5

## Basic cable



## 2090-XX\_PMP-10SXX

PVC M.I.	<b>01</b>	MAT9761712	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9961718	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961703	(4G6.0)C	16.0	7.5
TPE H*	<b>03</b>	MAT9961715	(4G6.0)C	16.0	7.5

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

igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core

\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Allen-Bradley/Rockwell Motor cables

## Basic cable



## 2090-XX\_PMP-14SXX

PVC M.I.	<b>01</b>	MAT9761711	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9961717	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9851711	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961702	(4G2.5)C	11.5	7.5
TPE H*	<b>03</b>	MAT9961714	(4G2.5)C	11.5	7.5

## 2090-XX\_PMP-16SXX

PVC M.I.	<b>01</b>	MAT9761710	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9961716	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861701	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961701	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9961713	(4G1.5)C	10.0	7.5

## Extension cable



## 2090-CPWM7E7-08AF

PUR O.I.	<b>06</b>	MAT9861716	(4G10)C	17.0	10
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## 2090-CPWM7E7-10AF

PUR O.I.	<b>06</b>	MAT9861715	(4G6.0)C	14.5	10
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## Extension cable



## 2090-CPWM7E7-12AF

PUR O.I.	<b>06</b>	MAT9861714	(4G4.0)C	12.5	10
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## 2090-CPWM7E7-14AF

PUR O.I.	<b>06</b>	MAT9861713	(4G2.5)C	10.5	10
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## 2090-CPWM7E7-16AF

PUR O.I.	<b>06</b>	MAT9861712	(4G1.5)C	9.0	10
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## Allen-Bradley/Rockwell Servo cables

## Basic cable



## 2090-CPBM4DF-08AFxx

PVC M.I.	<b>05</b>	MAT9751799	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	<b>06</b>	MAT9851798	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	<b>07</b>	MAT9851799	(4G10+(2x1.5)C)C	21.0	7.5

## 2090-CPBM4DF-10AFxx

PVC O.I.	<b>04</b>	MAT9751797	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	<b>05</b>	MAT9751798	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	<b>06</b>	MAT9851796	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	<b>07</b>	MAT9851797	(4G6.0+(2x1.5)C)C	17.5	7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Allen-Bradley/Rockwell Servo cables

## Basic cable



## 2090-CPBM4DF-12AFxx

PVC O.I.	<b>04</b>	MAT9751795	(4G4.0+(2x1.5)C)C	15.0	10
PVC M.I.	<b>05</b>	MAT9751796	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9851794	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	<b>07</b>	MAT9851795	(4G4.0+(2x1.5)C)C	16.0	7.5

## 2090-CPBM4DF-14AFxx

PVC O.I.	<b>04</b>	MAT9751791	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	<b>05</b>	MAT9751792	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	<b>06</b>	MAT9851790	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	<b>07</b>	MAT9851791	(4G2.5+(2x1.5)C)C	14.5	7.5

## 2090-CPBM4DF-16AFxx

PVC O.I.	<b>04</b>	MAT9751757	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	<b>05</b>	MAT9751756	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	<b>06</b>	MAT9851755	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	<b>07</b>	MAT9851754	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 2090-CPBM7DF-02AF

PUR M.I.	<b>07</b>	MAT9851745	(4G35+(2x1.5)C)C	32.0	7.5
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## 2090-CPBM7DF-04AF

PUR O.I.	<b>06</b>	MAT9851743	(4G25+(2x1.5)C)C	28.5	10
PUR M.I.	<b>07</b>	MAT9851744	(4G25+(2x1.5)C)C	28.0	7.5

## Basic cable



## 2090-CPBM7DF-06AF

PUR O.I.	<b>06</b>	MAT9851741	(4G16+(2x1.5)C)C	24.0	10
PUR M.I.	<b>07</b>	MAT9851742	(4G16+(2x1.5)C)C	24.0	7.5

## 2090-CPBM7DF-08AFxx

PVC M.I.	<b>05</b>	MAT9751745	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	<b>06</b>	MAT9851736	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	<b>07</b>	MAT9851735	(4G10+(2x1.5)C)C	21.0	7.5

## 2090-CPBM7DF-10AFxx

PVC O.I.	<b>04</b>	MAT9751706	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	<b>05</b>	MAT9751705	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	<b>06</b>	MAT9851712	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	<b>07</b>	MAT9851705	(4G6.0+(2x1.5)C)C	17.5	7.5

## 2090-CPBM7DF-12AFxx

PVC O.I.	<b>04</b>	MAT9751793	(4G4.0+(2x1.5)C)C	15.0	10
PVC M.I.	<b>05</b>	MAT9751794	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9851792	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	<b>07</b>	MAT9851793	(4G4.0+(2x1.5)C)C	16.0	7.5



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Allen-Bradley/Rockwell Servo cables</b>				
<b>Basic cable</b>				
<b>2090-CPBM7DF-14AFxx</b>				
PVC O.I.	04	MAT9751744	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751743	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851734	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851733	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>2090-CPBM7DF-16AFxx</b>				
PVC O.I.	04	MAT9751742	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751741	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851732	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851731	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>2090-XX_PMF-10SXX</b>				
PVC O.I.	04	MAT9711730	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9961722	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9811726	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851708	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>2090-XX_PMF-14SXX</b>				
PVC O.I.	04	MAT9711729	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9961721	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9811725	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851707	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>2090-XX_PMF-16SXX</b>				
PVC O.I.	04	MAT9711728	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9961720	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9811724	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851706	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Extension cable</b>				
<b>2090-CPBM7E7-08AFxx</b>				
PVC M.I.	05	MAT9751709	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851710	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851709	(4G10+(2x1.5)C)C	21.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Allen-Bradley/Rockwell Servo cables</b>				
<b>2090-CPBM7E7-10AFxx</b>				
PVC O.I.	04	MAT9751708	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751707	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851714	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851713	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>Extension cable</b>				
<b>2090-CPBM7E7-12AFxx</b>				
PVC O.I.	04	MAT9751789	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751790	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851788	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851789	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>2090-CPBM7E7-14AFxx</b>				
PVC O.I.	04	MAT9751747	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751746	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851738	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851737	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>2090-CPBM7E7-16AFxx</b>				
PVC O.I.	04	MAT9751749	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751748	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851740	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851739	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Allen-Bradley/Rockwell Hybrid servo cables</b>				
<b>Basic cable</b>				
<b>2090-CSBM1DE-10AF</b>				
PUR O.I.	27	MAT9851723	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5 10
<b>Basic cable</b>				
<b>2090-CSBM1DE-14AF</b>				
PVC O.I.	26	MAT9751711	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5 10
PUR O.I.	27	MAT9851720	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5 10
<b>2090-CSBM1DE-18AF</b>				
PVC O.I.	26	MAT9751710	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5 10
PUR O.I.	27	MAT9851719	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5 10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Allen-Bradley/Rockwell Hybrid servo cables</b>				
<b>Basic cable</b>				
<b>2090-CSBM1DF-10AF</b>				
PUR O.I. 27	MAT9851717	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>2090-CSBM1DF-14AF</b>				
PVC O.I. 26	MAT9751703	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851703	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSBM1DF-18AF</b>				
PVC O.I. 26	MAT9751701	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851701	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
<b>Basic cable</b>				
<b>2090-CSBM1DG-10AF</b>				
PUR O.I. 27	MAT9851750	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>Basic cable</b>				
<b>2090-CSBM1DG-14AF</b>				
PVC O.I. 26	MAT9751719	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851747	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSBM1DG-18AF</b>				
PVC O.I. 26	MAT9751718	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851746	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
<b>Basic cable</b>				
<b>2090-CSWM1DE-10AF</b>				
PUR O.I. 27	MAT9851724	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>Basic cable</b>				
<b>2090-CSWM1DE-14AF</b>				
PVC O.I. 26	MAT9751713	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851722	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSWM1DE-18AF</b>				
PVC O.I. 26	MAT9751712	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851721	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Allen-Bradley/Rockwell Hybrid servo cables</b>				
<b>Basic cable</b>				
<b>2090-CSWM1DF-10AF</b>				
PUR O.I. 27	MAT9851718	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>Basic cable</b>				
<b>2090-CSWM1DF-14AF</b>				
PVC O.I. 26	MAT9751704	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851704	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSWM1DF-18AF</b>				
PVC O.I. 26	MAT9751702	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851702	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
<b>Basic cable</b>				
<b>2090-CSWM1DG-10AF</b>				
PUR O.I. 27	MAT9851751	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>Basic cable</b>				
<b>2090-CSWM1DG-14AF</b>				
PVC O.I. 26	MAT9751721	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851749	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSWM1DG-18AF</b>				
PVC O.I. 26	MAT9751720	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851748	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
<b>Extension cable</b>				
<b>2090-CSBM1E1-10AF</b>				
PUR O.I. 27	MAT9851729	(4G6.0+(2x1.0)C+(2xAWG22)C)C	17.5	10
<b>Extension cable</b>				
<b>2090-CSBM1E1-14AF</b>				
PVC O.I. 26	MAT9751715	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
PUR O.I. 27	MAT9851726	(4G2.5+(2x1.0)C+(2xAWG22)C)C	14.5	10
<b>2090-CSBM1E1-18AF</b>				
PVC O.I. 26	MAT9751714	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10
PUR O.I. 27	MAT9851725	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Allen-Bradley/Rockwell Hybrid servo cables

#### Extension cable



#### 2090-CSWM1E1-10AF

PUR O.I.	27	MAT9851730	(4G6.0+(2x1.0)C)+(2xAWG22)C	17.5	10
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#### Extension cable



#### 2090-CSWM1E1-14AF

PVC O.I.	26	MAT9751717	(4G2.5+(2x1.0)C)+(2xAWG22)C	14.5	10
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PUR O.I.	27	MAT9851728	(4G2.5+(2x1.0)C)+(2xAWG22)C	14.5	10
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#### 2090-CSWM1E1-18AF

PVC O.I.	26	MAT9751716	(4G1.0+(2x0.75)C)+(2xAWG22)C	12.0	10
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PUR O.I.	27	MAT9851727	(4G1.0+(2x0.75)C)+(2xAWG22)C	12.0	10
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### Allen-Bradley/Rockwell Brake cables

#### Basic cable



#### 2090-UX\_BMP-18SXX

PVC M.I.	18	MAT9711727	(3G0.75)C	8.0	7.5
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PVC, oil-res.	20	MAT9961719	(3G0.75)C	8.0	6.8
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PUR M.I.	22	MAT9811705	(3G0.75)C	8.0	6.8
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### Allen-Bradley/Rockwell Feedback cables

#### Basic cable



#### 2090-CFBM4DF-CDAFxx

PUR O.I.	09	MAT9841775	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841753	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941768	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### 2090-CFBM4DF-CEAFxx

PUR O.I.	09	MAT9841796	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841798	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941799	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### Basic cable



#### 2090-CFBM7DD-CDAFxx

PUR M.I.	10	MAT9841795	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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#### 2090-CFBM7DD-CEAFxx

PUR M.I.	10	MAT9841797	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality*	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Allen-Bradley/Rockwell Feedback cables

#### Basic cable



#### 2090-CFBM7DF-CDAFxx

PUR O.I.	09	MAT9841771	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841750	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941764	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### 2090-CFBM7DF-CEAFxx

PUR O.I.	09	MAT9841774	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841752	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941767	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### Basic cable



#### 2090-XX\_FMF-Sxx

PUR O.I.	09	MAT9941709	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841770	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941763	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### Basic cable



#### 2090-XX\_FMP-Sxx

PUR O.I.	09	MAT9841769	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9941704	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941762	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### Extension cable



#### 2090-CFBM7E7-CDAFxx

PUR O.I.	09	MAT9841772	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9841751	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941765	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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#### 2090-CFBM7E7-CEAFxx

PUR O.I.	09	MAT9841773	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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PUR M.I.	10	MAT9741776	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	7.5
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TPE H*	11	MAT9941766	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	10.0	6.8
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### Allen-Bradley/Rockwell Adapter cables (transition cables)

#### Basic cable



#### 2090-CFBM4E2-CATR

PUR O.I.	09	MAT9841799	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	9.0	10
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#### Basic cable



#### 2090-CPWM4E2-14TR

PUR O.I.	06	MAT9861792	(4G2.5)C	10.5	10
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# Harnessed drive cables | B&R

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>B&amp;R Motor cables</b>				
<b>Basic cable</b>				
<b>8BCMxxxx.1011A-0</b>				
PVC M.I.	05	MAT9610008	(4G0.75+2x(2x0.34)C)C	12.5 7.5
PUR O.I.	06	MAT9850108	(4G0.75+2x(2x0.34)C)C	12.0 10
PUR M.I.	07	MAT9600008	(4G0.75+2x(2x0.34)C)C	12.5 7.5
<b>Basic cable</b>				
<b>8BCMxxxx.1034C-0</b>				
PVC M.I.	05	MAT9610009	(4G0.75+2x(2x0.34)C)C	12.5 7.5
PUR O.I.	06	MAT9850109	(4G0.75+2x(2x0.34)C)C	12.0 10
PUR M.I.	07	MAT9600009	(4G0.75+2x(2x0.34)C)C	12.5 7.5
<b>Basic cable</b>				
<b>8BCMxxxx.1312A-0</b>				
PVC O.I.	04	MAT9750106	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9610012	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850106	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9600012	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>8BCMxxxx.1322A-0</b>				
PVC O.I.	04	MAT9750107	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9610013	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850107	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9600013	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>8CMxxx.12-0</b>				
PVC M.I.	05	MAT9610000	(4G0.75+2x(2x0.34)C)C	12.5 7.5
PUR O.I.	06	MAT9850100	(4G0.75+2x(2x0.34)C)C	12.0 10
PUR M.I.	07	MAT9600000	(4G0.75+2x(2x0.34)C)C	12.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | B&R

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>B&amp;R Servo cables</b>				
<b>Basic cable</b>				
<b>8BCMxxxx.1111A-0</b>				
PVC O.I.	04	MAT9750104	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9610010	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850104	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9600010	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>8BCMxxxx.1311A-0</b>				
PVC O.I.	04	MAT9750105	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9610011	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850105	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9600011	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>Basic cable</b>				
<b>8CMxxx.12-1</b>				
PVC O.I.	04	MAT9750101	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9610001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850101	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9600001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>8CMxxx.12-3</b>				
PVC O.I.	04	MAT9750102	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9610002	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850102	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9600002	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>8CMxxx.12-5</b>				
PVC M.I.	05	MAT9610003	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850103	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9600003	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>Extension cable</b>				
<b>8BCFxxxx.12230-0</b>				
PVC	08	MAT9740101	((4x0.14)+2x(2x0.34))C	7.0 10
PUR O.I.	09	MAT9840115	((4x0.14)+2x(2x0.34))C	7.0 10
<b>Extension cable</b>				
<b>8BCMxxxx.10360-0</b>				
PVC M.I.	05	MAT9750108	(4G0.75+2x(2x0.34)C)C	12.5 7.5
PUR O.I.	06	MAT9850115	(4G0.75+2x(2x0.34)C)C	12.0 10
PUR M.I.	07	MAT9850116	(4G0.75+2x(2x0.34)C)C	12.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | B&R

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### B&R Hybrid servo cables

#### Basic cable



#### 8BCHxxxx.1111A-0

PUR O.I.	27	MAT9850113	(4G1.5+(2x0.75)C +(2x2x0.14+2x0.25)C)C	15.0	10
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#### 8BCHxxxx.1312A-0

PUR O.I.	27	MAT9850110	(4G4.0+(2x1.0)C +(2x2x0.14+2x0.25)C)C	16.5	10
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#### 8CHxxxx.1111A-0

PUR O.I.	27	MAT9850112	(4G1.5+(2x0.75)C +(2x2x0.14+2x0.25)C)C	15.0	10
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#### Basic cable



#### 8ECHxxxx.1111A-0

PUR O.I.	27	MAT9850114	(4G1.5+(2x0.75)C +(2x2x0.14+2x0.25)C)C	15.0	10
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#### Extension cable



#### 8ECH00xx.11140-0

PUR O.I.	27	MAT9850117	(4G1.5+(2x0.75)C +(2x2x0.14+2x0.25)C)C	15.0	10
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### B&R EnDat cables

#### Basic cable



#### 8BCExxxx.1111A-0

PVC	08	MAT9670002	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9820102	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9660002	(5x(2x0.14)+2x0.5)C	8.5	6.8

#### 8CExxx.12-1

PVC	08	MAT9670001	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9820101	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9660001	(5x(2x0.14)+2x0.5)C	8.5	6.8

### B&R Encoder cables

#### Basic cable



#### 8BCFxxxx.1221B-0

PVC	08	MAT9670003	((4x0.14)+2x(2x0.34))C	7.0	10
PUR O.I.	09	MAT9840103	((4x0.14)+2x(2x0.34))C	7.0	10

# Harnessed drive cables | B&R

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### B&R Encoder cables

#### Basic cable



#### 8BCRxxxx.1121A-0

PVC	14	MAT9640015	(3x(2x0.25))C	7.0	7.5
PUR	15	MAT9840105	(3x(2x0.25))C	7.0	7.5
TPE H*	16	MAT9630015	(3x(2x0.25))C	8.0	6.8

#### Basic cable



#### 8BCSxxxx.1111A-0

PVC	08	MAT9670004	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9840114	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9820104	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9660004	(5x(2x0.14)+2x0.5)C	8.5	6.8

### B&R Resolver cables

#### Basic cable



#### 8BCRxxx.1111A-0

PVC	14	MAT9640010	(3x(2x0.25))C	7.0	7.5
PUR	15	MAT9840102	(3x(2x0.25))C	7.0	7.5
TPE H*	16	MAT9630010	(3x(2x0.25))C	8.0	6.8

#### 8CRxxx.12-1

PVC	14	MAT9640001	(3x(2x0.25))C	7.0	7.5
PUR	15	MAT9840101	(3x(2x0.25))C	7.0	7.5
TPE H*	16	MAT9630001	(3x(2x0.25))C	8.0	6.8

### B&R Bus cables

#### Basic cable



#### X20CA3E61.xxxx

PVC, oil-res.	28	MAT9630100	(4x0.38)C	7.0	12.5
PUR	29	MAT9730101	(4x0.38)C	7.0	12.5
TPE	12	MAT9930102	(4x0.38)C	7.5	10

#### Basic cable



#### X67CA0E41.xxxx


PVC, oil-res.	28	MAT9630103	(4x0.38)C	7.0	12.5
PUR	29	MAT9730104	(4x0.38)C	7.0	12.5
TPE	12	MAT9930105	(4x0.38)C	7.5	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581



Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>15 A Basic cable</b>				
				
<b>324781 (5m)</b>				
PVC O.I.	04	MAT9750201	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850201	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324782 (7m)</b>				
PVC O.I.	04	MAT9750202	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295002	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850202	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296002	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324783 (10m)</b>				
PVC O.I.	04	MAT9750203	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295003	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850203	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296003	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324784 (15m)</b>				
PVC O.I.	04	MAT9750204	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295004	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850204	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296004	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324785 (20m)</b>				
PVC O.I.	04	MAT9750205	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295005	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850205	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296005	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324786 (25m)</b>				
PVC O.I.	04	MAT9750206	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295006	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850206	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296006	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324787 (30m)</b>				
PVC O.I.	04	MAT9750207	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295007	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850207	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296007	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324788 (35m)</b>				
PVC O.I.	04	MAT9750208	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295008	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850208	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296008	(4G1.5+2x(2x0.75)C)C	14.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>324789 (40m)</b>				
PVC O.I.	04	MAT9750209	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295009	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850209	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296009	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324790 (50m)</b>				
PVC O.I.	04	MAT9750210	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295010	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850210	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296010	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324791 (75m)</b>				
PVC O.I.	04	MAT9750211	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295011	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850211	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296011	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>324792 (100m)</b>				
PVC O.I.	04	MAT9750212	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295012	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850212	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9296012	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>15 A Extension cable</b>				
				
<b>324781 (5m) (ext.)</b>				
PVC O.I.	04	MAT9750213	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9297001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850213	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9298001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>20 A Basic cable</b>				
				
<b>380967 (7m)</b>				
PVC O.I.	04	MAT9750215	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295021	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850215	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296021	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>413410 (10m)</b>				
PVC O.I.	04	MAT9750216	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295022	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850216	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296022	(4G2.5+2x(2x1.5)C)C	16.0 7.5


Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581



Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>20 A Basic cable</b>				
				
<b>414840 (5m)</b>				
PVC O.I.	04	MAT9750214	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295020	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850214	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296020	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414841 (15m)</b>				
PVC O.I.	04	MAT9750217	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295023	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850217	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296023	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414842 (20m)</b>				
PVC O.I.	04	MAT9750218	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295024	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850218	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296024	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414843 (25m)</b>				
PVC O.I.	04	MAT9750219	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295025	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850219	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296025	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414846 (30m)</b>				
PVC O.I.	04	MAT9750220	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295026	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850220	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296026	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414848 (35m)</b>				
PVC O.I.	04	MAT9750221	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295027	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850221	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296027	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414849 (40m)</b>				
PVC O.I.	04	MAT9750222	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295028	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850222	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296028	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414850 (50m)</b>				
PVC O.I.	04	MAT9750223	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295029	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850223	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296029	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581


Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>414851 (75m)</b>				
PVC O.I.	04	MAT9750224	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295030	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850224	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296030	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>414852 (100m)</b>				
PVC O.I.	04	MAT9750225	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295031	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850225	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296031	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>20 A Extension cable</b>				
				
<b>414840 (5m) (ext.)</b>				
PVC O.I.	04	MAT9750226	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9297020	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850226	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9298020	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>21 A Basic cable</b>				
				
<b>326577 (5m)</b>				
PVC O.I.	04	MAT9750227	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295040	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850227	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296040	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326578 (7m)</b>				
PVC O.I.	04	MAT9750228	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295041	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850228	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296041	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326579 (10m)</b>				
PVC O.I.	04	MAT9750229	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295042	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850229	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296042	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326580 (15m)</b>				
PVC O.I.	04	MAT9750230	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295043	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850230	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296043	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581



Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>21 A Basic cable</b>				
				
<b>326581 (20m)</b>				
PVC O.I.	04	MAT9750231	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295044	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850231	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296044	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326582 (25m)</b>				
PVC O.I.	04	MAT9750232	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295045	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850232	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296045	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326583 (30m)</b>				
PVC O.I.	04	MAT9750233	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295046	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850233	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296046	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326584 (35m)</b>				
PVC O.I.	04	MAT9750234	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295047	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850234	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296047	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326585 (40m)</b>				
PVC O.I.	04	MAT9750235	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295048	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850235	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296048	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326586 (50m)</b>				
PVC O.I.	04	MAT9750236	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295049	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850236	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296049	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326587 (75m)</b>				
PVC O.I.	04	MAT9750237	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295050	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850237	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296050	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326588 (100m)</b>				
PVC O.I.	04	MAT9750238	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295051	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850238	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9296051	(4G2.5+2x(2x1.5)C)C	16.0 7.5

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# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581


Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>21 A Extension cable</b>				
				
<b>326577 (5m) (ext.)</b>				
PVC O.I.	04	MAT9750239	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9297040	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850239	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9298040	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>28 A Basic cable</b>				
				
<b>326589 (5m)</b>				
PVC O.I.	04	MAT9750240	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295060	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850240	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296060	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326591 (7m)</b>				
PVC O.I.	04	MAT9750241	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295061	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850241	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296061	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326592 (10m)</b>				
PVC O.I.	04	MAT9750242	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295062	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850242	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296062	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326593 (15m)</b>				
PVC O.I.	04	MAT9750243	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295063	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850243	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296063	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326594 (20m)</b>				
PVC O.I.	04	MAT9750244	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295064	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850244	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296064	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326596 (25m)</b>				
PVC O.I.	04	MAT9750245	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295065	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850245	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296065	(4G2.5+2x(2x1.5)C)C	16.0 7.5

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# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>28 A Basic cable</b>				
				
<b>326597 (30m)</b>				
PVC O.I.	04	MAT9750246	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295066	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850246	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296066	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326598 (35m)</b>				
PVC O.I.	04	MAT9750247	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295067	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850247	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296067	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>326599 (40m)</b>				
PVC O.I.	04	MAT9750248	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295068	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850248	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9296068	(4G2.5+2x(2x1.5)C)C	16.0 7.5

### 28 A Extension cable



<b>326589 (5m) (ext.)</b>				
PVC O.I.	04	MAT9750249	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9297060	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9850249	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9298060	(4G2.5+2x(2x1.5)C)C	16.0 7.5

### 36 A Basic cable



<b>326600 (5m)</b>				
PVC O.I.	04	MAT9750250	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295070	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850250	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296070	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326601 (7m)</b>				
PVC O.I.	04	MAT9750251	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295071	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850251	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296071	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326602 (10m)</b>				
PVC O.I.	04	MAT9750252	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295072	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850252	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296072	(4G6.0+2x(2x1.5)C)C	19.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>326603 (15m)</b>				
PVC O.I.	04	MAT9750253	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295073	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850253	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296073	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326604 (20m)</b>				
PVC O.I.	04	MAT9750254	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295074	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850254	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296074	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326605 (25m)</b>				
PVC O.I.	04	MAT9750255	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295075	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850255	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296075	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326606 (30m)</b>				
PVC O.I.	04	MAT9750256	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295076	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850256	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296076	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326607 (35m)</b>				
PVC O.I.	04	MAT9750257	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295077	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850257	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296077	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>326608 (40m)</b>				
PVC O.I.	04	MAT9750258	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295078	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850258	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9296078	(4G6.0+2x(2x1.5)C)C	19.5 7.5

### 36 A Extension cable



<b>326600 (5m) (ext.)</b>				
PVC O.I.	04	MAT9750259	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9297070	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9850259	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9298070	(4G6.0+2x(2x1.5)C)C	19.5 7.5


Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Baumüller

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581



Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>50 A Basic cable</b>				
				
<b>326609 (5m)</b>				
PVC M.I.	05	MAT9295080	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850260	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296080	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326610 (7m)</b>				
PVC M.I.	05	MAT9295081	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850261	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296081	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326611 (10m)</b>				
PVC M.I.	05	MAT9295082	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850262	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296082	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326612 (15m)</b>				
PVC M.I.	05	MAT9295083	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850263	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296083	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326613 (20m)</b>				
PVC M.I.	05	MAT9295084	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850264	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296084	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326614 (25m)</b>				
PVC M.I.	05	MAT9295085	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850265	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296085	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326615 (30m)</b>				
PVC M.I.	05	MAT9295086	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850266	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296086	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326616 (35m)</b>				
PVC M.I.	05	MAT9295087	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850267	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296087	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>326617 (40m)</b>				
PVC M.I.	05	MAT9295088	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850268	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9296088	(4G10+2x(2x1.5)C)C	22.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581


Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables</b>				
<b>50 A Extension cable</b>				
				
<b>326609 (5m) (ext.)</b>				
PVC M.I.	05	MAT9297080	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9850269	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9298080	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>Baumüller Resolver cables</b>				
<b>SRS/SRM50 &amp; SKS/SKM36 Basic cable</b>				
				
<b>239540 (5m)</b>				
PVC	08	MAT9290003	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940203	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840203	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291003	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239541 (8m)</b>				
PVC	08	MAT9290005	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940205	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840205	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291005	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239542 (10m)</b>				
PVC	08	MAT9290006	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940206	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840206	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291006	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239543 (15m)</b>				
PVC	08	MAT9290007	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940207	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840207	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291007	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239544 (20m)</b>				
PUR O.I.	09	MAT9940208	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840208	(5x(2x0.14)+2x0.5)C	9.0 7.5
<b>239544 (20m)</b>				
PVC	08	MAT9290008	(5x(2x0.14)+2x0.5)C	8.0 10
TPE H*	11	MAT9291008	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239545 (25m)</b>				
PVC	08	MAT9290009	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940209	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840209	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291009	(5x(2x0.14)+2x0.5)C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Resolver cables</b>				
<b>SRS/SRM50 &amp; SKS/SKM36 Basic cable</b> 				
<b>239546 (30m)</b>				
PVC	08	MAT9290010	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940210	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840210	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291010	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>239547 (35m)</b>				
PVC	08	MAT9290011	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940211	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840211	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291011	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>240520 (40m)</b>				
PVC	08	MAT9290012	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940212	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840212	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291012	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>240521 (45m)</b>				
PVC	08	MAT9290013	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940213	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840213	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291013	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>240522 (50m)</b>				
PVC	08	MAT9290014	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940214	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840214	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291014	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>242954 (6m)</b>				
PVC	08	MAT9290004	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940204	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840204	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291004	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>243379 (4m)</b>				
PVC	08	MAT9290002	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940202	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840202	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291002	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>244033 (55m)</b>				
PVC	08	MAT9290015	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940215	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840215	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291015	(5x(2x0.14)+2x0.5)C	8.5 6.8

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# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Resolver cables</b>				
<b>245484 (60m)</b>				
PVC	08	MAT9290016	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940216	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840216	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291016	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>246658 (3m)</b>				
PVC	08	MAT9290001	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940201	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840201	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291001	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>SRS/SRM50 &amp; SKS/SKM36 Extension cable</b> 				
<b>246658 (3m) (ext.)</b>				
PVC	08	MAT9292001	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940217	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840217	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9293001	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>Baumüller Pulse encoder cables</b>				
<b>Pulse encoder Basic cable</b> 				
<b>198962 (3m)</b>				
PVC	08	MAT9290020	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940218	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840218	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291020	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198963 (5m)</b>				
PVC	08	MAT9290021	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940219	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840219	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291021	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198964 (8m)</b>				
PVC	08	MAT9290022	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940220	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840220	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291022	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198965 (10m)</b>				
PVC	08	MAT9290023	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940221	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840221	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291023	(5x(2x0.14)+2x0.5)C	8.5 6.8

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# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Pulse encoder cables</b>				
<b>Pulse encoder Basic cable</b>				
<b>198966 (15m)</b>				
PVC	08	MAT9290024	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940222	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840222	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291024	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198967 (20m)</b>				
PVC	08	MAT9290025	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940223	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840223	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291025	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198968 (25m)</b>				
PVC	08	MAT9290026	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940224	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840224	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291026	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198969 (30m)</b>				
PVC	08	MAT9290027	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940225	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840225	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291027	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>208829 (40m)</b>				
PVC	08	MAT9290029	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940227	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840227	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291029	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>225360 (35m)</b>				
PVC	08	MAT9290028	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940226	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840226	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291028	(5x(2x0.14)+2x0.5)C	8.5 6.8



### Pulse encoder Extension cable



<b>198962 (3m) (ext.)</b>				
PUR O.I.	09	MAT9940228	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840228	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9293020	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>198962 (3m) (ext.)</b>				
PVC	08	MAT9292020	(5x(2x0.14)+2x0.5)C	8.0 10

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Pulse encoder cables</b>				
<b>ECN1313/EQN1325 Basic cable</b>				
<b>369864 (3m)</b>				
PVC	08	MAT9290031	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940230	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840230	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291031	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>371494 (20m)</b>				
PVC	08	MAT9290038	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940237	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840237	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291038	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>378022 (50m)</b>				
PVC	08	MAT9290044	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940243	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840243	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291044	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>380358 (35m)</b>				
PVC	08	MAT9290041	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940240	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840240	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291041	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>382005 (45m)</b>				
PVC	08	MAT9290043	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940242	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840242	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291043	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>389807 (7m)</b>				
PVC	08	MAT9290033	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940232	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840232	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291033	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>389808 (9m)</b>				
PVC	08	MAT9290035	(5x(2x0.14)+2x0.5)C	8.0 10
TPE H*	11	MAT9291035	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>389808 (9m)</b>				
PUR O.I.	09	MAT9940234	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840234	(5x(2x0.14)+2x0.5)C	9.0 6.8
<b>391216 (40m)</b>				
PVC	08	MAT9290042	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940241	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840241	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291042	(5x(2x0.14)+2x0.5)C	8.5 6.8




Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581


Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Pulse encoder cables</b>				
<b>ECN1313/EQN1325 Basic cable</b>				
				
<b>393889 (2m)</b>				
PVC	08	MAT9290030	(5x(2x0.14)+2x0.5)C	8.0 10
TPE H*	11	MAT9291030	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393889 (2m)</b>				
PUR O.I.	09	MAT9940229	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840229	(5x(2x0.14)+2x0.5)C	9.0 7.5
<b>393890 (8m)</b>				
PVC	08	MAT9290034	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940233	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840233	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291034	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393891 (10m)</b>				
PVC	08	MAT9290036	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940235	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840235	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291036	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393892 (15m)</b>				
PVC	08	MAT9290037	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940236	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840236	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291037	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393893 (25m)</b>				
PVC	08	MAT9290039	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940238	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840238	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291039	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393894 (30m)</b>				
PVC	08	MAT9290040	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940239	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840239	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291040	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>394014 (5m)</b>				
PVC	08	MAT9290032	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940231	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840231	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291032	(5x(2x0.14)+2x0.5)C	8.5 6.8

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 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Pulse encoder cables</b>				
<b>ECN1313/EQN1325 Extension cable</b>				
				
<b>393889 (2m) (ext.)</b>				
PVC	08	MAT9292030	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840244	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9293030	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>393889 (2m) (ext.)</b>				
PUR O.I.	09	MAT9940244	(5x(2x0.14)+2x0.5)C	8.0 10

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>15 A Basic cable, SpeedTec</b>				
				
<b>445872</b>				
PVC O.I.	04	MAT9750260	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295089	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850270	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296089	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>445887</b>				
PVC O.I.	04	MAT9750261	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295090	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850271	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296090	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>445889</b>				
PVC O.I.	04	MAT9750262	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295091	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850272	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296091	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447675</b>				
PVC O.I.	04	MAT9750263	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295092	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850273	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296092	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447676</b>				
PVC O.I.	04	MAT9750264	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295093	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850274	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296093	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447677</b>				
PVC O.I.	04	MAT9750265	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295094	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850275	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296094	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447678</b>				
PVC O.I.	04	MAT9750266	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295095	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850276	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296095	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447679</b>				
PVC O.I.	04	MAT9750267	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295096	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850277	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296096	(4G1.5+2x(2x0.75)C)C	14.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>447680</b>				
PVC O.I.	04	MAT9750268	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295097	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850278	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296097	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447681</b>				
PVC O.I.	04	MAT9750269	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295098	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850279	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296098	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447682</b>				
PVC O.I.	04	MAT9750270	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295099	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850280	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296099	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>447683</b>				
PVC O.I.	04	MAT9750271	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9295100	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850281	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9296100	(4G1.5+2x(2x0.75)C)C	14.5 7.5

### 15 A Extension cable, SpeedTec



<b>445872</b>				
PVC O.I.	04	MAT9750272	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9297085	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850282	(4G1.5+2x(2x0.75)C)C	12.5 10
PUR M.I.	07	MAT9298085	(4G1.5+2x(2x0.75)C)C	14.5 7.5

### 20 A Basic cable, SpeedTec



<b>447684</b>				
PVC O.I.	04	MAT9750273	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295101	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850283	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296101	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447687</b>				
PVC O.I.	04	MAT9750274	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295102	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850284	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296102	(4G2.5+2x(2x1.5)C)C	16.0 7.5



Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>20 A Basic cable, SpeedTec</b>				
				
<b>447688</b>				
PVC O.I.	04	MAT9750275	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295103	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850285	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296103	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447692</b>				
PVC O.I.	04	MAT9750276	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295104	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850286	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296104	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447698</b>				
PVC O.I.	04	MAT9750277	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295105	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850287	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296105	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447852</b>				
PVC O.I.	04	MAT9750278	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295106	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850288	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296106	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447853</b>				
PVC O.I.	04	MAT9750279	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295107	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850289	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296107	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447854</b>				
PVC O.I.	04	MAT9750280	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295108	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850290	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296108	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447855</b>				
PVC O.I.	04	MAT9750281	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295109	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850291	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296109	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447856</b>				
PVC O.I.	04	MAT9750282	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295110	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850292	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296110	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>447857</b>				
PVC O.I.	04	MAT9750283	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295111	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850293	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296111	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447858</b>				
PVC O.I.	04	MAT9750284	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295112	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850294	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296112	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>20 A Extension cable, SpeedTec</b>				
				
<b>447684</b>				
PVC O.I.	04	MAT9750285	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9297086	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850295	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9298086	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>21 A Basic cable, SpeedTec</b>				
				
<b>447686</b>				
PVC O.I.	04	MAT9750286	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295113	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850296	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296113	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447689</b>				
PVC O.I.	04	MAT9750287	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295114	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850297	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296114	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447690</b>				
PVC O.I.	04	MAT9750288	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295115	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850298	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296115	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447691</b>				
PVC O.I.	04	MAT9750289	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295116	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850299	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296116	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581


Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>21 A Basic cable, SpeedTec</b>				
				
<b>447693</b>				
PVC O.I.	04	MAT9750290	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295117	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850300	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296117	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447694</b>				
PVC O.I.	04	MAT9750291	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295118	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880201	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296118	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447695</b>				
PVC O.I.	04	MAT9750292	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295119	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880202	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296119	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447696</b>				
PVC O.I.	04	MAT9750293	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295120	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880203	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296120	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447697</b>				
PVC O.I.	04	MAT9750294	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295121	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880204	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296121	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>447699</b>				
PVC O.I.	04	MAT9750295	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295122	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880205	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296122	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>448060</b>				
PVC O.I.	04	MAT9750296	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295123	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880206	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296123	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>448061</b>				
PVC O.I.	04	MAT9750297	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9295124	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880207	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9296124	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Servo cables, SpeedTec</b>				
<b>21 A Extension cable, SpeedTec</b>				
				
<b>447686</b>				
PVC O.I.	04	MAT9750298	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9297081	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9880208	(4G2.5+2x(2x1.5)C)C	15.5 10
PUR M.I.	07	MAT9298081	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>28 A Basic cable, SpeedTec</b>				
				
<b>448063</b>				
PVC O.I.	04	MAT9750299	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295125	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880209	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296125	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>448064</b>				
PVC O.I.	04	MAT9750300	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295126	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880210	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296126	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>448065</b>				
PVC O.I.	04	MAT9780201	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295127	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880211	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296127	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>448066</b>				
PVC O.I.	04	MAT9780202	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295128	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880212	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296128	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>448067</b>				
PVC O.I.	04	MAT9780203	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295129	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880213	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296129	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>448069</b>				
PVC O.I.	04	MAT9780204	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295130	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880214	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296130	(4G4.0+2x(2x1.5)C)C	17.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Servo cables, SpeedTec

#### 28 A Basic cable, SpeedTec



448070				
PVC O.I.	04	MAT9780205	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295131	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880215	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296131	(4G4.0+2x(2x1.5)C)C	17.5 7.5
448071				
PVC O.I.	04	MAT9780206	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295132	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880216	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296132	(4G4.0+2x(2x1.5)C)C	17.5 7.5
448072				
PVC O.I.	04	MAT9780207	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9295133	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880217	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9296133	(4G4.0+2x(2x1.5)C)C	17.5 7.5

#### 28 A Extension cable, SpeedTec



448063				
PVC O.I.	04	MAT9780208	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9297082	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9880218	(4G4.0+2x(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9298082	(4G4.0+2x(2x1.5)C)C	17.5 7.5

#### 36 A Basic cable, SpeedTec



448080				
PVC O.I.	04	MAT9780209	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295134	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880219	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296151	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448118				
PVC O.I.	04	MAT9780210	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295135	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880220	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296134	(4G6.0+2x(2x1.5)C)C	19.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Servo cables, SpeedTec

448119				
PVC O.I.	04	MAT9780211	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295136	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880221	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296135	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448120				
PVC O.I.	04	MAT9780212	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295137	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880222	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296136	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448121				
PVC O.I.	04	MAT9780213	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295138	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880223	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296137	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448122				
PVC O.I.	04	MAT9780214	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295139	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880224	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296138	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448123				
PVC O.I.	04	MAT9780215	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295140	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880225	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296139	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448124				
PVC O.I.	04	MAT9780216	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295141	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880226	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296140	(4G6.0+2x(2x1.5)C)C	19.5 7.5
448125				
PVC O.I.	04	MAT9780217	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9295142	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880227	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9296141	(4G6.0+2x(2x1.5)C)C	19.5 7.5

#### 36 A Extension cable, SpeedTec



448080				
PVC O.I.	04	MAT9780218	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9297083	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9880228	(4G6.0+2x(2x1.5)C)C	18.5 10
PUR M.I.	07	MAT9298083	(4G6.0+2x(2x1.5)C)C	19.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Servo cables, SpeedTec

#### 50 A Basic cable, SpeedTec



<b>448129</b>					
PVC M.I.	05	MAT9295143	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880229	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296142	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448131</b>					
PVC M.I.	05	MAT9295144	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880230	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296143	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448132</b>					
PVC M.I.	05	MAT9295145	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880231	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296144	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448133</b>					
PVC M.I.	05	MAT9295146	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880232	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296145	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448134</b>					
PVC M.I.	05	MAT9295147	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880233	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296146	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448135</b>					
PVC M.I.	05	MAT9295148	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880234	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296147	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448136</b>					
PVC M.I.	05	MAT9295149	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880235	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296148	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448137</b>					
PVC M.I.	05	MAT9295150	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880236	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296149	(4G10+2x(2x1.5)C)C	22.5	7.5
<b>448138</b>					
PVC M.I.	05	MAT9295151	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880237	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9296150	(4G10+2x(2x1.5)C)C	22.5	7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Servo cables, SpeedTec

#### 50 A Extension cable, SpeedTec



<b>448129</b>					
PVC M.I.	05	MAT9297084	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9880238	(4G10+2x(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9298084	(4G10+2x(2x1.5)C)C	22.5	7.5

### Baumüller Resolver cables, SpeedTec

#### SRS/SRM50 & SKS/SKM36 Basic cable, SpeedTec



<b>448944</b>					
PVC	08	MAT9290060	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940260	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840260	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291060	(5x(2x0.14)+2x0.5)C	8.5	6.8
<b>448945</b>					
PVC	08	MAT9290057	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940257	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840257	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291057	(5x(2x0.14)+2x0.5)C	8.5	6.8
<b>448946</b>					
PVC	08	MAT9290056	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940256	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840256	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291056	(5x(2x0.14)+2x0.5)C	8.5	6.8
<b>448948</b>					
PVC	08	MAT9290045	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940245	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840245	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291045	(5x(2x0.14)+2x0.5)C	8.5	6.8
<b>448949</b>					
PVC	08	MAT9290046	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940246	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840246	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291046	(5x(2x0.14)+2x0.5)C	8.5	6.8
<b>448956</b>					
PVC	08	MAT9290047	(5x(2x0.14)+2x0.5)C	8.0	10
PUR O.I.	09	MAT9940247	(5x(2x0.14)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9840247	(5x(2x0.14)+2x0.5)C	9.0	7.5
TPE H*	11	MAT9291047	(5x(2x0.14)+2x0.5)C	8.5	6.8


Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Resolver cables, SpeedTec</b>				
<b>SRS/SRM50 &amp; SKS/SKM36</b> Basic cable, SpeedTec				
				
<b>448962</b>				
PVC	08	MAT9290048	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940248	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840248	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291048	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448967</b>				
PVC	08	MAT9290049	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940249	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840249	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291049	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448970</b>				
PVC	08	MAT9290050	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940250	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840250	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291050	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448971</b>				
PVC	08	MAT9290051	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940251	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840251	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291051	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448973</b>				
PVC	08	MAT9290052	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940252	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840252	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291052	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448976</b>				
PVC	08	MAT9290053	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940253	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840253	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291053	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448978</b>				
PVC	08	MAT9290054	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940254	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840254	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291054	(5x(2x0.14)+2x0.5)C	8.5 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Baumüller Resolver cables, SpeedTec</b>				
<b>448980</b>				
PVC	08	MAT9290055	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940255	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840255	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291055	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448981</b>				
PVC	08	MAT9290058	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940258	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840258	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291058	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448982</b>				
PVC	08	MAT9290059	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940259	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840259	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291059	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>SRS/SRM50 &amp; SKS/SKM36</b> Extension cable, SpeedTec				
				
<b>448944</b>				
PVC	08	MAT9292040	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940261	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840261	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9293040	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>Baumüller Pulse encoder cables, SpeedTec</b>				
<b>ECN1313/EQN1325</b> Basic cable, SpeedTec				
				
<b>448816</b>				
PVC	08	MAT9290069	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940270	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840270	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291069	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448817</b>				
PVC	08	MAT9290061	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940262	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840262	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291061	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448818</b>				
PVC	08	MAT9290075	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940276	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840276	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291075	(5x(2x0.14)+2x0.5)C	8.5 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Pulse encoder cables, SpeedTec

ECN1313/EQN1325  
Basic cable, SpeedTec



<b>448819</b>				
PVC	08	MAT9290066	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940267	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840267	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291066	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448820</b>				
PVC	08	MAT9290070	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940271	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840271	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291070	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448821</b>				
PVC	08	MAT9290067	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940268	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840268	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291067	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448822</b>				
PVC	08	MAT9290071	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940272	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840272	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291071	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448823</b>				
PVC	08	MAT9290072	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940273	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840273	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291072	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448824</b>				
PVC	08	MAT9290062	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940263	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840263	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291062	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448826</b>				
PVC	08	MAT9290073	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940274	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840274	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291073	(5x(2x0.14)+2x0.5)C	8.5 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Baumüller, SpeedTec

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Baumüller Pulse encoder cables, SpeedTec

<b>448827</b>				
PVC	08	MAT9290064	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940265	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840265	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291064	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448828</b>				
PVC	08	MAT9290068	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940269	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840269	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291068	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448830</b>				
PVC	08	MAT9290065	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940266	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840266	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291065	(5x(2x0.14)+2x0.5)C	8.5 6.8
<b>448832</b>				
PVC	08	MAT9290063	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940264	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840264	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9291063	(5x(2x0.14)+2x0.5)C	8.5 6.8

ECN1313/EQN1325  
Extension cable, SpeedTec



<b>448816</b>				
PVC	08	MAT9292050	(5x(2x0.14)+2x0.5)C	8.0 10
PUR O.I.	09	MAT9940277	(5x(2x0.14)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9840277	(5x(2x0.14)+2x0.5)C	9.0 7.5
TPE H*	11	MAT9293050	(5x(2x0.14)+2x0.5)C	8.5 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Beckhoff

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Beckhoff Motor cables</b>				
<b>Basic cable</b>				
<b>ZK4500-8015-xxx</b>				
PUR O.I.	06	MAT9850314	(4G4.0+(2x1.0)C+(2xAWG22)C)C	16.0 10
<b>ZK4500-8024-xxx</b>				
PVC O.I.	04	MAT9750312	(4G2.5+(2x1.0)C+(2xAWG22)C)C	15.0 10
PUR O.I.	06	MAT9850312	(4G2.5+(2x1.0)C+(2xAWG22)C)C	15.0 10
<b>Basic cable</b>				
<b>ZK4501-8024-xxx</b>				
PVC O.I.	04	MAT9750313	(4G2.5+(2x1.0)C+(2xAWG22)C)C	15.0 10
PUR O.I.	06	MAT9850313	(4G2.5+(2x1.0)C+(2xAWG22)C)C	15.0 10
<b>Basic cable</b>				
<b>ZK4530-8110-xxxx</b>				
PVC	14	MAT9381006	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9382006	(4x(2x0.25))C	7.5 7.5
<b>Extension cable</b>				
<b>ZK4704-0411-xxxx</b>				
PVC M.I.	05	MAT9371008	(4G0.75+(2x0.5)C)C	11.0 7.5
PUR M.I.	07	MAT9750316	(4G0.75+(2x0.5)C)C	11.5 7.5
<b>Beckhoff Servo cables</b>				
<b>Basic cable</b>				
<b>ZK4000-2111-xxxx</b>				
PVC O.I.	04	MAT9750305	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9371005	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850305	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9372005	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>ZK4000-2112-xxxx</b>				
PVC O.I.	04	MAT9750306	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9371006	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850306	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9372006	(4G2.5+(2x1.5)C)C	14.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Beckhoff

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Beckhoff Servo cables</b>				
<b>Basic cable</b>				
<b>ZK4000-2711-xxxx</b>				
PVC O.I.	04	MAT9750307	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9371007	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850307	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9372007	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>ZK4500-0023-xxxx</b>				
PVC O.I.	04	MAT9750301	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9371001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850301	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9372001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>Basic cable</b>				
<b>ZK4500-0024-xxxx</b>				
PVC O.I.	04	MAT9750302	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9371002	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850302	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9372002	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>Extension cable</b>				
<b>ZK4501-0023-xxxx</b>				
PVC O.I.	04	MAT9750303	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9371003	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850303	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9372003	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>Extension cable</b>				
<b>ZK4501-0024-xxxx</b>				
PVC O.I.	04	MAT9750304	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9371004	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850304	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9372004	(4G2.5+2x(2x1.5)C)C	16.0 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Beckhoff

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Beckhoff Hybrid servo cables</b>				
<b>Basic cable</b>				
<b>ZK4500-8022-xxxx</b>				
PVC O.I.	26	MAT9750308	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0 10
PUR O.I.	27	MAT9850308	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0 10
<b>Basic cable</b>				
<b>ZK4500-8023-xxxx</b>				
PVC O.I.	26	MAT9750309	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0 10
PUR O.I.	27	MAT9850309	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0 10
<b>Basic cable</b>				
<b>ZK4704-0421-xxxx</b>				
PVC O.I.	26	MAT9750315	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0 10
PUR O.I.	27	MAT9850315	(4G0.75+(2x0.34)C+(2xAWG22)C)C	12.0 10
<b>Extension cable</b>				
<b>ZK4501-8022-xxxx</b>				
PVC O.I.	26	MAT9750310	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0 10
PUR O.I.	27	MAT9850310	(4G1.0+(2x0.75)C+(2xAWG22)C)C	12.0 10
<b>Extension cable</b>				
<b>ZK4501-8023-xxxx</b>				
PVC O.I.	26	MAT9750311	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0 10
PUR O.I.	27	MAT9850311	(4G1.5+(2x0.75)C+(2xAWG22)C)C	13.0 10
<b>Beckhoff Encoder cables</b>				
<b>Basic cable</b>				
<b>ZK4000-2410-xxxx</b>				
PVC	14	MAT9381005	(8x(2x0.25))C	10.5 7.5
PUR	15	MAT9382005	(8x(2x0.25))C	10.5 7.5
<b>Basic cable</b>				
<b>ZK4000-2610-xxxx</b>				
PVC	14	MAT9381004	(8x(2x0.25))C	10.5 7.5
PUR	15	MAT9382004	(8x(2x0.25))C	10.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Beckhoff

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Beckhoff Encoder cables</b>				
<b>Basic cable</b>				
<b>ZK4510-0020-xxxx</b>				
PVC	14	MAT9381001	(8x(2x0.25))C	10.5 7.5
PUR	15	MAT9382001	(8x(2x0.25))C	10.5 7.5
<b>Basic cable</b>				
<b>ZK4520-0020-xxxx</b>				
PVC	14	MAT9381002	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9382002	(6x(2x0.25))C	9.0 7.5
<b>Extension cable</b>				
<b>ZK4511-0020-xxxx</b>				
PVC	14	MAT9381003	(8x(2x0.25))C	10.5 7.5
PUR	15	MAT9382003	(8x(2x0.25))C	10.5 7.5
<b>Beckhoff Thermal protection cables</b>				
<b>Basic cable</b>				
<b>ZK4000-2510-xxxx</b>				
PVC	14	MAT9386001	(2x0.25)C	5.0 7.5
TPE H*	11	MAT9387001	(4x0.34)C	6.0 6.8
<b>Beckhoff Resolver cables</b>				
<b>Basic cable</b>				
<b>ZK4000-2210-xxxx</b>				
PVC	14	MAT9383003	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9384003	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9920303	(4x(2x0.25))C	8.5 6.8
<b>Basic cable</b>				
<b>ZK4530-0010-xxxx</b>				
PVC	14	MAT9383001	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9384001	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9920301	(4x(2x0.25))C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Beckhoff

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Beckhoff Resolver cables

#### Basic cable



#### ZK4530-8010-xxxx

PVC	<b>14</b>	MAT9383005	(4x(2x0.25))C	7.5	7.5
PUR	<b>15</b>	MAT9384005	(4x(2x0.25))C	7.5	7.5
TPE H*	<b>16</b>	MAT9920306	(4x(2x0.25))C	8.5	6.8

#### Extension cable



#### ZK4531-0020-xxxx

PVC	<b>14</b>	MAT9383002	(4x(2x0.25))C	7.5	7.5
PUR	<b>15</b>	MAT9384002	(4x(2x0.25))C	7.5	7.5
TPE H*	<b>16</b>	MAT9920302	(4x(2x0.25))C	8.5	6.8

#### Extension cable



#### ZK4724-0410-xxxx

PVC	<b>14</b>	MAT9383004	(3x(2x0.25))C	7.0	7.5
PUR	<b>15</b>	MAT9384004	(3x(2x0.25))C	7.0	7.5
TPE H*	<b>16</b>	MAT9920305	(3x(2x0.25))C	8.0	6.8

### Beckhoff Network cables EtherCAT

#### Basic cable



#### ZK1090-9191-xxxx

PUR	<b>29</b>	MAT9385003	(4x(2x0.15))C	7.5	12.5
TPE	<b>12</b>	MAT9385002	(4x(2x0.15))C	8.5	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Berger Lahr

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Berger Lahr Servo cables

#### Basic cable



#### VW3M5101Rxxx

PVC O.I.	<b>04</b>	MAT94503001	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	<b>05</b>	MAT94502001	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	<b>06</b>	MAT94501001	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	<b>07</b>	MAT94500001	(4G1.5+(2x1.5)C)	13.0	7.5

#### VW3M5102Rxxx

PVC O.I.	<b>04</b>	MAT94503002	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	<b>05</b>	MAT94502003	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	<b>06</b>	MAT94501003	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	<b>07</b>	MAT94500003	(4G2.5+(2x1.5)C)C	14.5	7.5

### Berger Lahr Resolver cables

#### Basic cable




#### VW3M8101Rxxx

PVC	<b>08</b>	MAT94603001	(4x(2x0.34)+4x0.5)C	9.5	10
PUR M.I.	<b>10</b>	MAT94601001	(4x(2x0.34)+4x0.5)C	10.0	7.5
TPE H*	<b>11</b>	MAT94600001	(4x(2x0.34)+4x0.5)C	10.0	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Basic cable</b>				
				
<b>IKG0331</b>				
PVC M.I.	05	MAT9190014	(4G0.75+(2x0.5)C)C	11.0 7.5
PUR M.I.	07	MAT9090014	(4G0.75+(2x0.5)C)C	11.5 7.5
<b>IKG4008</b>				
PVC M.I.	05	MAT9190064	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851315	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090064	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4009</b>				
PVC M.I.	05	MAT9190001	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851316	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090001	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4017</b>				
PVC M.I.	05	MAT9190002	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851317	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090002	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4018</b>				
PVC M.I.	05	MAT9190003	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851318	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090003	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4020</b>				
PVC M.I.	05	MAT9190004	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851319	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090004	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4055</b>				
PVC O.I.	04	MAT9751309	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190005	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851320	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090005	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>IKG4060</b>				
PVC O.I.	04	MAT9751310	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190006	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851321	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090006	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>IKG4067</b>				
PVC O.I.	04	MAT9751311	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190007	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851322	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090007	(4G2.5+2x(2x1.5)C)C	16.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961


\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>IKG4070</b>				
PVC O.I.	04	MAT9751312	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190008	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851323	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090008	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKG4072</b>				
PVC O.I.	04	MAT9751313	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190068	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851324	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090068	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKG4087</b>				
PVC O.I.	04	MAT9751314	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190009	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851325	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090009	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>IKG4090</b>				
PVC O.I.	04	MAT9751315	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190010	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851326	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090010	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>IKG4100</b>				
PVC M.I.	05	MAT9190020	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851327	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090020	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4103</b>				
PVC O.I.	04	MAT9751316	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190076	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851328	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090076	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4107</b>				
PVC O.I.	04	MAT9751317	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190011	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851329	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090011	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4118</b>				
PVC O.I.	04	MAT9751318	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190070	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851330	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090070	(4G6.0+2x(2x1.5)C)C	19.5 7.5

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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Basic cable</b>				
				
<b>IKG4119</b>				
PVC M.I.	05	MAT9190027	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851331	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090027	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4119</b>				
PVC M.I.	05	MAT9190027	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851331	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090027	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKG4147</b>				
PVC O.I.	04	MAT9751319	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190038	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851332	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090038	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4150</b>				
PVC O.I.	04	MAT9751320	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190012	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851333	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090012	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4155</b>				
PVC O.I.	04	MAT9751321	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190028	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851334	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090028	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4164</b>				
PVC M.I.	05	MAT9190035	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851335	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090035	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>IKG4167</b>				
PVC M.I.	05	MAT9190013	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851336	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090013	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>IKG4172</b>				
PVC M.I.	05	MAT9190069	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851337	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9090069	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>IKG4173</b>				
PVC M.I.	05	MAT9190072	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT9851338	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT9090072	(4G25+2x(2x1.5)C)C	31.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>IKG4186</b>				
PVC M.I.	05	MAT9190021	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851339	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9090021	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>IKG4200</b>				
PVC M.I.	05	MAT9190032	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851340	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9090032	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>IKG4204</b>				
PVC M.I.	05	MAT9190052	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT9851341	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT9090052	(4G25+2x(2x1.5)C)C	31.0 7.5
<b>IKL0001</b>				
PVC M.I.	05	MAT9190022	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851301	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090022	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKL0002</b>				
PVC M.I.	05	MAT9751354	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851385	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851384	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKL0006</b>				
PVC M.I.	05	MAT9190067	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851302	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090067	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKL0011</b>				
PVC M.I.	05	MAT9190023	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851303	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090023	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKL0012</b>				
PVC M.I.	05	MAT9751355	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851387	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851386	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>IKL0021</b>				
PVC O.I.	04	MAT9751301	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190024	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851304	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090024	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>IKL0022</b>				
PVC O.I.	04	MAT9751357	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9751356	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851389	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9851388	(4G1.5+2x(2x0.75)C)C	14.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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Basic cable



<b>IKL0041</b>				
PVC O.I.	04	MAT9751302	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190017	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851305	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090017	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKL0042</b>				
PVC O.I.	04	MAT9751303	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190077	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851306	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090077	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKL0061</b>				
PVC O.I.	04	MAT9751304	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190018	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851307	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090018	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>IKL0081</b>				
PVC O.I.	04	MAT9751305	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190030	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851308	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090030	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKL0101</b>				
PVC O.I.	04	MAT9751306	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190025	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851309	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090025	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKL0121</b>				
PVC M.I.	05	MAT9190019	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851310	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090019	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>IKL0161</b>				
PVC M.I.	05	MAT9190063	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT9851311	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT9090063	(4G25+2x(2x1.5)C)C	31.0 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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Basic cable



<b>RKL0006</b>				
PVC M.I.	05	MAT9751359	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851393	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851392	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>RKL0013</b>				
PVC M.I.	05	MAT9751360	(4G0.75+(2x0.5)C)C	11.0 7.5
PUR M.I.	07	MAT9851394	(4G0.75+(2x0.5)C)C	11.5 7.5
<b>RKL0014</b>				
PVC M.I.	05	MAT9751361	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851396	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851395	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>RKL0019</b>				
PVC O.I.	04	MAT9751363	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9751362	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851398	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851397	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL0053</b>				
PVC M.I.	05	MAT9751364	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT98513100	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9851399	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>RKL0054</b>				
PVC O.I.	04	MAT9751366	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9751365	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT98513102	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT98513101	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4300</b>				
PVC O.I.	04	MAT9751326	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190071	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851349	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090071	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4301</b>				
PVC O.I.	04	MAT9751327	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190037	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851350	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090037	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4302</b>				
PVC M.I.	05	MAT9190026	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851351	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090026	(4G1.0+2x(2x0.75)C)	13.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Basic cable</b>				
				
<b>RKL4303</b>				
PVC M.I.	05	MAT9190029	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT9851352	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT9090029	(4G1.0+2x(2x0.75)C)	13.5 7.5
<b>RKL4306</b>				
PVC O.I.	04	MAT9751328	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190040	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851353	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090040	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4307</b>				
PVC O.I.	04	MAT9751329	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190041	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851354	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090041	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4308</b>				
PVC O.I.	04	MAT9751330	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190033	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851355	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090033	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4309</b>				
PVC O.I.	04	MAT9751331	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190042	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851356	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090042	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4310</b>				
PVC O.I.	04	MAT9751332	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190043	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851357	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090043	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4313</b>				
PVC O.I.	04	MAT9751333	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190062	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851358	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090062	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4314</b>				
PVC O.I.	04	MAT9751334	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190060	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851359	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090060	(4G4.0+2x(2x1.5)C)C	17.5 7.5

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 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>RKL4315</b>				
PVC O.I.	04	MAT9751335	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190059	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851360	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090059	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4317</b>				
PVC O.I.	04	MAT9751336	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190061	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851361	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090061	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4318</b>				
PVC O.I.	04	MAT9751337	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190047	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851362	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090047	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4320</b>				
PVC O.I.	04	MAT9751338	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190039	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851363	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090039	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4321</b>				
PVC O.I.	04	MAT9751339	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190075	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851364	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090075	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4322</b>				
PVC O.I.	04	MAT9751340	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190078	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851365	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090078	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4323</b>				
PVC O.I.	04	MAT9751341	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190073	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851366	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090073	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4324</b>				
PVC M.I.	05	MAT9190079	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851367	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090079	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>RKL4325</b>				
PVC O.I.	04	MAT9751342	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9190049	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851368	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9090049	(4G1.5+2x(2x0.75)C)C	14.5 7.5

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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Basic cable</b>				
				
<b>RKL4326</b>				
PVC O.I.	04	MAT9751343	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9190045	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851369	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9090045	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4327</b>				
PVC O.I.	04	MAT9751344	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9190050	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851370	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9090050	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4328</b>				
PVC O.I.	04	MAT9751345	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9190057	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851371	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9090057	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4329</b>				
PVC M.I.	05	MAT9190051	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851372	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090051	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>RKL4330</b>				
PVC M.I.	05	MAT9190080	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851373	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9090080	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>RKL4331</b>				
PVC M.I.	05	MAT9190081	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT9851374	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT9090081	(4G25+2x(2x1.5)C)C	31.0 7.5
<b>RKL4332</b>				
PVC M.I.	05	MAT9751367	(4G35+2x(2x1.5)C)C	34.0 7.5
PUR O.I.	06	MAT98513104	(4G35+2x(2x1.5)C)C	35.0 10
<b>RKL4343</b>				
PVC O.I.	04	MAT9751369	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9751368	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT98513106	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT98513105	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4344</b>				
PVC M.I.	05	MAT9751370	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT98513108	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT98513107	(4G16+2x(2x1.5)C)C	26.0 7.5


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 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Linking cable with adapter plug</b>				
				
<b>IKG0332</b>				
PVC M.I.	05	MAT9190015	(4G0.75+(2x0.5)C)C	11.0 7.5
PUR M.I.	07	MAT9090015	(4G0.75+(2x0.5)C)C	11.5 7.5
<b>IKG4006</b>				
PVC M.I.	05	MAT9191001	(4G1.0+2x(2x0.75)C)C	13.5 7.5
PUR O.I.	06	MAT9851342	(4G1.0+2x(2x0.75)C)C	13.0 10
PUR M.I.	07	MAT9091001	(4G1.0+2x(2x0.75)C)C	13.5 7.5
<b>IKG4016</b>				
PVC M.I.	05	MAT9191002	(4G1.0+2x(2x0.75)C)C	13.5 7.5
PUR O.I.	06	MAT9851343	(4G1.0+2x(2x0.75)C)C	13.0 10
PUR M.I.	07	MAT9091002	(4G1.0+2x(2x0.75)C)C	13.5 7.5
<b>IKG4061</b>				
PVC O.I.	04	MAT9751322	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9191004	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851344	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9091004	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKG4074</b>				
PVC O.I.	04	MAT9751323	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9191014	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851345	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9091014	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>IKG4081</b>				
PVC O.I.	04	MAT9751324	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9191016	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851346	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9091016	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>IKG4141</b>				
PVC O.I.	04	MAT9751325	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9191003	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851347	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9091003	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKG4161</b>				
PVC M.I.	05	MAT9190036	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851348	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9090036	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>IKL0003</b>				
PVC M.I.	05	MAT9751358	(4G1.0+2x(2x0.75)C)C	13.5 7.5
PUR O.I.	06	MAT9851391	(4G1.0+2x(2x0.75)C)C	13.0 10
PUR M.I.	07	MAT9851390	(4G1.0+2x(2x0.75)C)C	13.5 7.5

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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>Linking cable with adapter plug</b>				
				
<b>IKL0023</b>				
PVC O.I.	04	MAT9751307	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9191013	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851312	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9091013	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>IKL0089</b>				
PVC O.I.	04	MAT9751308	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9191005	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851313	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9091005	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>IKL0168</b>				
PVC M.I.	05	MAT9191006	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT9851314	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT9091006	(4G25+2x(2x1.5)C)C	31.0 7.5
<b>RKL0035</b>				
PVC M.I.	05	MAT9751371	(4G0.75+(2x0.5)C)C	11.0 7.5
PUR M.I.	07	MAT98513109	(4G0.75+(2x0.5)C)C	11.5 7.5
<b>RKL4304</b>				
PVC O.I.	04	MAT9751346	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9191007	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851375	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9091007	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4305</b>				
PVC M.I.	05	MAT9191008	(4G1.0+2x(2x0.75)C)C	13.5 7.5
PUR O.I.	06	MAT9851376	(4G1.0+2x(2x0.75)C)C	13.0 10
PUR M.I.	07	MAT9091008	(4G1.0+2x(2x0.75)C)C	13.5 7.5
<b>RKL4311</b>				
PVC O.I.	04	MAT9751347	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9191009	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851377	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9091009	(4G1.5+2x(2x0.75)C)C	14.5 7.5

**Extension cable**



<b>RKL4312</b>				
PVC O.I.	04	MAT9751348	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9191010	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851378	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9091010	(4G2.5+2x(2x1.5)C)C	16.0 7.5

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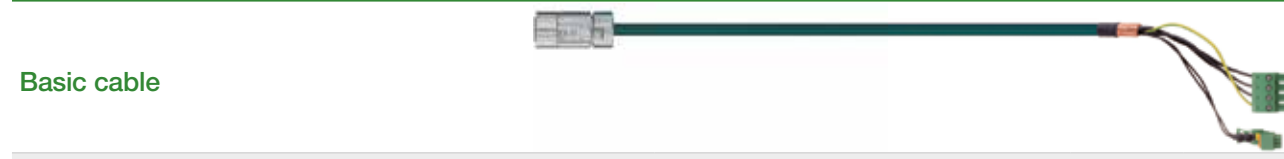
\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Power cables</b>				
<b>RKL4316</b>				
PVC O.I.	04	MAT9751349	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9191011	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851379	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9091011	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4319</b>				
PVC O.I.	04	MAT9751350	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9191012	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851380	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9091012	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4335</b>				
PVC O.I.	04	MAT9751373	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9751372	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT98513111	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT98513110	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>RKL4336</b>				
PVC O.I.	04	MAT9751351	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9191018	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851381	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9091018	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>RKL4337</b>				
PVC O.I.	04	MAT9751375	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9751374	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT98513113	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT98513112	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>RKL4338</b>				
PVC O.I.	04	MAT9751352	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9191017	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851382	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9091017	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>RKL4339</b>				
PVC M.I.	05	MAT9751376	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT98513115	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT98513114	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>RKL4340</b>				
PVC M.I.	05	MAT9191015	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851383	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9091015	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>RKL4341</b>				
PVC M.I.	05	MAT9751377	(4G25+2x(2x1.5)C)C	31.0 7.5
PUR O.I.	06	MAT98513117	(4G25+2x(2x1.5)C)C	28.5 10
PUR M.I.	07	MAT98513116	(4G25+2x(2x1.5)C)C	31.0 7.5

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 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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Bosch Rexroth Servo cables				
Basic cable				
<b>RL2-002CBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513150	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT98513156	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT98513150	(4G1.0+2x(2x0.75)C)	13.5 7.5

<b>RL2-022CBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513152	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT98513158	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT98513152	(4G1.0+2x(2x0.75)C)	13.5 7.5

<b>RL2-045EBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513154	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT98513160	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT98513154	(4G2.5+2x(2x1.5)C)C	16.0 7.5



<b>RL2-500CBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513151	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT98513157	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT98513151	(4G1.0+2x(2x0.75)C)	13.5 7.5

<b>RL2-521CBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513153	(4G1.0+2x(2x0.75)C)	13.5 7.5
PUR O.I.	06	MAT98513159	(4G1.0+2x(2x0.75)C)	13.0 10
PUR M.I.	07	MAT98513153	(4G1.0+2x(2x0.75)C)	13.5 7.5

<b>RL2-542EBB-NN-xxx,x</b>				
PVC M.I.	05	MAT97513155	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT98513161	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT98513155	(4G2.5+2x(2x1.5)C)C	16.0 7.5



<b>Bosch Rexroth Hybrid servo cables</b>				
Basic cable				
<b>RH2-021DBB-NN</b>				
PUR O.I.	27	MAT98513122	(4G1.5+(2x0.75)C + (2x2x0.14+2x0.25)C)C	15.0 10

<b>RH2-022DBB-NN</b>				
PUR O.I.	27	MAT98513123	(4G1.5+(2x0.75)C + (2x2x0.14+2x0.25)C)C	15.0 10

<b>RH2-023DBB-NN</b>				
PUR O.I.	27	MAT98513124	(4G1.5+(2x0.75)C + (2x2x0.14+2x0.25)C)C	15.0 10

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 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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<b>Bosch Rexroth Hybrid servo cables</b>				
Basic cable				
<b>RKH0101</b>				
PUR O.I.	27	MAT98513120	(5x2.5+(5x0.35)+(4xAWG22)C)C	17.0 10



<b>Bosch Rexroth Encoder cables</b>				
Basic cable				
<b>RKH0900</b>				
PUR O.I.	27	MAT98513121	(5x2.5+(5x0.35)+(4xAWG22)C)C	17.0 10



<b>Bosch Rexroth Encoder cables</b>				
Basic cable				
<b>IKS0230</b>				
PVC	08	MAT9110008	(2x(2x0.25)+2x0.5)C	6.5 10
PUR M.I.	10	MAT9841307	(2x(2x0.25)+2x0.5)C	6.5 7.5
TPE H*	11	MAT9100008	(2x(2x0.25)+2x0.5)C	6.5 6.8

<b>IKS0251</b>				
TPE H*	24	MAT9100014	(12x0.5)C	12.0 5

<b>IKS0253</b>				
TPE H*	24	MAT9100023	(12x0.5)C	12.0 5

<b>IKS0259</b>				
TPE H*	24	MAT9100032	(12x0.5)C	12.0 5

<b>IKS0262</b>				
TPE H*	24	MAT9100016	(12x0.5)C	12.0 5

<b>IKS0301</b>				
PVC	08	MAT9110015	(4x(2x0.25)+2x1.0)C	8.5 10

<b>IKS0315</b>				
PUR M.I.	10	MAT9841308	(4x(2x0.25)+2x1.0)C	9.0 7.5

<b>IKS0315</b>				
TPE H*	11	MAT9100015	(4x(2x0.25)+2x1.0)C	9.0 6.8

<b>IKS0315</b>				
PVC	08	MAT9110020	(4x(2x0.25)+2x1.0)C	8.5 10

<b>IKS0315</b>				
PUR M.I.	10	MAT9841309	(4x(2x0.25)+2x1.0)C	9.0 7.5

<b>IKS0315</b>				
TPE H*	11	MAT9100020	(4x(2x0.25)+2x1.0)C	9.0 6.8

<b>IKS0374</b>				
PVC	08	MAT9110011	(4x(2x0.25)+2x1.0)C	8.5 10

<b>IKS0374</b>				
PUR M.I.	10	MAT9841310	(4x(2x0.25)+2x1.0)C	9.0 7.5

<b>IKS0374</b>				
TPE H*	11	MAT9100011	(4x(2x0.25)+2x1.0)C	9.0 6.8

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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Bosch Rexroth Encoder cables**

Basic cable



<b>IKS4001</b>				
PVC	08	MAT9110026	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT9841311	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT9100026	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>IKS4002</b>				
PVC	08	MAT9110010	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841312	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100010	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>IKS4020</b>				
PVC	08	MAT9110006	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT9841313	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT9100006	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>IKS4038</b>				
PVC	08	MAT9110027	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT9841314	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT9100027	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>IKS4041</b>				
PVC	08	MAT9110028	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841315	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100028	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>IKS4042</b>				
PVC	08	MAT9110017	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841316	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100017	(4x(2x0.25)+2x0.5)C	8.5 6.8

Basic cable



<b>IKS4066</b>				
PVC	08	MAT9110025	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841317	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100025	(4x(2x0.25)+2x0.5)C	8.5 6.8

Basic cable



<b>IKS4103</b>				
PVC	08	MAT9110001	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841318	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100001	(4x(2x0.25)+2x0.5)C	8.5 6.8

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Bosch Rexroth Encoder cables**

Basic cable



<b>IKS4142</b>				
PVC	08	MAT9110007	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT9841319	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT9100007	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>IKS4314</b>				
PVC	08	MAT9110004	(4x(2x0.25)+2x1.0)C	8.5 10
PUR M.I.	10	MAT9841320	(4x(2x0.25)+2x1.0)C	9.0 7.5
TPE H*	11	MAT9100004	(4x(2x0.25)+2x1.0)C	9.0 6.8
<b>IKS4374</b>				
PVC	08	MAT9110002	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841321	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100002	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>IKS4375</b>				
PVC	08	MAT9110003	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841322	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100003	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>IKS4384</b>				
PVC	08	MAT9110005	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841323	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100005	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>IKS4389</b>				
PVC	08	MAT9110033	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841324	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100033	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8



Basic cable



<b>RG2-002AAB-NN-xxx,x</b>				
PVC	08	MAT9741301	(2x(2x0.25)+2x0.5)C	6.5 10
TPE H*	11	MAT9941301	(2x(2x0.25)+2x0.5)C	6.5 6.8
<b>RKG0014</b>				
PVC	08	MAT9110030	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841301	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100030	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>RKG0020</b>				
PVC	08	MAT9110034	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841302	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100034	(4x(2x0.25)+2x0.5)C	8.5 6.8


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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Encoder cables</b>				
<b>Basic cable</b>				
				
<b>RKG0026</b>				
PVC	08	MAT9110029	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841303	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100029	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>RKG0028</b>				
PVC	08	MAT9110031	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 10
PUR M.I.	10	MAT9841304	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 7.5
TPE H*	11	MAT9100031	(3x(2x0.25)C+(3x0.25)+2x1.0)C	10.0 6.8
<b>RKG4200</b>				
PVC	08	MAT9110013	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841305	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9100013	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>Linking cable with adapter plug</b>				
				
<b>IKS0232</b>				
PVC	08	MAT9110009	(2x(2x0.25)+2x0.5)C	6.5 10
PUR M.I.	10	MAT9841325	(2x(2x0.25)+2x0.5)C	6.5 7.5
TPE H*	11	MAT9100009	(2x(2x0.25)+2x0.5)C	6.5 6.8
<b>IKS0255</b>				
TPE H*	24	MAT9100018	(12x0.5)C	12.0 5
<b>IKS0303</b>				
PVC	08	MAT9110019	(4x(2x0.25)+2x1.0)C	8.5 10
PUR M.I.	10	MAT9841326	(4x(2x0.25)+2x1.0)C	9.0 7.5
TPE H*	11	MAT9100019	(4x(2x0.25)+2x1.0)C	9.0 6.8
<b>IKS4065</b>				
PVC	08	MAT9111001	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841327	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101001	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>IKS4151</b>				
PVC	08	MAT9111002	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841328	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101002	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>IKS4153</b>				
PVC	08	MAT9111003	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841329	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101003	(4x(2x0.25)+2x0.5)C	8.5 6.8

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Bosch Rexroth Encoder cables</b>				
<b>IKS4322</b>				
PVC	08	MAT9111005	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841331	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101005	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>IKS4376</b>				
PVC	08	MAT9111004	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841330	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101004	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>Extension cable with adapter plug</b>				
				
<b>RG2-510AAB-NN-xxx,x</b>				
PVC	08	MAT9741302	(2x(2x0.25)+2x0.5)C	6.5 10
TPE H*	11	MAT9941302	(2x(2x0.25)+2x0.5)C	6.5 6.8
<b>RKG4201</b>				
PVC	08	MAT9111006	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841306	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9101006	(4x(2x0.25)+2x0.5)C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



**EPLAN macros suitable for Bosch Rexroth available online**

Can be used directly in CAE planning.

Learn more about it on page 582/583 and online: [www.igus.eu/eplan-macro](http://www.igus.eu/eplan-macro)

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Elau/Schneider Electric Servo cables

#### Basic cable



E-MO-067				
PVC O.I.	04	MAT9750701	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9470001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850701	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9470101	(4G1.5+2x(2x0.75)C)C	14.5 7.5
E-MO-092				
PVC O.I.	04	MAT9750704	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9470004	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850704	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9470104	(4G1.5+2x(2x0.75)C)C	14.5 7.5

#### Basic cable



E-MO-087				
PVC O.I.	04	MAT9750703	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9470003	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850703	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9470103	(4G2.5+2x(2x1.5)C)C	16.0 7.5

#### Basic cable



E-MO-111 SH-Motor 1.5				
PVC O.I.	04	MAT9750702	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9470002	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9850702	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9470102	(4G1.5+2x(2x0.75)C)C	14.5 7.5

#### Basic cable



E-MO-113 SH-Motor 2.5				
PVC O.I.	04	MAT9750705	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9470005	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9850705	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9470105	(4G2.5+2x(2x1.5)C)C	16.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Elau/Schneider Electric Hybrid servo cables

#### Basic cable



E-MO-109, VW3E1109Rxxx				
PUR O.I.	06	MAT9850706	(4G25+2x(2x1.5)C)C	28.5 10

### Elau/Schneider Electric Encoder cables

#### Basic cable



E-FB-060				
PVC	08	MAT9480001	(4x(2x0.25)+2x0.5)C	8.0 10
TPE H*	11	MAT9480101	(4x(2x0.25)+2x0.5)C	8.5 6.8
E-FB-071				
PVC	08	MAT9480002	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9940702	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9480102	(4x(2x0.25)+2x0.5)C	8.5 6.8

#### Basic cable



E-FB-080				
PVC	08	MAT9480003	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9940703	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9480103	(4x(2x0.25)+2x0.5)C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Fagor

## PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Fagor Path measuring cables</b>				
<b>Extension cable</b>				
<b>iEEC-x</b>				
PUR O.I.	<b>09</b>	MAT9950808	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850808	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520070	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Extension cable</b>				
<b>iXC-C2-D</b>				
PUR O.I.	<b>09</b>	MAT9950801	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850801	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Extension cable</b>				
<b>iXC-C2-FN2</b>				
PUR O.I.	<b>09</b>	MAT9950807	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850807	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520060	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Extension cable</b>				
<b>iXC-C2-H</b>				
PUR O.I.	<b>09</b>	MAT9950803	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850803	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520020	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Extension cable</b>				
<b>iXC-C4-D</b>				
PUR O.I.	<b>09</b>	MAT9950802	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850802	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520010	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Extension cable</b>				
<b>iXC-C8-F-C9</b>				
PUR O.I.	<b>09</b>	MAT9950805	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	<b>10</b>	MAT9850805	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	<b>11</b>	MAT9520040	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	11.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Fagor

## PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Fagor Path measuring cables</b>				
<b>Extension cable</b>				
<b>iXC-C8-F-D</b>				
PUR O.I.	<b>09</b>	MAT9950804	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	<b>10</b>	MAT9850804	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	<b>11</b>	MAT9520030	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>Extension cable</b>				
<b>iXC-C8-FN</b>				
PUR O.I.	<b>09</b>	MAT9950806	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	<b>10</b>	MAT9850806	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	<b>11</b>	MAT9520050	(4x(2x0.14)+4x0.5)C	9.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Fanuc

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Fanuc Power cables

#### Basic cable



#### LX660-8077-T261

PVC M.I.	<b>01</b>	MAT9760901	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9200061	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9210061	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9960901	(4G1.5)C	10.0	7.5

#### Basic cable



#### LX660-8077-T264

PVC M.I.	<b>01</b>	MAT9760902	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200064	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210064	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960902	(4G2.5)C	11.5	7.5

#### LX660-8077-T266

PVC M.I.	<b>01</b>	MAT9760904	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200066	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210066	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960904	(4G2.5)C	11.5	7.5

#### Basic cable



#### LX660-8077-T265

PVC M.I.	<b>01</b>	MAT9760903	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200065	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210065	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960903	(4G2.5)C	11.5	7.5

#### LX660-8077-T267

PVC M.I.	<b>01</b>	MAT9760905	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200067	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210067	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960905	(4G2.5)C	11.5	7.5

#### Basic cable



#### LX660-8077-T270

PVC M.I.	<b>01</b>	MAT9760906	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9200070	(4G4.0)C	12.5	10
PUR M.I.	<b>07</b>	MAT9210070	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	<b>02</b>	MAT9960906	(4G4.0)C	13.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Fanuc

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Fanuc Power cables

#### Basic cable



#### LX660-8077-T271

PVC M.I.	<b>01</b>	MAT9760907	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9200071	(4G4.0)C	12.5	10
PUR M.I.	<b>07</b>	MAT9210071	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	<b>02</b>	MAT9960907	(4G4.0)C	13.0	7.5

#### LX660-8077-T272

PVC M.I.	<b>01</b>	MAT9760908	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9200072	(4G10)C	17.0	10
PUR M.I.	<b>07</b>	MAT9210072	(4G10+(2x1.5)C)C	21.0	7.5
TPE F	<b>02</b>	MAT9960908	(4G10)C	18.5	7.5

#### LX660-8077-T273

PVC M.I.	<b>01</b>	MAT9760909	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9200073	(4G10)C	17.0	10
PUR M.I.	<b>07</b>	MAT9210073	(4G10+(2x1.5)C)C	21.0	7.5
TPE F	<b>02</b>	MAT9960909	(4G10)C	18.5	7.5

#### Basic cable



#### LX660-8077-T291

PVC M.I.	<b>01</b>	MAT9760910	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200091	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210091	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960910	(4G2.5)C	11.5	7.5

#### LX660-8077-T293

PVC M.I.	<b>01</b>	MAT9760912	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9200093	(4G4.0)C	12.5	10
PUR M.I.	<b>07</b>	MAT9210093	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	<b>02</b>	MAT9960912	(4G4.0)C	13.0	7.5

#### Basic cable



#### LX660-8077-T292

PVC M.I.	<b>01</b>	MAT9760911	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9200092	(4G4.0)C	12.5	10
PUR M.I.	<b>07</b>	MAT9210092	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	<b>02</b>	MAT9960911	(4G4.0)C	13.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Fanuc

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Fanuc Power cables

#### Basic cable



#### LX660-8077-T296

PVC M.I.	<b>01</b>	MAT9760913	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200096	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210096	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960913	(4G2.5)C	11.5	7.5

#### Basic cable



#### LX660-8077-T298

PVC M.I.	<b>01</b>	MAT9760914	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9200098	(4G4.0)C	12.5	10
PUR M.I.	<b>07</b>	MAT9210098	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	<b>02</b>	MAT9960914	(4G4.0)C	13.0	7.5

#### Basic cable



#### LX660-8077-T300

PVC M.I.	<b>01</b>	MAT9760915	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9200300	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9210300	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9960915	(4G2.5)C	11.5	7.5

### Fanuc Servo cables

#### Basic cable



#### LX660-8077-T259

PUR O.I.	<b>06</b>	MAT9850916	(4G1.5)C	9.0	10
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#### Basic cable



#### LX660-8077-T274

PUR O.I.	<b>06</b>	MAT9850921	(4G2.5)C	10.5	10
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#### LX660-8077-T416

PUR O.I.	<b>06</b>	MAT9850923	(4G1.5+(2x1.5)C)	12.5	10
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#### LX660-8077-T451

PUR O.I.	<b>06</b>	MAT9850920	(4G2.5)C	10.5	10
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**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Fanuc

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Fanuc Servo cables

#### Basic cable



#### LX660-8077-T470

PUR O.I.	<b>06</b>	MAT9850925	(4G4.0)C	12.5	10
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#### Basic cable



#### LX660-8077-T471

PUR O.I.	<b>06</b>	MAT9850917	(4G4.0)C	12.5	10
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### Fanuc Brake cables

#### Basic cable



#### LX660-8077-T311

PUR M.I.	<b>22</b>	MAT9810919	(3G0.75)C	8.0	6.8
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### Fanuc Signal cables

#### Basic cable



#### LX660-2018-T015

PVC	<b>14</b>	MAT9840924	(10x(2x0.25))C	12.0	7.5
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#### Basic cable



#### LX660-4077-T296

PUR O.I.	<b>09</b>	MAT9300296	((2x0.25)+5x0.5)C	7.0	10
PUR M.I.	<b>10</b>	MAT9840901	((2x0.25)+5x0.5)C	8.0	7.5
TPE H*	<b>11</b>	MAT9310296	((2x0.25)+5x0.5)C	7.5	6.8

#### Basic cable



#### LX660-4077-T297

PUR O.I.	<b>09</b>	MAT9300297	((2x0.25)+5x0.5)C	7.0	10
PUR M.I.	<b>10</b>	MAT9840902	((2x0.25)+5x0.5)C	8.0	7.5
TPE H*	<b>11</b>	MAT9310297	((2x0.25)+5x0.5)C	7.5	6.8

#### Basic cable



#### LX660-4077-T302

PUR O.I.	<b>09</b>	MAT9300302	((4x0.25)+3x(2x0.25+2x0.5))C	9.5	10
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**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Fanuc

## PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Fanuc Signal cables</b>				
<b>Basic cable</b>				
PUR M.I.	10	MAT9840903	((4x0.25)+3x(2x0.25+2x0.5))C	11.0 7.5
TPE H*	11	MAT9310302	((4x0.25)+3x(2x0.25+2x0.5))C	10.0 6.8
<b>Basic cable</b>				
<b>LX660-4077-T303</b>				
PUR O.I.	09	MAT9300303	((4x0.25)+3x(2x0.25+2x0.5))C	9.5 10
PUR M.I.	10	MAT9840904	((4x0.25)+3x(2x0.25+2x0.5))C	11.0 7.5
TPE H*	11	MAT9310303	((4x0.25)+3x(2x0.25+2x0.5))C	10.0 6.8
<b>LX660-4077-T310</b>				
TPE H*	11	MAT9940922	((4x0.25)+3x(2x0.25+2x0.5))C	10.0 6.8
<b>Basic cable</b>				
<b>LX660-4077-T319</b>				
PUR O.I.	09	MAT9300319	((4x0.25)+3x(2x0.25+2x0.5))C	9.5 10
PUR M.I.	10	MAT9840905	((4x0.25)+3x(2x0.25+2x0.5))C	11.0 7.5
TPE H*	11	MAT9310319	((4x0.25)+3x(2x0.25+2x0.5))C	10.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Festo

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Festo Servo cables</b>				
<b>Basic cable</b>				
<b>NEBM-M16G8-E-xxx-Q7-LE8</b>				
PUR O.I.	06	MAT9852303	(4G0.75+2x(2x0.34))C	12.0 10
<b>Basic cable</b>				
<b>NEBM-M23G6-E-xxx-N-LE7</b>				
PVC O.I.	04	MAT9752301	(4G1.5+2x(2x0.75))C	13.5 10
PVC M.I.	05	MAT9752317	(4G1.5+2x(2x0.75))C	14.5 7.5
PUR O.I.	06	MAT9852301	(4G1.5+2x(2x0.75))C	13.5 10
PUR M.I.	07	MAT9852317	(4G1.5+2x(2x0.75))C	14.5 7.5
<b>NEBM-M23G8-E-xxx-N-LE8</b>				
PVC O.I.	04	MAT9752300	(4G2.5+2x(2x1.5))C	16.0 10
PVC M.I.	05	MAT9752316	(4G2.5+2x(2x1.5))C	17.0 7.5
PUR O.I.	06	MAT9852300	(4G2.5+(4x0.5))C	13.5 10
PUR M.I.	07	MAT9852316	(4G2.5+(4x0.5))C	14.0 7.5
<b>Basic cable</b>				
<b>NEBM-M40G8-E-xxx-N-LE7</b>				
PVC O.I.	04	MAT9752302	(4G2.5+2x(2x1.5))C	16.0 10
PVC M.I.	05	MAT9752318	(4G2.5+2x(2x1.5))C	17.0 7.5
PUR O.I.	06	MAT9852302	(4G2.5+2x(2x1.5))C	16.0 10
PUR M.I.	07	MAT9852318	(4G2.5+2x(2x1.5))C	16.0 7.5
<b>Festo Control cables</b>				
<b>Basic cable</b>				
<b>KPWR-MC-1-SUB-9HC-xxx</b>				
PVC M.I.	18	MAT9712320	(3G1.5)C	9.0 7.5
PUR M.I.	22	MAT9812320	(3G1.5)C	9.5 6.8
<b>Festo Encoder cables</b>				
<b>Basic cable</b>				
<b>NEBM-M23G12-E-xxx-N-S1G9</b>				
PVC	08	MAT9742308	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR O.I.	09	MAT9842308	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR M.I.	10	MAT9842324	(3x(2x0.14)C+2x(0.5)C)C	10.0 7.5
TPE H*	11	MAT9942308	(3x(2x0.14)C+2x(0.5)C)C	10.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Festo

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Festo Data cables</b>				
<b>Basic cable</b>				
<b>KDI-MC-M8-SUB-9-xxx</b>				
PVC	30	MAT9722311	(3x0.25)C	5.0 10
PUR	13	MAT9822311	(3x0.25)C	5.5 10
<b>Basic cable</b>				
<b>KES-MC-1-SUB-9-xxx</b>				
PVC	30	MAT9722310	(14x0.14)C	7.0 10
PUR	13	MAT9822310	(14x0.14)C	7.5 10
<b>Basic cable</b>				
<b>NEBM-M12G8-E-xxx-N-S1G15</b>				
PVC	14	MAT9722305	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822305	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922305	(4x(2x0.25))C	8.5 6.8
<b>Basic cable</b>				
<b>NEBM-M12G8-E-xxx-S1G9</b>				
PVC	14	MAT9722306	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822306	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922306	(4x(2x0.25))C	8.5 6.8
<b>Basic cable</b>				
<b>NEBM-M12W8-E-xxx-N-S1G15</b>				
PVC	14	MAT9722307	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822307	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922307	(4x(2x0.25))C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Festo

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Festo Data cables</b>				
<b>Basic cable</b>				
<b>NEBM-S1G15-E-xxx-LE6</b>				
PVC	14	MAT9722309	(4x(2x0.5))C	9.5 7.5
PUR	15	MAT9822309	(4x(2x0.5))C	9.5 7.5
TPE H*	16	MAT9922309	(4x(2x0.5))C	9.5 6.8
<b>Basic cable</b>				
<b>NEBM-S1G9-E-xxx-LE6</b>				
PVC	30	MAT9722313	(7x0.34)C	7.5 10
PUR	13	MAT9822313	(7x0.34)C	6.5 10
<b>Festo Bus cables</b>				
<b>Basic cable</b>				
<b>FBA-CO-SUB-9-M12</b>				
PVC, oil-res.	28	MAT9732312	(4x0.5)C	8.5 12.5
PUR	29	MAT9832312	(4x0.5)C	8.5 12.5
TPE	12	MAT9932312	(4x0.5)C	8.0 10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Heidenhain

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Servo cables</b>				
<b>Linking cable</b>				
<b>352 960-xx</b>				
PVC O.I.	04	MAT94907005	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9761001	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT93907005	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9861001	(4G1.5+(2x1.5)C)	13.0 7.5
<b>352 962-xx</b>				
PVC O.I.	04	MAT94907008	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9761003	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT93907008	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9861003	(4G1.5+(2x1.5)C)	13.0 7.5
<b>352 963-xx</b>				
PVC O.I.	04	MAT94907006	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9761002	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT93907006	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9861002	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>Heidenhain Adapter cables</b>				
<b>Basic cable</b>				
<b>298 401-xx</b>				
PVC	08	MAT9741006	(4x(2x0.14)+4x0.5)C	8.5 10
PUR O.I.	09	MAT9841008	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT9841007	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT9941021	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Basic cable</b>				
<b>333 164-xx</b>				
PVC	08	MAT9741008	(4x(2x0.14)+4x0.5)C	8.5 10
PUR O.I.	09	MAT9841009	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT9841004	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT9941019	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Basic cable</b>				
<b>368 330-xx</b>				
PVC	08	MAT9741010	((4x0.14)+2x(2x0.34))C	7.0 10
PUR O.I.	09	MAT9841006	((4x0.14)+2x(2x0.34))C	7.0 10

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Heidenhain

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Adapter cables</b>				
<b>Basic cable</b>				
<b>524 599-xx</b>				
PVC	08	MAT9741007	(4x(2x0.14)+4x0.5)C	8.5 10
PUR O.I.	09	MAT9841003	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT9841002	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT9941018	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Basic cable</b>				
<b>534 855-xx</b>				
PVC	08	MAT9741009	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT9841005	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT9941020	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>Basic cable</b>				
<b>605 424-xx</b>				
PVC	08	MAT9741000	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	10.0 10
PUR O.I.	09	MAT9841001	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	10.0 10
PUR M.I.	10	MAT9841000	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	11.0 7.5
TPE H*	11	MAT9941000	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	10.5 6.8
<b>Linking cable</b>				
<b>289 440-xx</b>				
PVC	08	MAT9741002	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT94901005	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT93901005	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>298 399-xx</b>				
PUR O.I.	09	MAT9941011	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94905001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93905001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>298 400-xx</b>				
PUR O.I.	09	MAT9941012	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94906002	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93906002	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>309 783-xx</b>				
PUR O.I.	09	MAT9941008	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94903003	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93903003	(4x(2x0.14)+4x0.5)C	9.0 6.8

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Heidenhain

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Adapter cables</b>				
<b>Linking cable</b>				
<b>336 376-xx</b>				
PVC	08	MAT9741001	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 10
PUR M.I.	10	MAT94901004	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 7.5
TPE H*	11	MAT93901004	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8
<b>604 419-xx</b>				
PUR O.I.	09	MAT9941003	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94901003	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93901003	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>298 402-xx</b>				
PUR O.I.	09	MAT9941016	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94909001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93909001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>309 738-xx</b>				
PUR O.I.	09	MAT9941007	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94903001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93903001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>309 774-xx</b>				
PUR M.I.	10	MAT94906001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93906001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>368 172-xx</b>				
PVC	08	MAT9741003	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR M.I.	10	MAT94903002	(3x(2x0.14)C+2x(0.5)C)C	10.0 7.5
TPE H*	11	MAT93903002	(4x(2x0.14)+(4x0.14)C+4x1.0)C	10.0 6.8

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Heidenhain

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Adapter cables</b>				
<b>Linking cable</b>				
<b>309 777-xx</b>				
PUR O.I.	09	MAT9941013	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94907001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93907001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>309 778-xx</b>				
PUR O.I.	09	MAT9941014	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94907002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93907002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>533 627-xx</b>				
PUR O.I.	09	MAT9941004	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94901006	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93901006	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>310 193-xx</b>				
PUR M.I.	10	MAT94907003	(3x(2x0.14)C+(2x0.5)C)C	10.0 7.5
TPE H*	11	MAT93907003	(3x(2x0.14)C+(2x0.5)C)C	10.0 6.8
<b>Linking cable</b>				
<b>310 197-xx</b>				
PUR M.I.	10	MAT94902001	(3x(2x0.14)C+(2x0.5)C)C	10.0 7.5
TPE H*	11	MAT93902001	(3x(2x0.14)C+(2x0.5)C)C	10.0 6.8
<b>310 199-xx</b>				
PUR O.I.	09	MAT9941006	(4x(2x0.14)+4x0.5)C	8.5 10
PUR M.I.	10	MAT94902003	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93902003	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>323 897-xx</b>				
PUR O.I.	09	MAT9941015	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94907004	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93907004	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Heidenhain

## PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Adapter cables</b>				
<b>Linking cable</b>				
<b>324 544-xx</b>				
PUR O.I.	09	MAT9941005	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94902002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93902002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>332 115-xx</b>				
PUR O.I.	09	MAT9941001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94901001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93901001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>Linking cable</b>				
<b>335 077-xx</b>				
PUR M.I.	10	MAT94908001	(4x(2x0.14)+4x0.5)C	9.0 7.5
TPE H*	11	MAT93908001	(4x(2x0.14)+4x0.5)C	9.0 6.8
<b>Linking cable</b>				
<b>354 411-xx</b>				
PUR O.I.	09	MAT9941009	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94904001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93904001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>355 398-xx</b>				
PUR O.I.	09	MAT9941010	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94904002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93904002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>Linking cable</b>				
<b>360 472-xx</b>				
PUR O.I.	09	MAT9941002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94901002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93901002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8
<b>Linking cable</b>				
<b>309 779-xx</b>				
PUR O.I.	09	MAT99411017	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	10.5 10
PUR M.I.	10	MAT94907007	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 7.5
TPE H*	11	MAT93907007	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	11.0 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Heidenhain

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Heidenhain Adapter cables</b>				
<b>Linking cable</b>				
<b>309 780-xx</b>				
PVC	08	MAT9741004	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR M.I.	10	MAT94909002	(3x(2x0.14)C+2x(0.5)C)C	10.0 7.5
TPE H*	11	MAT93909002	(3x(2x0.14)C+2x(0.5)C)C	10.0 6.8
<b>Linking cable</b>				
<b>354 770-xx</b>				
TPE	12	MAT94910001	((2xAWG28)+2xAWG20)C	5.5 12.5
	12	MAT94910002	((2xAWG24)+2xAWG20)C	6.5 12.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Jetter

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Jetter Motor cables

#### Basic cable



#### Cable No. 201

PVC M.I.	01	MAT9761805	(4G4.0)C	13.0	7.5
PUR O.I.	06	MAT9861806	(4G4.0)C	12.5	10
PUR M.I.	07	MAT9851807	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	02	MAT9961808	(4G4.0)C	13.0	7.5

#### Cable No. 203

PVC M.I.	01	MAT9761809	(4G4.0)C	13.0	7.5
PUR O.I.	06	MAT9861810	(4G4.0)C	12.5	10
PUR M.I.	07	MAT9851811	(4G4.0+(2x1.5)C)C	16.0	7.5
TPE F	02	MAT9961812	(4G4.0)C	13.0	7.5

#### Cable No. 26.1

PVC M.I.	01	MAT9761801	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT9861802	(4G1.5)C	9.0	10
PUR M.I.	07	MAT9861803	(4G1.5)C	11.0	7.5
TPE F	02	MAT9961804	(4G1.5)C	10.0	7.5

### Jetter Servo cables

#### Basic cable



#### Cable No. 202

PVC M.I.	05	MAT9751806	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	06	MAT9861807	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	07	MAT9851808	(4G4.0+(2x1.5)C)C	16.0	7.5

#### Cable No. 204

PVC M.I.	05	MAT9751810	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT9861811	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	07	MAT9851812	(4G6.0+(2x1.5)C)C	17.5	7.5

#### Basic cable



#### Cable No. 24.1

PVC M.I.	05	MAT9751802	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851803	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9851804	(4G1.5+(2x1.5)C)	13.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Jetter

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Jetter Resolver cables

#### Basic cable



#### Cable No. 23

PVC	08	MAT9741801	(3x(2x0.14)C+2x(0.5)C)C	9.5	10
PUR M.I.	10	MAT9841802	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5
TPE H*	11	MAT9941803	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5

#### Cable No. 423

PVC	08	MAT9741804	(3x(2x0.14)C+2x(0.5)C)C	9.5	10
PUR M.I.	10	MAT9841805	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5
TPE H*	11	MAT9941806	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5

#### Basic cable



#### Cable No. 523

PVC	14	MAT9741807	(5x(2x0.25))C	8.5	7.5
PUR	15	MAT9841808	(5x(2x0.25))C	8.5	7.5
TPE H*	16	MAT9941809	(5x(2x0.25))C	9.0	6.8


#### Cable No. 723

PVC	14	MAT9741810	(5x(2x0.25))C	8.5	7.5
PUR	15	MAT9841811	(5x(2x0.25))C	8.5	7.5
TPE H*	16	MAT9941812	(5x(2x0.25))C	9.0	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961




\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Motor cables</b>				
<b>Basic cable</b>				
				
<b>88959 (5m)</b>				
TPE H*	03	MAT9960626	(4G2.5)C	11.5 7.5
<b>88960 (10m)</b>				
TPE H*	03	MAT9960627	(4G2.5)C	11.5 7.5
<b>88962 (15m)</b>				
TPE H*	03	MAT9960628	(4G2.5)C	11.5 7.5
<b>88964 (20m)</b>				
TPE H*	03	MAT9960629	(4G2.5)C	11.5 7.5
<b>88966 (25m)</b>				
TPE H*	03	MAT9960630	(4G2.5)C	11.5 7.5
<b>89918 (5m)</b>				
PVC M.I.	01	MAT9340068	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440068	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960621	(4G1.5)C	10.0 7.5
<b>89952 (10m)</b>				
PVC M.I.	01	MAT9340069	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440069	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960622	(4G1.5)C	10.0 7.5
<b>89953 (15m)</b>				
PVC M.I.	01	MAT9340070	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440070	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960623	(4G1.5)C	10.0 7.5
<b>89954 (20m)</b>				
PVC M.I.	01	MAT9340071	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440071	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960624	(4G1.5)C	10.0 7.5
<b>89956 (25m)</b>				
PVC M.I.	01	MAT9340072	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440072	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960625	(4G1.5)C	10.0 7.5
<b>89959 (5m)</b>				
PVC M.I.	01	MAT9340004	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440004	(4G2.5)C	11.5 7.5
<b>89960 (10m)</b>				
PVC M.I.	01	MAT9340073	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440073	(4G2.5)C	11.5 7.5
<b>89962 (15m)</b>				
PVC M.I.	01	MAT9340074	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440074	(4G2.5)C	11.5 7.5




Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Motor cables</b>				
<b>89964 (20m)</b>				
PVC M.I.	01	MAT9340075	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440075	(4G2.5)C	11.5 7.5
<b>89966 (25m)</b>				
PVC M.I.	01	MAT9340076	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440076	(4G2.5)C	11.5 7.5
<b>90083 (5m)</b>				
PVC M.I.	01	MAT9340063	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440063	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960616	(4G1.5)C	10.0 7.5
<b>90084 (10m)</b>				
PVC M.I.	01	MAT9340064	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440064	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960617	(4G1.5)C	10.0 7.5
<b>90085 (15m)</b>				
PVC M.I.	01	MAT9340065	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440065	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960618	(4G1.5)C	10.0 7.5
<b>90086 (20m)</b>				
PVC M.I.	01	MAT9340066	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440066	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960619	(4G1.5)C	10.0 7.5
<b>90087 (25m)</b>				
PVC M.I.	01	MAT9340067	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440067	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960620	(4G1.5)C	10.0 7.5
<b>Basic cable</b>				
				
<b>102575 (5m)</b>				
PVC M.I.	01	MAT9340058	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440058	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960611	(4G1.5)C	10.0 7.5
<b>102576 (10m)</b>				
PVC M.I.	01	MAT9340059	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440059	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960612	(4G1.5)C	10.0 7.5
<b>102806 (15m)</b>				
PVC M.I.	01	MAT9340060	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440060	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960613	(4G1.5)C	10.0 7.5


Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Motor cables</b>				
<b>Basic cable</b>				
				
<b>102807 (20m)</b>				
PVC M.I.	01	MAT9340061	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440061	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960614	(4G1.5)C	10.0 7.5
<b>102808 (25m)</b>				
PVC M.I.	01	MAT9340062	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440062	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960615	(4G1.5)C	10.0 7.5
<b>Basic cable</b>				
				
<b>107473 (5m)</b>				
PVC M.I.	01	MAT9340053	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440053	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960606	(4G1.5)C	10.0 7.5
<b>107474 (10m)</b>				
PVC M.I.	01	MAT9340054	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440054	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960607	(4G1.5)C	10.0 7.5
<b>107475 (15m)</b>				
PVC M.I.	01	MAT9340055	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440055	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960608	(4G1.5)C	10.0 7.5
<b>107476 (20m)</b>				
PVC M.I.	01	MAT9340056	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440056	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960609	(4G1.5)C	10.0 7.5
<b>107477 (25m)</b>				
PVC M.I.	01	MAT9340057	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440057	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960610	(4G1.5)C	10.0 7.5
<b>Basic cable</b>				
				
<b>107485 (5m)</b>				
PVC M.I.	01	MAT9340002	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440002	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960601	(4G1.5)C	10.0 7.5


**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Motor cables</b>				
<b>107486 (10m)</b>				
PVC M.I.	01	MAT9340049	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440049	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960602	(4G1.5)C	10.0 7.5
<b>107487 (15m)</b>				
PVC M.I.	01	MAT9340050	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440050	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960603	(4G1.5)C	10.0 7.5
<b>107488 (20m)</b>				
PVC M.I.	01	MAT9340051	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440051	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960604	(4G1.5)C	10.0 7.5
<b>107489 (25m)</b>				
PVC M.I.	01	MAT9340052	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440052	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960605	(4G1.5)C	10.0 7.5
<b>Basic cable</b>				
				
<b>200456 (5m)</b>				
PVC M.I.	01	MAT9340077	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440077	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960631	(4G1.5)C	10.0 7.5
<b>200457 (10m)</b>				
PVC M.I.	01	MAT9340078	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440078	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960632	(4G1.5)C	10.0 7.5
<b>200458 (15m)</b>				
PVC M.I.	01	MAT9340079	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440079	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960633	(4G1.5)C	10.0 7.5
<b>200459 (20m)</b>				
PVC M.I.	01	MAT9340080	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440080	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960634	(4G1.5)C	10.0 7.5
<b>200460 (25m)</b>				
PVC M.I.	01	MAT9340081	(4G1.5)C	10.0 7.5
TPE F	02	MAT9440081	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960635	(4G1.5)C	10.0 7.5
<b>200468 (5m)</b>				
PVC M.I.	01	MAT9340082	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440082	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960636	(4G2.5)C	11.5 7.5


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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Motor cables</b>				
<b>Basic cable</b>				
				
<b>200469 (10m)</b>				
PVC M.I.	01	MAT9340083	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440083	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960637	(4G2.5)C	11.5 7.5
<b>200470 (15m)</b>				
PVC M.I.	01	MAT9340084	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440084	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960638	(4G2.5)C	11.5 7.5
<b>200471 (20m)</b>				
PVC M.I.	01	MAT9340085	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440085	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960639	(4G2.5)C	11.5 7.5
<b>200472 (25m)</b>				
PVC M.I.	01	MAT9340086	(4G2.5)C	11.5 7.5
TPE F	02	MAT9440086	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960640	(4G2.5)C	11.5 7.5
<b>200618 (5m)</b>				
PVC M.I.	01	MAT9340087	(4G4.0)C	13.0 7.5
TPE F	02	MAT9440087	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960641	(4G4.0)C	13.0 7.5
<b>200619 (10m)</b>				
PVC M.I.	01	MAT9340088	(4G4.0)C	13.0 7.5
TPE F	02	MAT9440088	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960642	(4G4.0)C	13.0 7.5
<b>200620 (15m)</b>				
PVC M.I.	01	MAT9340089	(4G4.0)C	13.0 7.5
TPE F	02	MAT9440089	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960643	(4G4.0)C	13.0 7.5
<b>200621 (20m)</b>				
PVC M.I.	01	MAT9340090	(4G4.0)C	13.0 7.5
TPE F	02	MAT9440090	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960644	(4G4.0)C	13.0 7.5
<b>200622 (25m)</b>				
PVC M.I.	01	MAT9340091	(4G4.0)C	13.0 7.5
TPE F	02	MAT9440091	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960645	(4G4.0)C	13.0 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>Basic cable</b>				
				
<b>89957 (5m)</b>				
PVC O.I.	04	MAT9750621	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340024	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850621	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440024	(4G1.5+(2x1.5)C)	13.0 7.5
<b>89961 (10m)</b>				
PVC O.I.	04	MAT9750622	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340025	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850622	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440025	(4G1.5+(2x1.5)C)	13.0 7.5
<b>89963 (15m)</b>				
PVC O.I.	04	MAT9750623	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340026	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850623	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440026	(4G1.5+(2x1.5)C)	13.0 7.5
<b>89965 (20m)</b>				
PVC O.I.	04	MAT9750624	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340027	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850624	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440027	(4G1.5+(2x1.5)C)	13.0 7.5
<b>89967 (25m)</b>				
PVC O.I.	04	MAT9750625	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340028	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850625	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440028	(4G1.5+(2x1.5)C)	13.0 7.5
<b>89968 (5m)</b>				
PVC O.I.	04	MAT9750626	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340029	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850626	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440029	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>89969 (25m)</b>				
PVC O.I.	04	MAT9750630	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340033	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850630	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440033	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>89970 (10m)</b>				
PVC O.I.	04	MAT9750627	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340030	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850627	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440030	(4G2.5+(2x1.5)C)C	14.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>Basic cable</b>				
<b>89971 (15m)</b>				
PVC O.I.	04	MAT9750628	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340031	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850628	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440031	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>89972 (20m)</b>				
PVC O.I.	04	MAT9750629	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340032	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850629	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440032	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>90088 (5m)</b>				
PVC O.I.	04	MAT9750616	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340019	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850616	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440019	(4G1.5+(2x1.5)C)	13.0 7.5
<b>90089 (10m)</b>				
PVC O.I.	04	MAT9750617	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340020	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850617	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440020	(4G1.5+(2x1.5)C)	13.0 7.5
<b>90090 (15m)</b>				
PVC O.I.	04	MAT9750618	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340021	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850618	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440021	(4G1.5+(2x1.5)C)	13.0 7.5
<b>90091 (20m)</b>				
PVC O.I.	04	MAT9750619	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340022	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850619	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440022	(4G1.5+(2x1.5)C)	13.0 7.5
<b>90092 (25m)</b>				
PVC O.I.	04	MAT9750620	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340023	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850620	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440023	(4G1.5+(2x1.5)C)	13.0 7.5



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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>Basic cable</b>				
<b>102579 (5m)</b>				
PVC O.I.	04	MAT9750611	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340014	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850611	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440014	(4G1.5+(2x1.5)C)	13.0 7.5
<b>102580 (10m)</b>				
PVC O.I.	04	MAT9750612	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340015	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850612	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440015	(4G1.5+(2x1.5)C)	13.0 7.5
<b>102809 (15m)</b>				
PVC O.I.	04	MAT9750613	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340016	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850613	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440016	(4G1.5+(2x1.5)C)	13.0 7.5
<b>102810 (20m)</b>				
PVC O.I.	04	MAT9750614	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340017	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850614	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440017	(4G1.5+(2x1.5)C)	13.0 7.5
<b>102811 (25m)</b>				
PVC O.I.	04	MAT9750615	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340018	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850615	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440018	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>107479 (5m)</b>				
PVC O.I.	04	MAT9750606	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340009	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850606	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440009	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107480 (10m)</b>				
PVC O.I.	04	MAT9750607	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340010	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850607	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440010	(4G1.5+(2x1.5)C)	13.0 7.5



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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>Basic cable</b>				
<b>107481 (15m)</b>				
PVC O.I.	04	MAT9750608	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340011	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850608	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440011	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107482 (20m)</b>				
PVC O.I.	04	MAT9750609	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340012	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850609	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440012	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107483 (25m)</b>				
PVC O.I.	04	MAT9750610	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340013	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850610	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440013	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>107491 (5m)</b>				
PVC O.I.	04	MAT9750601	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340001	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850601	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440001	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107492 (10m)</b>				
PVC O.I.	04	MAT9750602	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340005	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850602	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440005	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107493 (15m)</b>				
PVC O.I.	04	MAT9750603	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340006	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850603	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440006	(4G1.5+(2x1.5)C)	13.0 7.5
<b>107494 (20m)</b>				
PVC O.I.	04	MAT9750604	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340007	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850604	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440007	(4G1.5+(2x1.5)C)	13.0 7.5



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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>107495 (25m)</b>				
PVC O.I.	04	MAT9750605	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340008	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850605	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440008	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>200462 (5m)</b>				
PVC O.I.	04	MAT9750631	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340034	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850631	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440034	(4G1.5+(2x1.5)C)	13.0 7.5
<b>200463 (10m)</b>				
PVC O.I.	04	MAT9750632	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340035	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850632	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440035	(4G1.5+(2x1.5)C)	13.0 7.5
<b>200464 (15m)</b>				
PVC O.I.	04	MAT9750633	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340036	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850633	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440036	(4G1.5+(2x1.5)C)	13.0 7.5
<b>200465 (20m)</b>				
PVC O.I.	04	MAT9750634	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340037	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850634	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440037	(4G1.5+(2x1.5)C)	13.0 7.5
<b>200466 (25m)</b>				
PVC O.I.	04	MAT9750635	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9340038	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9850635	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9440038	(4G1.5+(2x1.5)C)	13.0 7.5
<b>200474 (5m)</b>				
PVC O.I.	04	MAT9750636	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340039	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850636	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440039	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>200475 (10m)</b>				
PVC O.I.	04	MAT9750637	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340040	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850637	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440040	(4G2.5+(2x1.5)C)C	14.5 7.5




**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Servo cables</b>				
<b>Basic cable</b>				
				
<b>200476 (15m)</b>				
PVC O.I.	04	MAT9750638	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340041	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850638	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440041	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>200477 (20m)</b>				
PVC O.I.	04	MAT9750639	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340042	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850639	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440042	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>200478 (25m)</b>				
PVC O.I.	04	MAT9750640	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9340043	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9850640	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9440043	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>200623 (5m)</b>				
PVC O.I.	04	MAT9750641	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9340044	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9850641	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9440044	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>200624 (10m)</b>				
PVC O.I.	04	MAT9750642	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9340045	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9850642	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9440045	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>200625 (15m)</b>				
PVC O.I.	04	MAT9750643	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9340046	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9850643	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9440046	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>200626 (20m)</b>				
PVC O.I.	04	MAT9750644	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9340047	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9850644	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9440047	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>200627 (25m)</b>				
PVC O.I.	04	MAT9750645	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9340048	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9850645	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9440048	(4G4.0+(2x1.5)C)C	16.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Kollmorgen/Danaher Motion Signal cables</b>				
<b>Basic cable</b>				
				
<b>84972 (5m)</b>				
PVC	14	MAT9320001	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9840601	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9330001	(4x(2x0.25))C	8.5 6.8
<b>84973 (10m)</b>				
PVC	14	MAT9320009	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9840602	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9330009	(4x(2x0.25))C	8.5 6.8
<b>84974 (15m)</b>				
PVC	14	MAT9320010	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9840603	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9330010	(4x(2x0.25))C	8.5 6.8
<b>84975 (20m)</b>				
PVC	14	MAT9320011	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9840604	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9330011	(4x(2x0.25))C	8.5 6.8
<b>87655 (25m)</b>				
PVC	14	MAT9320012	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9840605	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9330012	(4x(2x0.25))C	8.5 6.8
<b>90287 (5m)</b>				
PVC	14	MAT9320002	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330002	(8x(2x0.34))C	13.0 6.8
<b>91019 (10m)</b>				
PVC	14	MAT9320013	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330013	(8x(2x0.34))C	13.0 6.8
<b>91807 (20m)</b>				
PVC	14	MAT9320015	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330015	(8x(2x0.34))C	13.0 6.8
<b>91811 (15m)</b>				
PVC	14	MAT9320014	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330014	(8x(2x0.34))C	13.0 6.8
<b>92205 (25m)</b>				
PVC	14	MAT9320016	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330016	(8x(2x0.34))C	13.0 6.8

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Kollmorgen/Danaher Motion Signal cables**

**Basic cable**



107915 (5m)				
PVC	14	MAT9320004	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330004	(8x(2x0.34))C	13.0 6.8
107916 (10m)				
PVC	14	MAT9320017	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330017	(8x(2x0.34))C	13.0 6.8
107917 (15m)				
PVC	14	MAT9320018	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330018	(8x(2x0.34))C	13.0 6.8
107918 (20m)				
PVC	14	MAT9320019	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330019	(8x(2x0.34))C	13.0 6.8
107919 (25m)				
PVC	14	MAT9320020	(8x(2x0.25))C	10.5 7.5
TPE H*	16	MAT9330020	(8x(2x0.34))C	13.0 6.8

**Basic cable**



85034 (5m)				
PVC	14	MAT9320007	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840606	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330007	(6x(2x0.25))C	10.0 6.8
85035 (10m)				
PVC	14	MAT9320021	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840607	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330021	(6x(2x0.25))C	10.0 6.8
85036 (15m)				
PVC	14	MAT9320022	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840608	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330022	(6x(2x0.25))C	10.0 6.8
85037 (20m)				
PVC	14	MAT9320023	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840609	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330023	(6x(2x0.25))C	10.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Kollmorgen/Danaher Motion Signal cables**

**Basic cable**



85039 (5m)				
PVC	14	MAT9320008	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840610	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330008	(6x(2x0.25))C	10.0 6.8
85040 (10m)				
PVC	14	MAT9320024	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840611	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330024	(6x(2x0.25))C	10.0 6.8
85041 (15m)				
PVC	14	MAT9320025	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840612	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330025	(6x(2x0.25))C	10.0 6.8
85042 (20m)				
PVC	14	MAT9320026	(6x(2x0.25))C	9.0 7.5
PUR	15	MAT9840613	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9330026	(6x(2x0.25))C	10.0 6.8

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\* Cable qualities: **M.I** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Servo cables</b>				
<b>Basic cable</b>				
<b>EWLMxxxGMS-015C</b>				
PVC O.I.	04	MAT9751101	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130001	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851101	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120001	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EWLMxxxGMS-025</b>				
PVC O.I.	04	MAT9751102	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130002	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851102	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120002	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EWLMxxxGMS-040I</b>				
PVC O.I.	04	MAT9751130	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751129	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851130	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9851129	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>EYP0010AxxxxA00P01</b>				
PVC O.I.	04	MAT9751116	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130063	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851118	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120063	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0010AxxxxM01A00</b>				
PVC O.I.	04	MAT9751107	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130050	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851105	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120050	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0011AxxxxA00P01</b>				
PVC O.I.	04	MAT9751117	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130064	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851119	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120064	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0011AxxxxM01A00</b>				
PVC O.I.	04	MAT9751108	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130051	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851106	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120051	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0012AxxxxA00P01</b>				
PVC O.I.	04	MAT9751118	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130065	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851120	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120065	(4G2.5+(2x1.5)C)C	14.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Servo cables</b>				
<b>EYP0012AxxxxA00P02</b>				
PVC O.I.	04	MAT9751113	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130058	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851113	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120058	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EYP0012AxxxxM01A00</b>				
PVC O.I.	04	MAT9751109	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130052	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851107	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120052	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EYP0012AxxxxM02A00</b>				
PVC O.I.	04	MAT9751110	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130053	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851108	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120053	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EYP0013AxxxxA00P02</b>				
PVC O.I.	04	MAT9751114	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9130059	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851114	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9120059	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>EYP0013AxxxxM02A00</b>				
PVC O.I.	04	MAT9751111	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9130054	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851109	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9120054	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>EYP0014AxxxxA00P03</b>				
PVC O.I.	04	MAT9751115	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9130060	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851115	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9120060	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>EYP0014AxxxxM03A00</b>				
PVC O.I.	04	MAT9751112	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9130055	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851110	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR M.I.	07	MAT9120055	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>EYP0015AxxxxA00P03</b>				
PVC M.I.	05	MAT9130061	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851116	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9120061	(4G10+(2x1.5)C)C	21.0 7.5
<b>EYP0015AxxxxM03A00</b>				
PVC M.I.	05	MAT9130056	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851111	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9120056	(4G10+(2x1.5)C)C	21.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Servo cables</b>				
<b>Basic cable</b>				
<b>EYP0016AxxxxA00P03</b>				
PVC M.I.	05	MAT9130062	(4G16+(2x1.5)C)C	25.0 7.5
PUR O.I.	06	MAT9851117	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9120062	(4G16+(2x1.5)C)C	24.0 7.5
<b>EYP0016AxxxxM03A00</b>				
PVC M.I.	05	MAT9130057	(4G16+(2x1.5)C)C	25.0 7.5
PUR O.I.	06	MAT9851112	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9120057	(4G16+(2x1.5)C)C	24.0 7.5
<b>Linking cable</b>				
<b>EWLMxxxZM-015C</b>				
PVC O.I.	04	MAT9751103	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130006	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851103	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120006	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EWLMxxxZM-025</b>				
PVC O.I.	04	MAT9751104	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130007	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851104	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120007	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EYP0010VxxxxM01P01</b>				
PVC O.I.	04	MAT9751122	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130071	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851126	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120071	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0011VxxxxM01P01</b>				
PVC O.I.	04	MAT9751123	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9130072	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851127	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9120072	(4G1.5+(2x1.5)C)	13.0 7.5
<b>EYP0012VxxxxM01P01</b>				
PVC O.I.	04	MAT9751124	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130073	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851128	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120073	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>EYP0012VxxxxM02P02</b>				
PVC O.I.	04	MAT9751119	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9130066	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851121	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9120066	(4G2.5+(2x1.5)C)C	14.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Servo cables</b>				
<b>EYP0013VxxxxM02P02</b>				
PVC O.I.	04	MAT9751120	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9130067	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851122	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9120067	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>EYP0014VxxxxM03P03</b>				
PVC O.I.	04	MAT9751121	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9130068	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851123	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9120068	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>EYP0015VxxxxM03P03</b>				
PVC M.I.	05	MAT9130069	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851124	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9120069	(4G10+(2x1.5)C)C	21.0 7.5
<b>EYP0016VxxxxM03P03</b>				
PVC M.I.	05	MAT9130070	(4G16+(2x1.5)C)C	25.0 7.5
PUR O.I.	06	MAT9851125	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9120070	(4G16+(2x1.5)C)C	24.0 7.5

### Lenze Fan cables

#### Basic cable

<b>EWLLxxxGMS</b>				
PVC	17	MAT9761101	3G1.0	6.5 7.5
PVC, oil-res.	19	MAT9130031	3G1.0	6.5 6.8
TPE H*	23	MAT9120031	3G1.0	6.0 5
TPE F	25	MAT9961101	3G1.0	6.5 5
<b>EYL002AxxxxL01A00</b>				
PVC, oil-res.	19	MAT9130040	5G1.0	8.0 6.8
TPE H*	23	MAT9120040	5G1.0	7.5 5
<b>EYL002AxxxxL02A00</b>				
PVC, oil-res.	19	MAT9130041	5G1.0	8.0 6.8
TPE H*	23	MAT9120041	5G1.0	7.5 5

#### Linking cable

<b>EWLLxxxZM</b>				
PVC	17	MAT9761102	3G1.0	6.5 7.5
PVC, oil-res.	19	MAT9130032	3G1.0	6.5 6.8
TPE H*	23	MAT9120032	3G1.0	6.0 5
TPE F	25	MAT9961102	3G1.0	6.5 5
<b>EYL002VxxxxL01J01</b>				
PVC, oil-res.	19	MAT9130044	5G1.0	8.0 6.8
TPE H*	23	MAT9120044	5G1.0	7.5 5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Lenze Fan cables

#### Linking cable



#### EYL002VxxxxL02J02

PVC, oil-res.	<b>19</b>	MAT9130045	5G1.0	8.0	6.8
TPE H*	<b>23</b>	MAT9120045	5G1.0	7.5	5

#### Extension cable



#### EYL002VxxxxA00J01

PVC, oil-res.	<b>19</b>	MAT9130042	5G1.0	8.0	6.8
TPE H*	<b>23</b>	MAT9120042	5G1.0	7.5	5

#### EYL002VxxxxA00J02

PVC, oil-res.	<b>19</b>	MAT9130043	5G1.0	8.0	6.8
PUR	<b>21</b>	MAT9861110	5G1.0	8.0	6.8
TPE H*	<b>23</b>	MAT9120043	5G1.0	7.5	5
TPE F	<b>25</b>	MAT9961106	5G1.0	9.0	5

### Lenze Decoder cables

#### Linking cable



#### EYD0017AxxxxW01S01

PVC	<b>08</b>	MAT9130100	3x(2x0.14)C+(3x0.14)C	8.0	10
PUR M.I.	<b>10</b>	MAT9841107	3x(2x0.14)C+(3x0.14)C	8.5	7.5
TPE H*	<b>11</b>	MAT9120100	3x(2x0.14)C+(3x0.14)C	8.0	6.8

#### EYD0017AxxxxW01S02

PVC	<b>08</b>	MAT9130101	3x(2x0.14)C+(3x0.14)C	8.0	10
PUR M.I.	<b>10</b>	MAT9841108	3x(2x0.14)C+(3x0.14)C	8.5	7.5
TPE H*	<b>11</b>	MAT9120101	3x(2x0.14)C+(3x0.14)C	8.0	6.8

#### EYD0017AxxxxW03S01

PVC	<b>08</b>	MAT9130102	3x(2x0.14)C+(3x0.14)C	8.0	10
PUR M.I.	<b>10</b>	MAT9841109	3x(2x0.14)C+(3x0.14)C	8.5	7.5
TPE H*	<b>11</b>	MAT9120102	3x(2x0.14)C+(3x0.14)C	8.0	6.8

#### EYD0017AxxxxW03S02

PVC	<b>08</b>	MAT9130103	3x(2x0.14)C+(3x0.14)C	8.0	10
PUR M.I.	<b>10</b>	MAT9841110	3x(2x0.14)C+(3x0.14)C	8.5	7.5
TPE H*	<b>11</b>	MAT9120103	3x(2x0.14)C+(3x0.14)C	8.0	6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Lenze Encoder cables

#### Basic cable



#### EWLExxxGM-T

PVC	<b>08</b>	MAT9130026	(4x(2x0.25)+2x1.0)C	8.5	10
PUR M.I.	<b>10</b>	MAT9841104	(4x(2x0.25)+2x1.0)C	9.0	7.5
TPE H*	<b>11</b>	MAT9120026	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### Linking cable



#### EWLExxxZMST

PVC	<b>08</b>	MAT9130027	(4x(2x0.25)+2x1.0)C	8.5	10
PUR M.I.	<b>10</b>	MAT9841105	(4x(2x0.25)+2x1.0)C	9.0	7.5
TPE H*	<b>11</b>	MAT9120027	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### Terminal box connection cable



#### EWLExxxGX-T

PVC	<b>08</b>	MAT9130028	(4x(2x0.25)+2x1.0)C	8.5	10
PUR M.I.	<b>10</b>	MAT9841106	(4x(2x0.25)+2x1.0)C	9.0	7.5
TPE H*	<b>11</b>	MAT9120028	(4x(2x0.25)+2x1.0)C	9.0	6.8

### Lenze Feedback cables

#### Basic cable



#### EYF0017AxxxxA00W02

PUR M.I.	<b>10</b>	MAT9121091	4x(2x0.14)C+2x(1.0)C	9.5	7.5
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#### Basic cable



#### EYF0018AxxxxA00S03

PVC	<b>08</b>	MAT9130095	4x(2x0.14)C+2x(1.0)C	9.5	10
PUR M.I.	<b>10</b>	MAT9121095	4x(2x0.14)C+2x(1.0)C	9.5	7.5
TPE H*	<b>11</b>	MAT9120095	4x(2x0.14)C+2x(1.0)C	9.5	6.8

#### Basic cable



#### EYF0018AxxxxA00W02

PVC	<b>08</b>	MAT9130091	4x(2x0.14)C+2x(1.0)C	9.5	10
TPE H*	<b>11</b>	MAT9120091	4x(2x0.14)C+2x(1.0)C	9.5	6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Feedback cables</b>				
<b>Basic cable</b>				
<b>EYF0018AxxxxF02S03</b>				
PVC	08	MAT9130088	4x(2x0.14)C+2x(1.0)C	9.5 10
TPE H*	11	MAT9120088	4x(2x0.14)C+2x(1.0)C	9.5 6.8
<b>Basic cable</b>				
<b>EYF0018AxxxxF02W02</b>				
PVC	08	MAT9130087	4x(2x0.14)C+2x(1.0)C	9.5 10
PUR M.I.	10	MAT9121087	4x(2x0.14)C+2x(1.0)C	9.5 7.5
TPE H*	11	MAT9120087	4x(2x0.14)C+2x(1.0)C	9.5 6.8
<b>Basic cable</b>				
<b>EYF0019AxxxxF02S03</b>				
PUR M.I.	10	MAT9121088	4x(2x0.14)C+2x(1.0)C	9.5 7.5
<b>Basic cable</b>				
<b>EYF0020AxxxxA00S04</b>				
PVC	08	MAT9130092	3x(2x0.14)C+(3x0.14)C	8.0 10
PUR M.I.	10	MAT9121092	3x(2x0.14)C+(3x0.14)C	8.5 7.5
TPE H*	11	MAT9120092	3x(2x0.14)C+(3x0.14)C	8.0 6.8
<b>Basic cable</b>				
<b>EYF0020AxxxxA00S05</b>				
PVC	08	MAT9130093	3x(2x0.14)C+(3x0.14)C	8.0 10
PUR M.I.	10	MAT9121093	3x(2x0.14)C+(3x0.14)C	8.5 7.5
TPE H*	11	MAT9120093	3x(2x0.14)C+(3x0.14)C	8.0 6.8
<b>Basic cable</b>				
<b>EYF0020AxxxxF01S04</b>				
PVC	08	MAT9130089	3x(2x0.14)C+(3x0.14)C	8.0 10
PUR M.I.	10	MAT9121089	3x(2x0.14)C+(3x0.14)C	8.5 7.5
TPE H*	11	MAT9120089	3x(2x0.14)C+(3x0.14)C	8.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Lenze Feedback cables</b>				
<b>Basic cable</b>				
<b>EYF0020AxxxxF01S05</b>				
PVC	08	MAT9130090	3x(2x0.14)C+(3x0.14)C	8.0 10
PUR M.I.	10	MAT9121090	3x(2x0.14)C+(3x0.14)C	8.5 7.5
TPE H*	11	MAT9120090	3x(2x0.14)C+(3x0.14)C	8.0 6.8
<b>Basic cable</b>				
<b>EYF0021AxxxxA00S03</b>				
PUR M.I.	10	MAT9121094	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5 7.5
TPE H*	11	MAT9120094	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.0 6.8
<b>Basic cable</b>				
<b>EYF0021AxxxxF03S03</b>				
PUR M.I.	10	MAT9121086	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5 7.5
TPE H*	11	MAT9120086	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.0 6.8
<b>Basic cable</b>				
<b>EYF0021AxxxxF07S03</b>				
PUR M.I.	10	MAT9841111	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5 7.5
TPE H*	11	MAT9941111	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.0 6.8
<b>Linking cable</b>				
<b>EYF0019VxxxxF02G02</b>				
PVC	08	MAT9130084	4x(2x0.14)C+2x(1.0)C	9.5 10
PUR M.I.	10	MAT9121084	4x(2x0.14)C+2x(1.0)C	9.5 7.5
TPE H*	11	MAT9120084	4x(2x0.14)C+2x(1.0)C	9.5 6.8
<b>Basic cable</b>				
<b>EYF0019VxxxxF06G07</b>				
PUR M.I.	10	MAT9121096	4x(2x0.14)C+2x(1.0)C	9.5 7.5
TPE H*	11	MAT9120096	4x(2x0.14)C+2x(1.0)C	9.5 6.8
<b>Basic cable</b>				
<b>EYF0020VxxxxF01G01</b>				
PVC	08	MAT9130083	3x(2x0.14)C+(3x0.14)C	8.0 10
PUR M.I.	10	MAT9121083	3x(2x0.14)C+(3x0.14)C	8.5 7.5
TPE H*	11	MAT9120083	3x(2x0.14)C+(3x0.14)C	8.0 6.8
<b>Linking cable</b>				
<b>EYF0022VxxxxF03G03</b>				
PUR M.I.	10	MAT9121085	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5 7.5
TPE H*	11	MAT9120085	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Lenze

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Lenze Feedback cables

#### Extension cable



#### EYF0019VxxxxA00G02

PVC	08	MAT9130081	4x(2x0.14)C+2x(1.0)C	9.5	10
PUR M.I.	10	MAT9121081	4x(2x0.14)C+2x(1.0)C	9.5	7.5
TPE H*	11	MAT9120081	4x(2x0.14)C+2x(1.0)C	9.5	6.8

#### EYF0020VxxxxA00G01

PVC	08	MAT9130080	3x(2x0.14)C+(3x0.14)C	8.0	10
PUR M.I.	10	MAT9121080	3x(2x0.14)C+(3x0.14)C	8.5	7.5
TPE H*	11	MAT9120080	3x(2x0.14)C+(3x0.14)C	8.0	6.8

#### EYF0022VxxxxA00G03

PUR M.I.	10	MAT9121082	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.5	7.5
TPE H*	11	MAT9120082	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	11.0	6.8

### Lenze Resolver cables

#### Basic cable



#### EWLRxxxGM-T

PVC	08	MAT9130021	(3x(2x0.14)C+2x(0.5)C)C	9.5	10
PUR M.I.	10	MAT9841101	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5
TPE H*	11	MAT9120021	(3x(2x0.14)C+(2x0.5)C)C	10.0	6.8

#### Linking cable



#### EWLRxxxZMST

PVC	08	MAT9130022	(3x(2x0.14)C+2x(0.5)C)C	9.5	10
PUR M.I.	10	MAT9841102	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5
TPE H*	11	MAT9120022	(3x(2x0.14)C+(2x0.5)C)C	10.0	6.8

#### Terminal box connection cable



#### EWLRxxxGX-T

PVC	08	MAT9130023	(3x(2x0.14)C+2x(0.5)C)C	9.5	10
PUR M.I.	10	MAT9841103	(3x(2x0.14)C+(2x0.5)C)C	10.0	7.5
TPE H*	11	MAT9120023	(3x(2x0.14)C+(2x0.5)C)C	10.0	6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | LinMot

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### LinMot Motor cables

#### Basic cable



#### P10-70x...-D01/D02-MS

PVC M.I.	01	MAT9762401	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT9862401	(4G1.5)C	9.0	10
PUR M.I.	07	MAT9862402	(4G1.5)C	11.0	7.5

### LinMot Servo cables

#### Basic cable



#### P10-70x...-D03-MS

PVC O.I.	04	MAT9752401	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9752402	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9852402	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9852401	(4G1.5+(2x1.5)C)	13.0	7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### LTI DRIVES Servo cables

#### Basic cable



#### KM3-KSxxx

PVC O.I.	04	MAT9020004	(4G1.5+2x(2x0.75)C)C	13.5	10
PVC M.I.	05	MAT9020003	(4G1.5+2x(2x0.75)C)C	14.5	7.5
PUR O.I.	06	MAT9020002	(4G1.5+2x(2x0.75)C)C	13.5	10
PUR M.I.	07	MAT9020001	(4G1.5+2x(2x0.75)C)C	14.5	7.5
<b>KM3-KSxxx-24A</b>					
PVC O.I.	04	MAT9020014	(4G2.5+2x(2x1.5)C)C	16.0	10
PVC M.I.	05	MAT9020013	(4G2.5+2x(2x1.5)C)C	17.0	7.5
PUR O.I.	06	MAT9020012	(4G2.5+2x(2x1.5)C)C	16.0	10
PUR M.I.	07	MAT9020011	(4G2.5+2x(2x1.5)C)C	16.0	7.5

#### Basic cable



#### KM3-KSxxx-63A

PVC M.I.	05	MAT9020023	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9020022	(4G10+2x(2x1.5)C)C	22.5	10
PUR M.I.	07	MAT9020021	(4G10+2x(2x1.5)C)C	22.5	7.5

#### Extension cable



#### KM3-KSxxx (ext.)

PVC O.I.	04	MAT9022004	(4G1.5+2x(2x0.75)C)C	13.5	10
PUR O.I.	06	MAT9022002	(4G1.5+2x(2x0.75)C)C	13.5	10
PUR M.I.	07	MAT9022001	(4G1.5+2x(2x0.75)C)C	14.5	7.5

#### KM3-KSxxx (ext.)

PVC M.I.	05	MAT9022003	(4G1.5+2x(2x0.75)C)C	14.5	7.5
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#### KM3-KSxxx-24A (ext.)

PVC O.I.	04	MAT9022014	(4G2.5+2x(2x1.5)C)C	16.0	10
PVC M.I.	05	MAT9022013	(4G2.5+2x(2x1.5)C)C	17.0	7.5
PUR O.I.	06	MAT9022012	(4G2.5+2x(2x1.5)C)C	16.0	10
PUR M.I.	07	MAT9022011	(4G2.5+2x(2x1.5)C)C	16.0	7.5

#### Extension cable



#### KM3-KSxxx-63A (ext.)

PVC M.I.	05	MAT9022023	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR M.I.	07	MAT9022021	(4G10+2x(2x1.5)C)C	22.5	7.5

#### KM3-KSxxx-63A (ext.)

PUR O.I.	06	MAT9022022	(4G10+2x(2x1.5)C)C	22.5	10
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**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### LTI DRIVES Encoder cables

#### Basic cable



#### KGH2-KSxxx

PVC	08	MAT9021004	(4x(2x0.25)+2x1.0)C	8.5	10
TPE H*	11	MAT9021001	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### KGH3-KSxxx

PVC	08	MAT9021014	(4x(2x0.25)+2x1.0)C	8.5	10
TPE H*	11	MAT9021011	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### KGS2-KSxxx

PUR O.I.	09	MAT9021023	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	10.5	10
PUR M.I.	10	MAT9021022	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	7.5
TPE H*	11	MAT9021021	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	6.8

#### KRY2-CDF-KSxxx

PVC	08	MAT9021034	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9021032	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9021031	(4x(2x0.25)+2x0.5)C	8.5	6.8

#### KRY2-KSxxx

PVC	08	MAT9021044	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9021042	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9021041	(4x(2x0.25)+2x0.5)C	8.5	6.8

#### Extension cable



#### KGH2-KSxxx (ext.)

PVC	08	MAT9023004	(4x(2x0.25)+2x1.0)C	8.5	10
TPE H*	11	MAT9023001	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### KGH3-KSxxx (ext.)

PVC	08	MAT9023014	(4x(2x0.25)+2x1.0)C	8.5	10
TPE H*	11	MAT9023011	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### KGS2-KSxxx (ext.)

PUR O.I.	09	MAT9023023	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	10.5	10
PUR M.I.	10	MAT9023022	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	7.5
TPE H*	11	MAT9023021	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	11.0	6.8

#### KRY2-CDF-KSxxx (ext.)

PVC	08	MAT9023034	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9023032	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9023031	(4x(2x0.25)+2x0.5)C	8.5	6.8

#### KRY2-KSxxx (ext.)

PVC	08	MAT9023044	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9023042	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9023041	(4x(2x0.25)+2x0.5)C	8.5	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Mitsubishi Electric Motor cables</b>				
<b>Basic cable</b>				
<b>MR-BKS1CBL-xxx-A1-H</b>				
PVC, oil-res.	19	MAT9712002	3G0.75	6.5 6.8
PUR	21	MAT9812002	3G0.75	6.5 6.8
<b>MR-BKS1CBL-xxx-A2-H</b>				
PVC, oil-res.	19	MAT9712004	3G0.75	6.5 6.8
PUR	21	MAT9812004	3G0.75	6.5 6.8
<b>Basic cable</b>				
<b>MR-PWS1CBL-xxx-A1-H</b>				
PVC, oil-res.	19	MAT9712001	4G0.75	7.0 6.8
PUR	21	MAT9812001	4G0.75	7.0 6.8
<b>MR-PWS1CBL-xxx-A2-H</b>				
PVC, oil-res.	19	MAT9712003	4G0.75	7.0 6.8
PUR	21	MAT9812003	4G0.75	7.0 6.8
<b>Basic cable</b>				
<b>PCS015N-xxx-0-0C4</b>				
PVC M.I.	01	MAT9752002	(4G1.5)C	10.0 7.5
PUR O.I.	06	MAT9852002	(4G1.5)C	9.0 10
PUR M.I.	07	MAT9952002	(4G1.5)C	11.0 7.5
<b>PCS025N-xxx-0-0C5</b>				
PVC M.I.	01	MAT9752003	(4G2.5)C	11.5 7.5
PUR O.I.	06	MAT9852003	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9952003	(4G2.5)C	12.5 7.5
<b>PCS025N-xxx-C4</b>				
PVC O.I.	04	MAT9752001	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9852001	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9952001	(4G2.5)C	12.5 7.5
<b>PCS040N-xxx-0-0C4</b>				
PVC M.I.	01	MAT9752004	(4G4.0)C	13.0 7.5
PUR O.I.	06	MAT9852004	(4G4.0)C	12.5 10
TPE F	02	MAT9952004	(4G4.0)C	13.0 7.5
<b>PCS040N-xxx-0-0C5</b>				
PVC M.I.	01	MAT9752005	(4G4.0)C	13.0 7.5
PUR O.I.	06	MAT9852005	(4G4.0)C	12.5 10
TPE F	02	MAT9952005	(4G4.0)C	13.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Mitsubishi Electric Motor cables</b>				
<b>PCS060N-xxx-0-0C5</b>				
PVC M.I.	01	MAT9752006	(4G6.0)C	16.0 7.5
PUR O.I.	06	MAT9852006	(4G6.0)C	14.5 10
TPE F	02	MAT9952006	(4G6.0)C	16.0 7.5
<b>Mitsubishi Electric Encoder cables</b>				
<b>Basic cable</b>				
<b>MR-J3ENCBL-xxx-A1-H</b>				
PVC	14	MAT9722002	(3x(2x0.25))C	7.0 7.5
PUR	15	MAT9822002	(3x(2x0.25))C	7.0 7.5
<b>MR-J3ENCBL-xxx-A2-H</b>				
PVC	14	MAT9722003	(3x(2x0.25))C	7.0 7.5
PUR	15	MAT9822003	(3x(2x0.25))C	7.0 7.5
<b>Basic cable</b>				
<b>MR-J3ENCBL-xxx-H</b>				
PVC	14	MAT9722001	(3x(2x0.25))C	7.0 7.5
PUR	15	MAT9822001	(3x(2x0.25))C	7.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Nidec/Control Techniques Motor cables**

**Basic cable**



PS B A A A XXX				
PVC M.I.	01	MAT9560002	(4G2.5)C	11.5 7.5
TPE F	02	MAT9540002	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960502	(4G2.5)C	11.5 7.5
PS B A F A XXX				
PVC M.I.	01	MAT9560005	(4G2.5)C	11.5 7.5
TPE F	02	MAT9540005	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960505	(4G2.5)C	11.5 7.5
PS B B A A XXX				
PVC M.I.	01	MAT9560003	(4G4.0)C	13.0 7.5
TPE F	02	MAT9540003	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960503	(4G4.0)C	13.0 7.5
PS B B F A XXX				
PVC M.I.	01	MAT9560006	(4G4.0)C	13.0 7.5
TPE F	02	MAT9540006	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960506	(4G4.0)C	13.0 7.5
PS B G A A XXX				
PVC M.I.	01	MAT9560001	(4G1.5)C	10.0 7.5
TPE F	02	MAT9540001	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960501	(4G1.5)C	10.0 7.5
PS B G F A XXX				
PVC M.I.	01	MAT9560004	(4G1.5)C	10.0 7.5
TPE F	02	MAT9540004	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960504	(4G1.5)C	10.0 7.5

**Basic cable**



PS B A A B XXX				
PVC M.I.	01	MAT9560008	(4G2.5)C	11.5 7.5
TPE F	02	MAT9540008	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960508	(4G2.5)C	11.5 7.5
PS B A B B XXX				
PVC M.I.	01	MAT9560020	(4G2.5)C	11.5 7.5
TPE F	02	MAT9540020	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960520	(4G2.5)C	11.5 7.5
PS B A F B XXX				
PVC M.I.	01	MAT9560014	(4G2.5)C	11.5 7.5
TPE F	02	MAT9540014	(4G2.5)C	11.5 7.5
TPE H*	03	MAT9960514	(4G2.5)C	11.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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**Nidec/Control Techniques Motor cables**

**Basic cable**



PS B B A B XXX				
PVC M.I.	01	MAT9560009	(4G4.0)C	13.0 7.5
TPE F	02	MAT9540009	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960509	(4G4.0)C	13.0 7.5
PS B B B B XXX				
PVC M.I.	01	MAT9560021	(4G4.0)C	13.0 7.5
TPE F	02	MAT9540021	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960521	(4G4.0)C	13.0 7.5
PS B B F B XXX				
PVC M.I.	01	MAT9560015	(4G4.0)C	13.0 7.5
TPE F	02	MAT9540015	(4G4.0)C	13.0 7.5
TPE H*	03	MAT9960515	(4G4.0)C	13.0 7.5
PS B C A B XXX				
PVC M.I.	01	MAT9560010	(4G6.0)C	16.0 7.5
TPE F	02	MAT9540010	(4G6.0)C	16.0 7.5
TPE H*	03	MAT9960510	(4G6.0)C	16.0 7.5
PS B C B B XXX				
PVC M.I.	01	MAT9560022	(4G6.0)C	16.0 7.5
TPE F	02	MAT9540022	(4G6.0)C	16.0 7.5
TPE H*	03	MAT9960522	(4G6.0)C	16.0 7.5
PS B C F B XXX				
PVC M.I.	01	MAT9560016	(4G6.0)C	16.0 7.5
TPE F	02	MAT9540016	(4G6.0)C	16.0 7.5
TPE H*	03	MAT9960516	(4G6.0)C	16.0 7.5
PS B D A B XXX				
PVC M.I.	01	MAT9560011	(4G10)C	18.5 7.5
TPE F	02	MAT9540011	(4G10)C	18.5 7.5
TPE H*	03	MAT9960511	(4G10)C	18.5 7.5
PS B D B B XXX				
PVC M.I.	01	MAT9560023	(4G10)C	18.5 7.5
TPE F	02	MAT9540023	(4G10)C	18.5 7.5
TPE H*	03	MAT9960523	(4G10)C	18.5 7.5
PS B D F B XXX				
PVC M.I.	01	MAT9560017	(4G10)C	18.5 7.5
TPE F	02	MAT9540017	(4G10)C	18.5 7.5
TPE H*	03	MAT9960517	(4G10)C	18.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Nidec/Control Techniques Motor cables</b>				
<b>Basic cable</b>				
<b>PS B E A B XXX</b>				
PVC M.I.	01	MAT9560012	(4G16)C	23.0 7.5
TPE F	02	MAT9540012	(4G16)C	23.0 7.5
TPE H*	03	MAT9960512	(4G16)C	23.0 7.5
<b>PS B E B B XXX</b>				
PVC M.I.	01	MAT9560024	(4G16)C	23.0 7.5
TPE F	02	MAT9540024	(4G16)C	23.0 7.5
TPE H*	03	MAT9960524	(4G16)C	23.0 7.5
<b>PS B E F B XXX</b>				
PVC M.I.	01	MAT9560018	(4G16)C	23.0 7.5
TPE F	02	MAT9540018	(4G16)C	23.0 7.5
TPE H*	03	MAT9960518	(4G16)C	23.0 7.5
<b>PS B G A B XXX</b>				
PVC M.I.	01	MAT9560007	(4G1.5)C	10.0 7.5
TPE F	02	MAT9540007	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960507	(4G1.5)C	10.0 7.5
<b>PS B G B B XXX</b>				
PVC M.I.	01	MAT9560019	(4G1.5)C	10.0 7.5
TPE F	02	MAT9540019	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960519	(4G1.5)C	10.0 7.5
<b>PS B G F B XXX</b>				
PVC M.I.	01	MAT9560013	(4G1.5)C	10.0 7.5
TPE F	02	MAT9540013	(4G1.5)C	10.0 7.5
TPE H*	03	MAT9960513	(4G1.5)C	10.0 7.5



### Nidec/Control Techniques Servo cables

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Basic cable</b>				
<b>PB B A A A XXX</b>				
PVC O.I.	04	MAT9750502	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560041	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540041	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B A F A XXX</b>				
PVC O.I.	04	MAT9750505	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560044	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540044	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B B A A XXX</b>				
PVC O.I.	04	MAT9750503	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560042	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540042	(4G4.0+(2x1.5)C)C	16.0 7.5



**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Nidec/Control Techniques Servo cables</b>				
<b>PB B B F A XXX</b>				
PVC O.I.	04	MAT9750506	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560045	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540045	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>PB B G A A XXX</b>				
PVC O.I.	04	MAT9750501	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560040	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540040	(4G1.5+(2x1.5)C)	13.0 7.5
<b>PB B G F A XXX</b>				
PVC O.I.	04	MAT9750504	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560043	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540043	(4G1.5+(2x1.5)C)	13.0 7.5



<b>Basic cable</b>				
<b>PB B A A B XXX</b>				
PVC O.I.	04	MAT9750508	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560047	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540047	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B A B B XXX</b>				
PVC O.I.	04	MAT9750516	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560059	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540059	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B A F B XXX</b>				
PVC O.I.	04	MAT9750512	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560053	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540053	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B A G B XXX</b>				
PVC O.I.	04	MAT9750520	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9560065	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9540065	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>PB B B A B XXX</b>				
PVC O.I.	04	MAT9750509	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560048	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540048	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>PB B B B B XXX</b>				
PVC O.I.	04	MAT9750517	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560060	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540060	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>PB B B F B XXX</b>				
PVC O.I.	04	MAT9750513	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560054	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540054	(4G4.0+(2x1.5)C)C	16.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Nidec/Control Techniques Servo cables</b>				
<b>Basic cable</b>				
				
<b>PB B B G B XXX</b>				
PVC O.I.	04	MAT9750521	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9560066	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR M.I.	07	MAT9540066	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>PB B C A B XXX</b>				
PVC O.I.	04	MAT9750510	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9560049	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR M.I.	07	MAT9540049	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>PB B C B B XXX</b>				
PVC O.I.	04	MAT9750518	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9560061	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR M.I.	07	MAT9540061	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>PB B C F B XXX</b>				
PVC O.I.	04	MAT9750514	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9560055	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR M.I.	07	MAT9540055	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>PB B C G B XXX</b>				
PVC O.I.	04	MAT9750522	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9560067	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR M.I.	07	MAT9540067	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>PB B D A B XXX</b>				
PVC M.I.	05	MAT9560050	(4G10+(2x1.5)C)C	21.5 7.5
PUR M.I.	07	MAT9540050	(4G10+(2x1.5)C)C	21.0 7.5
<b>PB B D B B XXX</b>				
PVC M.I.	05	MAT9560062	(4G10+(2x1.5)C)C	21.5 7.5
PUR M.I.	07	MAT9540062	(4G10+(2x1.5)C)C	21.0 7.5
<b>PB B D F B XXX</b>				
PVC M.I.	05	MAT9560056	(4G10+(2x1.5)C)C	21.5 7.5
PUR M.I.	07	MAT9540056	(4G10+(2x1.5)C)C	21.0 7.5
<b>PB B D G B XXX</b>				
PVC M.I.	05	MAT9560068	(4G10+(2x1.5)C)C	21.5 7.5
PUR M.I.	07	MAT9540068	(4G10+(2x1.5)C)C	21.0 7.5
<b>PB B E A B XXX</b>				
PVC M.I.	05	MAT9560051	(4G16+(2x1.5)C)C	25.0 7.5
PUR M.I.	07	MAT9540051	(4G16+(2x1.5)C)C	24.0 7.5
<b>PB B E B B XXX</b>				
PVC M.I.	05	MAT9560063	(4G16+(2x1.5)C)C	25.0 7.5
PUR M.I.	07	MAT9540063	(4G16+(2x1.5)C)C	24.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Nidec/Control Techniques Servo cables</b>				
<b>PB B E F B XXX</b>				
PVC M.I.	05	MAT9560057	(4G16+(2x1.5)C)C	25.0 7.5
PUR M.I.	07	MAT9540057	(4G16+(2x1.5)C)C	24.0 7.5
<b>PB B E G B XXX</b>				
PVC M.I.	05	MAT9560069	(4G16+(2x1.5)C)C	25.0 7.5
PUR M.I.	07	MAT9540069	(4G16+(2x1.5)C)C	24.0 7.5
<b>PB B G A B XXX</b>				
PVC O.I.	04	MAT9750507	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560046	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540046	(4G1.5+(2x1.5)C)	13.0 7.5
<b>PB B G B B XXX</b>				
PVC O.I.	04	MAT9750515	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560058	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540058	(4G1.5+(2x1.5)C)	13.0 7.5
<b>PB B G F B XXX</b>				
PVC O.I.	04	MAT9750511	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560052	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540052	(4G1.5+(2x1.5)C)	13.0 7.5
<b>PB B G G B XXX</b>				
PVC O.I.	04	MAT9750519	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9560064	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9540064	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Nidec/Control Techniques Encoder cables</b>				
<b>Basic cable</b>				
				
<b>SS B A H C XXX</b>				
PVC	08	MAT9560100	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9840501	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9540100	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>SS B A H H XXX</b>				
PVC	08	MAT9560101	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9840502	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9540101	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>SS B A H N XXX</b>				
PVC	08	MAT9560104	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9840505	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9540104	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | NUM

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### NUM Power cables

#### Basic cable



#### AGOFRU018LMxxx

PVC M.I.	<b>01</b>	MAT9280051	(4G1.5)C	10.0	7.5
TPE F	<b>02</b>	MAT9282051	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9961201	(4G1.5)C	10.0	7.5

#### AGOFRU019LMxxx

PVC M.I.	<b>01</b>	MAT9280052	(4G4.0)C	13.0	7.5
TPE F	<b>02</b>	MAT9282052	(4G4.0)C	13.0	7.5
TPE H*	<b>03</b>	MAT9961202	(4G4.0)C	13.0	7.5

#### Extension cable



#### AGOFRU018LMxxx (ext.)

PVC M.I.	<b>01</b>	MAT9280061	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9961203	(4G1.5)C	10.0	7.5

#### AGOFRU018LMxxx (ext.)

TPE F	<b>02</b>	MAT9282061	(4G1.5)C	10.0	7.5
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#### AGOFRU019LMxxx (ext.)

PVC M.I.	<b>01</b>	MAT9280062	(4G4.0)C	13.0	7.5
TPE F	<b>02</b>	MAT9282062	(4G4.0)C	13.0	7.5
TPE H*	<b>03</b>	MAT9961204	(4G4.0)C	13.0	7.5

### NUM Servo cables

#### Basic cable



#### AGOFRU018Mxxx

PVC M.I.	<b>05</b>	MAT9280001	(4G1.5+(2x1.5)C)	13.0	7.5
PUR M.I.	<b>07</b>	MAT9282001	(4G1.5+(2x1.5)C)	13.0	7.5

#### AGOFRU019Mxxx

PVC M.I.	<b>05</b>	MAT9280002	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR M.I.	<b>07</b>	MAT9282002	(4G4.0+(2x1.5)C)C	16.0	7.5

#### Basic cable



#### AGOFRU020Mxxx

PVC M.I.	<b>05</b>	MAT9280003	(4G10+(2x1.5)C)C	21.5	7.5
PUR M.I.	<b>07</b>	MAT9282003	(4G10+(2x1.5)C)C	21.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | NUM

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### NUM Servo cables

#### Extension cable



#### AGOFRU018Mxxx (ext.)

PVC M.I.	<b>05</b>	MAT9280011	(4G1.5+(2x1.5)C)	13.0	7.5
PUR M.I.	<b>07</b>	MAT9282011	(4G1.5+(2x1.5)C)	13.0	7.5

#### AGOFRU019Mxxx (ext.)

PVC M.I.	<b>05</b>	MAT9280012	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR M.I.	<b>07</b>	MAT9282012	(4G4.0+(2x1.5)C)C	16.0	7.5

#### Extension cable



#### AGOFRU020Mxxx (ext.)

PVC M.I.	<b>05</b>	MAT9280013	(4G10+(2x1.5)C)C	21.5	7.5
PUR M.I.	<b>07</b>	MAT9282013	(4G10+(2x1.5)C)C	21.0	7.5

### NUM Fan cables

#### Basic cable



#### AGOFRU012Mxxx

PVC	<b>17</b>	MAT9289005	4G1.0	7.0	7.5
TPE H*	<b>23</b>	MAT9289007	4G1.0	6.5	5

#### Extension cable



#### AGOFRU012Mxxx (ext.)

PVC	<b>17</b>	MAT9289015	4G1.0	7.0	7.5
TPE H*	<b>23</b>	MAT9289017	4G1.0	6.5	5

### NUM Encoder cables

#### Basic cable



#### AGOFRU029Mxxx

PVC	<b>08</b>	MAT9284001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
TPE H*	<b>11</b>	MAT9286001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

#### Basic cable



#### AGOFRU030Mxxx

PVC	<b>08</b>	MAT9289001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
TPE H*	<b>11</b>	MAT9289004	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



# Harnessed drive cables | NUM PVC/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## NUM Encoder cables

### Extension cable



#### AGOFRU029Mxxx (ext.)

PVC	<b>08</b>	MAT9284011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
TPE H*	<b>11</b>	MAT9286011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

### Extension cable



#### AGOFRU030Mxxx (ext.)

PVC	<b>08</b>	MAT9289011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
TPE H*	<b>11</b>	MAT9289014	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Omron PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Omron Motor cables

### Basic cable



#### R88A-CAWA-xxxS-DE

TPE F	<b>02</b>	MAT9810004	(4G0.5)C	7.5	7.5
TPE H*	<b>03</b>	MAT9962104	(4G0.5)C	8.0	7.5

#### R88A-CAWCxxx

PVC M.I.	<b>01</b>	MAT9710005	(4G1.5)C	10.0	7.5
TPE F	<b>02</b>	MAT9810005	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9962105	(4G1.5)C	10.0	7.5

#### R88A-CAWCxxxS-E

PVC M.I.	<b>01</b>	MAT9710003	(4G1.5)C	10.0	7.5
TPE F	<b>02</b>	MAT9810003	(4G1.5)C	10.0	7.5
TPE H*	<b>03</b>	MAT9962103	(4G1.5)C	10.0	7.5

#### R88A-CAWDxxxS

PVC M.I.	<b>01</b>	MAT9710006	(4G2.5)C	11.5	7.5
TPE F	<b>02</b>	MAT9810006	(4G2.5)C	11.5	7.5
TPE H*	<b>03</b>	MAT9962106	(4G2.5)C	11.5	7.5

#### R88A-CAWDxxxS-E

PVC M.I.	<b>01</b>	MAT9710001	(4G2.5)C	11.5	7.5
TPE F	<b>02</b>	MAT9810001	(4G2.5)C	11.5	7.5
TPE H*	<b>03</b>	MAT9962101	(4G2.5)C	11.5	7.5

#### R88A-CAWFxxxS-E

PVC M.I.	<b>01</b>	MAT9710002	(4G4.0)C	13.0	7.5
TPE F	<b>02</b>	MAT9810002	(4G4.0)C	13.0	7.5
TPE H*	<b>03</b>	MAT9962102	(4G4.0)C	13.0	7.5

## Omron Control cables

### Basic cable



#### JZSP-CHM000-xx-E

PVC M.I.	<b>18</b>	MAT9712103	(5G0.5)C	8.0	7.5
PVC, oil-res.	<b>20</b>	MAT9710015	(5G0.5)C	8.5	6.8
PUR M.I.	<b>22</b>	MAT9810015	(5G0.5)C	8.0	6.8
TPE H*	<b>24</b>	MAT9912103	(5x0.5)C	7.5	5

### Basic cable



#### JZSP-CHM000-xx-ME

PVC M.I.	<b>18</b>	MAT9712104	(5G0.5)C	8.0	7.5
PVC, oil-res.	<b>20</b>	MAT9710016	(5G0.5)C	8.5	6.8
PUR M.I.	<b>22</b>	MAT9810016	(5G0.5)C	8.0	6.8
TPE H*	<b>24</b>	MAT9912104	(5x0.5)C	7.5	5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Omron

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Omron Control cables

#### Basic cable



#### JZSP-CHM030-xx-E

PVC M.I.	18	MAT9712105	(7G0.75)C	10.0	7.5
PVC, oil-res.	20	MAT9710017	(7G0.5)C	10.0	6.8
PUR M.I.	22	MAT9810017	(7G0.5)C	9.5	6.8
TPE H*	24	MAT9912105	(7x0.5)C	8.5	5

#### Basic cable



#### JZSP-CHM030-xx-ME

PVC M.I.	18	MAT9712106	(7G0.75)C	10.0	7.5
PVC, oil-res.	20	MAT9710018	(7G0.5)C	10.0	6.8
PUR M.I.	22	MAT9810018	(7G0.5)C	9.5	6.8
TPE H*	24	MAT9912106	(7x0.5)C	8.5	5

#### Basic cable



#### JZSP-CSM22-xx-E-G1

PVC M.I.	18	MAT9712102	(4G0.75)C	8.5	7.5
PVC, oil-res.	20	MAT9710014	(4G0.75)C	8.5	6.8
PUR M.I.	22	MAT9810014	(4G0.75)C	8.5	6.8
TPE H*	24	MAT9912102	(4G0.75)C	7.5	5

#### Basic cable



#### R88A-CAWCxxxB-E

PVC	17	MAT9712101	2x0.5	5.5	7.5
PVC, oil-res.	19	MAT9710013	2x0.5	6.0	6.8
PUR	21	MAT9810013	3G0.75	6.5	6.8
TPE H*	23	MAT9912101	2x0.5	5.0	5

#### Basic cable



#### R88A-CAWExxxB

PVC M.I.	18	MAT9712107	(3G0.5)C	7.0	7.5
PVC, oil-res.	20	MAT9710019	(2x0.5)C	7.0	6.8
PUR M.I.	22	MAT9810019	(4G0.5)C	8.0	6.8
TPE H*	24	MAT9912107	(4x0.5)C	7.0	5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Omron

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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### Omron Encoder cables

#### Basic cable



#### JZSP-CHP800-xx-E

PVC	08	MAT9710009	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9842103	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9810009	(4x(2x0.25)+2x0.5)C	8.5	6.8

#### Basic cable



#### JZSP-CHP800-xx-ME

PVC	08	MAT9710008	(4x(2x0.25)+2x0.5)C	8.0	10
PUR M.I.	10	MAT9842102	(4x(2x0.25)+2x0.5)C	8.5	7.5
TPE H*	11	MAT9810008	(4x(2x0.25)+2x0.5)C	8.5	6.8

#### Basic cable



#### JZSP-CSP21-xx-E-G1

PVC	14	MAT9710011	(3x(2x0.25))C	7.0	7.5
PUR M.I.	10	MAT9842105	(3x(2x0.25))C	7.5	7.5
TPE H*	11	MAT9810011	(3x(2x0.25))C	7.5	6.8

#### Basic cable



#### R88A-CRWA-xxxC-DE

PVC	08	MAT9710012	(2x(2x0.25)+2x0.5)C	6.5	10
PUR M.I.	10	MAT9842106	(2x(2x0.25)+2x0.5)C	6.5	7.5
TPE H*	11	MAT9810012	(2x(2x0.25)+2x0.5)C	6.5	6.8

#### Basic cable



#### R88A-CRWBxxxN

PVC	08	MAT9710010	(4x(2x0.25)+2x1.0)C	8.5	10
PUR M.I.	10	MAT9842104	(4x(2x0.25)+2x1.0)C	9.0	7.5
TPE H*	11	MAT9810010	(4x(2x0.25)+2x1.0)C	9.0	6.8

#### R88A-CRWBxxxN-E

PVC	08	MAT9710007	(4x(2x0.25)+2x1.0)C	8.5	10
PUR M.I.	10	MAT9842101	(4x(2x0.25)+2x1.0)C	9.0	7.5
TPE H*	11	MAT9810007	(4x(2x0.25)+2x1.0)C	9.0	6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Parker

## PVC/PUR

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Parker Motor cables</b>				
<b>Basic cable</b>				
<b>iMOK42</b>				
PVC O.I.	04	MAT9752255	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9752205	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9852255	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9852205	(4G1.5+(2x1.5)C)	13.0 7.5
<b>iMOK43</b>				
PVC O.I.	04	MAT9752257	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9852257	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9752207	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9852207	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>iMOK44</b>				
PVC O.I.	04	MAT9752256	(4G1.5+(2x1.5)C)	12.5 10
PUR O.I.	06	MAT9852256	(4G1.5+(2x1.5)C)	12.5 10
PUR O.I.	06	MAT9752206	(4G1.5+(2x1.5)C)	13.0 7.5
PUR M.I.	07	MAT9852206	(4G1.5+(2x1.5)C)	13.0 7.5
<b>iMOK45</b>				
PVC O.I.	04	MAT9752258	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9852258	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9752208	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9852208	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>iMOK54</b>				
PVC O.I.	04	MAT9752252	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9752202	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9852252	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9852202	(4G1.5+(2x1.5)C)	13.0 7.5
<b>iMOK55</b>				
PVC O.I.	04	MAT9752251	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9752201	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9852251	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9852201	(4G1.5+(2x1.5)C)	13.0 7.5
<b>iMOK56</b>				
PVC O.I.	04	MAT9752253	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9752203	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9852253	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9852203	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>iMOK57</b>				
PVC O.I.	04	MAT9752254	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9852254	(4G2.5+(2x1.5)C)C	14.0 10
PUR O.I.	06	MAT9752204	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR M.I.	07	MAT9852204	(4G2.5+(2x1.5)C)C	14.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

# Harnessed drive cables | Parker

## PVC/PUR/TPE

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Parker Resolver cables</b>				
<b>Basic cable</b>				
<b>iREK32</b>				
PVC	14	MAT9722211	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822211	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922211	(4x(2x0.25))C	8.5 6.8
<b>iREK33</b>				
PVC	14	MAT9722212	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822212	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922212	(4x(2x0.25))C	8.5 6.8
<b>iREK41</b>				
PVC	14	MAT9722210	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822210	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922210	(4x(2x0.25))C	8.5 6.8
<b>iREK42</b>				
PVC	14	MAT9722209	(4x(2x0.25))C	7.5 7.5
PUR	15	MAT9822209	(4x(2x0.25))C	7.5 7.5
TPE H*	16	MAT9922209	(4x(2x0.25))C	8.5 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Motor cables</b>				

## Connection cable (Amphenol)



<b>0199 1809</b>				
PVC M.I.	<b>01</b>	MAT9410006	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861401	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9400006	(4G1.5)C	10.0 7.5
<b>0199 1825</b>				
PVC M.I.	<b>01</b>	MAT9410007	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861402	(4G2.5)C	10.5 10
TPE F	<b>02</b>	MAT9400007	(4G2.5)C	11.5 7.5
<b>0199 1841</b>				
PVC M.I.	<b>01</b>	MAT9410008	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861403	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9400008	(4G4.0)C	13.0 7.5
<b>0199 1868</b>				
PVC M.I.	<b>01</b>	MAT9410009	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861404	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9400009	(4G6.0)C	16.0 7.5
<b>0199 1884</b>				
PVC M.I.	<b>01</b>	MAT9410010	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861405	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9400010	(4G10)C	18.5 7.5

## Connection cable



<b>0590 4773</b>				
PVC M.I.	<b>01</b>	MAT9410012	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861406	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9400012	(4G1.5)C	10.0 7.5
<b>0590 4803</b>				
PVC M.I.	<b>01</b>	MAT9761415	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861415	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9961415	(4G4.0)C	13.0 7.5
<b>0590 6245</b>				
PVC M.I.	<b>01</b>	MAT9761413	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861413	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9961413	(4G1.5)C	10.0 7.5
<b>0590 6253</b>				
PVC M.I.	<b>01</b>	MAT9761414	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861414	(4G2.5)C	10.5 10
TPE F	<b>02</b>	MAT9961414	(4G2.5)C	11.5 7.5

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igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Motor cables</b>				

## Connection cable



<b>1335 0293</b>				
PVC M.I.	<b>01</b>	MAT9761416	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861416	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9961416	(4G6.0)C	16.0 7.5
<b>1335 0307</b>				
PVC M.I.	<b>01</b>	MAT9761417	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861417	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961417	(4G10)C	18.5 7.5
<b>1335 0315</b>				
PVC M.I.	<b>01</b>	MAT9761418	(4G16)C	23.0 7.5
PUR O.I.	<b>06</b>	MAT9861418	(4G16)C	20.5 10
TPE F	<b>02</b>	MAT9961418	(4G16)C	23.0 7.5



## Extension cable (Amphenol)



<b>0199 5502</b>				
PVC M.I.	<b>01</b>	MAT9411006	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861407	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9401006	(4G1.5)C	10.0 7.5
<b>0199 5529</b>				
PVC M.I.	<b>01</b>	MAT9411007	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861408	(4G2.5)C	10.5 10
TPE F	<b>02</b>	MAT9401007	(4G2.5)C	11.5 7.5
<b>0199 5545</b>				
PVC M.I.	<b>01</b>	MAT9411008	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861409	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9401008	(4G4.0)C	13.0 7.5
<b>0199 5561</b>				
PVC M.I.	<b>01</b>	MAT9411009	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861410	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9401009	(4G6.0)C	16.0 7.5
<b>0199 5588</b>				
PVC M.I.	<b>01</b>	MAT9411010	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861411	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9401010	(4G10)C	18.5 7.5



**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Motor cables</b>				
<b>Extension cable</b>				
				
<b>0590 3610</b>				
PVC M.I.	<b>01</b>	MAT9411012	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861412	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9401012	(4G1.5)C	10.0 7.5
<b>Extension cable</b>				
				
<b>1333 2457</b>				
PVC M.I.	<b>01</b>	MAT9761419	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861419	(4G1.5)C	9.0 10
TPE F	<b>02</b>	MAT9961419	(4G1.5)C	10.0 7.5
<b>1333 2465</b>				
PVC M.I.	<b>01</b>	MAT9761420	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861420	(4G2.5)C	10.5 10
TPE F	<b>02</b>	MAT9961420	(4G2.5)C	11.5 7.5
<b>1333 2473</b>				
PVC M.I.	<b>01</b>	MAT9761421	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861421	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9961421	(4G4.0)C	13.0 7.5
<b>1335 0021</b>				
PVC M.I.	<b>01</b>	MAT9761422	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861422	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9961422	(4G6.0)C	16.0 7.5
<b>1335 0048</b>				
PVC M.I.	<b>01</b>	MAT9761423	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861423	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961423	(4G10)C	18.5 7.5
<b>1335 0056</b>				
PVC M.I.	<b>01</b>	MAT9761424	(4G16)C	23.0 7.5
PUR O.I.	<b>06</b>	MAT9861424	(4G16)C	20.5 10
TPE F	<b>02</b>	MAT9961424	(4G16)C	23.0 7.5



**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Servo cables</b>				
<b>Connection cable (Amphenol)</b>				
				
<b>0199 1906</b>				
PVC O.I.	<b>04</b>	MAT9751401	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	<b>05</b>	MAT9410001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	<b>06</b>	MAT9851401	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	<b>07</b>	MAT9400001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>0199 1922</b>				
PVC O.I.	<b>04</b>	MAT9751402	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	<b>05</b>	MAT9410002	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	<b>06</b>	MAT9851402	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	<b>07</b>	MAT9400002	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>0199 1949</b>				
PVC O.I.	<b>04</b>	MAT9751403	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	<b>05</b>	MAT9410003	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	<b>06</b>	MAT9851403	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	<b>07</b>	MAT9400003	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>0199 1965</b>				
PVC O.I.	<b>04</b>	MAT9751404	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	<b>05</b>	MAT9410004	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	<b>06</b>	MAT9851404	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	<b>07</b>	MAT9400004	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>0199 1981</b>				
PVC M.I.	<b>05</b>	MAT9410005	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	<b>06</b>	MAT9851405	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	<b>07</b>	MAT9400005	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>Connection cable</b>				
				
<b>1332 4861</b>				
PVC O.I.	<b>04</b>	MAT9751405	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	<b>05</b>	MAT9410011	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	<b>06</b>	MAT9851406	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	<b>07</b>	MAT9400011	(4G1.5+(2x1.5)C)	13.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
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\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Servo cables</b>				
<b>Connection cable</b>				
				
<b>1333 1221</b>				
PVC O.I.	04	MAT9751473	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751474	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851473	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851474	(4G1.5+(2x1.5)C)	13.0 7.5
TPE H*	31	MAT9951473	(4G1.5+(2x1.5)C)	13.0 6.8
<b>1333 2155</b>				
PVC O.I.	04	MAT9751471	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751472	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851471	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851472	(4G2.5+(2x1.5)C)C	14.5 7.5
TPE H*	31	MAT9951471	(4G2.5+(2x1.5)C)C	14.0 6.8
<b>Connection cable</b>				
				
<b>1335 0153</b>				
PVC O.I.	04	MAT9751422	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9751440	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851422	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9851440	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>1335 0161</b>				
PVC M.I.	05	MAT9751441	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851423	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9851441	(4G10+2x(2x1.5)C)C	22.5 7.5
<b>1335 0188</b>				
PVC M.I.	05	MAT9751442	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851424	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9851442	(4G16+2x(2x1.5)C)C	26.0 7.5
<b>1335 0234</b>				
PVC O.I.	04	MAT9751416	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751434	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851416	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851434	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>1335 0242</b>				
PVC M.I.	05	MAT9751435	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851417	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851435	(4G10+(2x1.5)C)C	21.0 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Servo cables</b>				
<b>1335 0250</b>				
PVC M.I.	05	MAT9751436	(4G16+2x(2x1.5)C)C	26.5 7.5
PUR O.I.	06	MAT9851418	(4G16+2x(2x1.5)C)C	26.0 10
PUR M.I.	07	MAT9851436	(4G16+(2x1.5)C)C	24.0 7.5
<b>1335 4302</b>				
PUR O.I.	27	MAT9851419	(4G1.5+(3x1.0)C)C	12.0 10
<b>1335 4310</b>				
PVC O.I.	04	MAT9751420	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9751438	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851420	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9851438	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>1335 4329</b>				
PVC O.I.	04	MAT9751421	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9751439	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851421	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9851439	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>1335 4388</b>				
PUR O.I.	27	MAT9851413	(4G1.5+(3x1.0)C)C	12.0 10
<b>1335 4396</b>				
PUR O.I.	27	MAT9851479	(4G2.5+(3x1.0)C)C	13.5 10

**Extension cable (Amphenol)**

<b>0199 2007</b>				
PVC O.I.	04	MAT9751406	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9411001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851407	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9401001	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>0199 2023</b>				
PVC O.I.	04	MAT9751407	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9411002	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851408	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9401002	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>0199 204X</b>				
PVC O.I.	04	MAT9751408	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9411003	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851409	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9401003	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>0199 2066</b>				
PVC O.I.	04	MAT9751409	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9411004	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851410	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9401004	(4G6.0+2x(2x1.5)C)C	19.5 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## SEW Servo cables

## Extension cable (Amphenol)



## 0199 2082

PVC M.I.	05	MAT9411005	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9851411	(4G10+2x(2x1.5)C)C	22.5	10
PUR M.I.	07	MAT9401005	(4G10+2x(2x1.5)C)C	22.5	7.5

## Extension cable



## 0593 6500

PVC O.I.	04	MAT9751410	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9411011	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851412	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9401011	(4G1.5+(2x1.5)C)	13.0	7.5

## Extension cable



## 1333 1205

PUR O.I.	27	MAT9851480	(4G1.5+(3x1.0)C)C	12.0	10
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**EPLAN macros suitable for SEW available online**

Can be used directly in CAE planning.

Learn more about it on page 582/583 and online: [www.igus.eu/eplan-macro](http://www.igus.eu/eplan-macro)



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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## SEW Servo cables

## Extension cable



## 1333 2481

PVC O.I.	04	MAT9751475	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9751476	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851475	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9851476	(4G1.5+(2x1.5)C)	13.0	7.5
TPE H*	31	MAT9951475	(4G1.5+(2x1.5)C)	13.0	6.8

## 1333 2503

PVC O.I.	04	MAT9751477	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	05	MAT9751478	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	06	MAT9851477	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	07	MAT9851478	(4G2.5+(2x1.5)C)C	14.5	7.5
TPE H*	31	MAT9951477	(4G2.5+(2x1.5)C)C	14.0	6.8

## 1335 0099

PVC M.I.	05	MAT9751446	(4G6.0+2x(2x1.5)C)C	21.0	7.5
PUR O.I.	06	MAT9851428	(4G6.0+2x(2x1.5)C)C	19.0	10
PUR M.I.	07	MAT9851446	(4G6.0+2x(2x1.5)C)C	19.5	7.5

## 1335 0102

PVC M.I.	05	MAT9751447	(4G10+2x(2x1.5)C)C	23.0	7.5
PUR O.I.	06	MAT9851429	(4G10+2x(2x1.5)C)C	22.5	10
PUR M.I.	07	MAT9851447	(4G10+2x(2x1.5)C)C	22.5	7.5

## 1335 0110

PVC M.I.	05	MAT9751448	(4G16+2x(2x1.5)C)C	26.5	7.5
PUR O.I.	06	MAT9851430	(4G16+2x(2x1.5)C)C	26.0	10
PUR M.I.	07	MAT9851448	(4G16+2x(2x1.5)C)C	26.0	7.5

## 1335 4221

PUR O.I.	27	MAT9851425	(4G1.5+(3x1.0)C)C	12.0	10
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## 1335 4248





PVC M.I.	05	MAT9751444	(4G2.5+2x(2x1.5)C)C	17.0	7.5
PUR O.I.	06	MAT9851426	(4G2.5+2x(2x1.5)C)C	16.0	10
PUR M.I.	07	MAT9851444	(4G2.5+2x(2x1.5)C)C	16.0	7.5

## 1335 4337




PVC M.I.	05	MAT9751445	(4G4.0+2x(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT9851427	(4G4.0+2x(2x1.5)C)C	17.0	10
PUR M.I.	07	MAT9851445	(4G4.0+2x(2x1.5)C)C	17.5	7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]	
<b>SEW Hybrid servo cables</b>					
<b>Basic cable</b>					
					
<b>0186 725 3</b>					
PUR O.I.	27	MAT9851443	4G1.5+(2x0.75)C+(3x0.75)C	14.0 10	
<b>0187 889 5</b>					
PUR O.I.	27	MAT9851456	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0593 278 5</b>					
PUR O.I.	27	MAT9851449	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0593 755 8</b>					
PUR O.I.	27	MAT9851451	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0816 208 5</b>					
PUR O.I.	27	MAT9851454	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0816 325 1</b>					
PUR O.I.	27	MAT9851450	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0816 326 X</b>					
PUR O.I.	27	MAT9851452	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0817 886 0</b>					
PUR O.I.	27	MAT9851457	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0817 887 9</b>					
PUR O.I.	27	MAT9851455	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0817 888 7</b>					
PUR O.I.	27	MAT9851458	(7x2.5+(2x0.75)C)C	20.0 10	
<b>0817 948 4</b>					
PUR O.I.	27	MAT9851453	(7x2.5+(2x0.75)C)C	20.0 10	
<b>Connection cable</b>					
					
<b>2812 3743</b>					
PUR O.I.	28	New	MAT9851482	(4G1.5+2x(2x1.0)C+HF50-0.9/2.95)C	15.5 10
<b>2812 3751</b>					
PUR O.I.	28	New	MAT9851484	(4G2.5+2x(2x1.0)C+HF50-0.9/2.95)C	16.5 10
<b>Extension cable</b>					
					
<b>2812 3859</b>					
PUR O.I.	28	New	MAT9851483	(4G1.5+2x(2x1.0)C+HF50-0.9/2.95)C	15.5 10
<b>2812 3867</b>					
PUR O.I.	28	New	MAT9851485	(4G2.5+2x(2x1.0)C+HF50-0.9/2.95)C	16.5 10
<b>Connection cable</b>					
					
<b>1811 8119</b>					
PUR O.I.	27	MAT9851464	(7x1.5+(2x0.75)C)C	16.0 10	

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>SEW Control cables</b>				
<b>Connection cable</b>				
				
<b>0199 560x</b>				
PVC, oil-res.	19	MAT9711401	3G1.0	6.5 6.8
PUR	21	MAT9811401	3G1.0	6.5 6.8
TPE F	25	MAT9911401	3G1.0	6.5 5
<b>SEW Encoder cables</b>				
<b>Connection cable</b>				
				
<b>0198 9308</b>				
PUR M.I.	10	MAT9841404	(3x(2x0.25))C	7.5 7.5
<b>0199 3194</b>				
PUR M.I.	10	MAT9841401	(5x(2x0.25))C	8.5 7.5
<b>0199 4875</b>				
PVC	08	MAT9741401	(5x(2x0.25))C	8.0 10
<b>0595 1518</b>				
PVC	08	MAT9741408	(6x(2x0.25))C	8.5 10
PUR M.I.	10	MAT9841408	(6x(2x0.25))C	9.0 7.5
TPE H*	16	MAT9941408	(6x(2x0.25))C	10.0 6.8
<b>1332 4551</b>				
PVC	08	MAT9741403	(6x(2x0.25))C	8.5 10
PUR M.I.	10	MAT9841403	(6x(2x0.25))C	9.0 7.5
<b>1332 7437</b>				
PVC	08	MAT9741402	(5x(2x0.25))C	8.0 10
PUR M.I.	10	MAT9841402	(5x(2x0.25))C	8.5 7.5
<b>Extension cable</b>				
				
<b>0199 5405</b>				
PVC	08	MAT9741406	(6x(2x0.25))C	8.5 10
PUR M.I.	10	MAT9841406	(6x(2x0.25))C	9.0 7.5
<b>0199 5413</b>				
PVC	08	MAT9741405	(5x(2x0.25))C	8.0 10
PUR M.I.	10	MAT9841405	(5x(2x0.25))C	8.5 7.5
<b>0593 9682</b>				
PVC	08	MAT9741407	(5x(2x0.25))C	8.0 10
PUR M.I.	10	MAT9841407	(5x(2x0.25))C	8.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. G = with green-yellow earth core, x = without earth core  
\* Cable qualities: M.I = with inner jacket, O.I. = without inner jacket, F = flame-retardant, H = halogen-free OIL = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX8002-5CN06

PVC M.I.	01	MAT9761554	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT98615122	(4G1.5)C	9.0	10
PUR M.I.	07	MAT98615123	(4G1.5)C	11.0	7.5
TPE F	02	MAT9961560	(4G1.5)C	10.0	7.5

## 6FX8002-5CN16

PVC M.I.	01	MAT9761559	(4G2.5)C	11.5	7.5
PUR O.I.	06	MAT98615108	(4G2.5)C	10.5	10
PUR M.I.	07	MAT98615107	(4G2.5)C	12.5	7.5
TPE F	02	MAT9961554	(4G2.5)C	11.5	7.5

## Basic cable



## 6FX8002-5CN26

PVC M.I.	01	MAT97515111	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT98515130	(4G1.5)C	9.0	10
TPE F	02	MAT98515131	(4G1.5)C	10.0	7.5

## 6FX8002-5CN36

PVC M.I.	01	MAT9761556	(4G2.5)C	11.5	7.5
PUR O.I.	06	MAT98615102	(4G2.5)C	10.5	10
PUR M.I.	07	MAT98615103	(4G2.5)C	12.5	7.5
TPE F	02	MAT9961552	(4G2.5)C	11.5	7.5

## 6FX8002-5CN46

PVC M.I.	01	MAT9761557	(4G4.0)C	13.0	7.5
PUR O.I.	06	MAT98615105	(4G4.0)C	12.5	10
TPE F	02	MAT9961553	(4G4.0)C	13.0	7.5

## 6FX8002-5CN56

PVC M.I.	01	MAT9761561	(4G6.0)C	16.0	7.5
PUR O.I.	06	MAT98615110	(4G6.0)C	14.5	10
TPE F	02	MAT9961555	(4G6.0)C	16.0	7.5

## Basic cable



## 6FX8002-5CS06

PVC M.I.	01	MAT9761568	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT98615120	(4G1.5)C	9.0	10
PUR M.I.	07	MAT98615121	(4G1.5)C	11.0	7.5
TPE F	02	MAT9961559	(4G1.5)C	10.0	7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CA01

PVC M.I.	01	MAT9150001	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT9861504	(4G1.5)C	9.0	10
TPE F	02	MAT9050001	(4G1.5)C	10.0	7.5

## 6FX\_002-5CA11

PVC M.I.	01	MAT9150002	(4G2.5)C	11.5	7.5
PUR O.I.	06	MAT9861505	(4G2.5)C	10.5	10
TPE F	02	MAT9050002	(4G2.5)C	11.5	7.5

## Basic cable



## 6FX\_002-5CA13

PVC M.I.	01	MAT9150009	(4G10)C	18.5	7.5
PUR O.I.	06	MAT9861524	(4G10)C	17.0	10
TPE F	02	MAT9050009	(4G10)C	18.5	7.5

## Basic cable



## 6FX\_002-5CA21

PVC M.I.	01	MAT9150003	(4G1.5)C	10.0	7.5
PUR O.I.	06	MAT9861506	(4G1.5)C	9.0	10
TPE F	02	MAT9050003	(4G1.5)C	10.0	7.5

## Basic cable



## 6FX\_002-5CA23

PVC M.I.	01	MAT9150008	(4G16)C	23.0	7.5
PUR O.I.	06	MAT9861511	(4G16)C	20.5	10
TPE F	02	MAT9050008	(4G16)C	23.0	7.5

## Basic cable



## 6FX\_002-5CA31

PVC M.I.	01	MAT9150004	(4G2.5)C	11.5	7.5
PUR O.I.	06	MAT9861507	(4G2.5)C	10.5	10
TPE F	02	MAT9050004	(4G2.5)C	11.5	7.5

## 6FX\_002-5CA41

PVC M.I.	01	MAT9150005	(4G4.0)C	13.0	7.5
PUR O.I.	06	MAT9861508	(4G4.0)C	12.5	10
TPE F	02	MAT9050005	(4G4.0)C	13.0	7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CA51

PVC M.I.	<b>01</b>	MAT9150006	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861509	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9050006	(4G6.0)C	16.0	7.5

## 6FX\_002-5CA61

PVC M.I.	<b>01</b>	MAT9150007	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861510	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9050007	(4G10)C	18.5	7.5

## Basic cable



## 6FX\_002-5CG01

PVC M.I.	<b>01</b>	MAT9761512	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861542	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861541	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961512	(4G1.5)C	10.0	7.5

## Basic cable



## 6FX\_002-5CG11

PVC M.I.	<b>01</b>	MAT9761514	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861546	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861545	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961514	(4G2.5)C	11.5	7.5

## Basic cable



## 6FX\_002-5CG13

PVC M.I.	<b>01</b>	MAT9761520	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861553	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961520	(4G10)C	18.5	7.5

## 6FX\_002-5CG21

PVC M.I.	<b>01</b>	MAT9761513	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861544	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861543	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961513	(4G1.5)C	10.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CG23

PVC M.I.	<b>01</b>	MAT9761521	(4G16)C	23.0	7.5
PUR O.I.	<b>06</b>	MAT9861554	(4G16)C	20.5	10
TPE F	<b>02</b>	MAT9961521	(4G16)C	23.0	7.5

## 6FX\_002-5CG31

PVC M.I.	<b>01</b>	MAT9761516	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861549	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861548	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961516	(4G2.5)C	11.5	7.5

## 6FX\_002-5CG41

PVC M.I.	<b>01</b>	MAT9761517	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861550	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9961517	(4G4.0)C	13.0	7.5

## 6FX\_002-5CG51

PVC M.I.	<b>01</b>	MAT9761518	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861551	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961518	(4G6.0)C	16.0	7.5

## 6FX\_002-5CG61

PVC M.I.	<b>01</b>	MAT9761519	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861552	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961519	(4G10)C	18.5	7.5

## Basic cable



## 6FX\_002-5CK01

PUR M.I.	<b>07</b>	MAT98615112	(4G0.75)C	9.5	7.5
TPE F	<b>02</b>	MAT9961556	(4G0.75)C	8.0	7.5

## Basic cable



## 6FX\_002-5CL01

PVC M.I.	<b>01</b>	MAT9761563	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT98615114	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT98615115	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961557	(4G1.5)C	10.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CL02

PVC M.I.	<b>01</b>	MAT9761572	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT98615126	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT98615127	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961563	(4G1.5)C	10.0	7.5

## 6FX\_002-5CL12

PVC M.I.	<b>01</b>	MAT9761573	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT98615128	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT98615129	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961564	(4G2.5)C	11.5	7.5

## Basic cable



## 6FX\_002-5CS01

PVC M.I.	<b>01</b>	MAT9150020	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861512	(4G1.5)C	10.0	10
PUR M.I.	<b>07</b>	MAT9861501	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9050020	(4G1.5)C	10.0	7.5

## Basic cable



## 6FX\_002-5CS02

PVC M.I.	<b>01</b>	MAT9761501	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861526	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861525	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9961501	(4G1.5)C	10.0	7.5

## Basic cable



## 6FX\_002-5CS11

PVC M.I.	<b>01</b>	MAT9761502	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861528	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861527	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961502	(4G2.5)C	11.5	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CS12

PVC M.I.	<b>01</b>	MAT9761503	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861530	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861529	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9961503	(4G2.5)C	11.5	7.5

## Basic cable



## 6FX\_002-5CS13

PVC M.I.	<b>01</b>	MAT9761504	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861531	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961504	(4G10)C	18.5	7.5

## 6FX\_002-5CS21

PVC M.I.	<b>01</b>	MAT9150021	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861513	(4G1.5)C	9.0	10
PUR M.I.	<b>07</b>	MAT9861502	(4G1.5)C	11.0	7.5
TPE F	<b>02</b>	MAT9050021	(4G1.5)C	10.0	7.5

## Basic cable



## 6FX\_002-5CS23

PVC M.I.	<b>01</b>	MAT9761515	(4G16)C	23.0	7.5
PUR O.I.	<b>06</b>	MAT9861547	(4G16)C	20.5	10
TPE F	<b>02</b>	MAT9961515	(4G16)C	23.0	7.5

## 6FX\_002-5CS24

PVC M.I.	<b>01</b>	MAT9761570	(4G16)C	23.0	7.5
PUR O.I.	<b>06</b>	MAT98615125	(4G16)C	20.5	10
TPE F	<b>02</b>	MAT9961561	(4G16)C	23.0	7.5
TPE H*	<b>03</b>	MAT9961562	(4G16)C	23.0	7.5

## Basic cable



## 6FX\_002-5CS31

PVC M.I.	<b>01</b>	MAT9150022	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861514	(4G2.5)C	10.5	10
PUR M.I.	<b>07</b>	MAT9861503	(4G2.5)C	12.5	7.5
TPE F	<b>02</b>	MAT9050022	(4G2.5)C	11.5	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CS41

PVC M.I.	<b>01</b>	MAT9150023	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861533	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9050023	(4G4.0)C	13.0	7.5

## Basic cable



## 6FX\_002-5CS42

PVC M.I.	<b>01</b>	MAT9761506	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861534	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9961506	(4G4.0)C	13.0	7.5

## Basic cable



## 6FX\_002-5CS51

PVC M.I.	<b>01</b>	MAT9150024	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861535	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9050024	(4G6.0)C	16.0	7.5

## Basic cable



## 6FX\_002-5CS52

PVC M.I.	<b>01</b>	MAT9761507	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861536	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961507	(4G6.0)C	16.0	7.5

## Basic cable



## 6FX\_002-5CS54

PVC M.I.	<b>01</b>	MAT9761508	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861537	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9961508	(4G6.0)C	16.0	7.5

## Basic cable



## 6FX\_002-5CS61

PVC M.I.	<b>01</b>	MAT9761509	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861538	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961509	(4G10)C	18.5	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Basic cable



## 6FX\_002-5CS62

PVC M.I.	<b>01</b>	MAT9761510	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861539	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961510	(4G10)C	18.5	7.5

## Basic cable



## 6FX\_002-5CS64

PVC M.I.	<b>01</b>	MAT9761511	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861540	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9961511	(4G10)C	18.5	7.5

## Extension cable



## 6FX\_002-5CA05

PVC M.I.	<b>01</b>	MAT9151001	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861515	(4G1.5)C	9.0	10
TPE F	<b>02</b>	MAT9051001	(4G1.5)C	10.0	7.5

## 6FX\_002-5CA15

PVC M.I.	<b>01</b>	MAT9151002	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861516	(4G2.5)C	10.5	10
TPE F	<b>02</b>	MAT9051002	(4G2.5)C	11.5	7.5

## Extension cable



## 6FX\_002-5CA28

PVC M.I.	<b>01</b>	MAT9151003	(4G1.5)C	10.0	7.5
PUR O.I.	<b>06</b>	MAT9861517	(4G1.5)C	9.0	10
TPE F	<b>02</b>	MAT9051003	(4G1.5)C	10.0	7.5

## 6FX\_002-5CA38

PVC M.I.	<b>01</b>	MAT9151004	(4G2.5)C	11.5	7.5
PUR O.I.	<b>06</b>	MAT9861518	(4G2.5)C	10.5	10
TPE F	<b>02</b>	MAT9051004	(4G2.5)C	11.5	7.5

## 6FX\_002-5CA48

PVC M.I.	<b>01</b>	MAT9151005	(4G4.0)C	13.0	7.5
PUR O.I.	<b>06</b>	MAT9861519	(4G4.0)C	12.5	10
TPE F	<b>02</b>	MAT9051005	(4G4.0)C	13.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables

## Extension cable



## 6FX\_002-5CA58

PVC M.I.	<b>01</b>	MAT9151006	(4G6.0)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9861520	(4G6.0)C	14.5	10
TPE F	<b>02</b>	MAT9051006	(4G6.0)C	16.0	7.5

## 6FX\_002-5CA68

PVC M.I.	<b>01</b>	MAT9151007	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861521	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9051007	(4G10)C	18.5	7.5

## Extension cable



## 6FX\_002-5CX18

PVC M.I.	<b>01</b>	MAT9151009	(4G10)C	18.5	7.5
PUR O.I.	<b>06</b>	MAT9861522	(4G10)C	17.0	10
TPE F	<b>02</b>	MAT9051009	(4G10)C	18.5	7.5

## 6FX\_002-5CX28

PVC M.I.	<b>01</b>	MAT9151008	(4G16)C	23.0	7.5
PUR O.I.	<b>06</b>	MAT9861523	(4G16)C	20.5	10
TPE F	<b>02</b>	MAT9051008	(4G16)C	23.0	7.5

## Siemens Servo cables

## Basic cable



## 6FX\_002-5DA01

PVC O.I.	<b>04</b>	MAT9751501	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	<b>05</b>	MAT9160001	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	<b>06</b>	MAT9851501	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	<b>07</b>	MAT9060001	(4G1.5+(2x1.5)C)	13.0	7.5

## 6FX\_002-5DA11

PVC O.I.	<b>04</b>	MAT9751502	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	<b>05</b>	MAT9160002	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	<b>06</b>	MAT9851502	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	<b>07</b>	MAT9060002	(4G2.5+(2x1.5)C)C	14.5	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Servo cables

## Basic cable



## 6FX\_002-5DA21

PVC O.I.	<b>04</b>	MAT9751503	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	<b>05</b>	MAT9160003	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	<b>06</b>	MAT9851503	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	<b>07</b>	MAT9060003	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 6FX\_002-5DA23

PVC M.I.	<b>05</b>	MAT9160008	(4G16+(2x1.5)C)C	25.0	7.5
PUR O.I.	<b>06</b>	MAT9851508	(4G16+(2x1.5)C)C	24.0	10
PUR M.I.	<b>07</b>	MAT9060008	(4G16+(2x1.5)C)C	24.0	7.5

## Basic cable



## 6FX\_002-5DA30

PVC O.I.	<b>04</b>	MAT97515127	(4G1.5+(2x1.5)C)	12.5	10
PUR O.I.	<b>06</b>	MAT98515151	(4G1.5+(2x1.5)C)	12.5	10

## Basic cable



## 6FX\_002-5DA31

PVC O.I.	<b>04</b>	MAT9751504	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	<b>05</b>	MAT9160004	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	<b>06</b>	MAT9851504	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	<b>07</b>	MAT9060004	(4G2.5+(2x1.5)C)C	14.5	7.5

## Basic cable



## 6FX\_002-5DA33

PVC M.I.	<b>05</b>	MAT9160009	(4G25+(2x1.5)C)C	30.0	7.5
PUR M.I.	<b>07</b>	MAT9060009	(4G25+(2x1.5)C)C	28.0	7.5

## Basic cable



## 6FX\_002-5DA41

PVC O.I.	<b>04</b>	MAT9751505	(4G4.0+(2x1.5)C)C	15.0	10
PVC M.I.	<b>05</b>	MAT9160005	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	<b>06</b>	MAT9851505	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	<b>07</b>	MAT9060005	(4G4.0+(2x1.5)C)C	16.0	7.5

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables</b>				
<b>Basic cable</b>				
<b>6FX_002-5DA43</b>				
PVC M.I.	05	MAT9160010	(4G35+(2x1.5)C)C	33.5 7.5
PUR M.I.	07	MAT9060010	(4G35+(2x1.5)C)C	32.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DA51</b>				
PVC O.I.	04	MAT9751506	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9160006	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851506	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9060006	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>6FX_002-5DA61</b>				
PVC M.I.	05	MAT9160007	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851507	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9060007	(4G10+(2x1.5)C)C	21.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG01</b>				
PVC O.I.	04	MAT9751529	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751528	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851541	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851540	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG11</b>				
PVC O.I.	04	MAT9751533	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751532	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851545	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851544	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG13</b>				
PVC M.I.	05	MAT9751541	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851555	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851554	(4G10+(2x1.5)C)C	21.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables</b>				
<b>6FX_002-5DG21</b>				
PVC O.I.	04	MAT9751531	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751530	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>PUR O.I.</b>				
PUR O.I.	06	MAT9851543	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851542	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG23</b>				
PUR O.I.	06	MAT9851557	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9851556	(4G16+(2x1.5)C)C	24.0 7.5
<b>6FX_002-5DG31</b>				
PVC O.I.	04	MAT9751535	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751534	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851547	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851546	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG33</b>				
PUR M.I.	07	MAT9851558	(4G25+(2x1.5)C)C	28.0 7.5
<b>6FX_002-5DG41</b>				
PVC O.I.	04	MAT9751537	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751536	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851549	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9851548	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DG43</b>				
PUR M.I.	07	MAT9851559	(4G35+(2x1.5)C)C	32.0 7.5
<b>6FX_002-5DG51</b>				
PVC O.I.	04	MAT9751539	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751538	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851551	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851550	(4G6.0+(2x1.5)C)C	17.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Servo cables

## Basic cable



## 6FX\_002-5DG61

PVC M.I.	05	MAT9751540	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	06	MAT9851553	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9851552	(4G10+(2x1.5)C)C	21.0	7.5

## Basic cable



## 6FX\_002-5DN06

PVC O.I.	04	MAT97515103	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT97515102	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT98515122	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT98515123	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 6FX\_002-5DN16

PVC O.I.	04	MAT97515108	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	05	MAT97515109	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	06	MAT98515129	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	07	MAT98515128	(4G2.5+(2x1.5)C)C	14.5	7.5

## Basic cable



## 6FX\_002-5DN26

PVC O.I.	04	MAT97515125	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT97515126	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT98515145	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT98515146	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 6FX\_002-5DN30

PVC O.I.	04	MAT9761566	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT98615117	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9761565	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT98615116	(4G1.5+(2x1.5)C)	13.0	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Servo cables

## Basic cable



## 6FX\_002-5DN46

PVC O.I.	04	MAT97515113	(4G4.0+(2x1.5)C)C	15.0	10
PVC M.I.	05	MAT97515114	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	06	MAT98515133	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	07	MAT98515134	(4G4.0+(2x1.5)C)C	16.0	7.5

## Basic cable



## 6FX\_002-5DN56

PVC O.I.	04	MAT97515119	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	05	MAT97515120	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT98515139	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	07	MAT98515140	(4G6.0+(2x1.5)C)C	17.5	7.5

## Basic cable



## 6FX\_002-5DS01

PVC O.I.	04	MAT9751507	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9160020	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851509	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9060020	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 6FX\_002-5DS06

PVC O.I.	04	MAT97515105	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT97515104	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT98515124	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT98515125	(4G1.5+(2x1.5)C)	13.0	7.5

## Basic cable



## 6FX\_002-5DS11

PVC O.I.	04	MAT9751516	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	05	MAT9751515	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	06	MAT9851523	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	07	MAT9851522	(4G2.5+(2x1.5)C)C	14.5	7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables</b>				
<b>Basic cable</b>				
<b>6FX_002-5DS13</b>				
PVC M.I.	05	MAT9751517	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851525	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851524	(4G10+(2x1.5)C)C	21.0 7.5
<b>6FX_002-5DS21</b>				
PVC O.I.	04	MAT9751508	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9160021	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851510	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9060021	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS23</b>				
PUR O.I.	06	MAT9851527	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9851526	(4G16+(2x1.5)C)C	24.0 7.5
<b>6FX_002-5DS33</b>				
PUR M.I.	07	MAT9851532	(4G25+(2x1.5)C)C	28.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS36</b>				
PVC O.I.	04	MAT97515107	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT97515106	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT98515127	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT98515126	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS41</b>				
PVC O.I.	04	MAT9751522	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751521	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851531	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9851530	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS43</b>				
PUR M.I.	07	MAT9851533	(4G35+(2x1.5)C)C	32.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables</b>				
<b>Basic cable</b>				
<b>6FX_002-5DS51</b>				
PVC O.I.	04	MAT9751524	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751523	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851535	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851534	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS54</b>				
PVC O.I.	04	MAT9751526	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751525	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851537	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851536	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS61</b>				
PVC M.I.	05	MAT9160022	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851511	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9060022	(4G10+(2x1.5)C)C	21.0 7.5
<b>Basic cable</b>				
<b>6FX_002-5DS64</b>				
PVC M.I.	05	MAT9751527	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851539	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851538	(4G10+(2x1.5)C)C	21.0 7.5
<b>Extension cable</b>				
<b>6FX_002-5DA05</b>				
PVC O.I.	04	MAT9751509	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9161001	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851512	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9061001	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DA15</b>				
PVC O.I.	04	MAT9751510	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9161002	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851513	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9061002	(4G2.5+(2x1.5)C)C	14.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables</b>				
<b>Extension cable</b>				
<b>6FX_002-5DA28</b>				
PVC O.I.	04	MAT9751511	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9161003	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851514	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9061003	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DA38</b>				
PVC O.I.	04	MAT9751512	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9161004	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851515	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9061004	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DA48</b>				
PVC O.I.	04	MAT9751513	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9161005	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851516	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9061005	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>Extension cable</b>				
<b>6FX_002-5DA58</b>				
PVC O.I.	04	MAT9751514	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9161006	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851517	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9061006	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>6FX_002-5DA68</b>				
PVC M.I.	05	MAT9161007	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851518	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9061007	(4G10+(2x1.5)C)C	21.0 7.5
<b>Extension cable</b>				
<b>6FX_002-5DX18</b>				
PVC M.I.	05	MAT9161011	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851520	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9061011	(4G10+(2x1.5)C)C	21.0 7.5
<b>6FX_002-5DX28</b>				
PVC M.I.	05	MAT9161008	(4G16+(2x1.5)C)C	25.0 7.5
PUR O.I.	06	MAT9851519	(4G16+(2x1.5)C)C	24.0 10
PUR M.I.	07	MAT9061008	(4G16+(2x1.5)C)C	24.0 7.5
<b>6FX_002-5DX38</b>				
PVC M.I.	05	MAT9161009	(4G25+(2x1.5)C)C	30.0 7.5
PUR M.I.	07	MAT9061009	(4G25+(2x1.5)C)C	28.0 7.5
<b>6FX_002-5DX48</b>				
PVC M.I.	05	MAT9161010	(4G35+(2x1.5)C)C	33.5 7.5
PUR M.I.	07	MAT9061010	(4G35+(2x1.5)C)C	32.0 7.5

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]	
<b>Siemens Hybrid servo cables</b>					
<b>Basic cable</b>					
<b>6FX_002-8QN04</b>					
PVC O.I.	26	New	MAT97515129	(4G0,34+(2x0,34)C+(4xAWG26)C)C	10.0 10
PUR O.I.	27		MAT98515147	(4G0,34+(2x0,34)C+(4xAWG26)C)C	10.0 10
<b>Basic cable</b>					
<b>6FX_002-8QN08</b>					
PVC O.I.	26	New	MAT97515130	(4G0,75+(2x0,5)C+(4xAWG26)C)C	11.0 10
PUR O.I.	27		MAT98515148	(4G0,75+(2x0,5)C+(4xAWG26)C)C	11.0 10
<b>Basic cable</b>					
<b>6FX_002-8QN11</b>					
PUR O.I.	27		MAT98515153	(4G1,5+(2x1,5)C+(4xAWG26)C)C	13.0 10
<b>6FX_002-8QN21</b>					
PUR O.I.	27		MAT98515154	(4G2,5+(2x1,5)C+(4xAWG26)C)C	14.5 10
<b>Extension cable</b>					
<b>6FX_002-8QE04</b>					
PVC O.I.	26	New	MAT97515131	(4G0,34+(2x0,34)C+(4xAWG26)C)C	10.0 10
PUR O.I.	27		MAT98515149	(4G0,34+(2x0,34)C+(4xAWG26)C)C	10.0 10
<b>Extension cable</b>					
<b>6FX_002-8QE08</b>					
PVC O.I.	26	New	MAT97515132	(4G0,75+(2x0,5)C+(4xAWG26)C)C	11.0 10
PUR O.I.	27		MAT98515150	(4G0,75+(2x0,5)C+(4xAWG26)C)C	11.0 10
<b>Extension cable</b>					
<b>6FX_002-8QE11</b>					
PUR O.I.	27		MAT98515155	(4G1,5+(2x1,5)C+(4xAWG26)C)C	13.0 10
<b>6FX_002-8QE21</b>					
PUR O.I.	27		MAT98515156	(4G2,5+(2x1,5)C+(4xAWG26)C)C	14.5 10

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables

## Basic cable



## 6FX8002-2CF20

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741518	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR O.I.	09	MAT9841563	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.5 10
PUR M.I.	10	MAT9841564	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9941505	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8

## Basic cable



## 6FX8002-2CQ31

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741514	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0 10
PUR O.I.	09	MAT9841557	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0 10
PUR M.I.	10	MAT9841558	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0 7.5
TPE H*	11	MAT9941503	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5 6.8

## Basic cable



## 6FX8002-2DC40

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741520	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR O.I.	09	MAT9841566	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR M.I.	10	MAT9841567	(2x(2x0.20)+(2x0.38))C	7.5 7.5

## Basic cable



## 6FX8002-2DC42

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741522	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR O.I.	09	MAT9841569	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR M.I.	10	MAT9841570	(2x(2x0.20)+(2x0.38))C	7.5 7.5

## Basic cable



## 6FX\_002-1DC00

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741506	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR O.I.	09	MAT9841532	(2x(2x0.15)+(2x0.38))C	7.5 10
PUR M.I.	10	MAT9070032	(2x(2x0.20)+(2x0.38))C	7.5 7.5

## Basic cable



## 6FX\_002-2AD00

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841501	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables

## Basic cable



## 6FX\_002-2AH00

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170018	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841518	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070018	(4x(2x0.34)+4x0.5)C	10.0 6.8

## Basic cable



## 6FX\_002-2AH11

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9741526	(4x(2x0.34)+4x0.5)C	9.5 10
PUR O.I.	09	MAT98415104	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT98415105	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9941507	(4x(2x0.34)+4x0.5)C	10.0 6.8

## Basic cable



## 6FX\_002-2CA11

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170002	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841502	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070002	(4x(2x0.34)+4x0.5)C	10.0 6.8

## Basic cable



## 6FX\_002-2CA15

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841503	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8

## Basic cable



## 6FX\_002-2CA31

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0 10
PUR M.I.	10	MAT9841504	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0 7.5
TPE H*	11	MAT9070004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5 6.8

## Basic cable



## 6FX\_002-2CA51

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
PVC	08	MAT9170005	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841505	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070005	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Signal cables</b>				
<b>Basic cable</b>				
<b>6FX_002-2CA71</b>				
PVC	08	MAT9170006	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841506	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070006	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2CB31</b>				
PUR	13	MAT9841507	(14x0.25)C	8.0 10
TPE H*	24	MAT9070007	(12x0.25)C	9.5 5
<b>6FX_002-2CB51</b>				
PVC	08	MAT9170008	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841508	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070008	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>6FX_002-2CC11</b>				
PVC	08	MAT9170009	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841509	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070009	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>6FX_002-2CD01</b>				
PVC	08	MAT9170010	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841510	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070010	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2CF01</b>				
PVC	08	MAT9170021	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841519	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070021	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8
<b>6FX_002-2CF02</b>				
PVC	08	MAT9170011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841511	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8
<b>6FX_002-2CG00</b>				
PVC	08	MAT9170012	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841512	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9070012	(4x(2x0.34)+4x0.5)C	10.0 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Signal cables</b>				
<b>Basic cable</b>				
<b>6FX_002-2CH00</b>				
PVC	08	MAT9170013	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0 10
PUR M.I.	10	MAT9841513	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 7.5
TPE H*	11	MAT9070013	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2CK00</b>				
PVC	08	MAT9170014	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR M.I.	10	MAT9841514	(3x(2x0.14)C+2x(0.5)C)C	10.0 7.5
TPE H*	11	MAT9070014	(3x(2x0.14)C+2x(0.5)C)C	10.0 6.8
<b>6FX_002-2CL00</b>				
PVC	08	MAT9170015	(3x(2x0.14)C+2x(0.5)C)C	9.5 10
PUR M.I.	10	MAT9841515	(3x(2x0.14)C+2x(0.5)C)C	10.0 7.5
TPE H*	11	MAT9070015	(3x(2x0.14)C+2x(0.5)C)C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2CR00</b>				
PVC	08	MAT9741524	(4x(2x0.34)+4x0.5)C	9.5 10
PUR O.I.	09	MAT98415101	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT98415102	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9941506	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2CT12</b>				
PVC	08	MAT9741531	(4x(2x0.34)+4x0.5)C	9.5 10
PUR O.I.	09	MAT98415111	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT98415112	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9941509	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>Basic cable</b>				
<b>6FX_002-2DB10</b>				
PUR	MAT9821501	(4x(2x0.25)C)C	11.0	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables

## Basic cable



## 6FX\_002-2DC10

PVC	08	MAT9741504	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR O.I.	09	MAT9841530	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR M.I.	10	MAT9070030	(2x(2x0.20)+(2x0.38))C	7.5	7.5

## Extension cable



## 6FX\_002-2DC34

PVC	08	MAT9741509	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR O.I.	09	MAT9841551	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR M.I.	10	MAT9841571	(2x(2x0.20)+(2x0.38))C	7.5	7.5

## Basic cable



## 6FX\_002-2DC36

PVC	08	MAT9741528	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR O.I.	09	MAT98415107	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR M.I.	10	MAT98415108	(2x(2x0.20)+(2x0.38))C	7.5	7.5

## Basic cable



## 6FX\_002-2EQ00

PVC	08	MAT9170016	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841516	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9070016	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

## Basic cable



## 6FX\_002-2EQ10

PVC	08	MAT9170017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841517	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9070017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

## 6FX\_002-2EQ20

PVC	08	MAT9741530	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR O.I.	09	MAT98415109	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT98415110	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9941508	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

## 6FX\_002-2EQ31

PVC	08	MAT9741512	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR O.I.	09	MAT9841554	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841555	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9941502	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables

## Basic cable



## 6FX\_002-5BL03

PVC M.I.	18	MAT9711502	(3G0.75)C	8.0	7.5
PUR M.I.	22	MAT9811501	(3G0.75)C	8.0	6.8

## Basic cable



## 6fx3002-2CT10

PVC	08	MAT9741507	(4x(2x0.34)+4x0.5)C	9.5	10
PUR O.I.	09	MAT9841548	(4x(2x0.34)+4x0.5)C	9.5	10
PUR M.I.	10	MAT9841549	(4x(2x0.34)+4x0.5)C	10.0	7.5
TPE H*	11	MAT9941501	(4x(2x0.34)+4x0.5)C	10.0	6.8

## Extension cable



## 6FX8002-2CQ34

PVC	08	MAT9741516	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR O.I.	09	MAT9841560	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841561	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9941504	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

## Extension cable



## 6FX\_002-2AD04

PVC	08	MAT9171001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
PUR M.I.	10	MAT9841520	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	7.5
TPE H*	11	MAT9071001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

## 6FX\_002-2AH04

PVC	08	MAT9171018	(4x(2x0.34)+4x0.5)C	9.5	10
PUR M.I.	10	MAT9841529	(4x(2x0.34)+4x0.5)C	10.0	7.5
TPE H*	11	MAT9071018	(4x(2x0.34)+4x0.5)C	10.0	6.8

## 6FX\_002-2CA34

PVC	08	MAT9171004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841523	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9071004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8

## 6FX\_002-2CA54

PVC	08	MAT9171003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
PUR M.I.	10	MAT9841522	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	7.5
TPE H*	11	MAT9071003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables

## Extension cable



## 6FX\_002-2CB34

PUR	13	MAT9841525	(14x0.25)C	8.0	10
TPE H*	24	MAT9071007	(12x0.25)C	9.5	5

## 6FX\_002-2CB54

PVC	08	MAT9171002	(4x(2x0.34)+4x0.5)C	9.5	10
PUR M.I.	10	MAT9841521	(4x(2x0.34)+4x0.5)C	10.0	7.5
TPE H*	11	MAT9071002	(4x(2x0.34)+4x0.5)C	10.0	6.8

## Extension cable



## 6FX\_002-2CC14

PVC	08	MAT9171009	(4x(2x0.34)+4x0.5)C	9.5	10
PUR M.I.	10	MAT9841526	(4x(2x0.34)+4x0.5)C	10.0	7.5
TPE H*	11	MAT9071009	(4x(2x0.34)+4x0.5)C	10.0	6.8

## 6FX\_002-2CF04

PVC	08	MAT9171011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	9.0	10
PUR M.I.	10	MAT9841527	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	7.5
TPE H*	11	MAT9071011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	10.0	6.8

## Extension cable



## 6FX\_002-2DC20

PVC	08	MAT9741505	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR O.I.	09	MAT9841531	(2x(2x0.15)+(2x0.38))C	7.5	10
PUR M.I.	10	MAT9070031	(2x(2x0.20)+(2x0.38))C	7.5	7.5

## Extension cable



## 6FX\_002-2EQ14

PVC	08	MAT9171017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.0	10
PUR M.I.	10	MAT9841528	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	11.0	7.5
TPE H*	11	MAT9071017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	10.5	6.8



**EPLAN macros suitable for Siemens available online**

Can be used directly in CAE planning.

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**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Signal cables DriveCliq

## Basic cable



## 6FX8002-2DC30-1AD0(3m)

PUR M.I.	10	MAT9841534	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1AF0(5m)

PUR M.I.	10	MAT9841535	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1BA0(10m)

PUR M.I.	10	MAT9841536	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1BF0(15m)

PUR M.I.	10	MAT9841537	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1CA0(20m)

PUR M.I.	10	MAT9841538	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1CF0(25m)

PUR M.I.	10	MAT9841539	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC30-1DA0(30m)

PUR M.I.	10	MAT9841540	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## Extension cable



## 6FX8002-2DC34-1AD0(3m)

PUR M.I.	10	MAT9841541	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1AF0(5m)

PUR M.I.	10	MAT9841542	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1BA0(10m)

PUR M.I.	10	MAT9841543	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1BF0(15m)

PUR M.I.	10	MAT9841544	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1CA0(20m)

PUR M.I.	10	MAT9841545	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1CF0(25m)

PUR M.I.	10	MAT9841546	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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## 6FX8002-2DC34-1DA0(30m)

PUR M.I.	10	MAT9841547	(2x(2x0.20)+(2x0.38))C	7.5	7.5
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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables, SpeedTec

## Basic cable, SpeedTec



6FX_002-5CG10				
PVC M.I.	01	MAT9761540	(4G1.5)C	10.0 7.5
PUR O.I.	06	MAT9861584	(4G1.5)C	9.0 10
PUR M.I.	07	MAT9861583	(4G1.5)C	11.0 7.5
TPE F	02	MAT9961540	(4G1.5)C	10.0 7.5
6FX_002-5CG12				
PVC M.I.	01	MAT9761541	(4G2.5)C	11.5 7.5
PUR O.I.	06	MAT9861586	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9861585	(4G2.5)C	12.5 7.5
TPE F	02	MAT9961541	(4G2.5)C	11.5 7.5
6FX_002-5CG22				
PVC M.I.	01	MAT9761542	(4G1.5)C	10.0 7.5
PUR O.I.	06	MAT9861588	(4G1.5)C	9.0 10
PUR M.I.	07	MAT9861587	(4G1.5)C	11.0 7.5
TPE F	02	MAT9961542	(4G1.5)C	10.0 7.5
6FX_002-5CG32				
PVC M.I.	01	MAT9761543	(4G2.5)C	11.5 7.5
PUR O.I.	06	MAT9861590	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9861589	(4G2.5)C	12.5 7.5
TPE F	02	MAT9961543	(4G2.5)C	11.5 7.5
6FX_002-5CG42				
PVC M.I.	01	MAT9761544	(4G4.0)C	13.0 7.5
PUR O.I.	06	MAT9861591	(4G4.0)C	12.5 10
TPE F	02	MAT9961544	(4G4.0)C	13.0 7.5
6FX_002-5CG52				
PVC M.I.	01	MAT9761545	(4G6.0)C	16.0 7.5
PUR O.I.	06	MAT9861592	(4G6.0)C	14.5 10
TPE F	02	MAT9961545	(4G6.0)C	16.0 7.5
6FX_002-5CG62				
PVC M.I.	01	MAT9761546	(4G10)C	18.5 7.5
PUR O.I.	06	MAT9861593	(4G10)C	17.0 10
TPE F	02	MAT9961546	(4G10)C	18.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Power cables, SpeedTec

## Basic cable, SpeedTec






6FX_002-5CN01				
PVC M.I.	01	MAT9761531	(4G1.5)C	10.0 7.5
PUR O.I.	06	MAT9861571	(4G1.5)C	9.0 10
PUR M.I.	07	MAT9861570	(4G1.5)C	11.0 7.5
TPE F	02	MAT9961531	(4G1.5)C	10.0 7.5
6FX_002-5CN11				
PVC M.I.	01	MAT9761532	(4G2.5)C	11.5 7.5
PUR O.I.	06	MAT9861573	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9861572	(4G2.5)C	12.5 7.5
TPE F	02	MAT9961532	(4G2.5)C	11.5 7.5
6FX_002-5CN21				
PVC M.I.	01	MAT9761533	(4G1.5)C	10.0 7.5
PUR O.I.	06	MAT9861575	(4G1.5)C	9.0 10
PUR M.I.	07	MAT9861574	(4G1.5)C	11.0 7.5
TPE F	02	MAT9961533	(4G1.5)C	10.0 7.5
6FX_002-5CN31				
PVC M.I.	01	MAT9761534	(4G2.5)C	11.5 7.5
PUR O.I.	06	MAT9861577	(4G2.5)C	10.5 10
PUR M.I.	07	MAT9861576	(4G2.5)C	12.5 7.5
TPE F	02	MAT9961534	(4G2.5)C	11.5 7.5
6FX_002-5CN41				
PVC M.I.	01	MAT9761535	(4G4.0)C	13.0 7.5
PUR O.I.	06	MAT9861578	(4G4.0)C	12.5 10
TPE F	02	MAT9961535	(4G4.0)C	13.0 7.5
6FX_002-5CN51				
PVC M.I.	01	MAT9761536	(4G6.0)C	16.0 7.5
PUR O.I.	06	MAT9861579	(4G6.0)C	14.5 10
TPE F	02	MAT9961536	(4G6.0)C	16.0 7.5
6FX_002-5CN54				
PVC M.I.	01	MAT9761537	(4G6.0)C	16.0 7.5
PUR O.I.	06	MAT9861580	(4G6.0)C	14.5 10
TPE F	02	MAT9961537	(4G6.0)C	16.0 7.5

## Basic cable, SpeedTec




**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Power cables, SpeedTec</b>				
<b>Basic cable, SpeedTec</b>				
				
<b>6FX_002-5CN61</b>				
PVC M.I.	<b>01</b>	MAT9761538	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861581	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961538	(4G10)C	18.5 7.5
<b>Basic cable, SpeedTec</b>				
				
<b>6FX_002-5CN64</b>				
PVC M.I.	<b>01</b>	MAT9761539	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861582	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961539	(4G10)C	18.5 7.5
<b>Basic cable, SpeedTec</b>				
				
<b>6FX_002-5CQ01</b>				
PVC M.I.	<b>01</b>	MAT9761524	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861560	(4G1.5)C	9.0 10
PUR M.I.	<b>07</b>	MAT9861559	(4G1.5)C	11.0 7.5
TPE F	<b>02</b>	MAT9961524	(4G1.5)C	10.0 7.5
<b>6FX_002-5CQ11</b>				
PVC M.I.	<b>01</b>	MAT9761525	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861562	(4G2.5)C	10.5 10
PUR M.I.	<b>07</b>	MAT9861561	(4G2.5)C	12.5 7.5
TPE F	<b>02</b>	MAT9961525	(4G2.5)C	11.5 7.5
<b>6FX_002-5CQ21</b>				
PVC M.I.	<b>01</b>	MAT9761526	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861564	(4G1.5)C	9.0 10
PUR M.I.	<b>07</b>	MAT9861563	(4G1.5)C	11.0 7.5
TPE F	<b>02</b>	MAT9961526	(4G1.5)C	10.0 7.5
<b>6FX_002-5CQ31</b>				
PVC M.I.	<b>01</b>	MAT9761527	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861566	(4G2.5)C	10.5 10
PUR M.I.	<b>07</b>	MAT9861565	(4G2.5)C	12.5 7.5
TPE F	<b>02</b>	MAT9961527	(4G2.5)C	11.5 7.5
<b>6FX_002-5CQ41</b>				
PVC M.I.	<b>01</b>	MAT9761528	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861567	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9961528	(4G4.0)C	13.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Power cables, SpeedTec</b>				
<b>6FX_002-5CQ51</b>				
PVC M.I.	<b>01</b>	MAT9761529	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861568	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9961529	(4G6.0)C	16.0 7.5
<b>6FX_002-5CQ61</b>				
PVC M.I.	<b>01</b>	MAT9761530	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT9861569	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961530	(4G10)C	18.5 7.5
<b>Extension cable, SpeedTec</b>				
				
<b>6FX_002-5CN05</b>				
PVC M.I.	<b>01</b>	MAT9761522	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861556	(4G1.5)C	9.0 10
PUR M.I.	<b>07</b>	MAT9861555	(4G1.5)C	11.0 7.5
TPE F	<b>02</b>	MAT9961522	(4G1.5)C	10.0 7.5
<b>6FX_002-5CQ15</b>				
PVC M.I.	<b>01</b>	MAT9761523	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861558	(4G2.5)C	10.5 10
PUR M.I.	<b>07</b>	MAT9861557	(4G2.5)C	12.5 7.5
TPE F	<b>02</b>	MAT9961523	(4G2.5)C	11.5 7.5
<b>6FX_002-5CQ28</b>				
PVC M.I.	<b>01</b>	MAT9761547	(4G1.5)C	10.0 7.5
PUR O.I.	<b>06</b>	MAT9861595	(4G1.5)C	9.0 10
PUR M.I.	<b>07</b>	MAT9861594	(4G1.5)C	11.0 7.5
TPE F	<b>02</b>	MAT9961547	(4G1.5)C	10.0 7.5
<b>6FX_002-5CQ38</b>				
PVC M.I.	<b>01</b>	MAT9761548	(4G2.5)C	11.5 7.5
PUR O.I.	<b>06</b>	MAT9861597	(4G2.5)C	10.5 10
PUR M.I.	<b>07</b>	MAT9861596	(4G2.5)C	12.5 7.5
TPE F	<b>02</b>	MAT9961548	(4G2.5)C	11.5 7.5
<b>6FX_002-5CQ48</b>				
PVC M.I.	<b>01</b>	MAT9761549	(4G4.0)C	13.0 7.5
PUR O.I.	<b>06</b>	MAT9861598	(4G4.0)C	12.5 10
TPE F	<b>02</b>	MAT9961549	(4G4.0)C	13.0 7.5
<b>6FX_002-5CQ58</b>				
PVC M.I.	<b>01</b>	MAT9761550	(4G6.0)C	16.0 7.5
PUR O.I.	<b>06</b>	MAT9861599	(4G6.0)C	14.5 10
TPE F	<b>02</b>	MAT9961550	(4G6.0)C	16.0 7.5
<b>6FX_002-5CQ68</b>				
PVC M.I.	<b>01</b>	MAT9761551	(4G10)C	18.5 7.5
PUR O.I.	<b>06</b>	MAT98615100	(4G10)C	17.0 10
TPE F	<b>02</b>	MAT9961551	(4G10)C	18.5 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables, SpeedTec</b>				
<b>Basic cable, SpeedTec</b>				
<b>6FX_002-5DG10</b>				
PVC O.I.	04	MAT9751589	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751588	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT98515107	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT98515106	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DG12</b>				
PVC O.I.	04	MAT9751593	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751592	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT98515111	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT98515110	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DG22</b>				
PVC O.I.	04	MAT9751591	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751590	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT98515109	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT98515108	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DG32</b>				
PVC O.I.	04	MAT9751595	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751594	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT98515113	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT98515112	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DG42</b>				
PVC O.I.	04	MAT9751597	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751596	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT98515115	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT98515114	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>6FX_002-5DG52</b>				
PVC O.I.	04	MAT9751599	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751598	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT98515117	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT98515116	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>6FX_002-5DG62</b>				
PVC M.I.	05	MAT97515100	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT98515119	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT98515118	(4G10+(2x1.5)C)C	21.0 7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables, SpeedTec</b>				
<b>Basic cable, SpeedTec</b>				
<b>6FX_002-5DN01</b>				
PVC O.I.	04	MAT9751571	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751570	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851589	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851588	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DN11</b>				
PVC O.I.	04	MAT9751573	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751572	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851591	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851590	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DN21</b>				
PVC O.I.	04	MAT9751575	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751574	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851593	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851592	(4G1.5+(2x1.5)C)	13.0 7.5
<b>Basic cable, SpeedTec</b>				
<b>6FX_002-5DN27</b>				
PVC O.I.	04	MAT97515128	(4G1.5+(2x1.5)C)	12.5 10
PUR O.I.	06	MAT98515152	(4G1.5+(2x1.5)C)	12.5 10
<b>Basic cable, SpeedTec</b>				
<b>6FX_002-5DN31</b>				
PVC O.I.	04	MAT9751577	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751576	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851595	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851594	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DN41</b>				
PVC O.I.	04	MAT9751579	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751578	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851597	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9851596	(4G4.0+(2x1.5)C)C	16.0 7.5

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961



\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Servo cables, SpeedTec

## Basic cable, SpeedTec



## 6FX\_002-5DN51

PVC O.I.	04	MAT9751581	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	05	MAT9751580	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT9851599	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	07	MAT9851598	(4G6.0+(2x1.5)C)C	17.5	7.5

## Basic cable, SpeedTec



## 6FX\_002-5DN54

PVC O.I.	04	MAT9751583	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	05	MAT9751582	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT98515101	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	07	MAT98515100	(4G6.0+(2x1.5)C)C	17.5	7.5

## Basic cable, SpeedTec



## 6FX\_002-5DN61

PVC M.I.	05	MAT9751584	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	06	MAT98515103	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT98515102	(4G10+(2x1.5)C)C	21.0	7.5

## Basic cable, SpeedTec



## 6FX\_002-5DN64

PVC M.I.	05	MAT9751586	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	06	MAT98515105	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT98515104	(4G10+(2x1.5)C)C	21.0	7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
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## Siemens Servo cables, SpeedTec

## Basic cable, SpeedTec



## 6FX\_002-5DQ01

PVC O.I.	04	MAT9751557	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9751556	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851575	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9851574	(4G1.5+(2x1.5)C)	13.0	7.5

## 6FX\_002-5DQ11

PVC O.I.	04	MAT9751559	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	05	MAT9751558	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	06	MAT9851577	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	07	MAT9851576	(4G2.5+(2x1.5)C)C	14.5	7.5

## 6FX\_002-5DQ21

PVC O.I.	04	MAT9751561	(4G1.5+(2x1.5)C)	12.5	10
PVC M.I.	05	MAT9751560	(4G1.5+(2x1.5)C)	13.0	7.5
PUR O.I.	06	MAT9851579	(4G1.5+(2x1.5)C)	12.5	10
PUR M.I.	07	MAT9851578	(4G1.5+(2x1.5)C)	13.0	7.5

## 6FX\_002-5DQ31

PVC O.I.	04	MAT9751563	(4G2.5+(2x1.5)C)C	14.0	10
PVC M.I.	05	MAT9751562	(4G2.5+(2x1.5)C)C	14.5	7.5
PUR O.I.	06	MAT9851581	(4G2.5+(2x1.5)C)C	14.0	10
PUR M.I.	07	MAT9851580	(4G2.5+(2x1.5)C)C	14.5	7.5

## 6FX\_002-5DQ41

PVC O.I.	04	MAT9751565	(4G4.0+(2x1.5)C)C	15.0	10
PVC M.I.	05	MAT9751564	(4G4.0+(2x1.5)C)C	16.0	7.5
PUR O.I.	06	MAT9851583	(4G4.0+(2x1.5)C)C	15.0	10
PUR M.I.	07	MAT9851582	(4G4.0+(2x1.5)C)C	16.0	7.5

## 6FX\_002-5DQ51

PVC O.I.	04	MAT9751567	(4G6.0+(2x1.5)C)C	16.5	10
PVC M.I.	05	MAT9751566	(4G6.0+(2x1.5)C)C	18.0	7.5
PUR O.I.	06	MAT9851585	(4G6.0+(2x1.5)C)C	16.5	10
PUR M.I.	07	MAT9851584	(4G6.0+(2x1.5)C)C	17.5	7.5

## 6FX\_002-5DQ61

PVC M.I.	05	MAT9751568	(4G10+(2x1.5)C)C	21.5	7.5
PUR O.I.	06	MAT9851587	(4G10+(2x1.5)C)C	21.0	10
PUR M.I.	07	MAT9851586	(4G10+(2x1.5)C)C	21.0	7.5

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\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Siemens Servo cables, SpeedTec</b>				
<b>Extension cable, SpeedTec</b>				
<b>6FX_002-5DN05</b>				
PVC O.I.	04	MAT9751544	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751543	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851561	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851560	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DN15</b>				
PVC O.I.	04	MAT9751546	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751545	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851563	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851562	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DQ15</b>				
PVC O.I.	04	MAT97515122	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT97515123	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT98515142	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT98515143	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DQ28</b>				
PVC O.I.	04	MAT9751548	(4G1.5+(2x1.5)C)	12.5 10
PVC M.I.	05	MAT9751547	(4G1.5+(2x1.5)C)	13.0 7.5
PUR O.I.	06	MAT9851565	(4G1.5+(2x1.5)C)	12.5 10
PUR M.I.	07	MAT9851564	(4G1.5+(2x1.5)C)	13.0 7.5
<b>6FX_002-5DQ38</b>				
PVC O.I.	04	MAT9751550	(4G2.5+(2x1.5)C)C	14.0 10
PVC M.I.	05	MAT9751549	(4G2.5+(2x1.5)C)C	14.5 7.5
PUR O.I.	06	MAT9851567	(4G2.5+(2x1.5)C)C	14.0 10
PUR M.I.	07	MAT9851566	(4G2.5+(2x1.5)C)C	14.5 7.5
<b>6FX_002-5DQ48</b>				
PVC O.I.	04	MAT9751552	(4G4.0+(2x1.5)C)C	15.0 10
PVC M.I.	05	MAT9751551	(4G4.0+(2x1.5)C)C	16.0 7.5
PUR O.I.	06	MAT9851569	(4G4.0+(2x1.5)C)C	15.0 10
PUR M.I.	07	MAT9851568	(4G4.0+(2x1.5)C)C	16.0 7.5
<b>6FX_002-5DQ58</b>				
PVC O.I.	04	MAT9751554	(4G6.0+(2x1.5)C)C	16.5 10
PVC M.I.	05	MAT9751553	(4G6.0+(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851571	(4G6.0+(2x1.5)C)C	16.5 10
PUR M.I.	07	MAT9851570	(4G6.0+(2x1.5)C)C	17.5 7.5
<b>6FX_002-5DQ68</b>				
PVC M.I.	05	MAT9751555	(4G10+(2x1.5)C)C	21.5 7.5
PUR O.I.	06	MAT9851573	(4G10+(2x1.5)C)C	21.0 10
PUR M.I.	07	MAT9851572	(4G10+(2x1.5)C)C	21.0 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ▶ Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Stöber Servo cables</b>				
<b>Basic cable</b>				
<b>Gr.1-Motor-1,0mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751601	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9430001	(4G1.0+2x(2x0.75)C)C	13.5 7.5
PUR O.I.	06	MAT9851601	(4G1.0+2x(2x0.75)C)C	13.0 10
PUR M.I.	07	MAT9420001	(4G1.0+2x(2x0.75)C)C	13.5 7.5
<b>Gr.1-Motor-1,5mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751602	(4G1.5+2x(2x0.75)C)C	13.5 10
PVC M.I.	05	MAT9430002	(4G1.5+2x(2x0.75)C)C	14.5 7.5
PUR O.I.	06	MAT9851602	(4G1.5+2x(2x0.75)C)C	13.5 10
PUR M.I.	07	MAT9420002	(4G1.5+2x(2x0.75)C)C	14.5 7.5
<b>Gr.1-Motor-2,5mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751603	(4G2.5+2x(2x1.5)C)C	16.0 10
PVC M.I.	05	MAT9430003	(4G2.5+2x(2x1.5)C)C	17.0 7.5
PUR O.I.	06	MAT9851603	(4G2.5+2x(2x1.5)C)C	16.0 10
PUR M.I.	07	MAT9420003	(4G2.5+2x(2x1.5)C)C	16.0 7.5
<b>Gr.1-Motor-4,0mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751604	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9430004	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851604	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9420004	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>Basic cable</b>				
<b>Gr.1,5-Motor-4,0mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751605	(4G4.0+2x(2x1.5)C)C	17.0 10
PVC M.I.	05	MAT9430005	(4G4.0+2x(2x1.5)C)C	18.0 7.5
PUR O.I.	06	MAT9851605	(4G4.0+2x(2x1.5)C)C	17.0 10
PUR M.I.	07	MAT9420005	(4G4.0+2x(2x1.5)C)C	17.5 7.5
<b>Gr.1,5-Motor-6,0mm<sup>2</sup></b>				
PVC O.I.	04	MAT9751606	(4G6.0+2x(2x1.5)C)C	19.0 10
PVC M.I.	05	MAT9430006	(4G6.0+2x(2x1.5)C)C	21.0 7.5
PUR O.I.	06	MAT9851606	(4G6.0+2x(2x1.5)C)C	19.0 10
PUR M.I.	07	MAT9420006	(4G6.0+2x(2x1.5)C)C	19.5 7.5
<b>Gr.1,5-Motor-10,0mm<sup>2</sup></b>				
PVC M.I.	05	MAT9430007	(4G10+2x(2x1.5)C)C	23.0 7.5
PUR O.I.	06	MAT9851607	(4G10+2x(2x1.5)C)C	22.5 10
PUR M.I.	07	MAT9420007	(4G10+2x(2x1.5)C)C	22.5 7.5

Note: The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image.  
igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
\* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
igus® GmbH defines cable length as entire length including connectors or open harnessing. ▶ Page 961

\* Technical information on the cable quality (Code **01-31**): ► Page 578-581

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Ø [mm]	R min. [x d]
<b>Stöber Encoder cables</b>				
<b>iSDS4000 Basic cable</b>				
<b>Encoder ED/EK iSDS4000</b>				
PVC	08	MAT9431001	(4x(2x0.34)+4x0.5)C	9.5 10
PUR O.I.	09	MAT9941601	(4x(2x0.34)+4x0.5)C	9.5 10
PUR M.I.	10	MAT9841601	(4x(2x0.34)+4x0.5)C	10.0 7.5
TPE H*	11	MAT9421001	(4x(2x0.34)+4x0.5)C	10.0 6.8
<b>iSDS4000 Basic cable</b>				
<b>Encoder ES iSDS4000</b>				
PUR O.I.	09	MAT9941602	((4x0.25)+3x(2x0.25+2x0.5))C	9.5 10
PUR M.I.	10	MAT9841602	((4x0.25)+3x(2x0.25+2x0.5))C	11.0 7.5
TPE H*	11	MAT9421002	((4x0.25)+3x(2x0.25+2x0.5))C	10.0 6.8
<b>iHTL Basic cable</b>				
<b>Encoder HTL</b>				
PVC	08	MAT9431006	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841606	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9421006	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>iMDS5000 Basic cable</b>				
<b>Encoder iMDS5000</b>				
PVC	08	MAT9431004	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841604	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9421004	(4x(2x0.25)+2x0.5)C	8.5 6.8
<b>iMDS5000 Basic cable</b>				
<b>Resolver iMDS5000</b>				
PVC	08	MAT9431005	(3x(2x0.25))C	9.0 10
PUR M.I.	10	MAT9841605	(3x(2x0.25))C	7.5 7.5
TPE H*	11	MAT9421005	(3x(2x0.25))C	7.5 6.8
<b>iSDS4000 Basic cable</b>				
<b>Resolver iSDS4000</b>				
PVC	08	MAT9431003	(4x(2x0.25)+2x0.5)C	8.0 10
PUR M.I.	10	MAT9841603	(4x(2x0.25)+2x0.5)C	8.5 7.5
TPE H*	11	MAT9421003	(4x(2x0.25)+2x0.5)C	8.5 6.8

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits. Example image. igus® gladly pre-harnesses the cable according to your technical guidelines. **G** = with green-yellow earth core, **x** = without earth core  
 \* Cable qualities: **M.I.** = with inner jacket, **O.I.** = without inner jacket, **F** = flame-retardant, **H** = halogen-free **OIL** = oil-resistant  
 igus® GmbH defines cable length as entire length including connectors or open harnessing. ► Page 961

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# igus® Connectors



igus® connectors		Type	Page
<b>Connectors</b>			
	<b>SERIES A 623</b>	<b>Signal connector</b> M23 standard [6 to 19-pole] standard/Speedtec	788
	<b>SERIES B 923</b>	<b>Power connector</b> Size 1 [6, 8 and 9-pole] standard/Speedtec	793
	<b>SERIES C 940</b>	<b>Power connector</b> Size 1.5 [6, 8 and 9-pole] standard/Speedtec	798
	<b>SERIES D 958</b>	<b>Power connector</b> Size 3 [6 and 8-pole] standard	801
	<b>SERIES 615/915</b>	<b>Signal and power connector</b> Signal [12-pole] and power connector [9-pole] plastic/metal clamping ring	803
	<b>SERIES M17 617/917</b>	<b>Signal and power connector</b> M17 signal [17-pole] and power connector [4 to 9-pole] standard/Speedtec	811
	<b>SERIES S 623</b>	<b>Power connector</b> [1-pole] standard	816
	<b>Tools/accessories and connector packs</b> Individual connector sets from quantity 1		818
	<b>igus® ibow</b>	<b>Angle adapter</b> for power connector 923 and signal connector 623	821
	<b>Torque Master <span style="color: orange;">New!</span></b> Connector assembly with precise torque		822
	<b>Module Connect</b>	<b>Connector system</b> Connect your energy supply with just ONE connector	824
	<b>SUB-D</b>	<b>Signal connector</b> SUB-D standard [9 to 44-pole]	830
	<b>Yamaichi Y-CONKIT</b>		834
	<b>HARTING</b>	<b>Connector sets</b> Standard and Premium	836
	<b>Binder</b>	<b>Connectors</b> series 768, 820, 825, 713	839
	<b>Glands</b>		844

## Test igus®!

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Signal connectors Series A, M23 standard [9 to 19-pole]

Types

- Connector, standard and push-pull version, angular connector
- Lead-through
- Coupling, standard or with central attachment
- PG 13.5 installation box
- Straight installation box with flange
- Installation box angled and angled rotatable with flange

Number of poles in insulation body

- 6, 7, [8+1], 9, 10, 12, 16, 17, [16+3]

Electrical information

Design	Signal 6 to 12-pole	Signal 16 to 19-pole
Max. continuous nominal current	10A	9A
Nominal voltage (AC/DC)	160V	125V
Testing voltage	2500V	2500V
Contact resistance	< 5mΩ	< 5mΩ
Insertion cycles	> 50	> 50

Technical data

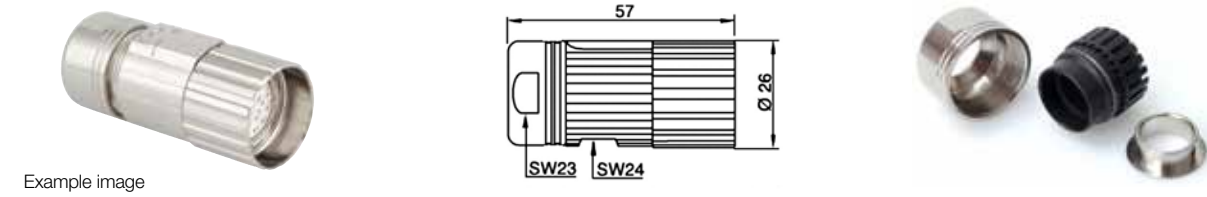
Locking	Thread M23
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

Connector materials

Housing	Zinc die-casting/brass, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body (material)	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated



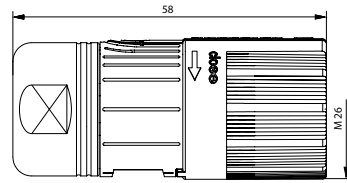
Signal connector [9 to 19-pole] (Metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179600	P type [8+1]-pole 3 coding slots	Female crimp, slotted	8x1.0	0.14-1	9.0-13.2	C 1 4
		Female crimp, slotted	1x2.0	0.35-2.5		
MAT0179601	E type 12-pole 3 coding slots	Female crimp, slotted	12x1.0	0.14-1	9.0-13.2	A
MAT0179602	P type 16-pole 1 coding slot	Female crimp, slotted	16x1.0	0.14-1	9.0-13.2	A
MAT0179603	P type 17 pole 3 coding slots	Female crimp, slotted	17x1.0	0.14-1	9.0-13.2	A
MAT0179604	P type [16+3]-pole 1 coding slot	Female crimp, slotted	16x1.0	0.14-1	9.0-13.2	C 1 5
		Female crimp, slotted	3x1.5	0.14-1		



Bulkhead connector with union nut		
Part No.	Number of poles	Crimping tool + insert
MAT0179605	[8+1]-pole	C 1 4
MAT0179606	12-pole	A
MAT0179607	16-pole	A
MAT0179608	17 pole	A
MAT0179609	[16+3]-pole	C 1 5



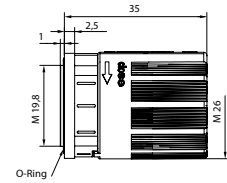
Example image



Signal connector [9 to 19-pole] (Metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723461	P type [8+1]-pole 3 coding slots	Female crimp, slotted	8x1.0	0.14-1	9.0-13.2	C 1 4
		Female crimp, slotted	1x2.0	0.35-2.5		
MAT01723462	E type 12-pole 3 coding slots	Female crimp, slotted	12x1.0	0.14-1	9.0-13.2	A
MAT01723463	P type 16-pole 1 coding slot	Female crimp, slotted	16x1.0	0.14-1	9.0-13.2	A
MAT01723464	P type 17 pole 3 coding slots	Female crimp, slotted	17x1.0	0.14-1	9.0-13.2	A
MAT01723465	P type [16+3]-pole 1 coding slot	Female crimp, slotted	16x1.0	0.14-1	9.0-13.2	C 1 5
		Female crimp, slotted	3x1.5	0.14-1		



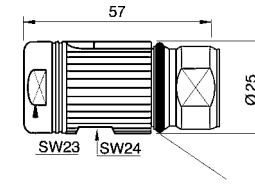
Example image



Bulkhead connector with union nut		
Part No.	Number of poles	Crimping tool + insert
MAT01723466	[8+1]-pole	C 1 4
MAT01723467	12-pole	A
MAT01723468	16-pole	A
MAT01723469	17 pole	A
MAT01723470	[16+3]-pole	C 1 5



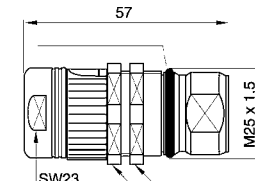
Example image



Signal connector [9 to 19-pole] (Metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179610	E type [8+1]-pole 3 coding slots	Male crimp	8x1.0	0.14-1	9.0-13.2	C 1 4
		Male crimp	1x2.0	0.35-2.5		
MAT0179611	P type 12-pole 3 coding slots	Male crimp	12x1.0	0.14-1	9.0-13.2	A
MAT0179612	E type 16-pole 1 coding slot	Male crimp	16x1.0	0.14-1	9.0-13.2	A
MAT0179613	E type 17 pole 3 coding slots	Male crimp	17x1.0	0.14-1	9.0-13.2	A
MAT0179614	E type [16+3]-pole 1 coding slot	Male crimp	16x1.0	0.14-1	9.0-13.2	C 1 5
		Male crimp	3x1.5	0.14-1		



Example image



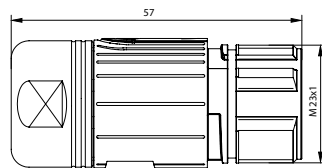
Coupling with central attachment		
Part No.	Number of poles	Crimping tool + insert
MAT0179615	[8+1]-pole	C 1 4
MAT0179616	12-pole	A
MAT0179617	16-pole	A
MAT0179618	17 pole	A
MAT0179619	[16+3]-pole	C 1 5

Crimping tools and inserts ► Page 818





Example image

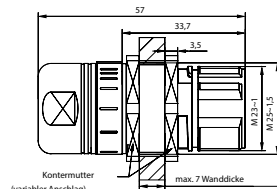


Signal connector [9 to 19-pole] (Metal construction, EMC shielding)

Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723471	E type [8+1]-pole 3 coding slots	Male crimp	8x1.0	0.14-1	9.0-13.2	C 1 4
		Male crimp	1x2.0	0.35-2.5		
MAT01723472	P type 12-pole 3 coding slots	Male crimp	12x1.0	0.14-1	9.0-13.2	A
MAT01723473	E type 16-pole 1 coding slot	Male crimp	16x1.0	0.14-1	9.0-13.2	A
MAT01723474	E type 17 pole 3 coding slots	Male crimp	17x1.0	0.14-1	9.0-13.2	A
MAT01723475	E type [16+3]-pole 1 coding slot	Male crimp	16x1.0	0.14-1	9.0-13.2	C 1 5
		Male crimp	3x1.5	0.14-1		



Example image



Coupling with central attachment

Part No.	Number of poles	Crimping tool + insert
MAT01723476	[8+1]-pole	C 1 4
MAT01723477	12-pole	A
MAT01723478	16-pole	A
MAT01723479	17 pole	A
MAT01723480	[16+3]-pole	C 1 5

Crimping tools and inserts ► Page 818



Power connectors series B, M23, size 1 [6, 8 and 9-pole]

Types

- Connector, short and long, push-pull version, angular connector
- Coupling, standard or with central attachment
- Lead-through
- Installation box straight with flange
- Installation box angled and angled rotatable with flange

Number of poles in insulation body

- 6, 8, 9

Electrical information

Design	Power 6-pole	Power 8 and 9-pole
Max. continuous nominal current	28A	30A
Nominal voltage (AC/DC)	630V	630V
Testing voltage	6,000V	6,000V
Contact resistance	< 3mΩ	< 3mΩ
Insertion cycles	> 50	> 50

Technical data

Locking	Thread M23
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

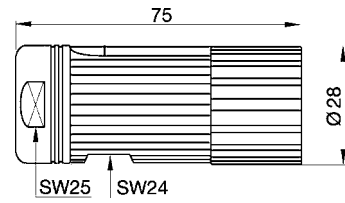
Connector materials

Housing	Zinc die-casting/brass, nickel-plated (optional: stainless steel)
Coupling nut	Brass, nickel-plated
Insulation body (material)	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated

Crimping tools and inserts ► Page 818



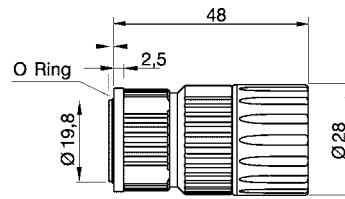
Example image



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179620	P type 6-pole	HC female crimp	6x2.0	0.35-2.5	9.5-14.5	G2
MAT0179621	P type 8-pole	HC female crimp	4x2.0	0.35-2.5	9.5-14.5	C21
		HC female crimp	4x1.0	0.14-1		
MAT0179622	P type 9-pole	HC female crimp	4x2.0	0.35-2.5	9.5-14.5	C21
		HC female crimp	5x1.0	0.14-1		



Example image

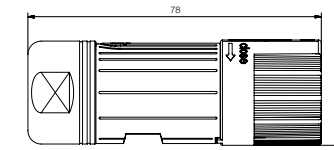


Bulkhead connector with union nut		
Part No.	Number of poles	Crimping tool + insert
MAT0178406	6-pole	G2
MAT0175661	8-pole	C21
MAT0179033	9-pole	G21

Crimping tools and inserts ► Page 818



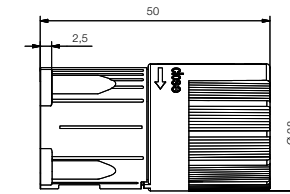
Example image



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723481	P type 6-pole	HC female crimp	6x2.0	0.35-2.5	9.5-14.5	G2
MAT01723482	P type 8-pole	HC female crimp	4x2.0	0.35-2.5	9.5-14.5	C21
		HC female crimp	4x1.0	0.14-1		
MAT01723483	P type 9-pole	HC female crimp	4x2.0	0.35-2.5	9.5-14.5	C21
		HC female crimp	5x1.0	0.14-1		



Example image



Bulkhead connector with union nut		
Part No.	Number of poles	Crimping tool + insert
MAT01723484	6-pole	G2
MAT01723485	8-pole	C21
MAT01723486	9-pole	G21

Crimping tools and inserts ► Page 818





Power connectors series C, M40, size 1.5 [6, 8 and 9-pole]

**Types**

- Connector, angular connector
- Coupling
- Lead-through
- Straight installation box with flange
- Installation box angled and angled rotatable with flange

**Number of poles in insulation body**

- 6, 8, 9

**Electrical information**

Design	<b>Power 6 to 19-pole</b>
Max. continuous nominal current	75A
Nominal voltage (AC/DC)	630V
Testing voltage	6,000V
Contact resistance	< 1mΩ
Insertion cycles	> 50

**Technical data**

Locking	Thread M40
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

**Data according to VDE 0110/EN 61984, Clause 6.19.2.2**

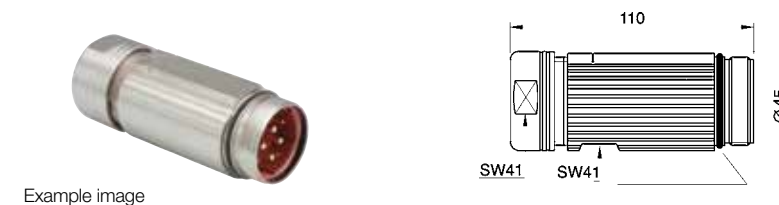
Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

**Connector materials**

Housing	Magnesium die-casting/aluminium
Coupling nut	Brass, nickel-plated
Insulation body (material)	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179629	P type 6-pole	HC female crimp	4x3.6	1.5-10	9.0-16.5	
		HC female crimp	2x2.0	0.5-2.5		
MAT0179630	P type 8-pole	HC female crimp	4x3.6	1.5-10	9.0-16.5	
		HC female crimp	4x2.0	0.5-2.5		
MAT0179631	P type 9-pole	HC female crimp	4x3.6	1.5-10	9.0-16.5	
		HC female crimp	5x2.0	0.5-2.5		



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179632	E type 6-pole	Male crimp	4x3.6	1.5-10	9.0-16.5	
		Male crimp	2x2.0	0.5-2.5		
MAT0179633	E type 8-pole	Male crimp	4x3.6	1.5-10	9.0-16.5	
		Male crimp	4x2.0	0.5-2.5		
MAT0179634	E type 9-pole	Male crimp	4x3.6	1.5-10	9.0-16.5	
		Male crimp	5x2.0	0.5-2.5		

Crimping tools and inserts ► Page 818





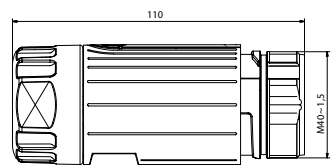
Example image



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)							
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert	
MAT01723501	P type 6-pole	HC female crimp	4x3.6		1.5-10	9.0-16.5	
		HC female crimp	2x2.0		0.5-2.5		
MAT01723502	P type 8-pole	HC female crimp	4x3.6		1.5-10	9.0-16.5	
		HC female crimp	4x2.0		0.5-2.5		
MAT01723503	P type 9-pole	HC female crimp	4x3.6		1.5-10	9.0-16.5	
		HC female crimp	5x2.0		0.5-2.5		



Example image



Power connector [6 to 9-pole], nickel-plated (metal construction, EMC shielding)							
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert	
MAT01723504	E type 6-pole	Male crimp	4x3.6		1.5-10	9.0-16.5	
		Male crimp	2x2.0		0.5-2.5		
MAT01723505	E type 8-pole	Male crimp	4x3.6		1.5-10	9.0-16.5	
		Male crimp	4x2.0		0.5-2.5		
MAT01723506	E type 9-pole	Male crimp	4x3.6		1.5-10	9.0-16.5	
		Male crimp	5x2.0		0.5-2.5		

Crimping tools and inserts ► Page 818

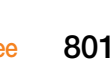


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Power connectors series D, M58, size 3 [6 and 8-pole]

**Types**

- Connector
- Coupling
- Straight installation box with flange
- Angled installation box with flange

**Number of poles in insulation body**

- 6, 8

**Electrical information**

Design	Power 6 and 8-pole	Signal contacts
Max. continuous nominal current	150A	12A
Nominal voltage (AC/DC)	630V	250V
Testing voltage	6,000V	4,000V
Contact resistance	< 90mΩ	< 5mΩ
Insertion cycles	> 50	> 50

**Technical data**

Locking	Thread M58
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

**Data according to VDE 0110/EN 61984, Clause 6.19.2.2**

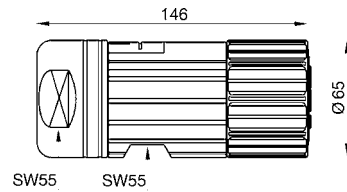
Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

**Connector materials**

Housing	Zinc die-casting, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body (material)	PA 6.6/PBT, UL 94/V0
Contacts	Brass, silver/gold-plated
Seals	FPM
Clamping ring	Aluminium, nickel-plated



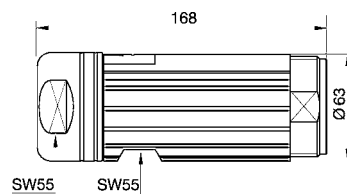
Example image



Power connector [6 and 8-pole] nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179635	P type 6-pole	Female crimp (power)	4x10		10-10	- <b>E10 C7</b>
		Female crimp (signal)	2x1.6		1.5-1.5	
MAT0179636	P type 8-pole	Female crimp (power)	4x10		10-10	- <b>E10 C7</b>
		Female crimp (signal)	4x1.6		1.5-1.5	



Example image



Power coupling [6 and 8-pole] nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179637	E type 6-pole	Male crimp (power)	4x10		10-10	- <b>E10 C8</b>
		Male crimp (signal)	2x1.6		1.5-1.5	
MAT0179638	E type 8-pole	Male crimp (power)	4x10		10-10	- <b>E10 C8</b>
		Male crimp (signal)	4x1.6		1.5-1.5	

Crimping tools and inserts ► Page 818



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Signal connectors series 615, plastic/metal clamping ring [12-pole]

Types

- Connector, plastic or metal clamping ring
- Coupling, plastic or metal clamping ring

Number of poles in insulation body

- 12

Electrical information

Design	Signal 12-pole
Max. continuous nominal current	3.6A
Nominal voltage (AC/DC)	63V
Testing voltage	1,500V
Contact resistance	< 15mΩ
Insertion cycles	> 50

Technical data

Locking	Quick-lock fastener
Temperature range	-20°C up to +130°C
Cable clamp	Lamella clamp
Protection class	IP 66/67 [plugged]

Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

Connector materials

Housing	Zinc die-casting, /brass, nickel-plated and plastic-coated
Coupling nut	PA modif., 30% Gf.
Insulation body (material)	PA/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/EPDM
Clamping ring	Brass, nickel-plated / PA modif., 30% Gf.





Example image



Signal connector [12-pole] (plastic clamping ring, EMC shielding)

Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730633	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	4.5-6.5	C14
MAT01730634	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	6.5-8.5	C14
MAT01730635	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	8.5-10.5	C14



Example image



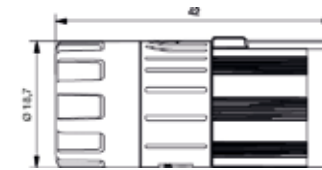
Signal coupling [12-pole] (plastic clamping ring, EMC shielding)

Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730640	E type 12-pole	Male crimp	12x1	0.1-0.75	4.5-6.5	C14
MAT01730641	E type 12-pole	Male crimp	12x1	0.1-0.75	6.5-8.5	C14
MAT01730642	E type 12-pole	Male crimp	12x1	0.1-0.75	8.5-10.5	C14

Crimping tools and inserts ► Page 818



Example image



Signal connector [12-pole], nickel-plated (metal clamping ring, EMC shielding)

Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730636	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	4.5-6.5	C14
MAT01730637	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	6.5-8.5	C14
MAT01730638	P type 12-pole	Female crimp, slotted	12x1	0.1-0.75	8.5-10.5	C14



Example image



Signal coupling [12-pole], nickel-plated (metal clamping ring, EMC shielding)

Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730643	E type 12-pole	Male crimp	12x1	0.1-0.75	4.5-6.5	C14
MAT01730644	E type 12-pole	Male crimp	12x1	0.1-0.75	6.5-8.5	C14
MAT01730645	E type 12-pole	Male crimp	12x1	0.1-0.75	8.5-10.5	C14




Crimping tools and inserts ► Page 818





Example image






Signal connector [12-pole], nickel-plated (metal clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730639	P type 12-pole	 Female crimp, slotted	12x1	 0.1-0.75	10.5-12.5	 C14



Example image



Signal coupling [12-pole], nickel-plated (metal clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730646	E type 12-pole	 Male crimp	12x1	 0.1-0.75	10.5-12.5	 C14

Power connectors series 915, plastic/ metal clamping ring [9-pole]

Types

- Connector, plastic or metal clamping ring
- Coupling, plastic or metal clamping ring

Number of poles in insulation body

- 9

Electrical information

Design	Power 9-pole
Max. continuous nominal current	20A
Nominal voltage (AC/DC)	630V
Testing voltage	6,000V
Contact resistance	< 5mΩ
Insertion cycles	> 50

Technical data

Locking	Quick-lock fastener
Temperature range	-20°C up to +130°C
Cable clamp	Lamella clamp
Protection class	IP 66/67 [plugged]

Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

Connector materials

Housing	Zinc die-casting, /brass, nickel-plated and plastic-coated
Coupling nut	PA modif., 30% Gf.
Insulation body (material)	PA/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/EPDM
Clamping ring	Brass, nickel-plated / PA modif., 30% Gf.

Crimping tools and inserts ► Page 818



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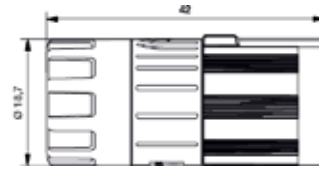


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Example image



Power connector [9-pole], nickel-plated (plastic clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730647	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	4.5-6.5
			Female crimp, slotted 5x1		0.1-0.75	
MAT01730648	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	6.5-8.5
			Female crimp, slotted 5x1		0.1-0.75	
MAT01730649	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	8.5-10.5
			Female crimp, slotted 5x1		0.1-0.75	



Example image



Power coupling [9-pole], (plastic clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730654	E type 9-pole		Male crimp 4x1		0.5-1.5	4.5-6.5
			Male crimp 5x1		0.1-0.75	
MAT01730655	E type 9-pole		Male crimp 4x1		0.5-1.5	6.5-8.5
			Male crimp 5x1		0.1-0.75	
MAT01730656	E type 9-pole		Male crimp 4x1		0.5-1.5	8.5-10.5
			Male crimp 5x1		0.1-0.75	

Crimping tools and inserts ► Page 818

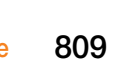


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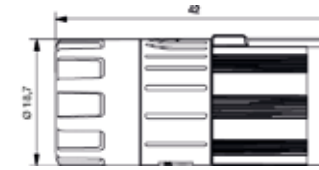
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Example image



Power connector [9-pole], nickel-plated (metal clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730650	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	4.5-6.5
			Female crimp, slotted 5x1		0.1-0.75	
MAT01730651	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	6.5-8.5
			Female crimp, slotted 5x1		0.1-0.75	
MAT01730652	P type 9-pole		Female crimp, slotted 4x1		0.5-1.5	8.5-10.5
			Female crimp, slotted 5x1		0.1-0.75	



Example image





Power coupling [9-pole], nickel-plated (metal clamping ring, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01730657	E type 9-pole		Male crimp 4x1		0.5-1.5	4.5-6.5
			Male crimp 5x1		0.1-0.75	
MAT01730658	E type 9-pole		Male crimp 4x1		0.5-1.5	6.5-8.5
			Male crimp 5x1		0.1-0.75	
MAT01730659	E type 9-pole		Male crimp 4x1		0.5-1.5	8.5-10.5
			Male crimp 5x1		0.1-0.75	





Example image





Power connector [9-pole], nickel-plated (metal clamping ring, EMC shielding)							
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert	
MAT01730653	P type 9-pole		Female crimp, slotted	4x1	0.5-1.5	10.5-12.5	
			Female crimp, slotted	5x1	0.1-0.75		

**C14**



Example image



Power coupling [9-pole], nickel-plated (metal clamping ring, EMC shielding)							
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert	
MAT01730660	E type 9-pole		Male crimp	4x1	0.5-1.5	10.5-12.5	
			Male crimp	5x1	0.1-0.75		

**C14**

Signal [17-pole] and power connectors [4 to 9-pole], M17

**Types**

- Connector, standard and push-pull version
- Coupling, standard or with central attachment
- Straight installation box with flange
- box straight, connecting thread M17 x 0.75
- Installation box angled, turnable with flange
- Installation box angled and angled rotatable with flange

**Number of poles in insulation body**

- Signal: 17
- Power: 4, 7, 9

**Electrical information**

Design	Signal 17-pole	Power 4-pole	Power 7-pole	Power 9-pole	Signal 9-pole
Max. continuous nominal current	3.6A	20A	10A	14A	3.6A
Nominal voltage (AC/DC)	63V	630V	630V	630V	63V
Testing voltage	1,500V	6,000V	6,000V	6,000V	1,500V
Contact resistance	< 15mΩ	< 5mΩ	< 5mΩ	< 5mΩ	< 15mΩ
Insertion cycles	> 50	> 50	> 50	> 50	> 50

**Technical data**

Locking	Thread M17
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

**Data according to VDE 0110/EN 61984, Clause 6.19.2.2**

Pollution degree	3
Over-voltage category	III
Max. installation height	2000m

**Connector materials**

Housing	Zinc die-casting/brass, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body (material)	PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM
Clamping ring	Brass, nickel-plated

Crimping tools and inserts ► Page 818



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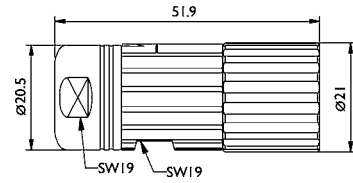


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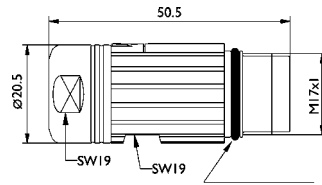
Example image



Signal connector [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179639	P type 17 pole	Female crimp, slotted	17x0.6	0.14-0.5	9.5-12.0	<b>B</b>



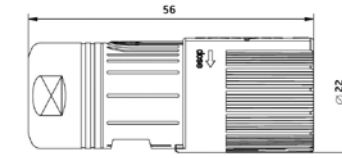
Example image



Signal coupling [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179640	E type 17 pole	Male crimp	17x0.6	0.14-0.5	9.5-12.0	<b>B</b>



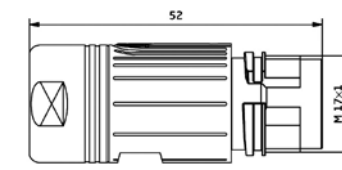
Example image



Signal connector [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723493	P type 17 pole	Female crimp, slotted	17x0.6	0.14-0.5	9.5-12.0	<b>B</b>



Example image



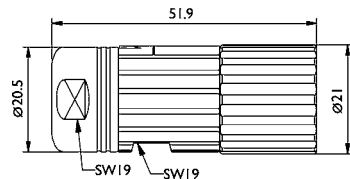
Signal coupling [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723494	E type 17 pole	Male crimp	17x0.6	0.14-0.5	9.5-12.0	<b>B</b>

Crimping tools and inserts ► Page 818





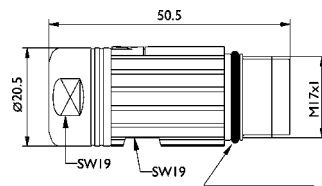
Example image



Signal connector [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179641	P type 4-pole	Female crimp, slotted	4x1.5	0.35-2.5	9.5-12.0	C 1
MAT0179643	P type 7-pole	Female crimp, slotted	7x1.0	0.5-1.5	9.5-12.0	A
MAT0179645	P type 9-pole	Female crimp, slotted	4x1.0	0.5-1.5	9.5-12.0	A B
		Female crimp, slotted	5x0.6	0.14-0.5		



Example image

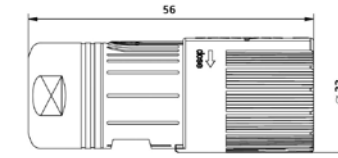


Power connector [4 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT0179642	E type 4-pole	Male crimp	4x1.5	0.35-2.5	9.5-12.0	C 6
MAT0179644	E type 7-pole	Male crimp	7x1.0	0.5-1.5	9.5-12.0	A
MAT0179646	E type 9-pole	Male crimp	4x1.0	0.5-0.5	9.5-12.0	A B
		Male crimp	5x0.6	0.14-0.5		

Crimping tools and inserts ► Page 818



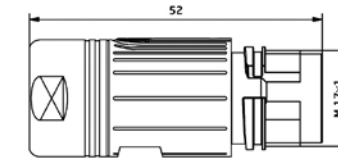
Example image



Signal connector [17-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723495	P type 4-pole	Female crimp, slotted	4x1.5	0.35-2.5	9.5-12.0	C 1
MAT01723497	P type 7-pole	Female crimp, slotted	7x1.0	0.5-1.5	9.5-12.0	A
MAT01723499	P type 9-pole	Female crimp, slotted	4x1.0	0.5-1.5	9.5-12.0	A B
		Female crimp, slotted	5x0.6	0.14-0.5		



Example image



Power connector [4 to 9-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm <sup>2</sup> ]	Clamping range [mm]	Crimping tool + insert
MAT01723496	E type 4-pole	Male crimp	4x1.5	0.35-2.5	9.5-12.0	C 6
MAT01723498	E type 7-pole	Male crimp	7x1.0	0.5-1.5	9.5-12.0	A
MAT01723500	E type 9-pole	Male crimp	4x1.0	0.5-1.5	9.5-12.0	A B
		Male crimp	5x0.6	0.14-0.5		

Crimping tools and inserts ► Page 818



Power connectors series S, M23 [1-pole]

Types

- Connector
- Coupling
- Straight installation box with flange

Number of poles in insulation body

- 1

Electrical information

Design	Power
Max. continuous nominal current	80A
Nominal voltage (AC/DC)	630V
Testing voltage	8,000V
Contact resistance	< 110mΩ
Insertion cycles	> 50

Technical data

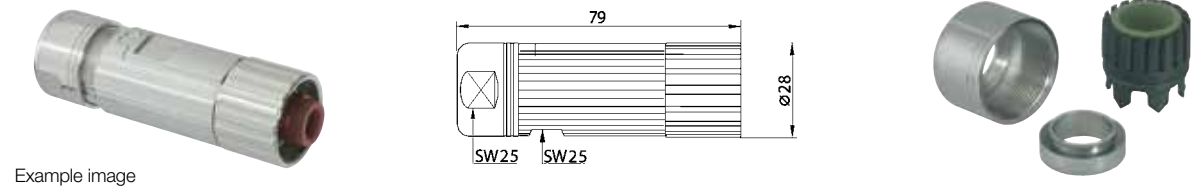
Locking	Thread M23
Temperature range	-20°C up to +130°C
Cable clamp	Crown clamp
Protection class	IP 66/67 [plugged]

Data according to VDE 0110/EN 61984, Clause 6.19.2.2




Pollution degree	3 [2]
Over-voltage category	IV
Max. installation height	2000m

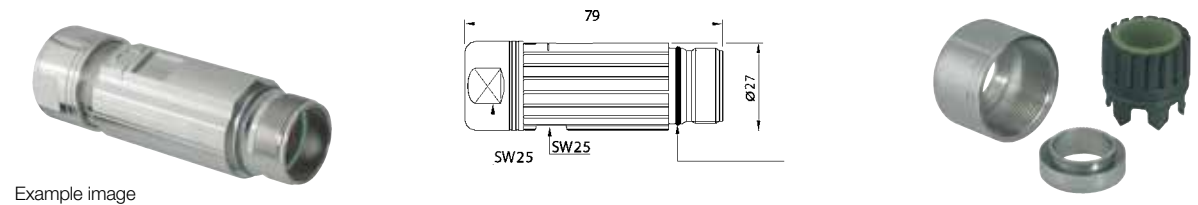
Connector materials

Housing	Zinc die-casting/brass, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body (material)	PA 6.6 mod., UL 94/V0
Contacts	Brass, silver-plated
Seals	FPM
Clamping ring	Brass, nickel-plated






Example image

Power connector [1-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm²]	Clamping range [mm]	Crimping tool + insert
MAT0179669	P type 1-pole	 Female crimp	1x8.0	 10-10	9.5-14.5	 E10



Example image

Power coupling [1-pole], nickel-plated (metal construction, EMC shielding)						
Part No.	Insulation body (material)	Contact type	Dimensions crimping insert [mm]	Crimping range [mm²]	Clamping range [mm]	Crimping tool + insert
MAT0179670	E type 1-pole	 Female crimp	2x1.6	 10	9.5-14.5	 E10

Crimping tools and inserts ► Page 818



Crimping tool for SERIES A and B



**A**  
Hand crimping tool  
for Ø 1mm contacts  
up to core cross section 1mm<sup>2</sup>  
includes positioning insert

MAT01710294



Positioning insert  
for Ø 1.0mm  
contacts

MAT01712938

Crimping tool for SERIES M17



**B**  
Hand crimping tool  
for Ø 0.6mm contacts  
up to core cross section 0.5mm<sup>2</sup>  
includes positioning insert

MAT0178919



Positioning insert  
for Ø 0.6mm  
contacts

MAT0179467

Crimping tool for series A, B, C, D and M17



Hand crimping tool  
for Ø 1mm and Ø 2mm contacts  
up to core cross section 4mm<sup>2</sup>  
includes positioning carrier

MAT0175736

**1**  
Positioning insert  
for Ø 1mm contacts

MAT0178195

**2**  
Positioning insert  
for Ø 2mm contacts

MAT0178196

**3**  
Positioning insert  
for Ø 1mm and Ø  
2mm contacts

MAT0177855

**4**  
Positioning insert  
for Ø 2mm contacts

MAT01714573



**5**  
Positioning insert  
for Ø 1.5mm contacts

MAT01714574

**6**  
Positioning insert  
for Ø 0.5mm and Ø 2.5mm  
contacts

MAT0178920

**7**  
Positioning insert  
for Ø 1.6mm contacts

MAT0177853

**8**  
Positioning insert  
for Ø 1.6mm contacts

MAT01714575

**14**  
Positioning insert  
for Ø 1.0mm contacts  
Y-Tec

MAT01724301

Crimping tool for SERIES C



**D**  
Hand crimping tool  
for Ø 3.6mm contacts  
up to core cross section 16mm<sup>2</sup>  
includes positioning carrier

MAT0179194



Positioning insert  
for Ø 3.6mm contacts

MAT0179195

Crimping tool for SERIES C



Pneumatic crimping tool  
for Ø 3.6mm and  
Ø 2.0mm contacts  
Core cross section 1.5 - 16mm<sup>2</sup>

MAT01721441

Crimping insert for pneumatic crimping tool



Contact

Crimp area

Pin Ø 2.0mm  
Socket Ø 2.0mm  
1.5/2.5mm<sup>2</sup>

MAT01727426

Pin Ø 3.6mm  
Socket Ø 3.6mm  
4.0/6.0mm<sup>2</sup>

MAT01727428

Pin Ø 3.6mm  
Socket Ø 3.6mm  
10.0mm<sup>2</sup>

MAT01721442

Pin Ø 3.6mm  
Socket Ø 3.6mm  
16.0mm<sup>2</sup>

MAT01721444

Locator for pneumatic crimping tool



Contact

Crimp area

Pin Ø 2.0mm  
Socket Ø 2.0mm  
1.5/2.5mm<sup>2</sup>  
1.5/2.5mm<sup>2</sup>

MAT01727429

Pin Ø 3.6mm  
Socket Ø 3.6mm  
1.5 - 10.0mm<sup>2</sup>

MAT01721443

Pin Ø 3.6mm  
Socket Ø 3.6mm  
1.5 - 16.0mm<sup>2</sup>

MAT01721445

Crimping insert for series S and D



Battery-powered crimping tool, B131-C

MAT0177854



**10**  
Crimping jaws  
up to 10mm<sup>2</sup>, 16mm<sup>2</sup>

MAT01713679



**11**  
Crimping jaws  
up to 25mm<sup>2</sup>

MAT01713678



**12**  
Crimping jaws  
up to 35mm<sup>2</sup>

MAT01713677



**13**  
Crimping jaws  
up to 50mm<sup>2</sup>

MAT01713676

... is the connector you are looking for not included in this catalogue?

Whether for your production or for spares, or a mating half for an existing connector; we can help!



Circular connectors e.g. in size M23



Sub-D signal connectors



Rectangular connectors, C148, Y-Tec® or connectors for network and bus systems

Connector service packs consisting of housing, insulation, strain relief, crimp/solder contact, in any quantity completely picked and packed for you.

**Your benefits at a glance:**

- More than 3,500 connectors components from stock
- Manufacturer independent, world-wide procurement, thanks to the igus® network
- Custom article numbers/labelling possible on each package
- Price: benefit from the consolidated demand of our customers
- Purchasing: only 1 order number, everything from one source
- QA: only one incoming inspection
- Internal logistics: only one storage location, fast identification

Talk to us! We can help!

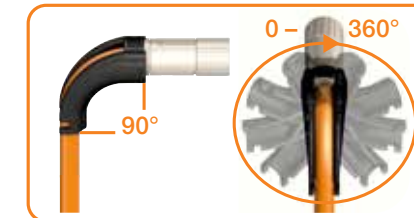


- ▶ **Safe ...**  
Easy retrofit assembly without opening the connector
- ▶ **Flexible ...**  
Freely selectable angle of rotation
- ▶ **Cost-efficient...**  
1 connector type gives straight and angled versions
- ▶ **Customised...**  
Colour coded and, upon request, with labelling

Push connector on ...



bend the cable ...



fix the cable ...



and ready to use!



Assembly video and information:  
[www.igus.eu/ibow](http://www.igus.eu/ibow)

Suitable for **923 power connectors** und also for **623 signal connectors**.  
Can be retrofitted for an angle of 90° ... or supplied ready-made as a harnessed igus® readycable®

Angle adapter igus® ibow

Part No.

MAT904104175 for 923 power connector

MAT904104176 for 623 signal connector





... 50% faster ... connector assembled automatically and safely ...

Faster, more precise and cost-effective. For automatic connector assembly. Easy to use, reliable result, with defined torque.



50% time saving



100% ergonomic and error-free



One machine for all connectors (interchangeable inserts)

#### Tech up

- Torque-controlled connector assembly for consistent results
- Automatic assembly reduces throughput times
- Production optimised with igus® experience

#### Cost down

- 50% less time per connector
- Quick and easy to use
- Ergonomics in the industrial workplace

#### Proof

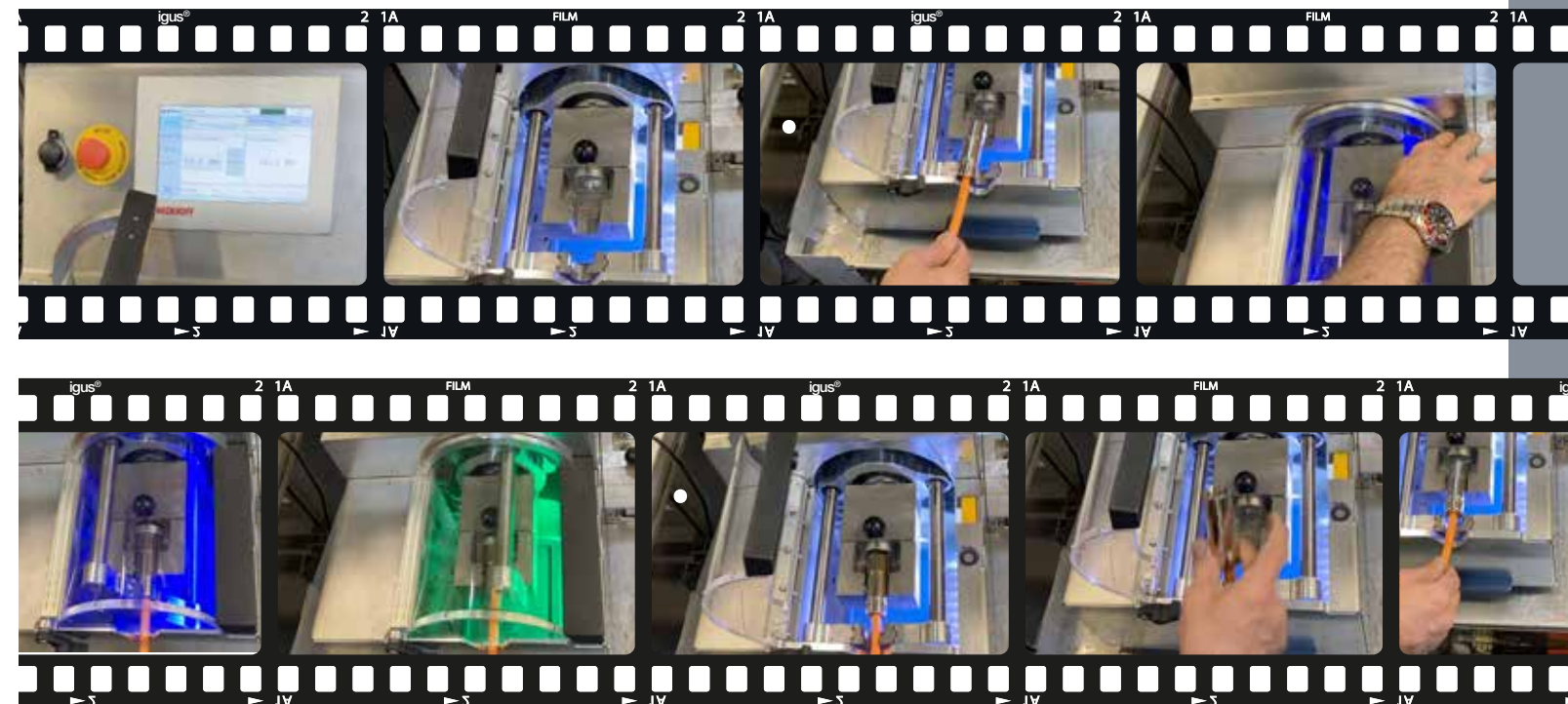
- Connector driving with precise torque (target/actual display)

#### Sustainability

- No damage to the connectors and/or cable
- With interchangeable inserts for different connectors
- In-house connector assembly avoids external transport



Video:





Like this ...



or this ...



or this ...



### Flexible ...

**Mounting bracket** for wall and floor installation as well as inline connection



### Lighter ... Space-saving design ...

Fibre-reinforced, high-performance polymer. **Weight saving** compared to conventional rectangular connectors



### Tightly sealed ...

Various sealing elements adapt individually to different cable diameters:  
**three or four cable outlets**



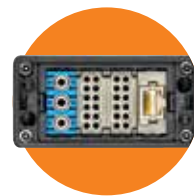
### Connected in seconds ...

Individual housing configurations by combining several assembled connectors:  
**Connected in seconds**



### Safer strain relief ...

Strong and easy to handle due to the one-piece, screw-on **clamping jaw**

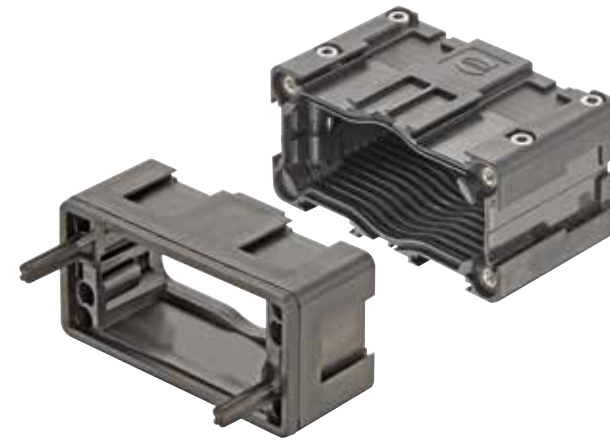


### Tried and tested inserts ...

Up to 4 HARTING Han Modular inserts per housing, e.g. pneumatics, power, bus, signal: **over 100 inserts to choose from**

### 1 housing ...

... with a choice of three or four cable inlets ...



### + more than 100 freely combinable industrial connector types...

... for electric cables, fibre optic cables and pneumatic hoses ...

Power and signal modules – with field assembly capability ... data transfer modules ... power and signal modules – crimp connection ... modules for media ...

### = infinite options

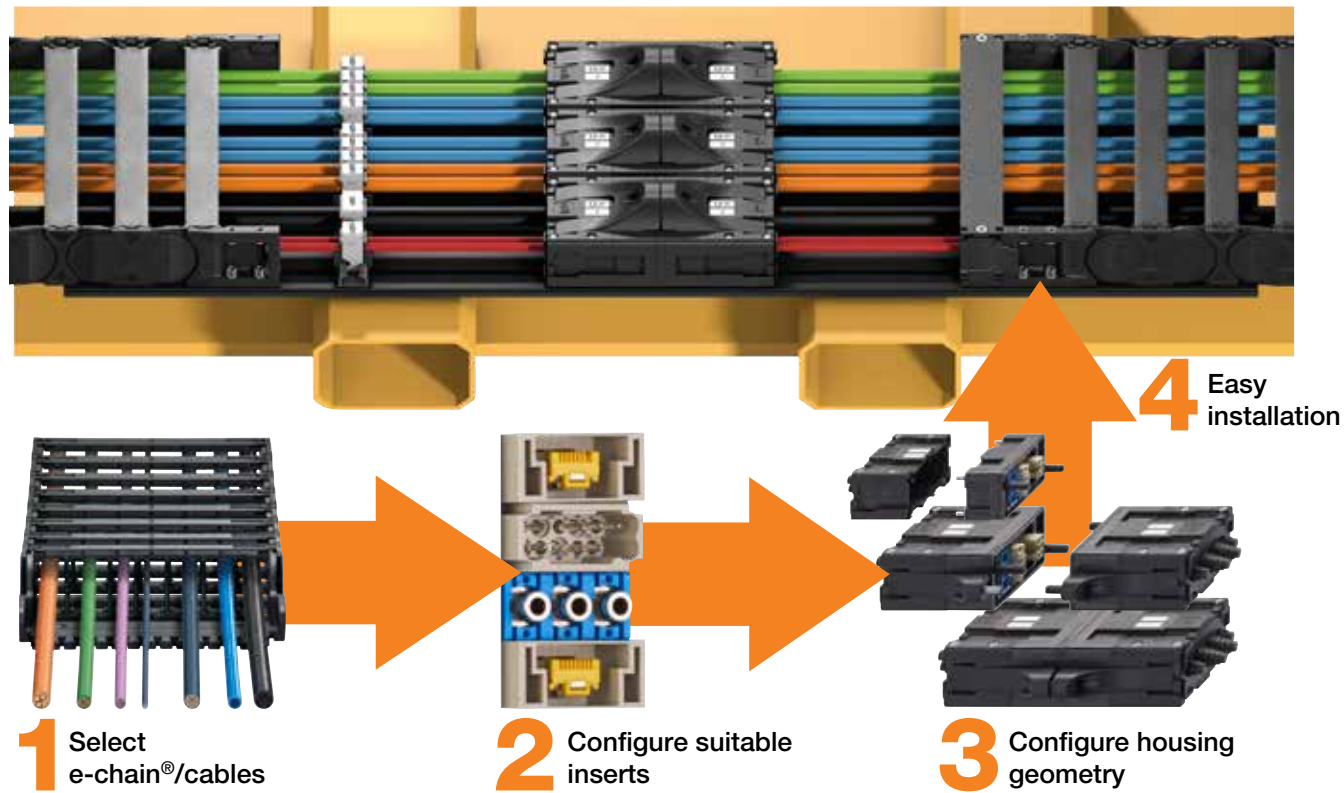
... for your tailor-made interface ...





## Easily configured ...

... match to your application in four steps ...



**1** Select e-chain®/cables

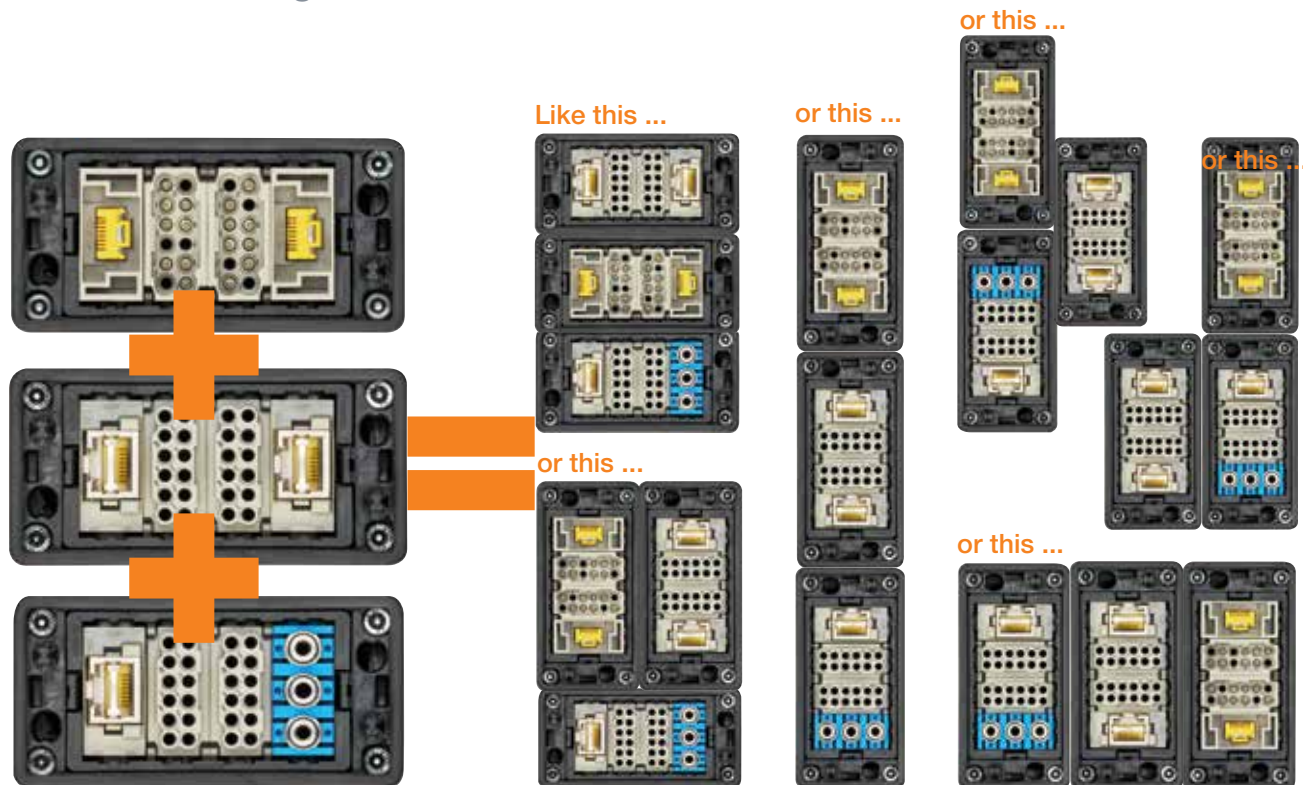
**2** Configure suitable inserts

**3** Configure housing geometry

**4** Easy installation

## Easily combined ...

... flexible housing combinations ...



Like this ...

or this ...

or this ...

or this ...

or this ...

## Easily fitted ...

... application examples ...

**Example 1:**  
Module Connect ensures fast commissioning of the energy supply system in the wood-working industry



Source: NowyStyl Group

**Example 2:**  
Module Connect interface in an automatic packaging machine



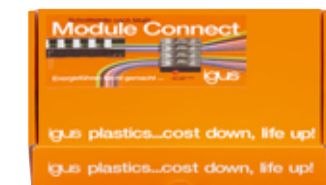
Source: GHD Georg Hartmann Maschinenbau GmbH

## Easily explained ...

[www.igus.eu/moduleconnect](http://www.igus.eu/moduleconnect)



Watch videos ... order a sample box ...



Your energy supply system - fitted within seconds ... request a sample





Module Connect connector housing				
ID	Part No.	Image	Drawing	
Module Connect housing a ... d	MAT01745430			
Module Connect housing A ... D	MAT01745928			
Module Connect connector housing, 4 cable entries	MAT01745431			
Module Connect connector housing, 3 cable entries	MAT01745432			

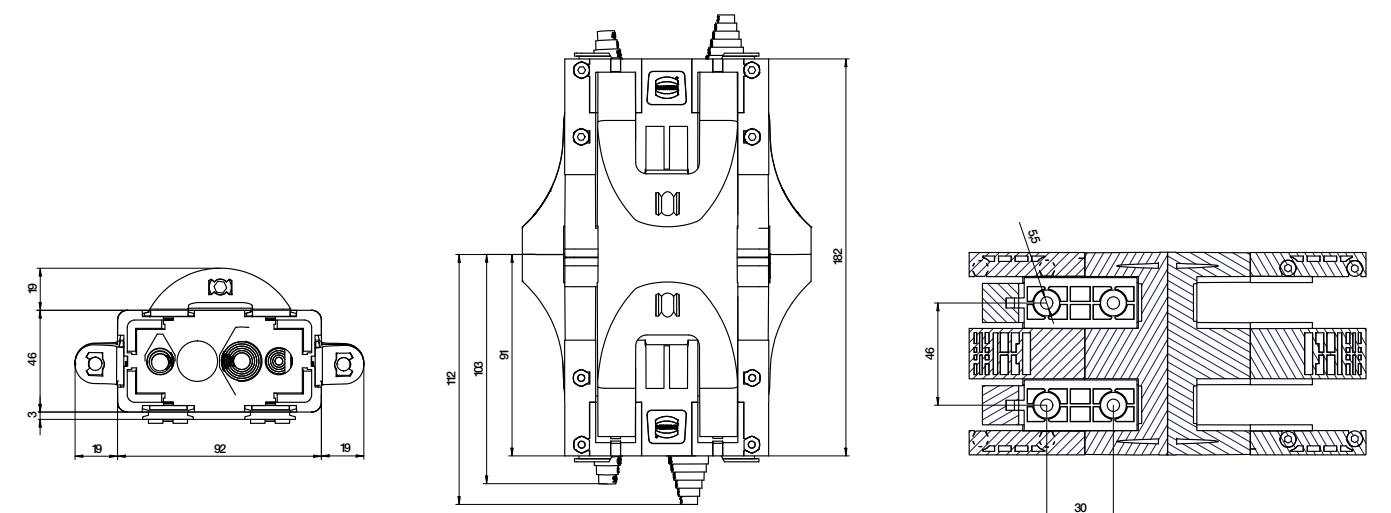
Module Connect sealing inserts				
ID	Part No.	Clamping range [mm]	Image	Drawing
Bellows sealing insert, small, for housing with 4 cable entries	MAT01745438	4.0-1.00		
Bellows sealing insert, medium for housing with 3 or 4 cable entries	MAT01745439	5.0-16.0		
Bellows sealing insert, large, for housing with 3 cable entries	MAT01745440	7.0-24.0		

Just order online ...  
Complete assemblies and individual parts  
[www.igus.eu/readychain/module-connect](http://www.igus.eu/readychain/module-connect)



Module Connect accessories				
ID	Part No.	Image	Drawing	
Double locking	MAT01745433			
Single locking	MAT01745434			
Fastening element	MAT01745435			
Strain relief Module Connect connector housing, 4 cable entries	MAT01745437			
Strain relief Module Connect connector housing, 3 cable entries	MAT01745436			

Dimensional drawing



Signal connectors SUB-D Standard [9 to 44-pole]

**Types**

- Connector, standard and angular connector

**Number of poles in insulation body**

- Standard 9, 15, 25
- High Density 15, 26, 44

**Electrical information**

Max. continuous nominal current	5A
Testing voltage	1,200V
Contact resistance	10 <sup>16</sup> Ω/cm
Insertion cycles	50



Metal hood, straight		
Part No.	Solder contact pin	
MAT01716504	Pin, standard 9-pole	
MAT01716505	Socket, standard 9-pole	
MAT01716506	Pin, HighDensity 15-pole	
MAT01716507	Socket, HighDensity 15-pole	



Metal hood, angled		
Part No.	Solder contact pin	
MAT01716508	Pin, standard 9-pole	
MAT01716509	Socket, standard 9-pole	
MAT01716510	Pin, HighDensity 15-pole	
MAT01716511	Socket, HighDensity 15-pole	

Crimping tools and inserts ► Page 818





Metal hood, straight		
Part No.	Solder contact pin	
MAT01716512	Pin, standard 15-pole	
MAT01716513	Socket, standard 15-pole	
MAT01716514	Pin, HighDensity 26-pole	
MAT01716515	Socket, HighDensity 26-pole	



Metal hood, angled		
Part No.	Solder contact pin	
MAT01716516	Pin, standard 15-pole	
MAT01716517	Socket, standard 15-pole	
MAT01716518	Pin, HighDensity 26-pole	
MAT01716519	Socket, HighDensity 26-pole	

Crimping tools and inserts ► Page 818



Metal hood, straight		
Part No.	Solder contact pin	
MAT01716520	Pin, standard 25-pole	
MAT01716521	Socket, standard 25-pole	
MAT01716522	Pin, HighDensity 44-pole	
MAT01716523	Socket, HighDensity 44-pole	



Metal hood, angled		
Part No.	Solder contact pin	
MAT01716524	Pin, standard 25-pole	
MAT01716525	Socket, standard 25-pole	
MAT01716526	Pin, HighDensity 44-pole	
MAT01716527	Socket, HighDensity 44-pole	

Crimping tools and inserts ► Page 818





**Electrical information**

Max. continuous nominal current	2.1A
Insertion cycles	1,000
Temperature range	-20°C up to +120°C

**Housing PA66**

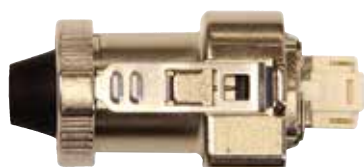
Manufacturer Part No.	Part No.	Number of poles
Y-CONKIT-10	MAT01719769	4 (Ethernet)
Y-CONKIT-11	MAT0176641	4 (Ethernet) + 2 (Power)

**Zinc die-casting housing**

Manufacturer Part No.	Part No.	Number of poles
Y-CONKIT-15	MAT01719236	4 (Ethernet) + 2 (Power)
Y-CONKIT-17	MAT01719770	4 (Ethernet)

**Housing Plastic PBT, UL94V-0**

Manufacturer Part No.	Part No.	Number of poles
Y-CONKIT-20	MAT01719771	4 (Ethernet)
Y-CONKIT-21	MAT0176759	4 (Ethernet) + 2 (Power)

**Zinc die-casting housing**

Manufacturer Part No.	Part No.	Number of poles
Y-CONKIT-40	MAT01719772	4 (Ethernet)
Y-CONKIT-40-E	MAT01719773	4 (Ethernet)
Y-CONKIT-41	MAT01717218	4 (Ethernet) + 2 (Power)
Y-CONKIT-41-E	MAT01718801	4 (Ethernet) + 2 (Power)

Manufacturer Part No.	Part No.
-----------------------	----------

**Cable dismantle tool**

MAT01719767

**Crimping tool**

Y-CONTOOL-11

MAT0176447

**Assembly tool**

Y-CONTOOL-30

MAT01717349



## HARTING | Connector sets with pin inserts

HARTING Connectors sets, pin				
Part No.	Cable entry	Insert	Pin insert - manufacturer Part No.	Connector housing - manufacturer Part No.
Han 6B connector housing, straight cable entry				
<b>MAT90489802.U</b>	M20	6+PE	09330062601	19300061440
Han 6B connector housing, angled cable entry				
<b>MAT90489804.U</b>	M20	6+PE	09330062601	19300061540
Han 10B connector housing, straight cable entry				
<b>MAT90489806.U</b>	M25	10+PE	09330102601	19300101441
Han 10B connector housing, angled cable entry				
<b>MAT90489808.U</b>	M25	10+PE	09330102601	19300101541
Han 16B connector housing, straight cable entry				
<b>MAT90489810.U</b>	M25	16+PE	09330162601	19300161441
Han 6B connector housing, angled cable entry				
<b>MAT90489812.U</b>	M25	16+PE	09330162601	19300161541
Han 24B connector housing, straight cable entry				
<b>MAT90489814.U</b>	M32	24+PE	09330242601	19300241442
Han 24B connector housing, angled cable entry				
<b>MAT90489816.U</b>	M32	24+PE	09330242601	19300241542

## HARTING | Connector sets with socket inserts

HARTING connector sets, socket				
Part No.	Cable entry	Insert	Socket insert - manufacturer Part No.	Connector housing - manufacturer Part No.
Han 6B connector housing, straight cable entry				
<b>MAT90489803.U</b>	M20	6+PE	09330062701	19300061440
Han 6B connector housing, angled cable entry				
<b>MAT90489805.U</b>	M20	6+PE	09330062701	19300061540
Han 10B connector housing, straight cable entry				
<b>MAT90489807.U</b>	M25	10+PE	09330102701	19300101441
Han 10B connector housing, angled cable entry				
<b>MAT90489809.U</b>	M25	10+PE	09330102701	19300101541
Han 16B connector housing, straight cable entry				
<b>MAT90489811.U</b>	M25	16+PE	09330162701	19300161441
Han 6B connector housing, angled cable entry				
<b>MAT90489813.U</b>	M25	16+PE	09330162701	19300161541
Han 24B connector housing, straight cable entry				
<b>MAT90489815.U</b>	M32	24+PE	09330242701	19300241442
Han 24B connector housing, angled cable entry				
<b>MAT90489817.U</b>	M32	24+PE	09330242701	19300241542

# HARTING | Connector sets Premium (pin + socket)

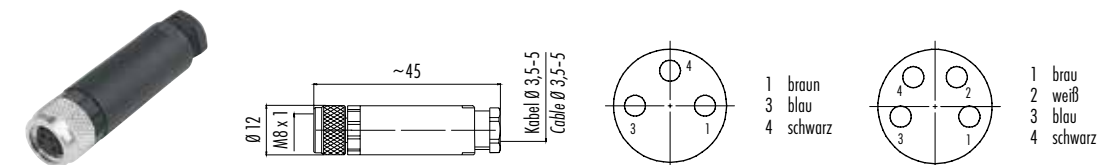
HARTING Connector sets Premium, pin + socket						
Part No.	Cable entry	Insert	Pin insert - manufacturer Part No.	Socket insert - manufacturer Part No.	Connector housing - manufacturer Part No.	Connector base - manufacturer Part No.
<b>Han 6B connector housing and base, straight cable entry</b>						
<b>MAT90489818.U</b>	M20	6+PE	09330062601	09330062701	19300061440	19300061250
<b>Han 6B connector housing and base, angled cable entry</b>						
<b>MAT90489819.U</b>	M20	6+PE	09330062601	09330062701	19300061540	19300061250
<b>Han 10B connector housing and base, straight cable entry</b>						
<b>MAT90489820.U</b>	M25	10+PE	09330102601	09330102701	19300101441	19300101250
<b>Han 10B connector housing and base, angled cable entry</b>						
<b>MAT90489821.U</b>	M25	10+PE	09330102601	09330102701	19300101541	19300101250
<b>Han 16B connector housing and base, straight cable entry</b>						
<b>MAT90489822.U</b>	M25	16+PE	09330162601	09330162701	19300161441	19300161251
<b>Han 16B connector housing and base, angled cable entry</b>						
<b>MAT90489823.U</b>	M25	16+PE	09330162601	09330162701	19300161541	19300161251
<b>Han 24B connector housing and base, straight cable entry</b>						
<b>MAT90489824.U</b>	M32	24+PE	09330242601	09330242701	19300241442	19300241251
<b>Han 24B connector housing and base, angled cable entry</b>						
<b>MAT90489825.U</b>	M32	24+PE	09330242601	09330242701	19300241542	19300241251

# BINDER | Series 768

## Electrical information series 768

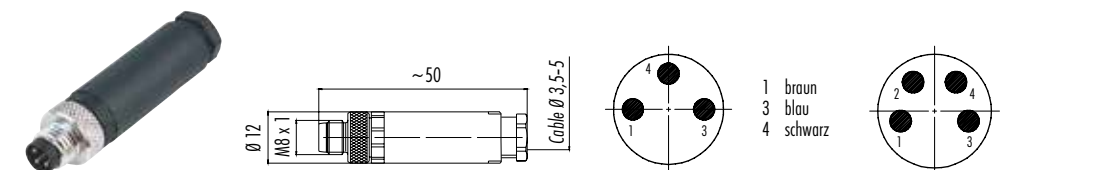
Number of poles	<b>3</b>	<b>4</b>
Terminal cross section	0.14mm <sup>2</sup> – 0.5mm <sup>2</sup> (AWG26–AWG20)	
Mechanical service life	> 100 insertion cycles	
Temperature limit	–40°C up to +80°C	
Rated voltage	60V (30V UL)	
Pollution degree	3	
Rated current (40°C)	4A	
Contact surface	Au (gold)	
Housing material	PBT/PA/CuZn (brass)	

Binder connector M8 – A-coded, screw connection				
Part No.	Manufacturer Part No.	Number of poles	Contact type	Clamping range [mm]



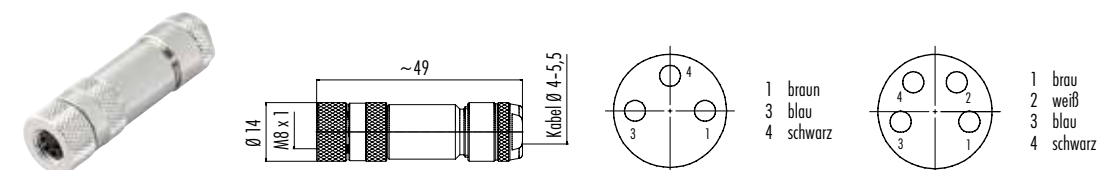
### Binder M8 cable socket

<b>MAT0174945</b>	99 3400 100 03	3-pole	Socket	3.5-5.0
<b>MAT0174989</b>	99 3376 100 04	4-pole	Socket	3.5-5.0



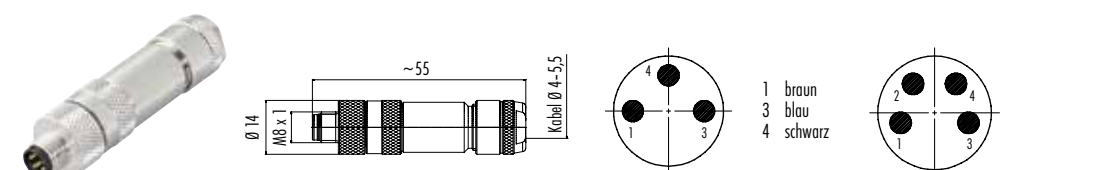
### Binder M8 cable connector

<b>MAT01712009</b>	99 3379 100 03	3-pole	Pin	3.5-5.0
<b>MAT0173041</b>	99 3383 100 04	4-pole	Pin	3.5-5.0



### Binder M8 cable socket, shielded

<b>MAT01747828</b>	99 3360 100 03	3-pole	Socket	4.0-5.5
<b>MAT01743277</b>	99 3362 100 04	4-pole	Socket	4.0-5.5
<b>MAT01733873</b>	99 3360 300 03	3-pole	Socket	6.0-8.0
<b>MAT01731011</b>	99 3362 300 04	4-pole	Socket	6.0-8.0



### Binder M8 cable connector, shielded

<b>MAT01715998</b>	99 3361 100 03	3-pole	Pin	4.0-5.5
<b>MAT01717508</b>	99 3363 100 04	4-pole	Pin	4.0-5.5
<b>MAT01733874</b>	99 3361 300 03	3-pole	Pin	6.0-8.0
<b>MAT01730059</b>	99 3363 300 04	4-pole	Pin	6.0-8.0

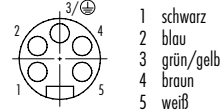
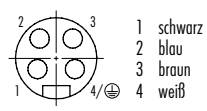
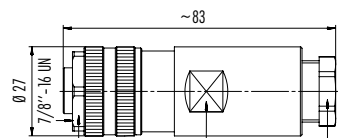


Electrical information series 820

	3+PE	4+PE
Number of poles		
Terminal cross section	max. 1.5mm <sup>2</sup> (AWG 16)	max. 2.5mm <sup>2</sup> (AWG14)
Mechanical service life	> 100 insertion cycles	> 50 insertion cycles
Temperature limit	-25°C up to +80°C	-25°C up to +85°C
Rated voltage	300V (600V UL)	
Pollution degree	3	
Rated current (40°C)	9A	
Contact surface	Au (gold)	
Housing material	PUR, PBT	

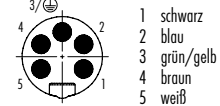
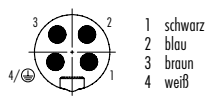
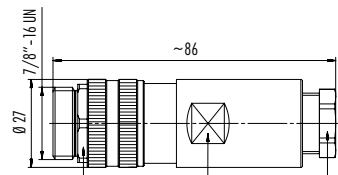
Binder connector 7/8", screw connection

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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Binder 7/8" cable socket

MAT01723423	99 2442 21 04	3+PE	Socket	8.0-10.0
MAT01718734	99 2444 21 05	4+PE	Socket	8.0-10.0



Binder 7/8" cable connector shielded

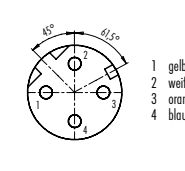
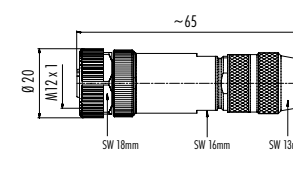
MAT01732663	99 2443 21 04	3+PE	Pin	8.0-10.0
MAT01722513	99 2445 21 05	4+PE	Pin	8.0-10.0

Electrical information series 825

	4
Number of poles	
Terminal cross section	max. 0.75mm <sup>2</sup> (AWG 20)
Mechanical service life	> 100 insertion cycles
Temperature limit	-40°C up to +85°C
Rated voltage	250V
Pollution degree	3
Rated current (40°C)	4A
Contact surface	Au (gold)
Housing material	Zinc die-casting nickel-plated, PUR

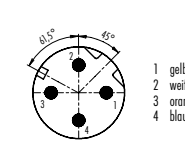
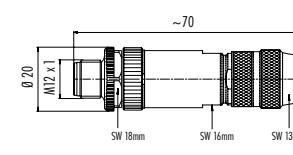
Binder connector M12 – D-coded, screw connection

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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Binder M12 cable socket

MAT01749274	99 3728 810 04	4-pole	Socket	5.0-8.0
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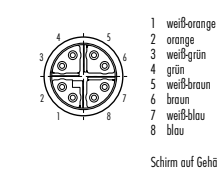
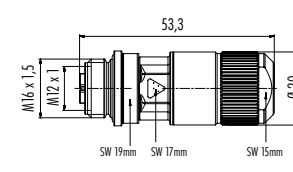


Binder M12 cable connector, shielded

MAT01738281	99 3727 810 04	4-pole	Pin	5.0-8.0
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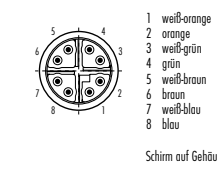
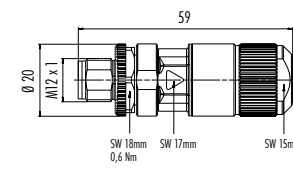
Binder connector M12 – X-coded, insulation displacement connection

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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Binder M12 cable socket

MAT01746538	99 3788 810 08	8-pole	Socket	5.0-8.0
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Binder M12 cable connector, shielded

MAT01742976	99 3787 810 08	8-pole	Pin	5.0-8.0
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**Electrical information series 713 plastic**

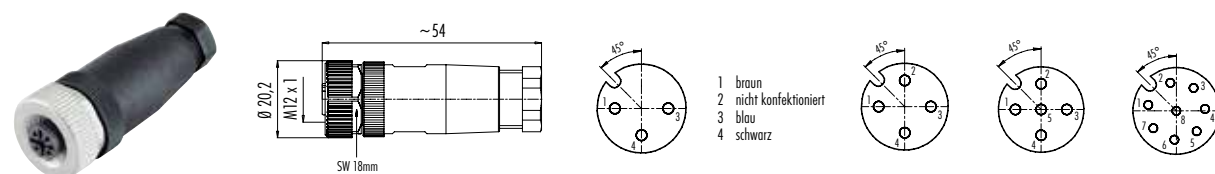
Number of poles	3	4	5	8
Terminal cross section	max. 0.75mm <sup>2</sup> (AWG 20)		max. 0.5mm <sup>2</sup> (AWG 20)	
Mechanical service life	> 50 insertion cycles		> 100 insertion cycles	
Temperature limit	-40°C up to +85°C, outdoor -40°C up to +100°C			
Rated voltage	250V		60V	
Pollution degree	3			
Rated current (40°C)	4A		2A	
Contact surface	CuSnZn (Optalloy)		Au (gold)	
Housing material	PA			

**Electrical information series 713 metal**

Number of poles	4	5	8
Terminal cross section	max. 0.75mm <sup>2</sup> (AWG 20)		max. 0.5mm <sup>2</sup> (AWG 20)
Mechanical service life	> 100 insertion cycles		
Temperature limit	-40°C up to +85°C		
Rated voltage	250V	60V	30V
Pollution degree	3		
Rated current (40°C)	4A		2A
Contact surface	Au (gold)		
Housing material	straight: CuZn (brass, nickel-plated), angled: zinc die-casting, nickel-plated		

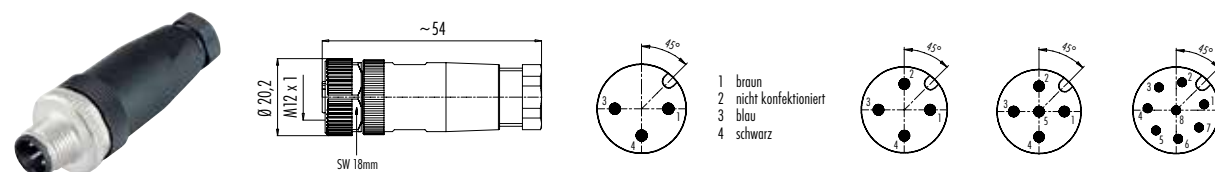
**Binder connector M12 – A-coded, screw connection**

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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**Binder M12 cable socket**

<b>MAT01717316</b>	99 0430 07 04	3-pole	Socket	4.0-6.0
<b>MAT01715145</b>	99 0430 12 04	4-pole	Socket	6.0-8.0
<b>MAT0175659</b>	99 0436 12 05	5-pole	Socket	6.0-8.0
<b>MAT0178575</b>	99 0486 12 08	8-pole	Socket	6.0-8.0

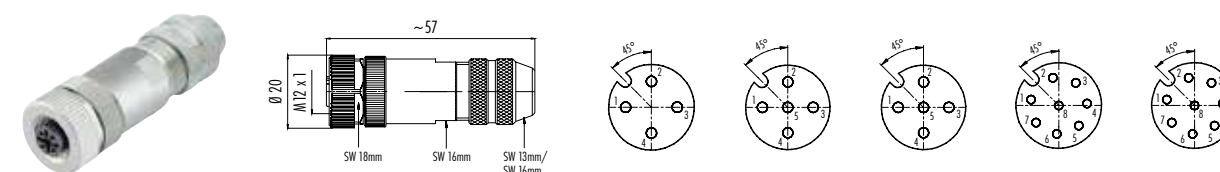


**Binder M12 connector**

<b>MAT0173490</b>	99 0429 07 04	3-pole	Pin	4.0-6.0
<b>MAT01710555</b>	99 0429 12 04	4-pole	Pin	6.0-8.0
<b>MAT01718305</b>	99 0437 12 05	5-pole	Pin	6.0-8.0
<b>MAT01710219</b>	99 0487 12 08	8-pole	Pin	6.0-8.0

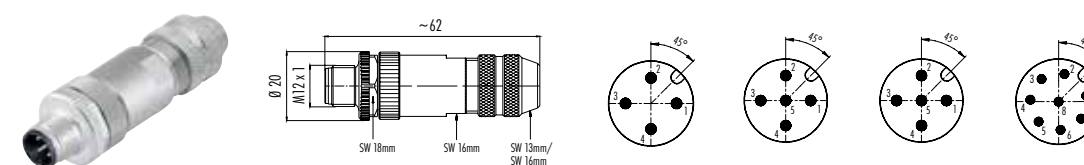
**Binder connector M12 – A-coded, screw connection**

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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**Binder M12 cables socket, shielded**

<b>MAT0171842</b>	99 1430 812 04	4-pole	Socket	4.0-6.0
<b>MAT0173023</b>	99 1436 812 05	5-pole	Socket	6.0-8.0
<b>MAT01749490</b>	99 1436 914 05	5-pole	Socket	8.0-10.0
<b>MAT0176266</b>	99 1486 812 08	8-pole	Socket	6.0-8.0
<b>MAT01724437</b>	99 1486 914 08	8-pole	Socket	8.0-10.0

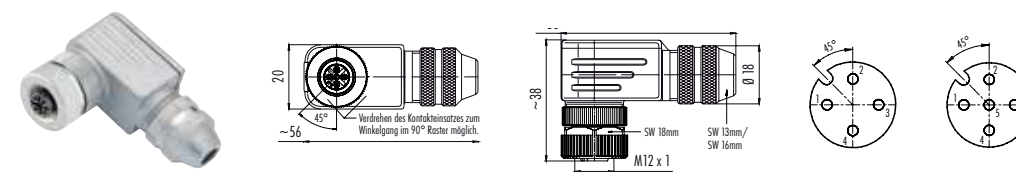


**Binder M12 cable connector, shielded**

<b>MAT0171841</b>	99 1429 812 04	4-pole	Pin	4.0-6.0
<b>MAT0170880</b>	99 1437 812 05	5-pole	Pin	6.0-8.0
<b>MAT01749489</b>	99 1437 914 05	5-pole	Pin	8.0-10.0
<b>MAT0176267</b>	99 1487 812 08	8-pole	Pin	6.0-8.0
<b>MAT01729497</b>	99 1487 914 08	8-pole	Pin	8.0-10.0

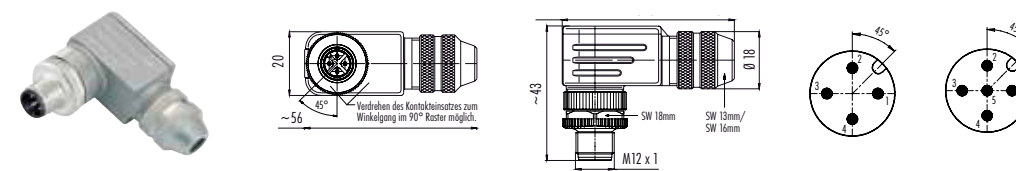
**Binder connector M12 – A-coded, angled sockets, screw connection**

Part No.	Part No.	Number of poles	Contact type	Clamping range [mm]
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**Binder M12 angled socket**

<b>MAT0172523</b>	99 1430 822 04	4-pole	Socket	6.0-8.0
<b>MAT01717529</b>	99 1436 822 05	5-pole	Socket	6.0-8.0




**Binder M12 angled connector shielded**

<b>MAT01725700</b>	99 1429 822 04	4-pole	Pin	6.0-8.0
<b>MAT01727838</b>	99 1437 822 05	5-pole	Pin	6.0-8.0

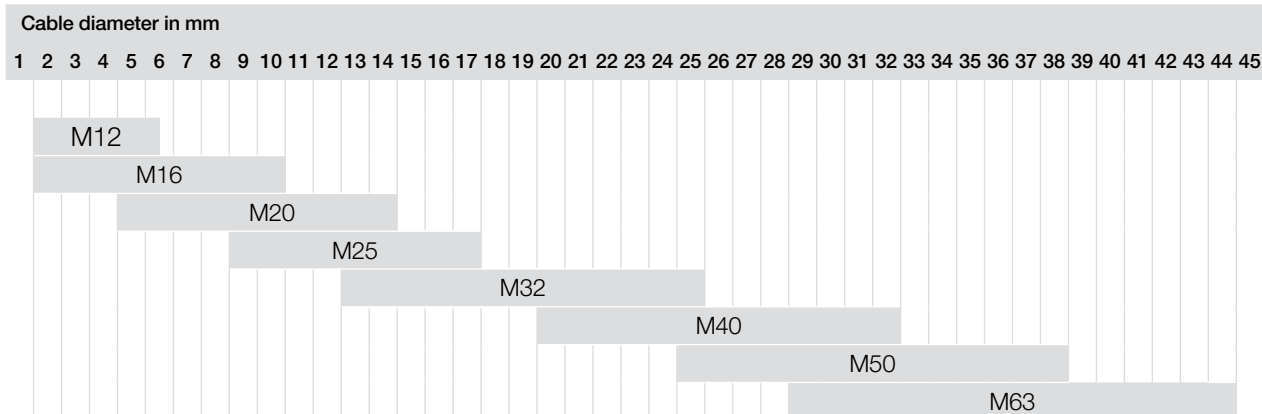
# HUMMEL | Cable glands HSK-K

**Material** PA V0 according to UL 94  
**Moulded seal** NBR  
**Protection class** IP 68 – 10 bar / IP 69K within the specified clamping range only with optional O-ring\*  
 (\* not included in delivery)  
**Continuous operating temperature** -40°C – 100°C  
**Colour** grey (RAL 7035)



AG	∅ <sub>k</sub> mm	GL mm	H mm	 mm	Pack size	Part No. grey	igus® Part No.
M12 x 1.5	3 - 6.5	8	21	15	5	1.209.1200.50	MAT0179492
M12 x 1.5	2 - 5	8	21	15	5	1.209.1200.51	MAT01712319
M16 x 1.5	4 - 8	8	22	19	5	1.209.1600.50	MAT0179493
M16 x 1.5	2 - 6	8	22	19	5	1.209.1600.51	MAT01712320
M16 x 1.5	5 - 10	8	25	22	5	1.219.1600.50	MAT01712321
M20 x 1.5	6 - 12	9	27	24	5	1.209.2000.50	MAT0179494
M20 x 1.5	5 - 9	9	27	24	5	1.209.2000.51	MAT01712322
M20 x 1.5	10 - 14	9	28	27	5	1.219.2000.50	MAT0179563
M25 x 1.5	13 - 18	11	31	33	5	1.209.2500.50	MAT0179495
M25 x 1.5	9 - 16	11	31	33	5	1.209.2500.51	MAT01712323
M32 x 1.5	18 - 25	11	39	42	5	1.209.3200.50	MAT0179496
M32 x 1.5	13 - 20	11	39	42	5	1.209.3200.51	MAT01712324
M40 x 1.5	22 - 32	13	48	53	5	1.209.4000.50	MAT0179497
M40 x 1.5	20 - 26	13	48	53	5	1.209.4000.51	MAT01712325
M50 x 1.5	32 - 38	13	49	60	5	1.209.5000.50	MAT0179498
M50 x 1.5	25 - 31	13	49	60	5	1.209.5000.51	MAT01712326
M63 x 1.5	37 - 44	14	49	65 / 68	5	1.209.6300.50	MAT0179499
M63 x 1.5	29 - 35	14	49	65 / 68	5	1.209.6300.51	MAT01712327


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# HUMMEL | K counter nuts

**Material** SB / PA  
**Continuous operating temperature** -20°C – 40°C (SB)  
 -40°C – 100°C (PA)  
**Colour** grey (RAL 7035)



IG	H mm	 mm	Pack size	Part No.	igus® Part No.
M12 x 1.5	5	17	5	1.262.1200.50	MAT0179500
M16 x 1.5	5	22	5	1.262.1600.50	MAT0179501
M20 x 1.5	6	27	5	1.262.2000.50	MAT0179502
M25 x 1.5	7	36	5	1.262.2500.50	MAT0179503
M32 x 1.5	7	41	5	1.262.3200.50	MAT0179504
M40 x 1.5	7	50	5	1.262.4000.50	MAT0179505
M50 x 1.5	8	60	5	1.262.5000.50	MAT0179506
M63 x 1.5	8	75	5	1.262.6300.50	MAT0179507

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# HUMMEL | Cable glands HSK-M

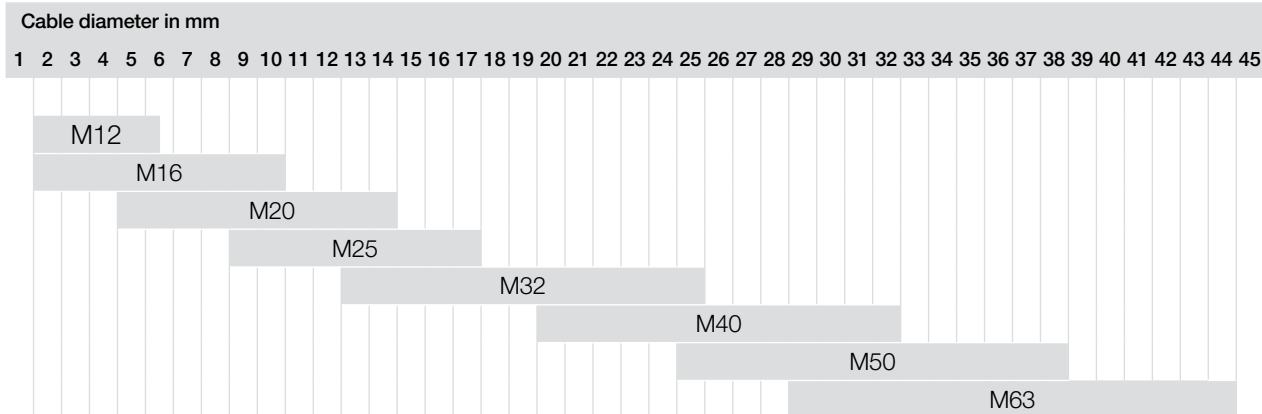
**Material** Brass, nickel-plated  
**Clamping insert** PA  
**Moulded seal** NBR  
**O ring** NBR  
**Protection class** IP 68 – 10 bar / IP 69K  
 within the specified clamping range only  
**Continuous operating temperature** -40°C – 100°C



AG	∅ <sub>k</sub> mm	GL mm	H mm	 mm	Pack size	Part No. grey	igus® Part No.
M12 x 1.5	3 - 6.5	6.5	19	14	5	1.609.1200.50	MAT0179476
M12 x 1.5	2 - 5	6.5	19	14	5	1.609.1200.51	MAT01712328
M16 x 1.5	4 - 8	6	21	17 / 19	5	1.609.1600.50	MAT0179477
M16 x 1.5	2 - 6	6	21	17 / 19	5	1.609.1600.51	MAT01712329
M16 x 1.5	5 - 10	6	22	20	5	1.609.1611.50	MAT01712330
M20 x 1.5	6 - 12	6	23	22	5	1.609.2000.50	MAT0179478
M20 x 1.5	5 - 9	6	23	22	5	1.609.2000.51	MAT01712331
M20 x 1.5	10 - 14	6	24	24	5	1.609.2016.50	MAT0179562
M25 x 1.5	13 - 18	7	26	30	5	1.609.2500.50	MAT0179479
M25 x 1.5	9 - 16	7	26	30	5	1.609.2500.51	MAT01711769
M32 x 1.5	18 - 25	8	31	40	5	1.609.3200.50	MAT0179480
M32 x 1.5	13 - 20	8	31	40	5	1.609.3200.51	MAT01712332
M40 x 1.5	22 - 32	8	37	50	5	1.609.4000.50	MAT0179481
M40 x 1.5	20 - 26	8	37	50	5	1.609.4000.51	MAT01712333
M50 x 1.5	32 - 38	9	37	57	5	1.609.5000.50	MAT0179482
M50 x 1.5	25 - 31	9	37	57	5	1.609.5000.51	MAT01712334
M63 x 1.5	37 - 44	10	38	64 / 68	5	1.609.6300.50	MAT0179483
M63 x 1.5	29 - 35	10	38	64 / 68	5	1.609.6300.51	MAT01712335

Material surcharge included.

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# HUMMEL | M counter nuts

**Material** Brass, nickel-plated



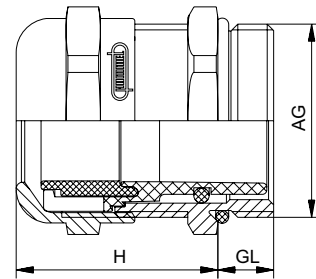
IG	H mm	 mm	Pack size	Part No.	igus® Part No.
M12 x 1.5	2.8	15	5	1.161.1200.50	MAT0179484
M16 x 1.5	2.8	19	5	1.161.1600.50	MAT0179485
M20 x 1.5	3.0	23	5	1.161.2000.50	MAT0179486
M25 x 1.5	3.5	29	5	1.161.2500.50	MAT017948
M32 x 1.5	4.0	36	5	1.161.3200.50	MAT0179488
M40 x 1.5	4.5	45	5	1.161.4000.50	MAT0179489
M50 x 1.5	5.5	55	5	1.161.5000.50	MAT0179490
M63 x 1.5	6.0	70	5	1.161.6300.50	MAT0179491

Material surcharge included.

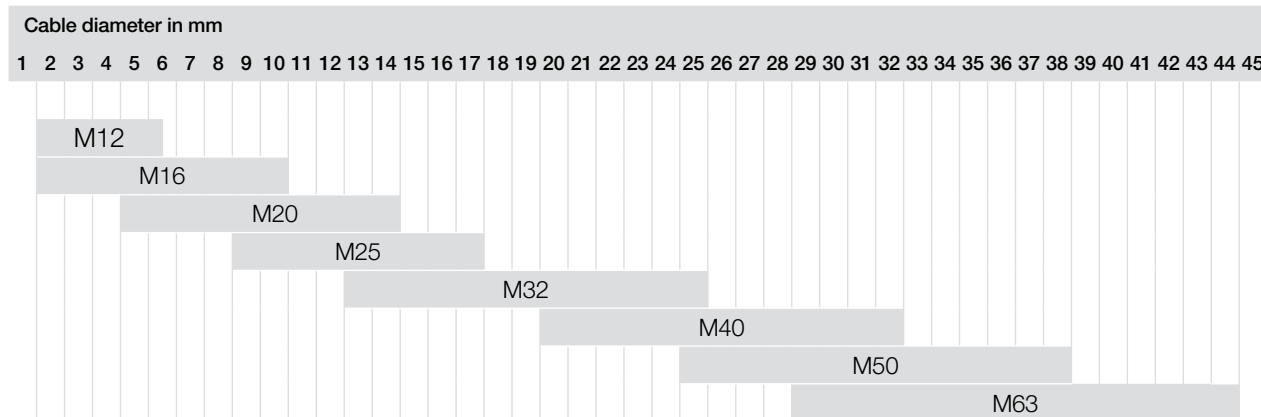
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# HUMMEL | Cable glands HSK-M-EMV

<b>Material</b>	Brass, nickel-plated
<b>Clamping insert</b>	PA
<b>Moulded seal</b>	NBR
<b>O ring</b>	NBR
<b>Protection class</b>	IP 68 – 10 bar / IP 69K within the specified clamping range only
<b>Continuous operating temperature</b>	-40°C – 100°C



AG	∅k mm	GL mm	H mm	mm	Pack size	Part No. grey	igus® Part No.
M12 x 1.5	3 - 6.5	6.5	19	14	5	1.691.1200.50	MAT0179508
M12 x 1.5	2 - 5	6.5	19	14	5	1.691.1200.51	MAT01712336
M16 x 1.5	5 - 10	6	22	20	5	1.691.1600.50	MAT0179509
M16 x 1.5	3 - 7	6	22	20	5	1.691.1600.51	MAT01712337
M20 x 1.5	10 - 14	6	23	24	5	1.691.2000.50	MAT0179510
M20 x 1.5	7 - 12	6	23	24	5	1.691.2000.51	MAT01712338
M25 x 1.5	13 - 18	7	24	30	5	1.691.2500.50	MAT0179511
M25 x 1.5	9 - 16	7	24	30	5	1.691.2500.51	MAT01712339
M32 x 1.5	18 - 25	8	31	40	5	1.691.3200.50	MAT0179512
M32 x 1.5	13 - 20	8	31	40	5	1.691.3200.51	MAT01712340
M40 x 1.5	22 - 32	8	37	50	5	1.691.4000.50	MAT0179513
M40 x 1.5	20 - 26	8	37	50	5	1.691.4000.51	MAT01712341
M50 x 1.5	32 - 38	9	37	57	5	1.691.5000.50	MAT0179514
M50 x 1.5	25 - 31	9	37	57	5	1.691.5000.51	MAT01712342
M63 x 1.5	37 - 44	10	38	64 / 68	5	1.691.6300.50	MAT0179515
M63 x 1.5	29 - 35	10	38	64 / 68	5	1.691.6300.51	MAT01712343



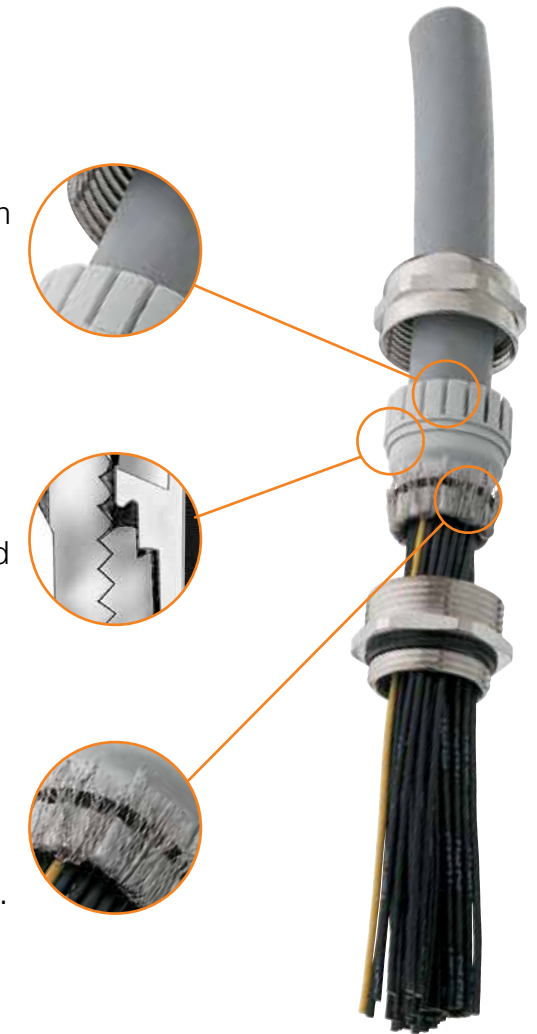
# HUMMEL | HSK-EMV Industry standard

## HSK-M-EMV

Flexible overlapping clamping splines prevent the form seal from being pulled out of the fitting

The internal sealing edge results in a superior seal between the splined Nylon clamping insert and the nickel-plated brass body

Patented 360° grounding. The internal O-Ring, which results in a perfect contact between braided shield of cable and fitting.

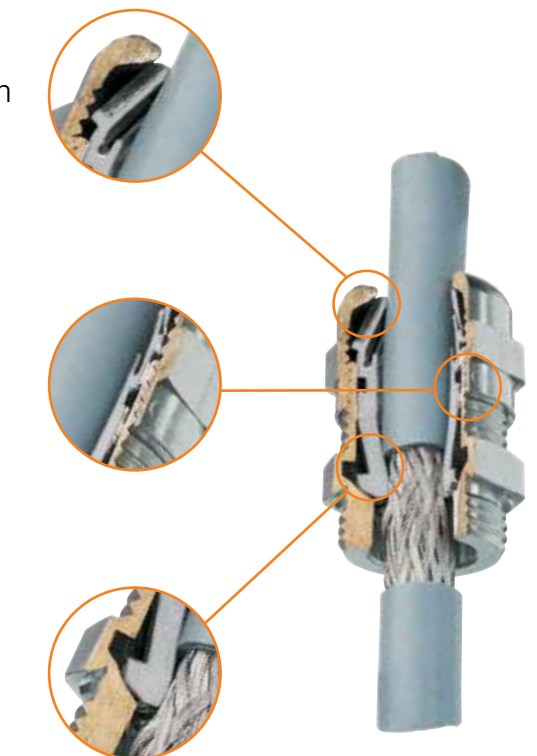


## HSK-M-EMV-D

Flexible overlapping clamping splines prevent the form seal from being pulled out of the fitting

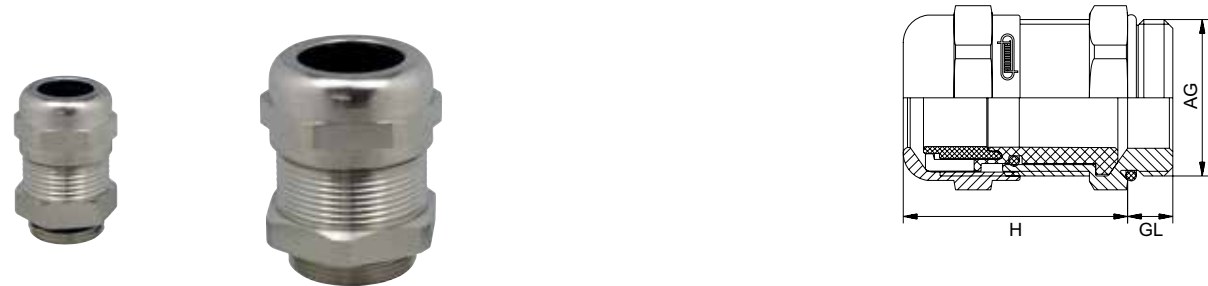
Metallised spline insert provides electrical conductivity.


Flexible contact points allow contact with variable braid diameters.



# HUMMEL | Cable glands HSK-M-EMV-D

**Material** Brass, nickel-plated  
**Clamping insert** Metal-coated PA  
**Moulded seal** NBR  
**O ring** NBR  
**Protection class** IP 68 – 10 bar / IP 69K  
 within the specified clamping range only  
**Continuous operating temperature** -40°C – 100°C



AG	∅k mm	GL mm	H mm	 mm	Pack size	Part No. grey	igus® Part No.
M12 x 1.5	3 - 6.5	6.5	25	14	5	1.631.1200.50	MAT0179524
M16 x 1.5	5 - 10	6	32	20	5	1.631.1600.50	MAT0179525
M20 x 1.5	10 - 14	6	33	24	5	1.631.2000.50	MAT0179526
M25 x 1.5	13 - 18	7	39	30	5	1.631.2500.50	MAT0179527
M32 x 1.5	18 - 25	8	45	40	5	1.631.3200.50	MAT0179528
M40 x 1.5	24 - 32	8	51	50	5	1.631.4000.50	MAT0179529
M50 x 1.5	32 - 38	9	57.5	57	5	1.631.5000.50	MAT0179530
M63 x 1.5	37 - 44	10	52	64 / 68	5	1.631.6300.50	MAT0179531


Material surcharge included.

**Larger quantities, small prices?**  
 Offers tailored to your needs  
 Offer service Fax: +49 2203 9649 222

# HUMMEL | EMV counter nuts

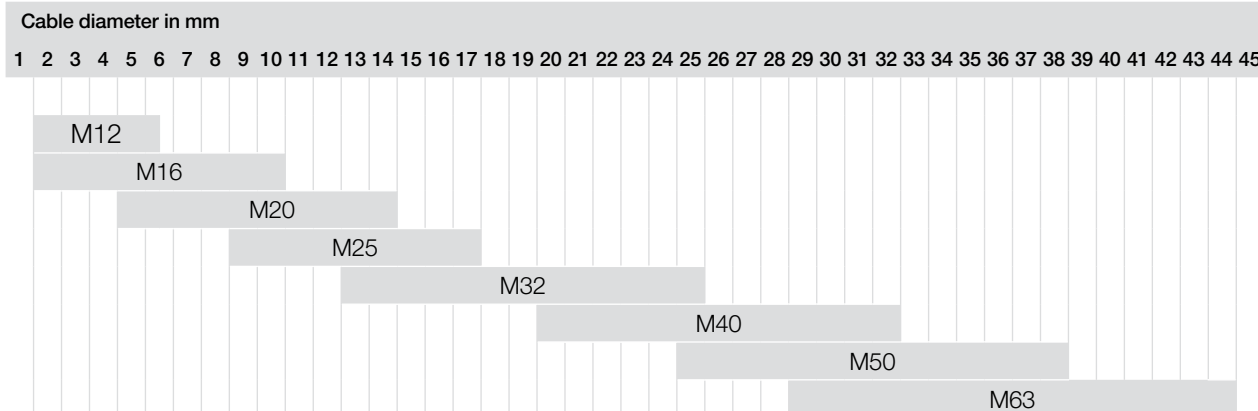
**Material** Brass, nickel-plated



IG	H mm	 mm	S mm	Pack size	Part No.	igus® Part No.
M12 x 1.5	2.8	15	0.7	5	1.167.1200.50	MAT0179516
M16 x 1.5	2.8	19	0.7	5	1.167.1600.50	MAT0179517
M20 x 1.5	3.0	24	0.7	5	1.167.2000.50	MAT0179518
M25 x 1.5	3.5	30	0.7	5	1.167.2500.50	MAT0179519
M32 x 1.5	4.5	36	0.7	5	1.167.3200.50	MAT0179520
M40 x 1.5	5.0	46	0.7	5	1.167.4000.50	MAT0179521
M50 x 1.5	5.0	60	0.7	5	1.167.5000.50	MAT0179522
M63 x 1.5	6.0	70	0.7	5	1.167.6300.50	MAT0179523

Material surcharge included.

**Larger quantities, small prices?**  
 Offers tailored to your needs  
 Offer service Fax: +49 2203 9649 222





## Solutions for predictive maintenance and condition monitoring

# smart plastics

for Industry 4.0  
energy supply

- **smart plastics** components are equipped with connectivity and sensors to make complex automation solutions capable of "Industry 4.0"
- **smart plastics** offer two options:
  - i.Sense - condition monitoring and
  - i.Cee - predictive maintenance
- Make maintenance and repair of your machines more efficient and cost-effective with **smart plastics**
- **smart plastics** reduce failures





smart plastics components are equipped with connectivity and sensors to make complex automation solutions suitable for "Industry 4.0"

## smart plastics Industry 4.0 energy supply

In the future, automation solutions across different industries will all have digitalisation. If you want to entirely network the machines in your manufacturing plant with the internet of things (IoT) in order to be Industry 4.0-compatible and optimise such items as maintenance, you will need time and money. A digitalisation strategy that begins by connecting and networking individual assemblies and components is faster and costs much less. Plant operators benefit immediately from the connectivity of smart components: status monitoring for automated plant can be implemented in real time without additional personnel, and maintenance can be organised predictively. smart plastics offer two options: the simple and rather analogue condition monitoring i.Sense (sense = perception), for integration with maximum safety. For the complete networking of the machines with the internet (IoT), the predictive maintenance i.Cee (Cee, derived from "see") is just right.

### i.Sense - condition monitoring

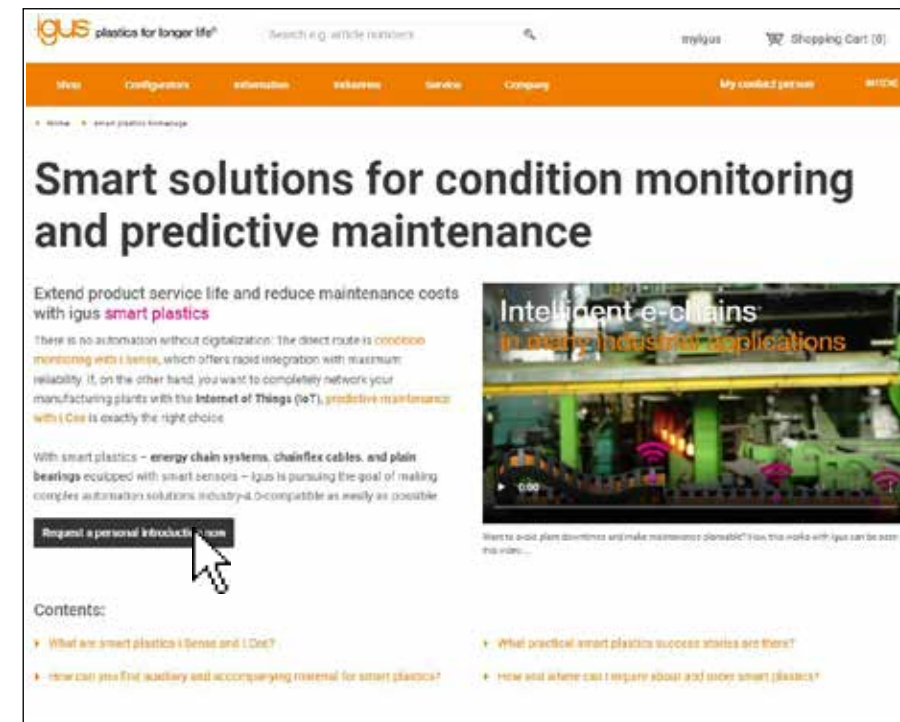
- Simplest, fastest way for a self-monitoring smart plastics product, by attachment of sensors
- Alarm or message when a previously defined limit value is exceeded
- Values outside defined limits can directly trigger a system shut-down

### i.Cee - predictive maintenance

- Sensors and software help to create a system for dynamic service life calculation and optimal maintenance times
- Wide variety of designs, offering a high degree of individuality
- Maximum system and user safety and product service life

### Typical industries and applications

- Harbour installations ● Cranes ● Automotive production ● Bulk Handling ● Logistics ● Semi conductor industry



### smart plastics Website

Always stay up to date. New products, new techniques, new applications

► [www.igus.eu/smartplastics](http://www.igus.eu/smartplastics)

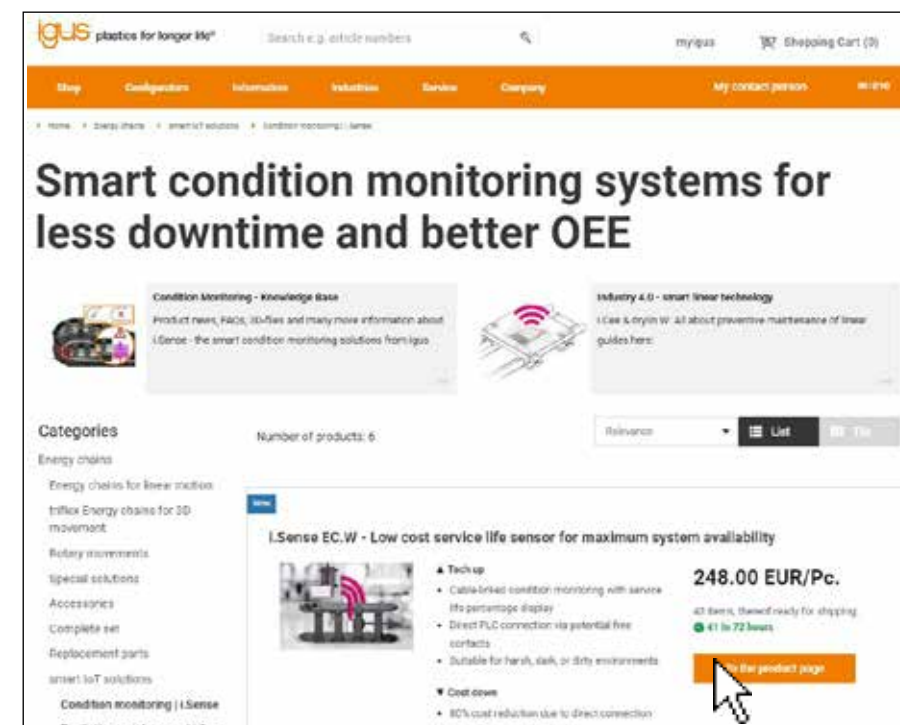


### smart plastics brochure

Overview with the following topics:

- Condition monitoring (i.Sense)
- Condition monitoring products
- Condition monitoring application examples
- Predictive maintenance (i.Cee)
- Application examples for predictive maintenance
- Predictive maintenance data flows

► [www.igus.eu/smartplastics](http://www.igus.eu/smartplastics)



### smart plastics online shop

Order systems with push/pull force monitoring and breakage detection online as a complete package ► [www.igus.eu/smart-plastics-shop](http://www.igus.eu/smart-plastics-shop)



### The igus® white paper on predictive maintenance

Clarifies the distinction between condition monitoring and predictive maintenance

- What igus® condition monitoring (i.Sense) means
- What igus® predictive maintenance (i.Cee) means
- What technology is behind both systems
- What the two systems offer industrial energy supply

► [www.igus.eu/smartplastics](http://www.igus.eu/smartplastics)

# Condition monitoring - i.Sense

- igus® products for condition monitoring
- Detects machine status regularly or continuously
- Uses fast switch-off to avoid crashes

If **smart plastics** are used for condition monitoring, they immediately report any unexpected operating state, switch off the system, or sound an alarm. Industrial manufacturers use this function to minimise system failures and downtime. ▶ [www.igus.eu/condition-monitoring](http://www.igus.eu/condition-monitoring)

## Control cabinet

- Simple module installation on top-hat (DIN) rail
- Integration into the existing plant control system via NC contacts
- 24V DC voltage supply

## i.Sense:module

- Evaluate all sensor data based on igus® algorithms
- Inform the plant controls in real time of any mechanical faults that occur

## Sensor units

- IS.CF.P tensile force monitoring for cables
- IS.CF.Q cable quality monitoring
- IS.CF.D data transmission monitoring

## i.Sense Condition monitoring

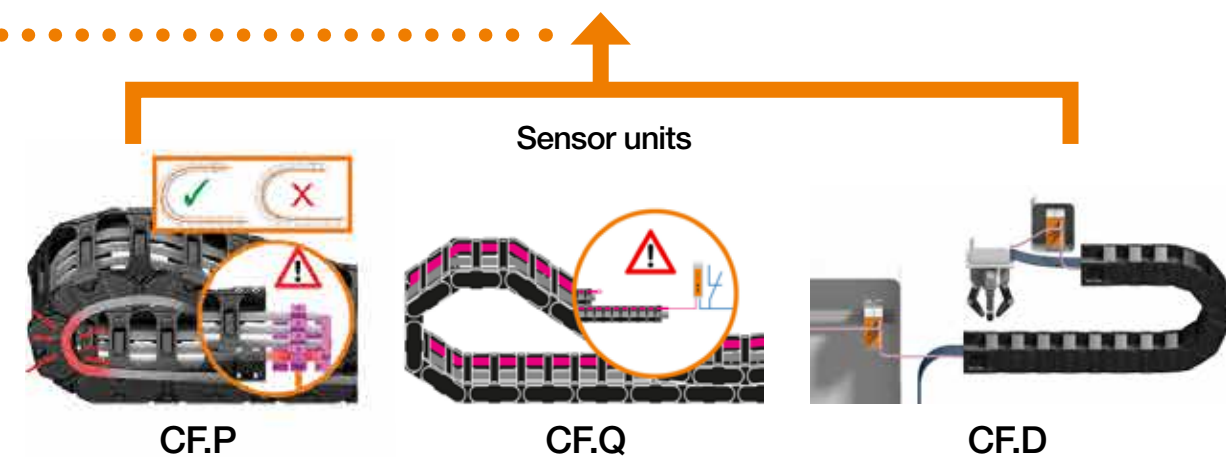


### Condition Monitoring

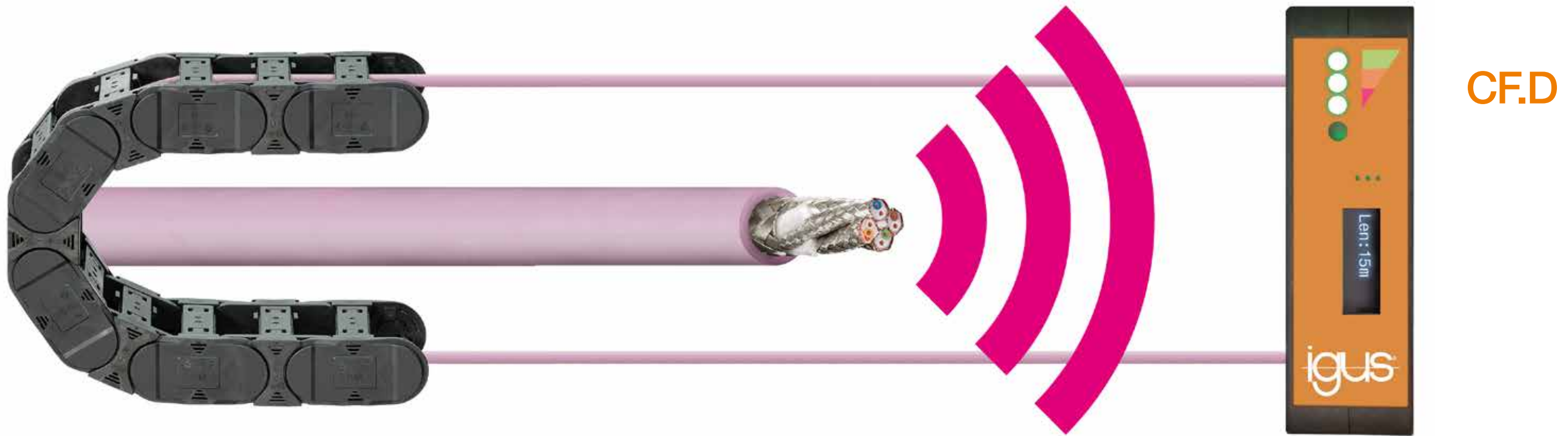
The concept of condition monitoring is based on a regular or constant recording of the machine condition by measuring and analysing physical parameters, e.g. vibration, temperature, position/proximity. Condition monitoring pursues two goals: safety and machine efficiency. (Source: Wikipedia)



i.Sense:module







## i.Sense cable monitoring systems:

### Tensile force monitoring for cables with i.Sense CF.P

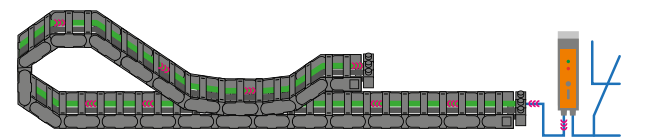
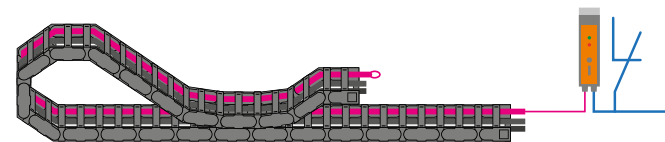
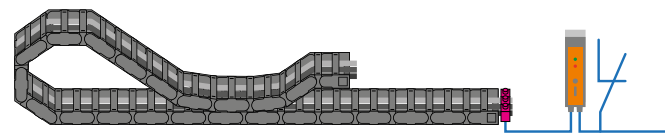
- Measures the forces directly at the strain relief element
- Triggers a shutdown by means of the NC contact if forces are excessive
- Cable damage caused by jacket abrasion is reliably avoided

### Cable quality monitoring with i.Sense CF.Q

- Measures the quality of the cable cores
- Early notification via contact if core rupture starts

### Data transmission monitoring with i.Sense CF.D

- The measuring is carried out on the actual used cores; no extra cores or sensor elements needed
- Identification of the alleged damaged cable area
- Early notification via contact, network or visual status display



## System components of i.Sense CF.D

Acquire data - Evaluate data - Visualise data



- **Sensors:** A new measuring method determines the data transmission characteristics of the cables during operation. This means that no extra cores are needed.
- **Evaluation module:** Every sensor data is processed by the CF.D module during operation. If the transmission properties begin to deteriorate, this can immediately indicate the need for a cable replacement in good time avoiding plant downtime.
- **Dashboard:** The dashboard provides detailed information on the detected deterioration in transmission properties and shows the distance in meters of the affected cable section. In this way, maintenance work can be carried out specifically, promptly and quickly.



# i.Sense protects a modern packaging machine ...

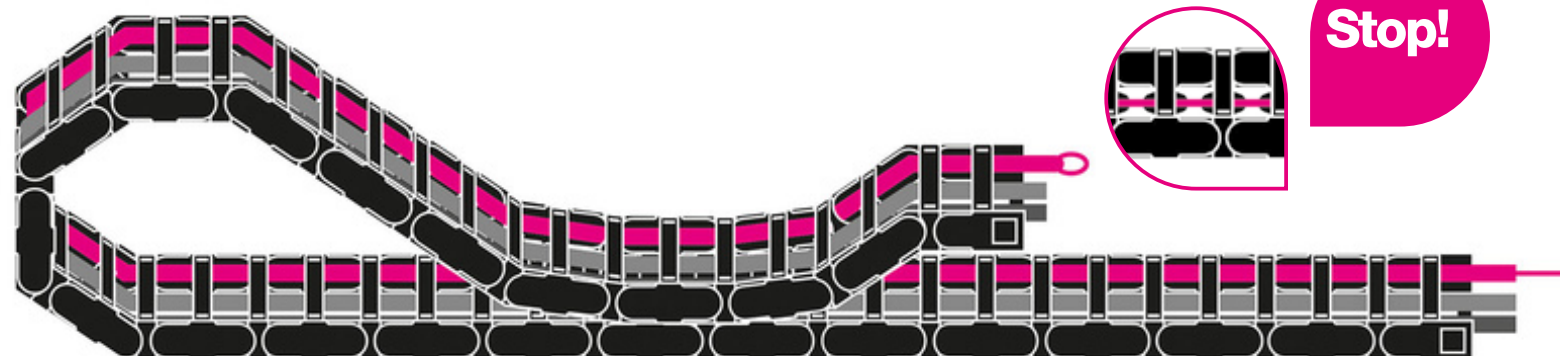


## Challenge

Sliced, packaged bread is an everyday product for many households. But it takes rather complex technology to make it that way. The bread must be carefully cut and securely packaged and sealed. GHD Georg Hartmann Maschinenbau is one of the world's leading manufacturers of systems for slicing and packaging foodstuffs. These operations require speed as well as precision.

Cutting-edge machines, such as the GBK 440, package up to 80 pieces of sliced bread per minute – less than a second for each. So it works with high strokes in a relatively small installation space. In particular, the energy chains with cables for energy supply, control and measurement are heavily stressed by the rapid movements. So all cables must be optimized for a minimum bend radius of just 63 millimetres. This places high demands on cable quality. Unfortunately, cable damage cannot be avoided entirely. They result in costly downtime, since the high throughput quickly adds up to large production backlogs.

So GHD wanted a warning system that would detect failures in advance so that they could be prevented. It commissioned igus® GmbH, a manufacturer of lubrication-free high-performance plastics and fail-safe energy supply systems, to implement the system.



## CF.Q - cable quality monitoring

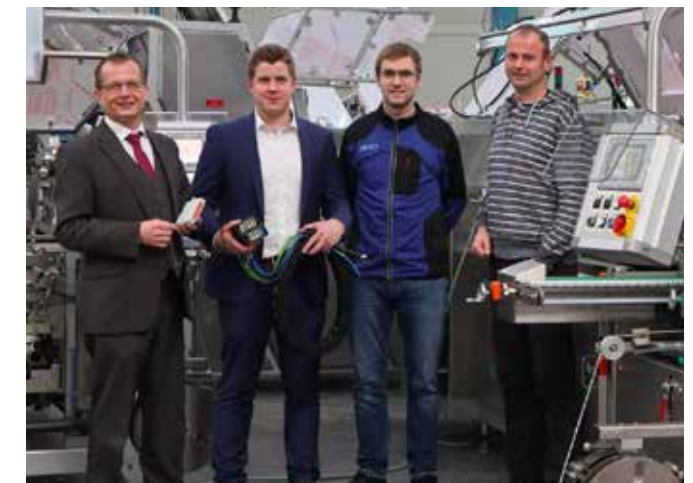
- Measures the push/pull forces acting on the e-chain®
- Recommends shutdown of the equipment if a force limit is exceeded
- Prevents failure

## The solution

For energy chains, cables and plain bearing products, igus® has developed a product family in which sensors make plastic components intelligent. It is called smart plastics. The principle is simple: intelligent sensors record the status of the components involved and report it to the i.Cee module, which passes the data on – to the cloud, for example. igus® uses the CF.Q module for cable monitoring to avoid cable damage in such applications like the GHD Hartmann bread packaging machine.

The principle of the monitoring system is as follows: it assumes that two cables from a production batch behave in the same way when stressed and should therefore also approach their breaking point at the same time. So a second, identical cable is added to the measuring cable. The system continuously monitors the two additional cores. The device measures push/pull forces and detects the beginning of a damage very early by the changes in the electrical properties.

For this, igus® has collected a large amount of data from load tests and historical data from various application scenarios which are used to generate a comparative value for forecasting. The software can therefore predict just how many more work cycles a chain can handle without failure. The process data collected at the same time makes it possible to predict the remaining number of working days the chain has, so that companies can precisely plan maintenance and replacement.



## → The result

The igus® CF.Q system is an integral part of the GBK 440 packaging machine. It allows the interval between maintenance sessions to be greatly extended. All data is evaluated in the customer control system and output as notifications on the Human Machine Interface (HMI).

This concept allows cables to operate far beyond the igus® guarantee period. The user company thus saves several thousand euros in maintenance costs each year. The i.Sense CF.Q's modern technology detects core ruptures before they occur, saving the user high downtime costs.



## ... and other exciting challenges

### ... sewage treatment plants...



#### Challenge

As the plant runs around the clock, and some of the time without any human presence, faults sometimes remain undetected for hours. Although the plant runs at a very slow speed, in the event of a failure it can lead to a total breakdown. This total breakdown of the energy supply system leads to significantly higher costs than a standstill for several hours, where the system can be put back into operation after a short maintenance period.



#### The solution with smart plastics

In this case the solution is the push/pull force monitoring system EC.P. This sensor continuously measures the force which the plant requires to move the energy supply system. If these forces change due to external influences such as ice, an animal or a tool forgotten during maintenance, the sensor detects this change and switches the system off immediately. This prevents expensive total damage to the sewage treatment plant.



### ... car plants


#### "A high price can be avoided."

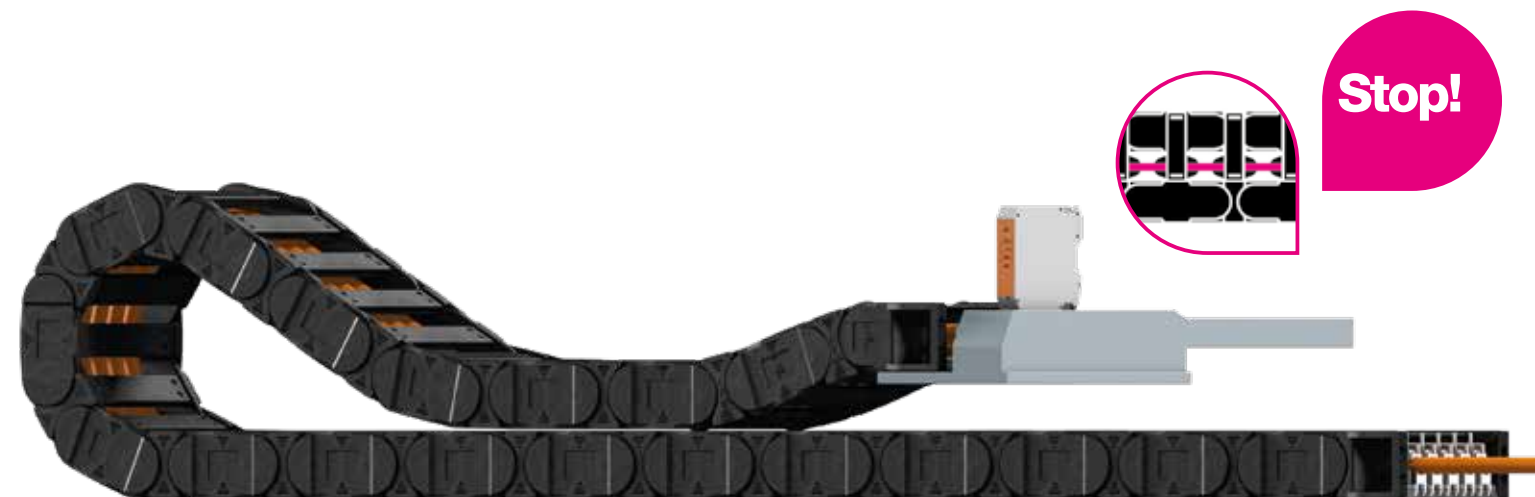
To avoid unplanned breakdowns and plant shutdown, **smart plastics** from igus® are used on indoor gantry cranes for the automated handling of engine blocks at an Austrian automotive supplier. EC.B modules monitor the status of the e-chain®. In the event of a chain breakage, the machine is stopped automatically to prevent subsequent damage. Additional EC.W modules signal advanced wear of the e-chain®. The measurement of wear data means that a chain's remaining service life can be predicted and replacement can be planned at an early stage.

Read more about this application at

► [www.igus.eu/smartplastics](http://www.igus.eu/smartplastics)



 The i.Sense system has been the standard in container cranes for many years.



#### EC.P - push/pull force detection for e-chains®

- Measures the push/pull forces acting on the e-chain®
- Recommends shutdown of the equipment if a force limit is exceeded
- Prevents failure



# Predictive maintenance - i.Cee

- Precisely predicts maintenance
- Prevents downtime or loss of quality
- Two options for data transmission: i.Cee:local / i.Cee:cloud

Both the service life calculation sensors mentioned above and the i.Sense sensor units for condition information provide data from which, in many cases, indicators of maintenance necessary to minimise the risk of product failure can be detected at a very early stage. Based on the experience gained in the 3,800m<sup>2</sup> test laboratory for plain bearings and energy transmission solutions, in combination with self-developed algorithms, the system alerts and notifies the user at an early stage about possible failure risks and/or the next maintenance date.

Offline: i.Cee:local / Online: i.Cee:cloud

## i.Cee hardware

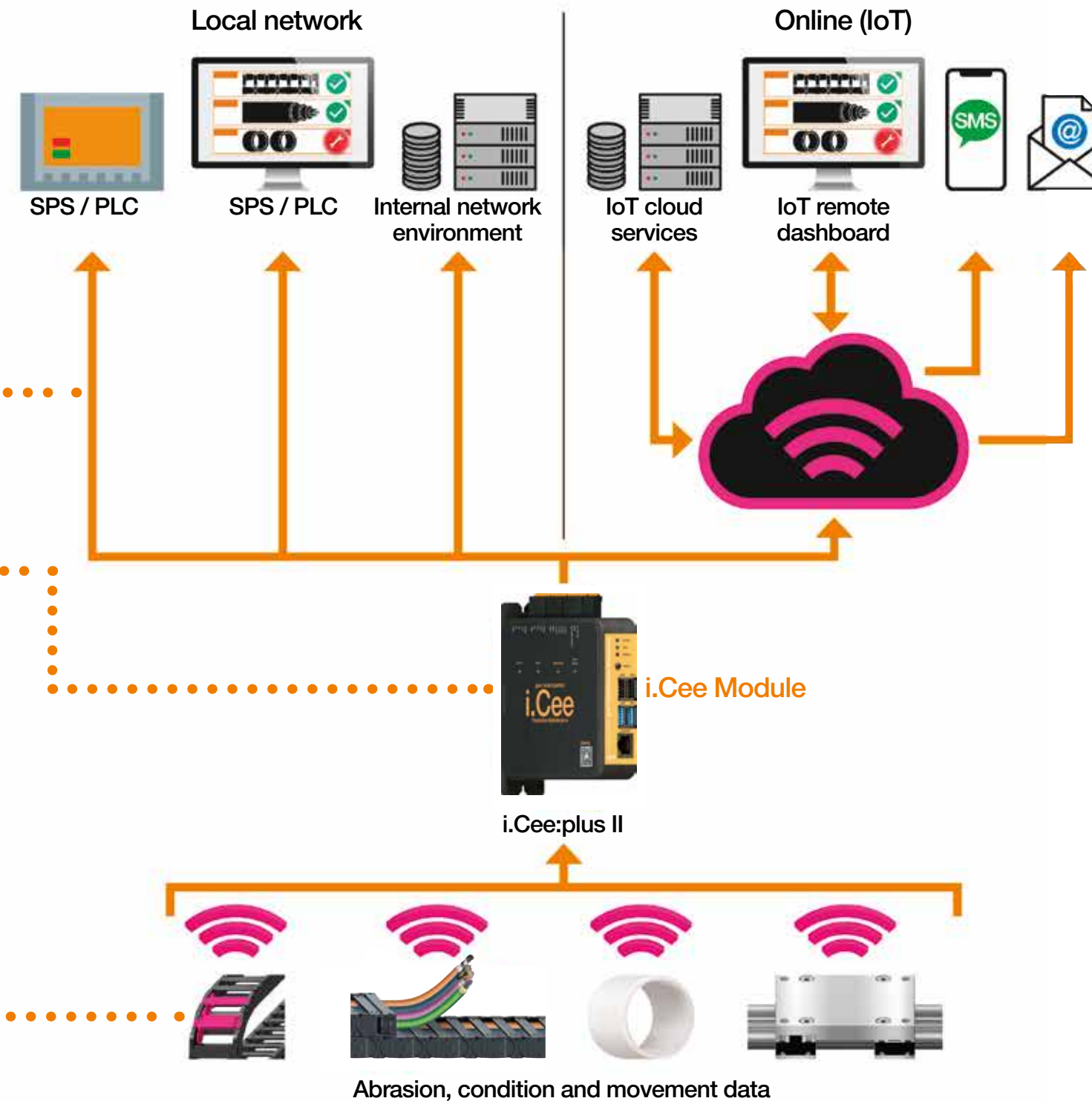
### Standard: i.Cee:plus II module

- Installation on top-hat (DIN) rail in control cabinet
- Storage and processing of sensor data
- Constant calculation of the product's service life
- Additional connection of i.Sense modules via USB possible
- Can be integrated into existing Industry 4.0 cloud solutions via IoT

## Sensors

- Provide abrasion, condition and movement data

## i.Cee Predictive maintenance



## i.Cee ... .. in use at train washing station in Luxembourg ...



### Challenge

The previous energy chain systems of a competitor caused disruptions in the operation of the plant, as they were often failing. This was particularly problematic because the washing plant is operated autonomously and a failure of an energy chain system could bring the entire washing process to a halt. The necessary repair measures were therefore time-consuming and partly necessary at night and on weekends. Failure would mean the confinement of a rail vehicle in the wash hall, which could result in the cancellation of several train runs.

### The solution with smart plastics

The aim was to find a product that not only safely supplies the washing trolleys with data, voltage, compressed air, water and cleaning agents, but also fulfils CFL's requirement to operate Europe's most modern train washing plant. For this purpose, a system was required that allows the operator to monitor each individual energy chain and to avoid a breakdown of the plant. Besides an igus® energy chain designed for long travels, igus® smart plastics components were installed. Sensors monitor the status of every igus® energy chain during operation with regard to the application of force but also with regard to wear and tear, and inform in good time as soon as a repair or replacement is required. In the course of the modernisation of the energy chain systems, the entire cleaning system was also renewed, so that in addition to particularly environmentally friendly cleaning agents, the used washing water was also reused again and again through reprocessing.



### EC.P/EC.W/EC.M

- EC.P sensor measures the tensile forces acting on the e-chain®
- EC.W Sensor measures the e-chain® wear
- EC.M sensor measures all dynamic parameters of the energy supply

## ... and many other exciting projects



### "If the containers stop ..."

A big German crane manufacturer relies on the i.Sense online system to ensure optimum production. Here, using "machine learning" and AI algorithms, a calculation of the service life is performed and displayed in a Web dashboard on any Internet-enabled device as a statement of "days until the next recommended maintenance".

Read more about this application at  
► [www.igus.eu/smartplastics](http://www.igus.eu/smartplastics)



I would be happy to answer your questions.  
Richard Habering



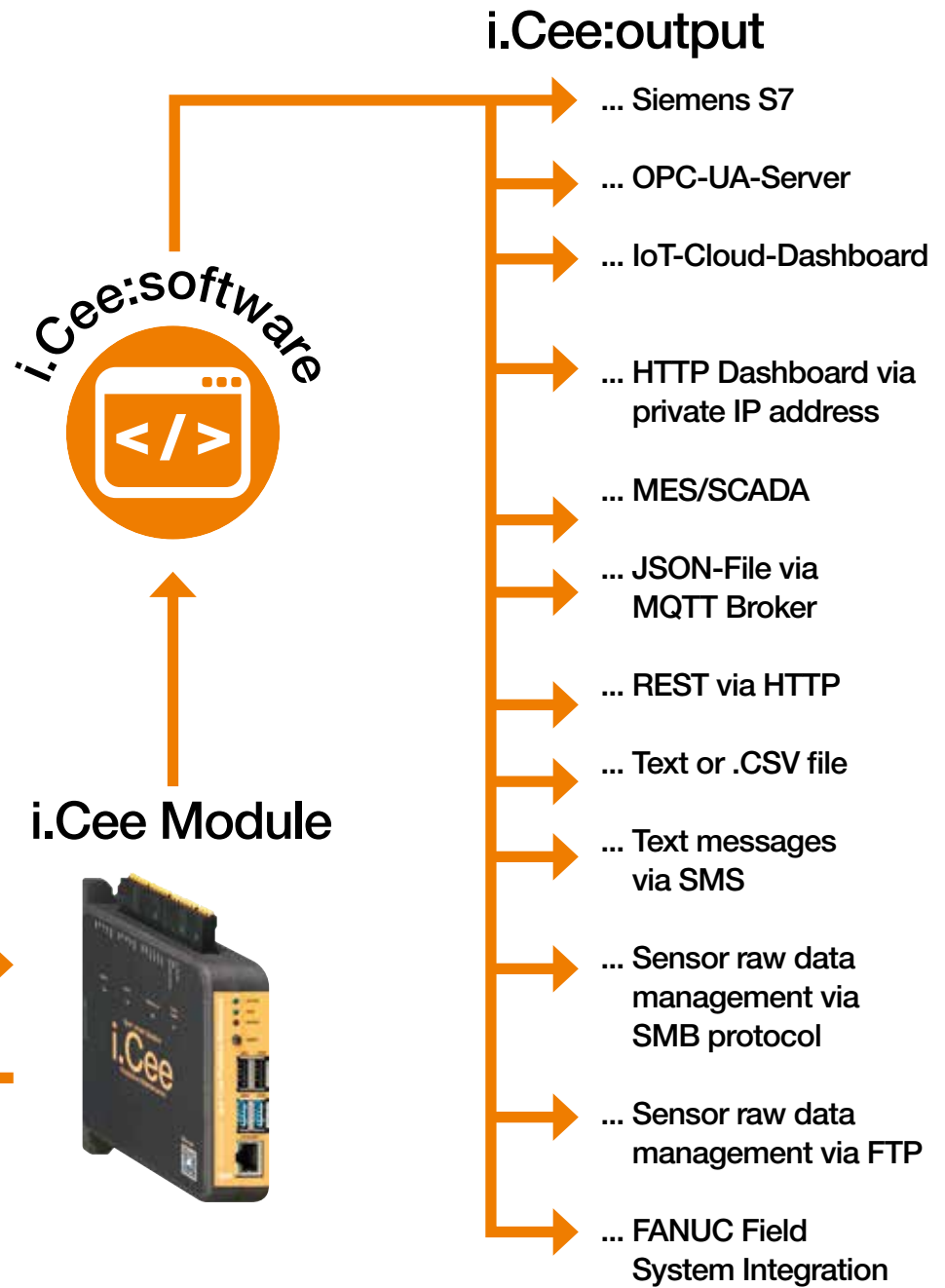


... Input options

Motion profile

- ... Siemens PLC connection
- ... integrated acceleration sensors EC.W/EC.IM
- ... OPC UA customer application server
- ... GPS position data
- ... igus® positioning system EC.PP
- ... Standard positioning systems, e.g. 4-20mA

i.Sense Module



... Output options

i.Cee:output

- ... Siemens S7
- ... OPC-UA-Server
- ... IoT-Cloud-Dashboard
- ... HTTP Dashboard via private IP address
- ... MES/SCADA
- ... JSON-File via MQTT Broker
- ... REST via HTTP
- ... Text or .CSV file
- ... Text messages via SMS
- ... Sensor raw data management via SMB protocol
- ... Sensor raw data management via FTP
- ... FANUC Field System Integration

Anyone who can make reliable and useful predictions about maintenance work is one step ahead of the competition. In the age of digitisation, more than Big Data is required for such predictions. In order to be able to use the sensor data to derive the correct recommendations for maintenance to be accurately scheduled, long term empirical values from the igus® test database are used.

- 3,800m<sup>2</sup> test area
- 4,100 energy chain system tests annually at 180 test stations: climate chamber, outdoor tests, noise chamber, travel lengths up to 130m, robot systems, etc.
- 2 billion test cycles a year for highly flexible cables
- 1 million electrical measurements recorded annually
- 15,000 tribological tests (friction and wear) in 300 test set-ups
- 140 trillion test movements in the bearings business unit
- Sensors on the test machines provide permanent measurement data, processing in the central database



P4.1 e-chain® with EC.PP in the igus® outdoor test



Switch cabinet with smart plastics modules

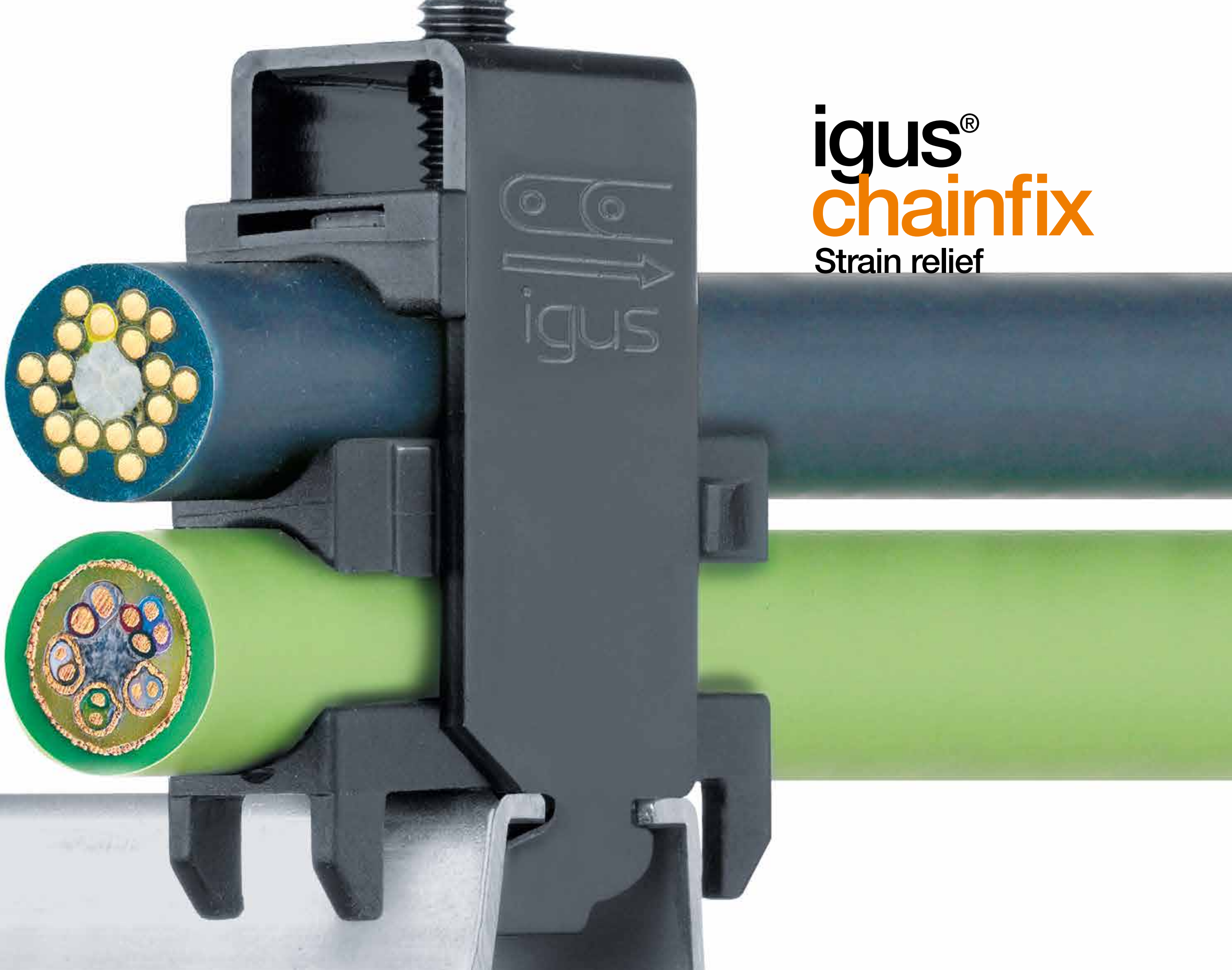
Calculate service life online and get a 36-month guarantee!



igus® lab, Cologne. A section of the motion plastics® test laboratory spread over 3,800m<sup>2</sup>



**igus<sup>®</sup>**  
**chainfix**  
Strain relief





The illustration shows the new CFU honeycomb strain relief for fast assembly. Simply insert cables and hoses into the honeycomb and close.











## igus® chainfix strain relief. Flexible, secure and fast.

Strain relief from igus® is specifically developed for use in e-chains® and dynamic applications. The combination of polymer strain relief components and chainflex® cable materials offers maximum holding force and very high service life for the cables. For a wide variety of applications, igus® offers the best solution with respect to cost and benefits; from the CFXL strain relief for long travels in harsh environments, or the new CFU honeycomb strain relief for fast assembly to the CFN chainfix nuggets for simple and inexpensive strain relief. igus® chainfix strain relief components have been successfully used in thousands of applications around the world for years.



Available from stock. Ready to ship in 24 - 48hrs.\*

\*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

<b>C-profile - standard and for heavy-duty applications</b>	Page
 ● Standard C-profile Part No. 92.42 (can be integrated into KMA)	884
● C-profile Part No. 92.52 for increased holding force (mounting in front of e-chain®)	884
<b>Steel and stainless steel clamps - for maximum holding force</b>	Page
 ● CFX* single, double, triple clamps with standard base	888
● CFXL* single, double, triple clamps with wide base for increased holding force	889
● chainfix multi-clamps CFX12*	891
● chainfix multi-clamps CFX16*	892
<b>chainfix tiwrap plates - universal, bolted or clip-on</b>	Page
 ● Option 1A: tiwrap plates as individual parts "series 2000" + cable tiwraps	894
● Option 1B: tiwrap plates as individual parts "series 3000" + cable tiwraps	895
<b>chainfix tiwrap plates - optional variants</b>	Page
 ● Option 1: tiwrap plates with clip-on connection to C-profile	896
● Option 2: integrated strain relief for R series E2 e-tubes	897
 ● Option 3: tiwrap plates for fixed crossbars	898
● Option 4: tiwrap plates for openable crossbars	899
<b>CFU.V - strain relief with innovative honeycomb design for fast assembly</b>	Page
 ● 80% faster filling (compared to CFX strain relief), openable from both sides for assembly in seconds	900
<b>Strain relief separators - separators with integrated strain relief teeth</b>	Page
 ● For easy strain relief with cable tiwraps	902
<b>CFV strain relief element - stepped strain relief</b>	Page
 ● Relieve cable strain easily, for use outside of the e-chain® section. With stepped strain relief teeth, even for fully enclosed e-tubes	906
<b>CFN - chainfix nuggets for C-profile and top-hat (DIN) rail 35</b>	Page
 ● Option 1: simple and universal cable fixation (for cable diameters of Ø 20mm and Ø 30mm)	907
● Option 2: fastening through clipping onto standard top-hat (DIN) rail 35	907
<b>CFB - strain relief connector system, modular and customised</b>	Page
 ● CFB polymer strain relief connector system, for many cables in a very confined space	908

\*Standard material: galvanised steel. Also available as stainless steel version (stainless steel material: 1.4301/AISI 304)


e-chain® Series/system	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU honeycomb strain relief	CFN chainfix nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets/KMA		Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection to C-profile	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB strain relief connector system
<b>E1</b>																	
E1.17.021.	-	-	-	-	-	-	-		-	-	-	E1.021.Z	-	-	-	-	-
<b>easy chain®</b>																	
E03	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E04	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E045/Z045	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E06/Z06	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E065/Z065	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E08/Z08	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E14/Z14	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E200/Z200	X 1)	-	-	-	-	-	-		2XXX.ZB	-	-	2050.Z	-	-	-	-	-
E16/Z16	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E26/Z26	X 1)	-	-	-	-	-	-		-	3XXX.ZB	-	-	-	-	-	-	-
E300/Z300	X 1)	-	-	-	-	-	-		-	3XXX.ZB	-	-	-	-	-	-	-
<b>zipper</b>																	
047	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
07/R07	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
09/R09	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
15/R15	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
17/R17	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
<b>E2 micro</b>																	
03	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
04	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
045	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
B07	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
06	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
074	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
094	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
B09	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
08	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
<b>E2 mini</b>																	
10	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
11.031	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
11.080	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
11.1/11.2	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
14	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
B15/B15i	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
B17/B17i	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
F17	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 92.52.XX)

2) Can be found on the product page of each e-chain® series


3) Half e-tube only

4) For KMA mounting bracket only

 = recommended strain relief for selected e-chain®



e-chain® Series/system	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU honeycomb strain relief	CFN chainfix nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets/KMA		Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection to C-profile	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB strain relief connector system
<b>E2.1 micro</b>																	
E2.10	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
E2.15	-	-	-	-	-	-	-		-	-	-	-	-	-	-	X	-
<b>E2.1</b>																	
E2.26	X <sup>1)</sup>	X <sup>1)</sup>	-	-	26.Z <sup>4)</sup>	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
E2.38	X <sup>1)</sup>	X <sup>1)</sup>	-	X	-	CFV.42.C	-		2XXX.ZB	3XXX.ZB	-	C.2.522.XXX.ZS	-	-	-	-	-
E2.48	X <sup>1)</sup>	X <sup>1)</sup>	X <sup>1)</sup>	X	-	CFV.42.C	-		-	3XXX.ZB	-	C.2.522.XXX.ZS	-	-	-	-	-
<b>E2/000</b>																	
1400/1500	X <sup>1)</sup>	X <sup>1)</sup>	-	-	21.1.Z	-	-		2XXX.ZB	-	-	-	-	-	-	X	-
1450/1480	X <sup>1)</sup>	X <sup>1)</sup>	-	-	21.1.Z	-	-		2XXX.ZB	-	-	-	-	-	-	X	-
2400/2500	X <sup>1)</sup>	X <sup>1)</sup>	-	-	2020.Z	-	-		2XXX.ZB	-	-	2050.Z	-	-	-	-	-
2450/2480	X <sup>1)</sup>	X <sup>1)</sup>	-	-	2020.ZR	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
2600/2700	X	X <sup>1)</sup>	-	X	262.Z	CFV.42.C	-		2XXX.ZB	3XXX.ZB	30XX.ZC	2050.Z	2050.Z	-	-	-	Upon request
2650/2680	X	X <sup>1)</sup>	-	X	-	CFV.42.C	-		-	3XXX.ZB	30XX.ZC	-	2050.Z <sup>3)</sup>	-	-	-	Upon request
3400/3500	X	X <sup>1)</sup>	X <sup>1)</sup>	X	301.Z	CFV.42.C	-		-	3XXX.ZB	30XX.ZC	30XX.Z	30XX.ZS	-	-	-	Upon request
3450/3480	X	X <sup>1)</sup>	X <sup>1)</sup>	X	34501.Z	CFV.42.C	-		-	3XXX.ZB	30XX.ZC	-	30XX.ZS <sup>3)</sup>	-	-	-	Upon request
255	-	-	-	-	-	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
<b>E2 R100</b>																	
R117/118	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
R157/158	X <sup>1)</sup>	X <sup>1)</sup>	-	-	1585.01.Z	-	-		-	-	-	-	-	-	-	-	-
R167/168	X <sup>1)</sup>	X <sup>1)</sup>	X <sup>1)</sup>	-	1685.01.Z	-	-		-	-	-	-	-	-	-	-	-
<b>E2 R</b>																	
R48	X <sup>1)</sup>	X <sup>1)</sup>	-	-	481.ZR	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
R58	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	5850.Z	-	-
R68	X <sup>1)</sup>	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-		-	-	-	-	-	-	30XX.Z	-	-
<b>R2.1</b>																	
R2.26	X <sup>1)</sup>	X <sup>1)</sup>	-	-	R2.26.Z	CFV.R2.26.Z	-		-	-	-	-	-	-	-	-	-
R2.40	X <sup>1)</sup>	X <sup>1)</sup>	-	-	R2.40.Z	CFV.R2.40.Z	-		-	-	-	-	-	-	-	-	-
R2.48	X <sup>1)</sup>	X <sup>1)</sup>	X <sup>1)</sup>	-	-	CFV.R2.48.Z	-		-	3XXX.ZB	30XX.ZC	-	-	-	-	-	-
R2.75	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	CFV.80.C	-		-	3XXX.ZB	30XX.ZC	-	-	-	-	-	-
<b>RX</b>																	
RX32	-	-	-	-	-	-	X		-	-	-	-	-	-	-	-	X
RX40	-	-	-	-	-	-	X		-	-	-	-	-	-	-	-	X
RX48	-	-	-	-	-	-	X		-	-	-	-	-	-	-	-	X
RX56	-	-	-	-	-	-	Upon request		-	-	-	-	-	-	-	-	X

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 92.52.XX)  
 2) Can be found on the product page of each e-chain® series  
 3) Half e-tube only  
 4) For KMA mounting bracket only  
 = recommended strain relief for selected e-chain®

e-chain® Series/system	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU honeycomb strain relief	CFN chainfix nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets/KMA		Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection to C-profile	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB strain relief connector system	
<b>E4.1L</b>																		
E4.31L/R4.31L	X <sup>1)</sup>	X <sup>1)</sup>	–	–	31.Z	CFV.31.N15	–	–	–	–	–	–	–	–	–	–	–	
E4.38L/R4.38L	X	X <sup>1)</sup>	–	X	38.Z	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	C622.100.ZS	–	–	–	X	
E4.48L/R4.48L	X	X <sup>1)</sup>	X <sup>1)</sup>	X	48.Z / 48.ZS	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	C622.100.ZS	–	–	–	X	
E4.64L	X	X <sup>1)</sup>	–	X	–	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	–	–	–	–	X	
<b>E4Q</b>																		
E4Q.34/E4Q.34 <sup>New</sup>	X	X <sup>1)</sup>	–	X	–	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	–	–	–	–	–	
E4Q.44/E4Q.44 <sup>New</sup>	X	X <sup>1)</sup>	X <sup>1)</sup>	X	–	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	–	–	–	–	X	
E4Q.58/E4Q.58 <sup>New</sup>	X	X <sup>1)</sup>	–	X	–	CFV.80.C	–	–	3XXX.ZB	30XX.ZC	–	–	–	–	–	–	X	
E4Q.82/E4Q.82 <sup>New</sup>	X	X <sup>1)</sup>	–	X	–	CFV.80.C	–	–	3XXX.ZB	30XX.ZC	–	–	–	–	–	–	X	
<b>E4.1</b>																		
E4.21	X <sup>1)</sup>	X <sup>1)</sup>	–	–	T2103.Z	–	–	–	2XXX.ZB	–	–	–	–	–	–	–	–	
E4.28/R4.28	X <sup>1)</sup>	X <sup>1)</sup>	–	–	28.Z / 28.ZT	–	–	–	2XXX.ZB	–	–	–	2050.Z	–	–	–	–	
E4.32/H4.32/R4.32	X	X <sup>1)</sup>	–	X	–	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	3850.ZS	–	–	–	X	
E4.42/H4.42/R4.42	X	X <sup>1)</sup>	X <sup>1)</sup>	X	–	CFV.42.C	–	–	3XXX.ZB	30XX.ZC	–	–	3850.ZS	–	–	–	X	
E4.56/H4.56/R4.56	X	X <sup>1)</sup>	–	X	–	CFV.80.C	–	–	3XXX.ZB	30XX.ZC	–	–	45XX.ZS	–	–	–	X	
E4.80/H4.80/R4.80	X	X <sup>1)</sup>	–	X	–	CFV.80.C	–	–	3XXX.ZB	30XX.ZC	–	–	45XX.ZS	–	–	–	X	
E4.112	X <sup>1)</sup>	X <sup>1)</sup>	–	–	–	–	–	–	3XXX.ZB	–	–	–	45XX.ZS	–	–	–	X	
E4.162	X <sup>1)</sup>	X <sup>1)</sup>	–	–	–	–	–	–	3XXX.ZB	–	–	–	–	–	–	–	X	
800	X <sup>1)</sup>	X <sup>1)</sup>	–	–	–	–	–	–	3XXX.ZB	–	–	–	–	–	–	–	–	
840	X <sup>1)</sup>	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	
<b>E4/light</b>																		
14040/14140/18840	X	X <sup>1)</sup>	–	X	–	–	–	–	–	3XXX.ZB	30XX.ZC	–	–	45XX.ZS	–	–	–	X
14240/14340	X	X <sup>1)</sup>	–	X	–	–	–	–	–	3XXX.ZB	30XX.ZC	–	–	3850.ZS	–	–	–	X
14550/14650/19050	X	X <sup>1)</sup>	–	X	–	–	–	–	–	3XXX.ZB	30XX.ZC	–	–	45XX.ZS	–	–	–	X
15050/15150/19850	X	X <sup>1)</sup>	–	–	–	–	–	–	–	3XXX.ZB	30XX.ZC	–	–	45XX.ZS	–	–	–	X
15250/15350	X	X <sup>1)</sup>	–	–	–	–	–	–	–	3XXX.ZB	30XX.ZC	–	–	3850.ZS	–	–	–	X
1640/R1608	X	X <sup>1)</sup>	–	–	–	–	–	–	–	3XXX.ZB	–	–	45XX.ZS	–	–	–	–	
<b>YE</b>																		
YE.42 <sup>New</sup>	X <sup>1)</sup>	X <sup>1)</sup>	–	–	–	–	–	–	–	–	–	–	–	3850.ZS	–	–	–	–
YE.56 <sup>New</sup>	X <sup>1)</sup>	X <sup>1)</sup>	–	–	–	–	–	–	–	–	–	–	–	45XX.ZS	–	–	–	–

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 92.52.XX)

2) Can be found on the product page of each e-chain® series

3) Half e-tube only

4) For KMA mounting bracket only

 = recommended strain relief for selected e-chain®



e-chain® Series/system	CFX Clamp, standard	CFXL Clamp, for increased holding force	CFU honeycomb strain relief	CFN chainfix nugget	Strain relief separator	CFV Stepped strain relief	Strain relief can be clipped onto mounting brackets/KMA		Tiewrap plate Series 2000	Tiewrap plate Series 3000	Tiewrap plate with clip-on connection to C-profile	Tiewrap plate for fixed crossbars	Tiewrap plate for openable crossbars	Tiewrap plate for triflex® R and triflex® 2)	Tiewrap plate for E2 e-tubes	Tiewrap plate/ teeth directly moulded on the mounting bracket	CFB strain relief connector system
<b>T3</b>																	
T3.29	-	-	-	-	E6.29.02.Z	-	20XX.ZB		-	-	-	-	-	-	-	-	-
<b>E3</b>																	
E3.10	-	-	-	-	-	-	E3.00.020		-	-	-	-	-	-	-	-	-
E3.15	-	-	-	-	-	-	E3.00.020		-	-	-	-	-	-	-	-	-
E3.22	-	-	-	-	-	-	E3.00.020		-	-	-	-	-	-	-	-	-
<b>E6.1</b>																	
E61.29/EF61.29	X <sup>1)</sup>	X <sup>1)</sup>	-	-	E6.29.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
E61.35	X <sup>1)</sup>	X <sup>1)</sup>	-	-	E6.35.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	X
E61.40	X	X <sup>1)</sup>	-	X	E6.40.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	X
E61.52	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	2050.Z	-	-	-	X
E61.62	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	3850.ZS	-	-	-	X
E61.80	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	45XX.ZS	-	-	-	X
<b>E6</b>																	
E6.29	X <sup>1)</sup>	X <sup>1)</sup>	-	-	E6.29.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
R6.29	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		2XXX.ZB	-	-	-	-	-	-	-	-
E6.35	X <sup>1)</sup>	X <sup>1)</sup>	-	-	E6.35.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	X
E6.40	X	X <sup>1)</sup>	-	X	E6.40.02.Z	-	-		2XXX.ZB	-	-	-	-	-	-	-	X
E6.52	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	2050.Z	-	-	-	X
R6.52	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	-	-	-	-	X
E6.62	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	3850.ZS	-	-	-	X
E6.80L	X	X <sup>1)</sup>	-	X	-	-	-		-	3XXX.ZB	30XX.ZC	-	45XX.ZS	-	-	-	X
<b>e-skin®</b>																	
SK28	-	-	-	-	-	-	2000.077.ZB		-	-	-	-	-	-	-	-	-
SK40	-	-	-	-	-	-	2000.077.ZB		-	-	-	-	-	-	-	-	-
<b>triflex® R</b>																	
TRC	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	X	-	-
TRC	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	X	-	-
TRCF	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	X	-	-
TRL	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	X	-	-
TRLF	X <sup>1)</sup>	X <sup>1)</sup>	-	-	-	-	-		-	-	-	-	-	-	X	-	-
<b>triflex®</b>																	
easy triflex®	X <sup>1)</sup>	-	-	-	-	-	-		-	-	-	-	-	-	E33X.XX.2	-	-
triflex®	X <sup>1)</sup>	-	-	-	-	-	-		-	-	-	-	-	-	33X.XX	-	-

1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 92.52.XX)

2) Can be found on the product page of each e-chain® series











3) Half e-tube only

4) For KMA mounting bracket only

= recommended strain relief for selected e-chain®



igus® chainfix strain relief

								
	<b>CFX - clamps</b>	<b>Tiewrap plates - bolted, clip-on</b>	<b>CFU.V - with innovative honeycomb design</b>		<b>CFN nuggets</b>	<b>Strain relief separators</b>	<b>CFV - strain relief element</b>	<b>CFB - strain relief connector system</b>
	<b>Recommended standard for the following e-chains®:</b>	E4, E6, for all KMA* with C-profile <small>*Polymer metal mounting bracket</small>	easy chain®, E2/000, E2 e-tubes, E4, E6	E2.48, 3400/3500, 3450/3480, R68, R167/168, R2.48, E4.48L/R4.48L, E4.42/H4.42/R4.42, E61.52, E6.52/R6.52	For all KMA* with C-profile or top-hat (DIN) rail 35 <small>*Polymer metal mounting bracket</small>	E2/000, E2 e-tubes, E6, T3	E2/000, R2.1, E4.1L, E4.1	E4, E6, for all KMA* with C-profile <small>*Polymer metal mounting bracket</small>
	<b>When to use this strain relief?</b>	Standard for high accelerations, loads and demanding applications. For many cables, large cable diameters and stacked cables. For long travels, cranes, offshore, machine tools, high speeds and hydraulic cables.	Standard for many applications at medium and low accelerations. For unsupported, gliding, hanging and standing applications in general machinery and machine tools. Also available as an individual part, for example in control cabinets.	CFU.V strain relief with innovative honeycomb design for fast assembly and high holding force. Openable from both sides. Easy positioning of cables for a variable filling. Cables with different diameters can be strain-relieved easily in one layer. Different attachment options in front of the e-chain®, strain relief can be screwed in from above and below.	Cost-effective, fast strain relief for simple application with small spaces and medium accelerations. Also available as individual parts for fixed applications, such as in cabinets, etc.	Combination of separator and strain relief, ideal for small spaces. For applications with medium accelerations. For small cable diameters. Ideal for e-tubes. For machine tools and automation.	For both in e-chains® and e-tubes. Stepped strain relief for use outside of the e-chain® cross section - even with different connectors. Easy to retrofit. Simple installation into top-hat rail 15 (TS92.31) or C-profile on KMA mounting brackets.	Space-saving, modular strain relief with many cables in confined spaces. For applications with high accelerations and loads, e.g. in machine tools.
	<b>When not to use it?</b>	No limitation	For large cable diameters	For high loads and large cable diameters	For high loads	For high loads	For high loads	No limitation
<b>Properties</b>								
<b>Assembly time index</b>	+	+	+++		+ -	+	++	+ -
<b>Adjustable tensile strength</b>	++	-	+		-	-	-	+
<b>Price index</b>	●●●	●●●	●●●		●●●	●●●	●●●	●●●
<b>Modularity</b>	yes	yes	yes		yes	yes	yes	yes (special fabrication)
<b>Dynamics</b>	high to very high	high	medium		high	high	medium	high to very high

Price index

●●● low price category    +++ = best suitability

●●● medium price category    + = good suitability

●●● highest price category    +- = suitable

                                         - = limited suitability

**Standard C-profile Part No. 92.42.XXX**

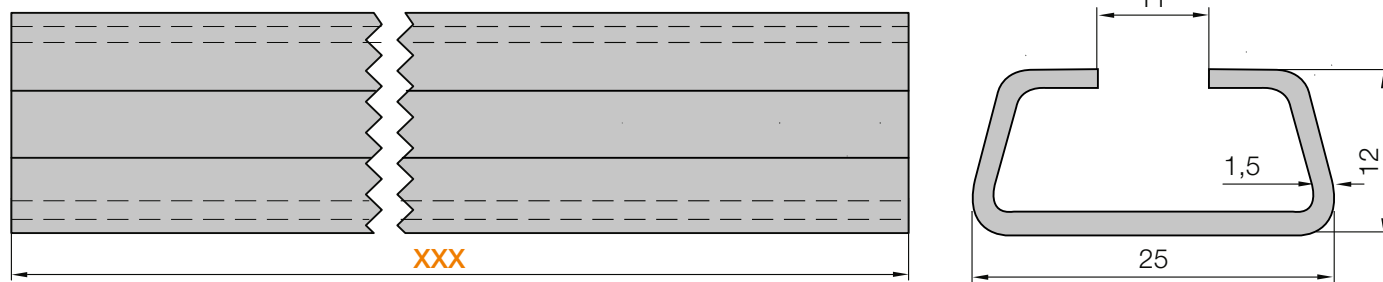
- For all igus® CFX clamps and KMA mounting brackets with C-profile option
- Standard material galvanised steel
- Also available as stainless steel\* version
- Length tolerances for C-profiles of ±1mm possible!

Complete Part No. with the required length XXX in mm. Example:92.42.075 for 75mm. \*For stainless steel material AISI 304, please add index .E. Example:92.42.075.E



**Standard C-profile Part No. 92.42. | For standard applications**

Can be integrated into KMA with C-profile option!



**Optional | For heavy-duty applications**

**C-profile Part No. 92.52.XXX**

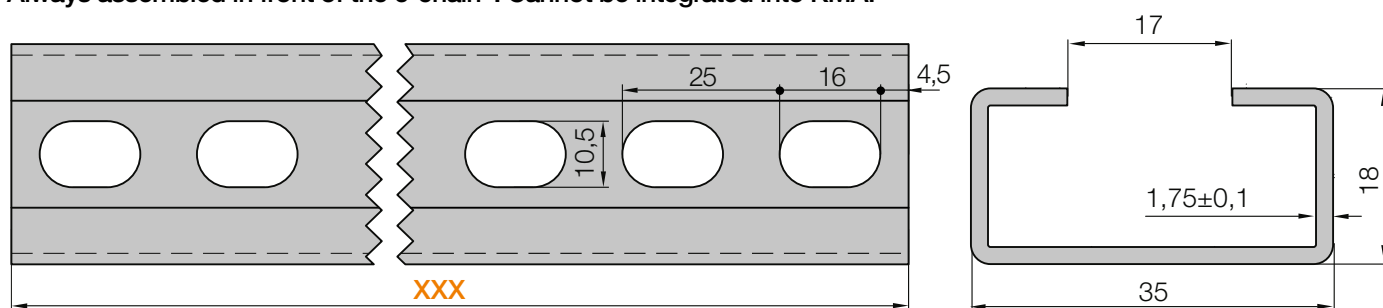
- For all igus® CFXL clamps
- With increased holding force - even for harsh applications
- Standard material galvanised steel
- Also available as stainless steel\* version
- Length tolerances for C-profiles of ±5mm possible!

Complete Part No. with the required length XXX in mm. Example:92.52.075 for 75mm. \*For stainless steel material AISI 304, please add index .E. Example:92.52.075.E



**C-profile Part No. 92.52 | For increased holding force for harsh applications**

Always assembled in front of the e-chain®. Cannot be integrated into KMA!

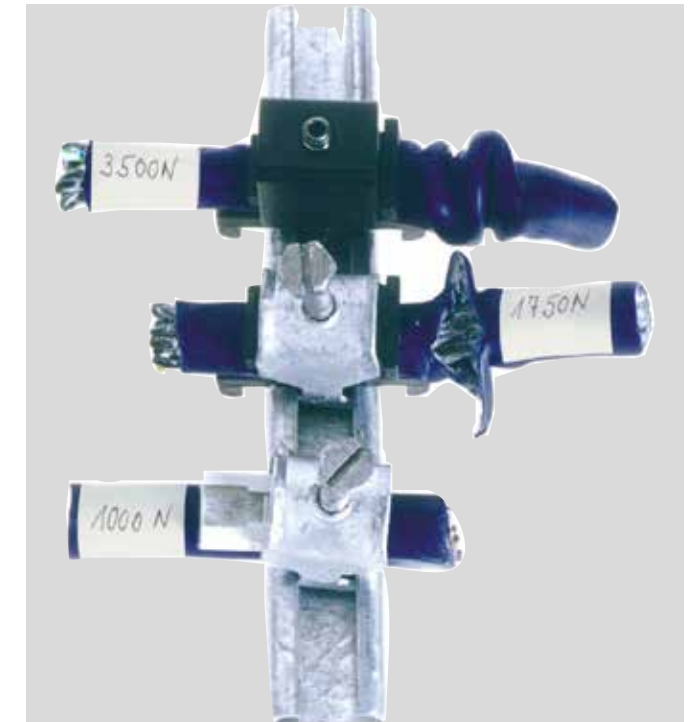


**igus® chainfix strain relief devices are tested in the in-house igus® laboratory under real-world conditions, taking many parameters into account**

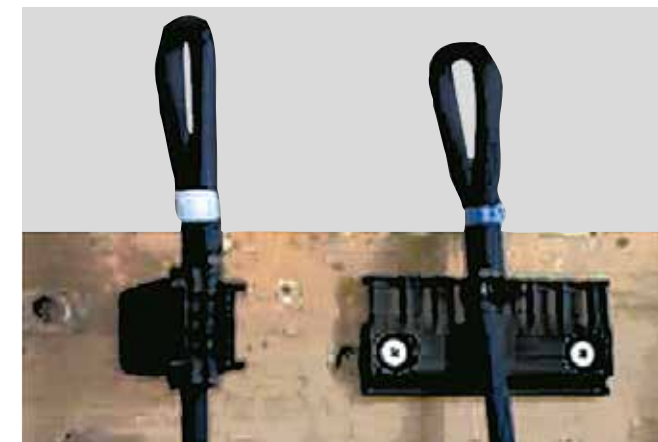
Whether under the influence of fluids like water or oil, or at different ambient temperatures. The interaction of chainfix systems with different jacket materials of cables and hoses plays a big role in the in-house test program.



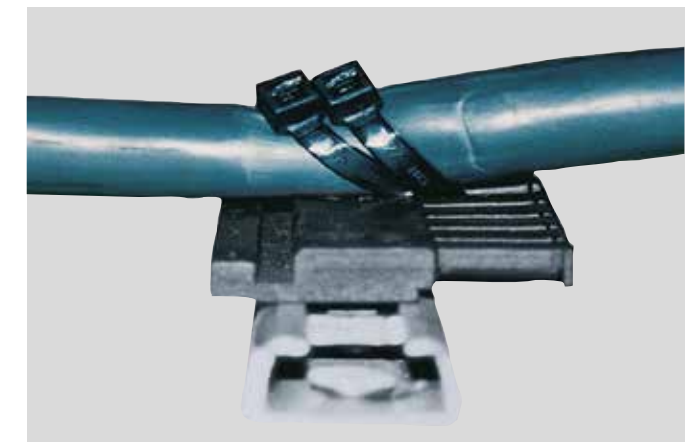
igus® tensile strength test CFX clamps with stacker saddle. **Conclusion:** the tensile strength of igus® chainfix clamps is three times higher when compared with conventional strain relief



Test: comparison of three different strain reliefs. **Conclusion:** triple tensile strength of igus® chainfix clamps when compared with conventional products



Tensile strength tests with chainflex® cables.



Tensile strength tests of igus® chainfix tiewrap plate with cable tiewraps.





Can be integrated into igus® KMA mounting bracket

For up to three cables stacked above one another

Reduced installation height, space-saving

High strength for dynamic applications

## chainfix clamps - fitted quickly and securely

- **New:** now also cost-effective strain relief for large hose and cable diameters - new sizes for cable diameters 42mm - 46mm and 46mm - 50mm are available
- chainfix clamps with up to 15mm reduced installation height compared to conventional clamps due to optimised housing height
- Tested in the igus® laboratory - up to 3.5 times higher force absorption compared to conventional clamps
- Easy to read the part number and mark indicating the correct installation direction
- Space and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easier fit into the C-profile
- Simple assembly with hex head set screw
- High strength for dynamic applications with improved stacker elements
- Built-in ribs on the stacker elements give secure grip on the cables
- Optional: CFXL clamps for increased holding force for heavy-duty applications (**Note:** CFXL clamps are always assembled in front of the e-chain®. They cannot be integrated into KMA mounting brackets with C-profile option!)



Available from stock. Ready to ship in 24 - 48hrs.\*

\*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

### Product range and materials

- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw: blank (material AISI 304)
- Stacker elements: bottom saddle and stacker saddle (igumid G material)
- Steel C-profile available (material galvanised steel)
- Stainless steel C-profile available (material AISI 304)

### Installation height

If the e-chain® glides on itself for long travels, the screw heads of the strain relief at the fixed end of the e-chain® must have a distance of at least 10mm from the top of the e-chain®. As a result, many strain relief elements described here may not be suitable for use at the fixed end on long gliding e-chains®. For unsupported e-chains® strain relief elements can always be safely used.



### Please note

- Ideally, the cables should be secured at both ends of the e-chain® with strain relief. **As a minimum they need to be attached at the moving end of the e-chain®!**
- When using chainfix clamps on C-profiles in the mounting bracket for series E4.38L/R4.38L, E4Q.34/H4Q.34, E4.32/H4.32/R4.32 (also for the classic series 280/290/R770, 2828/2928/R7728) a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index "K". Example: CFX12.1K



CFX - chainfix housing with reduced height



Save both time and space during installation with igus® chainfix clamps



For the following igus® series

#### E2.1

- E2.38
- E2.48

#### E2/000

- 2600/2700/2650/2680
- 3400/3500/3450/3480

#### E4.1L

- E4.38L/R4.38L
- E4.48L/R4.48L
- E4.64L

#### E4Q

- E4Q.34/H4Q.34
- E4Q.44/H4Q.44
- E4Q.58/H4Q.58
- E4Q.82/H4Q.82

#### E4.1

- E4.32/H4.32/R4.32
- E4.42/H4.42/R4.42
- E4.56/H4.56/R4.56
- E4.80/H4.80/R4.80
- E4.112/R4.112
- E4.162

#### E4/light

- 14040/14140/18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/19850
- 15250/15350

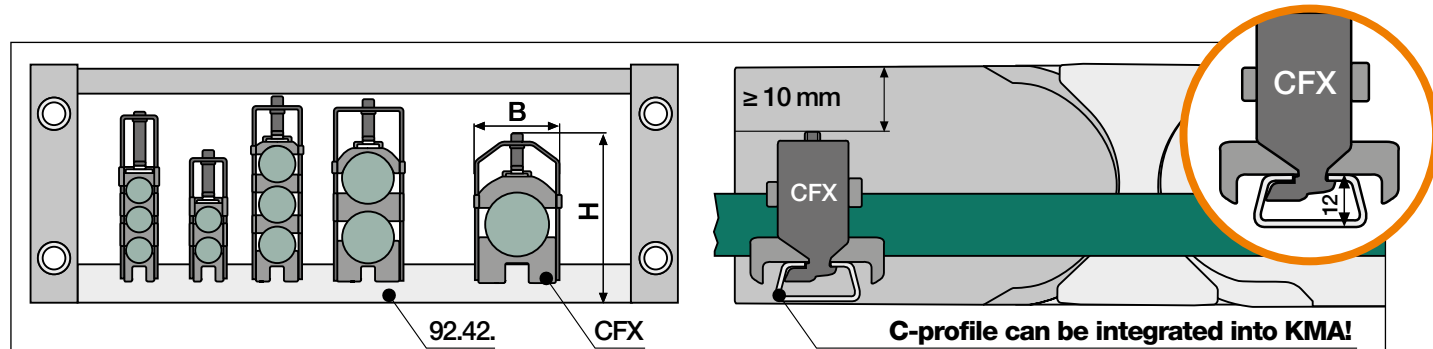
#### E6.1

- E61.40
- E61.52
- E61.62
- E61.80

#### E6

- E6.40
- E6.52/R6.52
- E6.62
- E6.80L
- E6.80





The H dimension in the tables is based on the maximum cable diameter. Cables with smaller diameters may result in a lower overall clamp housing heights. Tightening torque for CFX clamps 1.5Nm.



## CFX | Standard clamps with standard base

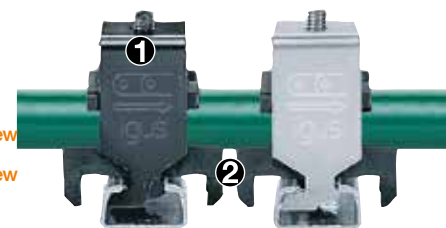
(suitable for C-profile 92.42.XXX, can be integrated into KMA with C-profile option)

### Single clamp housing, incl. bottom saddle

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFX12.1	CFX12.1.E	06 - 12	16	54	CFX30.1	CFX30.1.E	26 - 30	34	71
CFX14.1	CFX14.1.E	12 - 14	18	50	CFX34.1	CFX34.1.E	30 - 34	38	75
CFX16.1	CFX16.1.E	14 - 16	20	52	CFX38.1	CFX38.1.E	34 - 38	42	79
CFX18.1	CFX18.1.E	16 - 18	22	54	CFX42.1	CFX42.1.E	38 - 42	46	83
CFX20.1	CFX20.1.E	18 - 20	24	56	CFX46.1	CFX46.1.E	42 - 46	51	115 <b>New</b>
CFX22.1	CFX22.1.E	20 - 22	26	58	CFX50.1	CFX50.1.E	46 - 50	55	121 <b>New</b>
CFX26.1	CFX26.1.E	22 - 26	30	67					

\*Stainless steel material: AISI 304

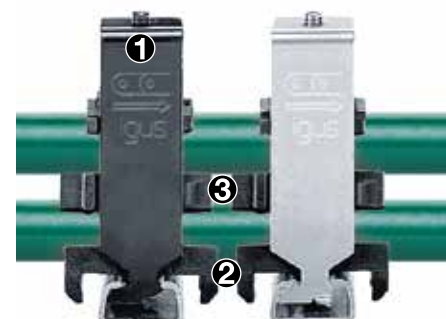
- ① Clamp
- ② Bottom saddle
- ③ Stacker saddle



### Double clamp housing, incl. bottom and stacker saddles

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFX12.2	CFX12.2.E	06 - 12	16	72	CFX22.2	CFX22.2.E	20 - 22	26	90
CFX14.2	CFX14.2.E	12 - 14	18	74	CFX26.2	CFX26.2.E	22 - 26	30	109
CFX16.2	CFX16.2.E	14 - 16	20	78	CFX30.2	CFX30.2.E	26 - 30	34	117
CFX18.2	CFX18.2.E	16 - 18	22	82	CFX34.2	CFX34.2.E	30 - 34	38	125
CFX20.2	CFX20.2.E	18 - 20	24	86					

\*Stainless steel material: AISI 304



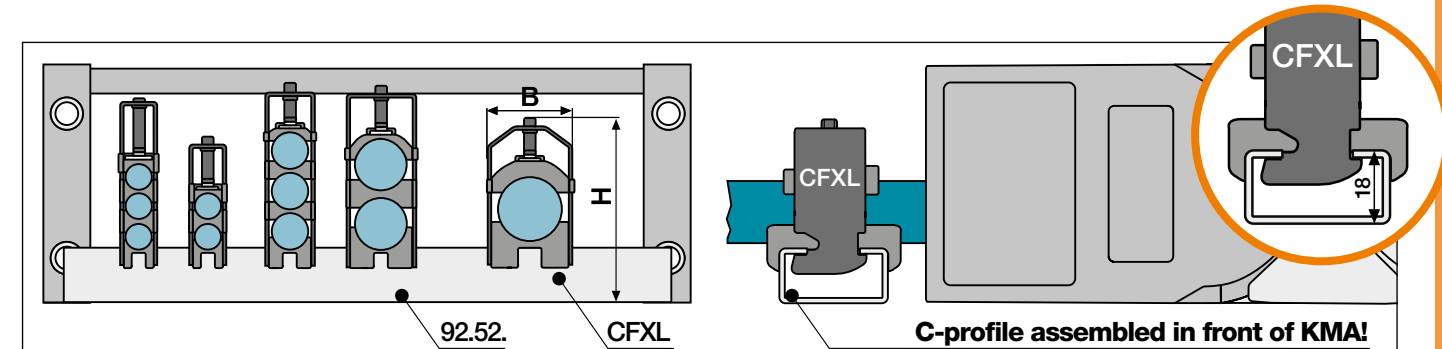
### Triple clamp housing, incl. bottom and stacker saddles

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFX12.3	CFX12.3.E	06 - 12	16	100	CFX18.3	CFX18.3.E	16 - 18	22	108
CFX14.3	CFX14.3.E	12 - 14	18	96	CFX20.3	CFX20.3.E	18 - 20	24	114
CFX16.3	CFX16.3.E	14 - 16	20	102	CFX22.3	CFX22.3.E	20 - 22	26	120

\*Stainless steel material: AISI 304



Suitable C-profile for CFX clamps ► Page 884



The H dimension in the tables is based on the maximum cable diameter. Cables with smaller diameters may result in a lower overall clamp housing heights. Tightening torque for CFX clamps 1.5Nm.

## CFXL | Clamps with wide base for increased holding force

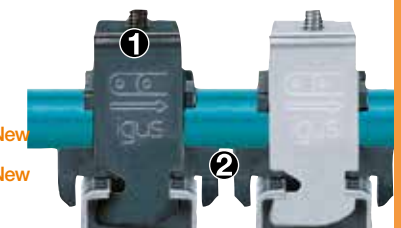
Suitable for C-profile 92.52.XXX, C-profile always assembled in front of the e-chain®. Cannot be integrated into KMA)

### Single clamp housing, incl. bottom saddle

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFXL12.1	CFXL12.1.E	06 - 12	16	60	CFXL30.1	CFXL30.1.E	26 - 30	34	77
CFXL14.1	CFXL14.1.E	12 - 14	18	56	CFXL34.1	CFXL34.1.E	30 - 34	38	81
CFXL16.1	CFXL16.1.E	14 - 16	20	58	CFXL38.1	CFXL38.1.E	34 - 38	42	85
CFXL18.1	CFXL18.1.E	16 - 18	22	60	CFXL42.1	CFXL42.1.E	38 - 42	46	89
CFXL20.1	CFXL20.1.E	18 - 20	24	62	CFXL46.1	CFXL46.1.E	42 - 46	51	122 <b>New</b>
CFXL22.1	CFXL22.1.E	20 - 22	26	64	CFXL50.1	CFXL50.1.E	46 - 50	55	125 <b>New</b>
CFXL26.1	CFXL26.1.E	22 - 26	30	73					

\*Stainless steel material: AISI 304

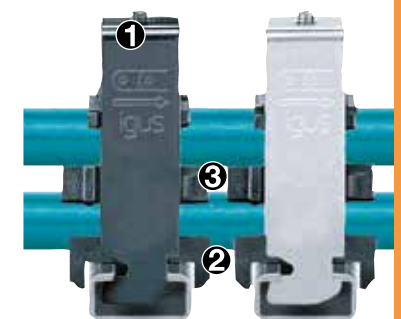
- ① Clamp
- ② Bottom saddle
- ③ Stacker saddle



### Double clamp housing, incl. bottom and stacker saddles

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFXL12.2	CFXL12.2.E	06 - 12	16	78	CFXL22.2	CFXL22.2.E	20 - 22	26	86
CFXL14.2	CFXL14.2.E	12 - 14	18	80	CFXL26.2	CFXL26.2.E	22 - 26	30	115
CFXL16.2	CFXL16.2.E	14 - 16	20	84	CFXL30.2	CFXL30.2.E	26 - 30	34	123
CFXL18.2	CFXL18.2.E	16 - 18	22	86	CFXL34.2	CFXL34.2.E	30 - 34	38	131
CFXL20.2	CFXL20.2.E	18 - 20	24	92					

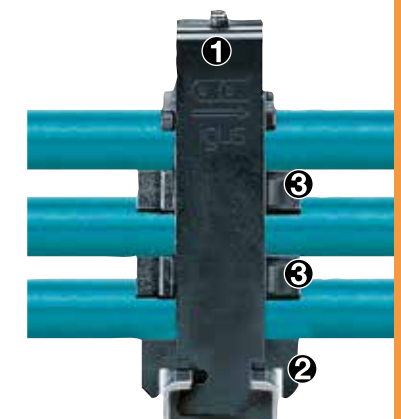
\*Stainless steel material: AISI 304



### Triple clamp housing, incl. bottom and stacker saddles

Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H	Part No.	Part No.	≤ Ø	B <sup>+2</sup>	H
Steel	Stainless steel*	[mm]	[mm]	[mm]	Steel	Stainless steel*	[mm]	[mm]	[mm]
CFXL12.3	-	06 - 12	16	106	CFXL18.3	-	16 - 18	22	114
CFXL14.3	-	12 - 14	18	102	CFXL20.3	-	18 - 20	24	120
CFXL16.3	-	14 - 16	20	108	CFXL22.3	-	20 - 22	26	126

\*Stainless steel material: AISI 304



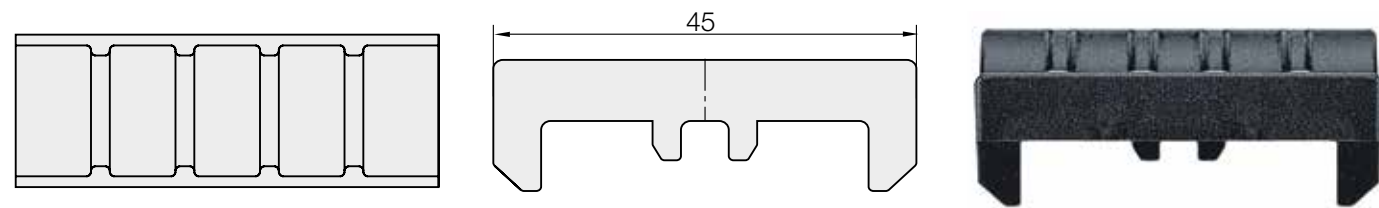
Suitable C-profile for CFXL clamps ► Page 884

**Stacker elements for CFX and CFXL clamps**

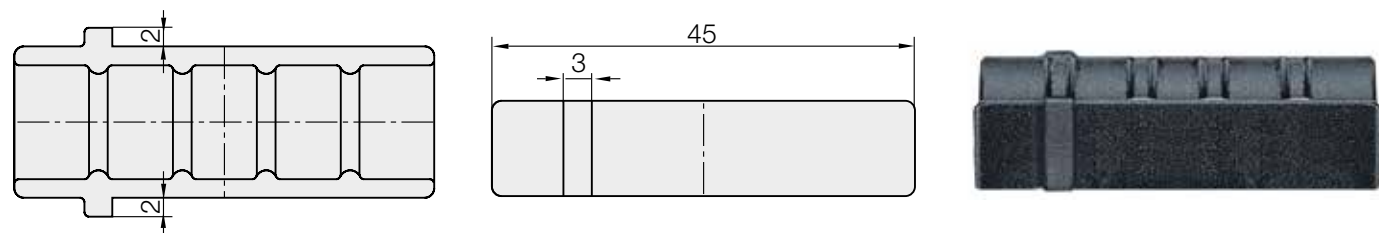
- Built-in ribs for secure grip on cables
- Optimised stacker saddle, captive due to ① locking spring and with ② spring groove for an easy and precise installation
- Conventional stacker saddle
- Long contact surface improves the clamp's stability
- More secure due to high strength



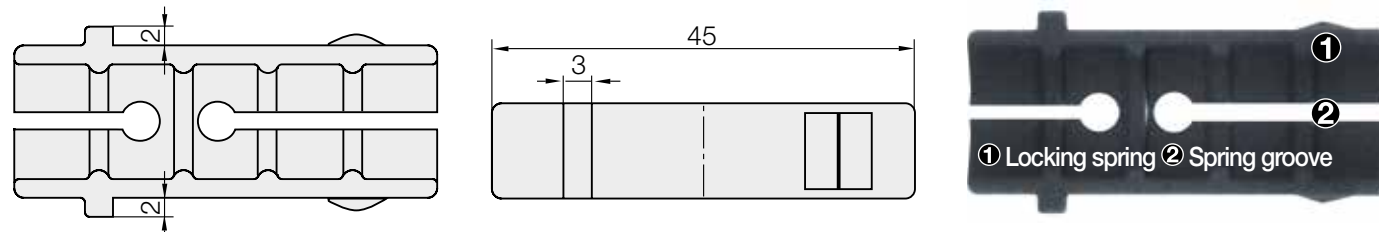
**CGXX | Bottom saddle to fit into the clamp housing as an individual part**



**CDXX | Conventional stacker saddles for all double and triple clamps as an individual part**



**CD.XX.C | Optimised stacker saddles for all double and triple clamps as an individual part**



CGXX	CDXX	CDXX.C	For	≤ Ø	CGXX	CDXX	CDXX.C	For	≤ Ø
Bottom saddle	Stacker saddle	Stacker saddle	clamp	[mm]	Bottom saddle	Stacker saddle	Stacker saddle	clamp	[mm]
CG12	CD12	CD.12.C	CFX/CFXL12.X	06 - 12	CG26	CD26	CD.26.C	CFX/CFXL26.X	22 - 26
CG14	CD14	CD.14.C	CFX/CFXL14.X	12 - 14	CG30	CD30	CD.30.C	CFX/CFXL30.X	26 - 30
CG16	CD16	CD.16.C	CFX/CFXL16.X	14 - 16	CG34	CD34	CD.34.C	CFX/CFXL34.X	30 - 34
CG18	CD18	CD.18.C	CFX/CFXL18.X	16 - 18	CG38	-	-	CFX/CFXL38.X	34 - 38
CG20	CD20	CD.20.C	CFX/CFXL20.X	18 - 20	CG42	-	-	CFX/CFXL42.X	38 - 42
CG22	CD22	CD.22.C	CFX/CFXL22.X	20 - 22					

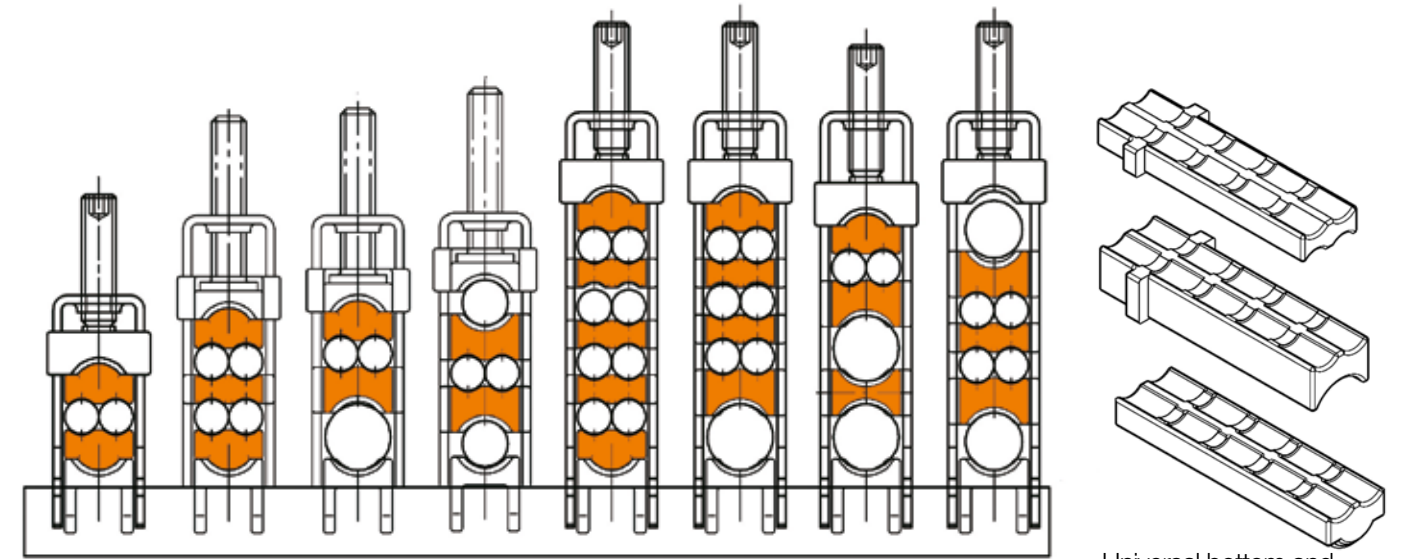
**Please note:** When using chainfix clamps on C-profile in the mounting bracket for series E4.38L/R4.38L, E4Q.34/H4Q.34, E4.32/H4.32/R4.32 a shortened bottom saddle has to be used. For shortened bottom saddles supplement Part No. with index "K". Example: CFX12.1K

**CFX12 - multi-clamps**

- More modular options of the proven igus® chainfix strain system
- Universal strain relief for various assembly options
- Save both time and space during installation
- Cost-effective, compact and modular
- For cable diameters from 6mm to 12mm



**CFX12 | Multi-clamps, universal strain relief**



CFX12.1.Z1 CFX12.2.Z1 CFX12.2.Z2 CFX12.2.Z3 CFX12.3.Z1 CFX12.3.Z2 CFX12.3.Z3 CFX12.3.Z4  
CFXL12.1.Z1 CFXL12.2.Z1 CFXL12.2.Z2 CFXL12.2.Z3 CFXL12.3.Z1 CFXL12.3.Z2 CFXL12.3.Z3 CFXL12.3.Z4

Universal bottom and stacker saddles

**CFX12 | Multi-clamps, universal strain relief**

Part No.Type	CDA.4/4-8	CD4/4	CD.4/4-8	CD12	≤ Ø [mm]
CFX12.1.Z1 / CFXL12.1.Z1	2 x	-	-	-	6
CFX12.2.Z1 / CFXL12.2.Z1	2 x	1 x	-	-	6
CFX12.2.Z2 / CFXL12.2.Z2	1 x	-	1 x	-	6 + 12
CFX12.2.Z3 / CFXL12.2.Z3	-	-	2 x	-	6 + 8
CFX12.3.Z1 / CFXL12.3.Z1	2 x	3 x	-	-	6
CFX12.3.Z2 / CFXL12.3.Z2	1 x	2 x	1 x	-	6 + 12
CFX12.3.Z3 / CFXL12.3.Z3	1 x	-	1 x	1 x	6 + 12
CFX12.3.Z4 / CFXL12.3.Z4	-	1 x	2 x	-	6 + 10

Standard material: galvanised steel. For the stainless steel version (material 1.4301/AISI 304), please add the part number with index .E. Example: Part No. CFX.12.3.Z1.E

Suitable C-profiles for CFX clamps ► Page 884

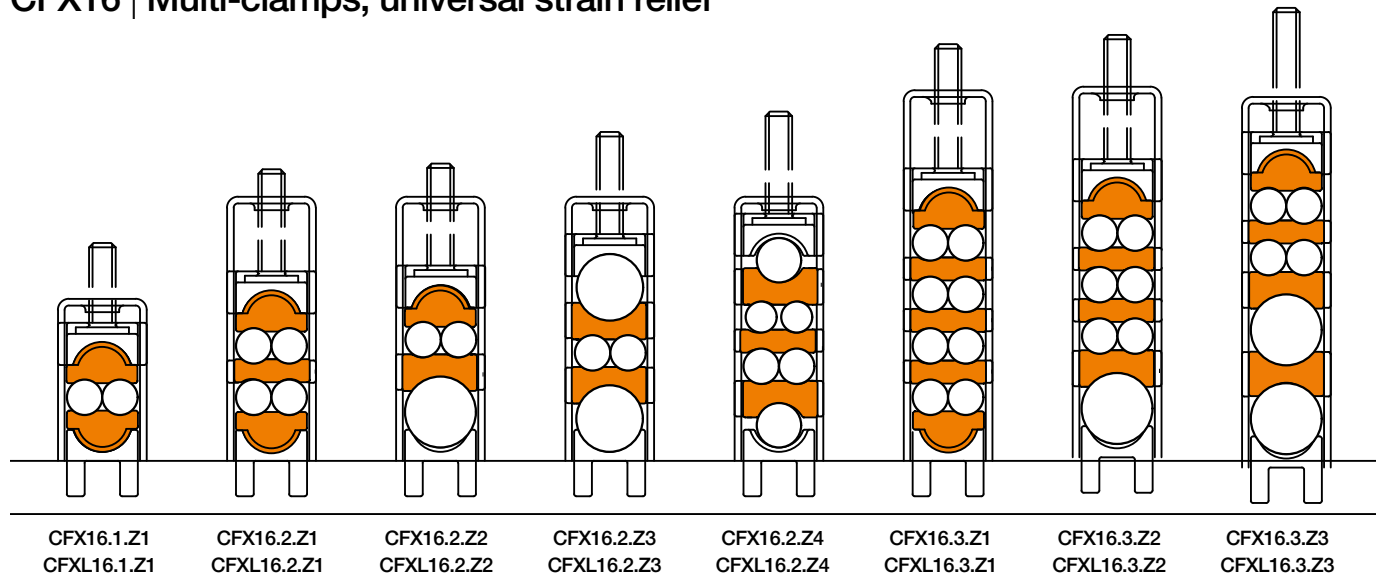


**CFX16 - multi-clamps**





- Very versatile, infinite assembly options
- **CFX** clamps with standard base
- Optional **CFXL** clamps with wide base for increased holding force available
- Save both time and space during installation
- Cost-effective, compact and modular
- Maximum cable or hose diameters: 8 to 16mm

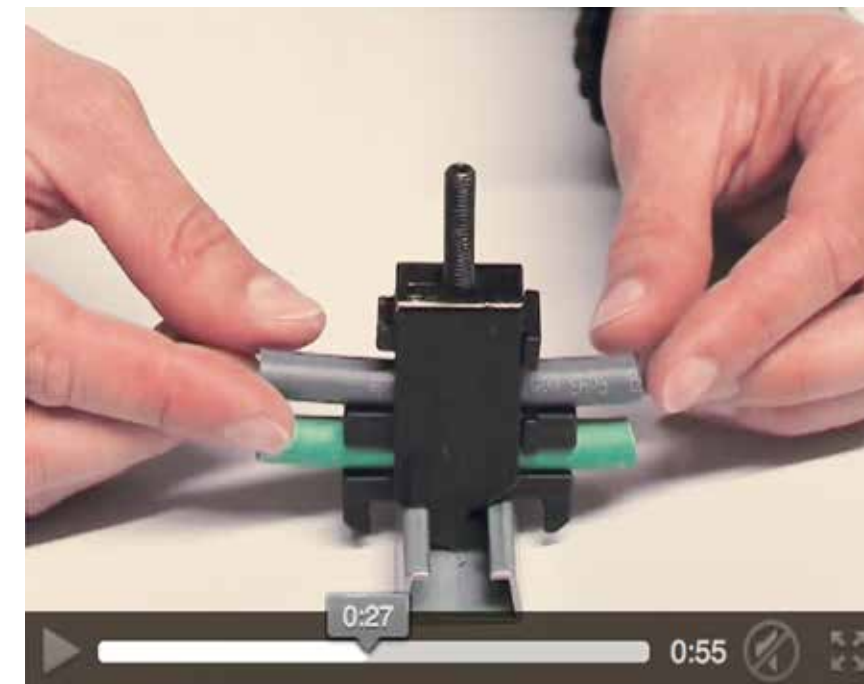
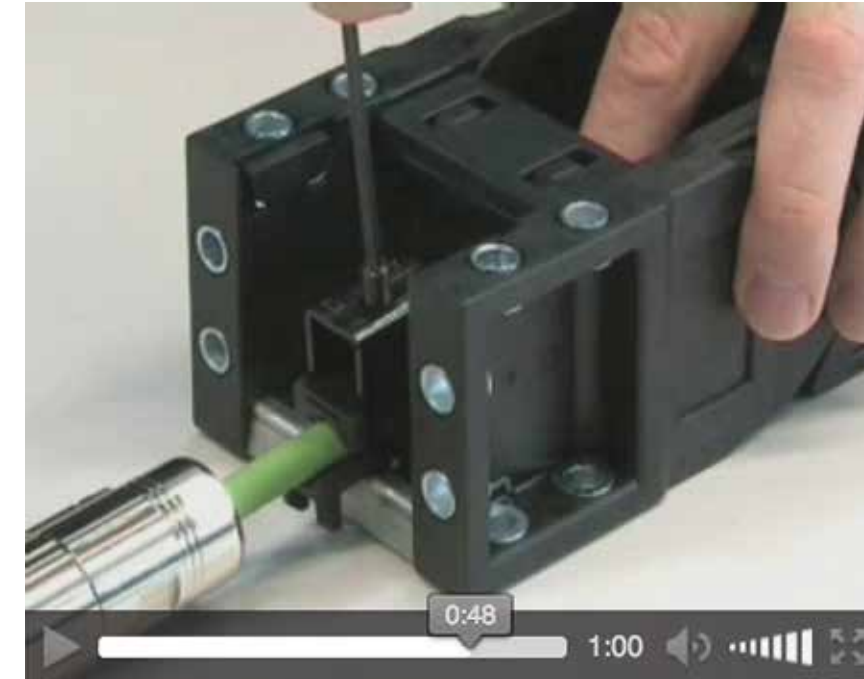


**CFX16 | Multi-clamps, universal strain relief**



**Stacker saddles - individual parts | Maximum cable or hose diameter**

Part No.Type	 CDA.8/8-16	 CD.8/8	 CD.8/8-16	 CD.16	≤ Ø [mm]
CFX16.1.Z1 / CFXL16.1.Z1	2 x	-	-	-	8
CFX16.2.Z1 / CFXL16.2.Z1	2 x	1 x	-	-	8
CFX16.2.Z2 / CFXL16.2.Z2	1 x	-	1 x	-	8 + 16
CFX16.2.Z3 / CFXL16.2.Z3	-	-	2 x	-	8 + 15
CFX16.2.Z4 / CFXL16.2.Z4	-	1 x	2 x	-	8 + 10
CFX16.3.Z1 / CFXL16.3.Z1	2 x	3 x	-	-	8
CFX16.3.Z2 / CFXL16.3.Z2	1 x	3 x	1 x	-	8 + 16
CFX16.3.Z3 / CFXL16.3.Z3	1 x	1 x	2 x	1 x	8 + 16



 You can find assembly videos for chainfix clamps online at ► [www.igus.eu/chainfix](http://www.igus.eu/chainfix)



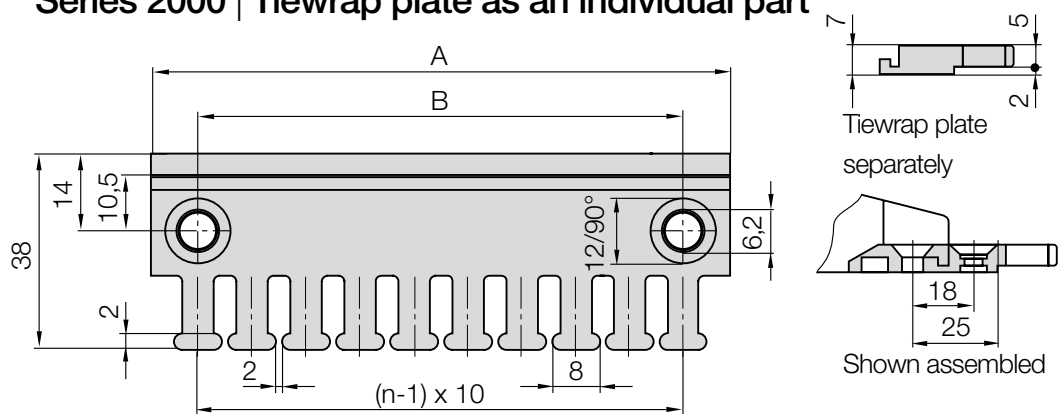
**Option 1A: chainfix tiewrap plate series 2000**

Available as an individual component

- Screwed on KMA with C-profile  
(KMA = polymer metal mounting bracket)
- Can be clipped onto some mounting brackets
- Can be used as an individual part in switchgear cabinets or in the assembly of machines



**Series 2000 | Tiewrap plate as an individual part**



Part No. Tiewrap plate	Number of teeth [n]	A [mm]	B [mm]	C [mm]	Centre bore - = no / + = yes
2020.ZB*	3	30	15	-	-
2030.ZB	4	40	20	-	-
2040.ZB	5	50	30	-	-
2050.ZB	6	58	40	-	-
2070.ZB	8	80	60	-	-
2090.ZB (= 2030.ZB + 2040.ZB)**	9	90	-	-	-
2100.ZB	10	100	80	-	-
2125.ZB (= 2050.ZB + 2050.ZB)**	12	120	-	-	-

\*Not suitable for E4.21.030. series \*\*Strain relief consisting of 2 tiewrap plates

**Cable tiewraps as individual parts**

Part No. cable tiewraps	Width x length [mm]	≤ Ø [mm]	Holding force [N]
100-piece bag			
CFB.001	4.8 x 150	36	222 N

**For the following igus® series**

- easy chain®**
- E200/Z200
- E2.1**
- E2.26
- E2/000**
- 1400/1500/1450/1480
- 2400/2500/2450/2480
- 255
- E2R100**
- R117/R118
- E2R**
- R48
- E4.1**
- E4.21
- E6.1**
- E61.29/EF61.29
- E61.35
- E61.40
- E6**
- E6.29/R6.29
- E6.35
- E6.40

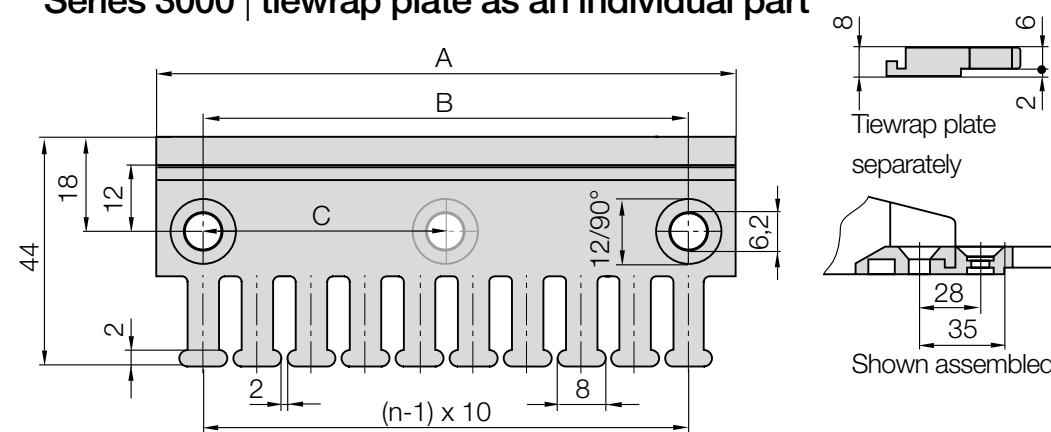
**Option 1B: chainfix tiewrap plate Series 3000**

Available as an individual component

- Screwed on KMA with C-profile  
(KMA = polymer metal mounting bracket)
- Can be clipped onto some mounting brackets
- Can be used as an individual part in switchgear cabinets or in the assembly of machines



**Series 3000 | tiewrap plate as an individual part**



Part No. Tiewrap plate	Number of teeth [n]	A [mm]	B [mm]	C [mm]	Centre bore - = no / + = yes
3050.ZB	5	50	30	-	-
3075.ZB	7	75	55	-	-
3100.ZB	10	100	80	-	-
3115.ZB	11	115	95	-	-
3125.ZB	12	125	105	-	-
3150.ZB	15	150	130	-	-
3175.ZB	17	175	155	-	-
3200.ZB	20	200	180	90	+
3225.ZB	22	225	205	102.5	+
3250.ZB	25	250	230	115	+

**Cable tiewraps as individual parts**

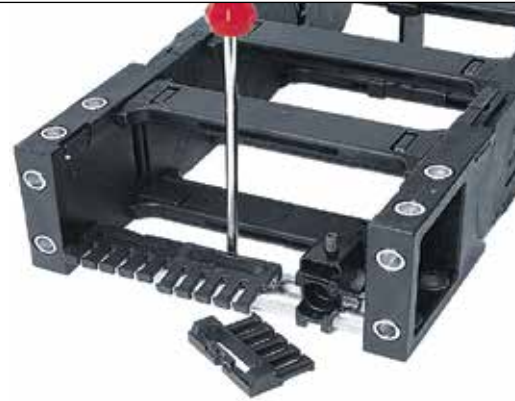
Part No. cable tiewraps	Width x length [mm]	≤ Ø [mm]	Holding force [N]
100-piece bag			
CFB.001	4.8 x 150	36	222 N

**For the following igus® series**


- easy chain®**
- E26/Z26
- E300/Z300
- E2.1**
- E2.38
- E2.48
- E2/000**
- 2600/2700/2650/2680
- 3400/3500/3450/3480
- E4.1L**
- E4.38L/R4.38L
- E4.48L/R4.48L
- E4.64L
- E4Q**
- E4Q.34/H4Q.34
- E4Q.44/H4Q.44
- E4Q.58/H4Q.58
- E4Q.82/H4Q.82
- E4.1**
- E4.32/H4.32/R4.32
- E4.42/H4.42/R4.42
- E4.56/H4.56/R4.56
- E4.80/H4.80/R4.80
- E4.112/R4.112
- E4.162
- 800
- 840
- E4/light**
- 14040/14140/18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/19850
- 15250/15350
- 1640/1608
- E6.1**
- E61.52
- E61.62
- E61.80
- E6**
- E6.52/R6.52
- E6.62
- E6.80L
- E6.80

**Option 1: chainfix tiewrap plates with clip-on connection to C-profile**

- Can be clipped into the KMA C-profile
- Easy to assemble without any screws
- Easy to remove with screwdriver but secure when in use
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

**Option 1 | Tiewrap plate for C-profile**

Part No.Tiewrap plate	Width [mm]	Number of teeth	For series
3050.ZC	50	5	For all mounting brackets with C-profile
3075.ZC	75	7	For all mounting brackets with C-profile

 For the following igus® series

**C-profile**

- For all mounting brackets with C-profile


**Option 2: integrated strain relief for R series E2 e-tubes**

- Strain relief integrates completely into the e-tube
- Easy to assemble without any screws
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

**Option 2 | Tiewrap plate for R series E2 e-tubes**

Part No.Tiewrap plate	Width [mm]	Number of teeth	For series
3050.Z*	50	5	R68
3075.Z	75	7	R68
5850.Z	46	4	R58
5835.Z	32	3	R58 for series 58.050. <i>Bi</i> 50 only.

\*Only possible from e-chain® width 100mm and larger

 For the following igus® series

**E2 R**


- R58
- R68

**Option 3: tiewrap plates for fixed crossbars**

- Can be clipped on fixed crossbars
- For use with many harnessed cables
- If the KMA is too small for C-profile
- Easy to assemble without any screws

**Option 3 | Tiewrap plate for fixed crossbars**

Part No.Tiewrap plate	Width [mm]	Number of teeth	For series
2050.Z	60	6	E/Z200, 2400/2500, 2600/2700
3050.Z	50	5	3400/3500
3075.Z	74	7	3400/3500
C.2.522.050.ZS <i>New</i>	48	4	E2.38, E2.48
C.2.522.065.ZS	63	6	E2.38, E2.48
C.2.522.075.ZS	73	7	E2.38, E2.48

 For the following igus® series

**easy chain®**

- E200/Z200

**E2.1**

- E2.38
- E2.48

**E2/000**


- 2400/2500
- 2600/2700
- 3400/3500

**Option 4: chainfix tiewrap plates for openable crossbars**

- Can be clipped on openable crossbars
- For use with many harnessed cables
- If the KMA is too small for C-profile
- Easy to assemble without any screws

**Option 4 | Tiewrap plate for openable crossbars**

Part No.Tiewrap plate	Width [mm]	Number of teeth	For series
2050.Z	60	6	2600/2700/2650, E4.28, E61.52, E6.52
3035.ZS	35	3	3400/3500/3450
3050.ZS	50	5	3400/3500/3450
3075.ZS	75	7	3400/3500/3450
3850.ZS	48	5	E4.32/H4.32, E4.42/H4.42, 14240/14340, 15250/15350, E61.62, E6.62
3875.ZS <i>New</i>	74	7	E4.32/H4.32, E4.42/H4.42, 14240/14340, 15250/15350, E61.62, E6.62
4550.ZS	74	5	E4.56/H4.56, E4.80/H4.80, E4.112, 14040/14140, 14550/14650, 15050/15150, E61.80, E6.80L, E6.80, 1640
4575.ZS	80	7	E4.56/H4.56, E4.80/H4.80, E4.112, 14040/14140, 14550/14650, 15050/15150, E61.80, E6.80L, E6.80, 1640
C622.100.ZS		8	E4.38L, E4.48L

 For the following igus® series

**E2/000**

- 2600/2700/2650
- 3400/3500/3450

**E4.1L**

- E4.38L
- E4.48L

**E4.1**

- E4.28
- E4.32/H4.32
- E4.42/H4.42
- E4.56/H4.56
- E4.80/H4.80
- E4.112

**E4/light**

- 14040/14140
- 14240/14340
- 14550/14650
- 15050/15150
- 15250/15350
- 1640

**E6**

- E6.52
- E6.62
- E6.80L
- E6.80

**E6.1**

- E61.52
- E61.62
- E61.80



**CFU.V strain relief with innovative honeycomb design for fast assembly and high holding force.**

- 80% faster filling (compared to CFX strain relief), openable from both sides for assembly in seconds
- Flexible honeycomb design for increased holding force
- Tribologically optimised honeycomb design for the best hold
- Different cables with diameters from 2mm to 17mm can be strain-relieved without problems
- Cables can be replaced easily
- Easy positioning of cables
- CFU.V cannot be attached to mounting bracket, but has to be installed beforehand on-site



### CFU.V | Honeycomb strain relief | Product range

Part No.CFU.V	Bi [mm]	Height [mm]	For series
CFU.V.64.40.100.25.01	100	62	See table on the right
CFU.V.64.40.125.25.01	125	62	See table on the right
CFU.V.64.40.150.25.01	150	62	See table on the right
CFU.V.64.40.175.25.01	175	62	See table on the right
CFU.V.64.40.200.25.01	200	62	See table on the right
CFU.V.64.40.225.25.01	225	62	See table on the right
CFU.V.64.40.250.25.01	250	62	See table on the right
CFU.V.64.40.275.25.01	275	62	See table on the right
CFU.V.64.40.300.25.01	300	62	See table on the right
CFU.V.64.40.325.25.01	325	62	See table on the right
CFU.V.64.40.350.25.01	350	62	See table on the right
CFU.V.64.40.375.25.01	375	62	See table on the right
CFU.V.64.40.400.25.01	400	62	See table on the right



reddot design award  
winner 2018



Installation note: 80% faster (compared to CFX strain relief) for different cable types in different chambers, fully flexible, with strong holding force and easy assembly.



1 Remove the top side with a hexagon wrench, openable from both sides ...



2 ... fill the CFU.V honeycomb with different cables (with diameters from 2mm to 17mm)



3 Close the top side ...



4 ... and screw the top side down with a hexagon wrench



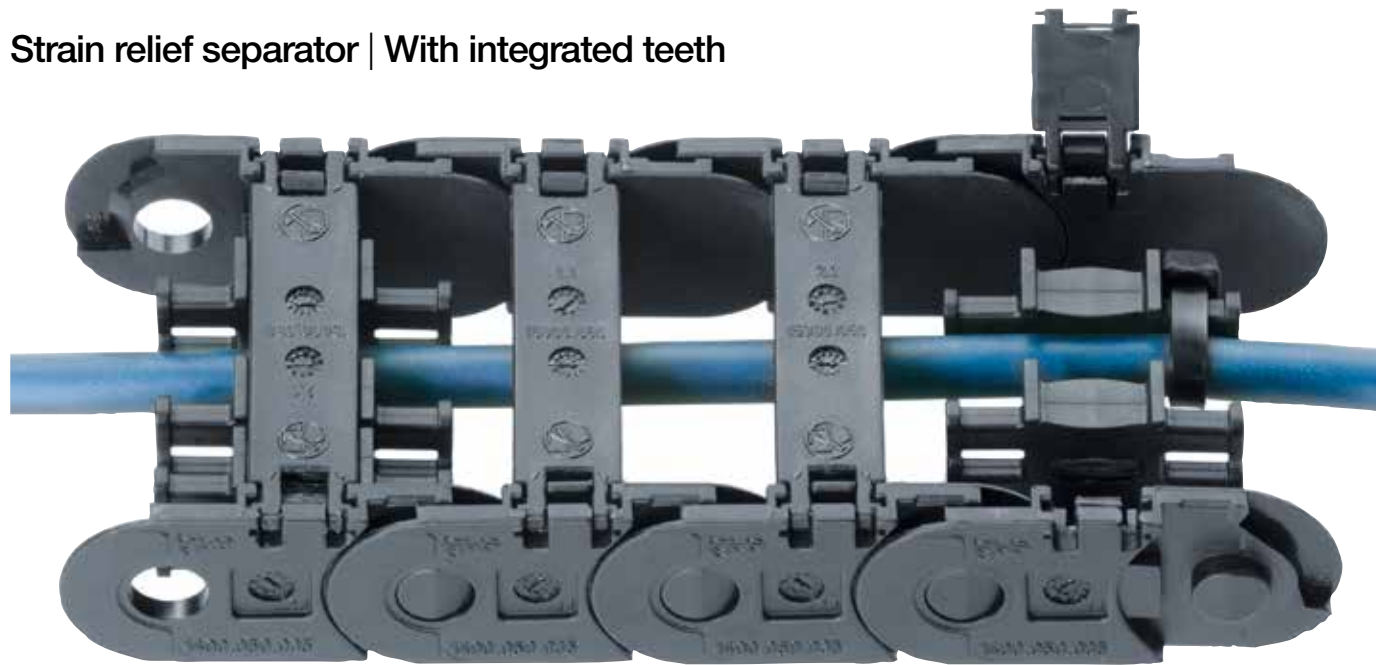
An installation video can be found on the Internet at  
► [www.igus.eu/cfu-honeycomb](http://www.igus.eu/cfu-honeycomb)

### Strain relief separators - separators with integrated strain relief teeth

- To be fitted at the first and last e-chain® link
- For restricted space conditions
- Easy to assemble without any screws
- The number  $n$  depends on the selection of the cables (diameter, type) and the available space

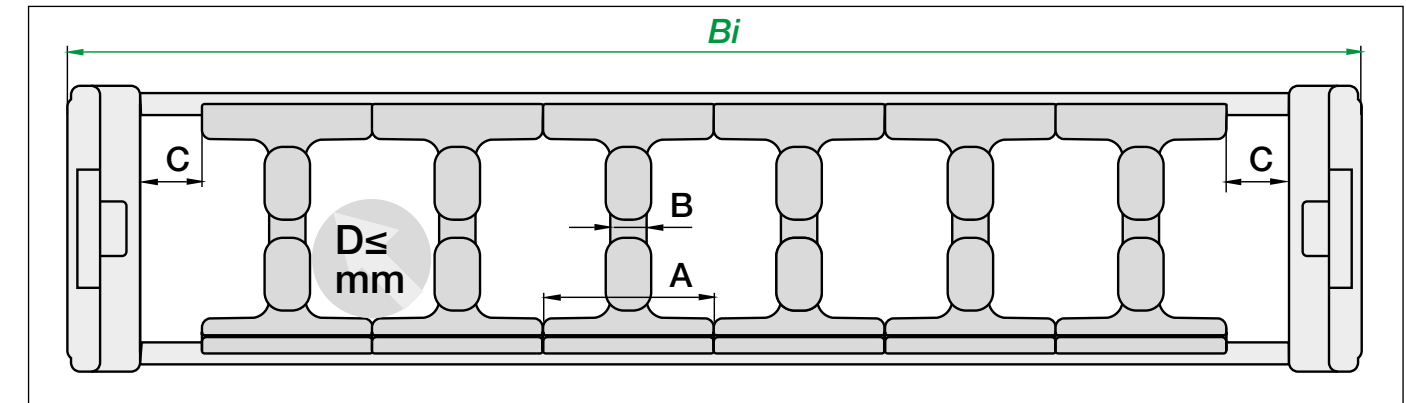


### Strain relief separator | With integrated teeth



Strain relief separators are assembled either at the first or last e-chain® link. Alternatively they can be fitted within the e-chain® as an intermediate strain relief


### Product range | Installation dimensions



### Strain relief separator | Product range | Installation dimensions

Part No.	For series	Number of teeth	A [mm]	B [mm]	C [mm]	D [mm]
26.Z*	E2.26	6	12	3	–	7
21.1.Z	1400/1500	4	10	4	–	6
2020.Z	2400/2500	2	10	4	–	6
2020.ZR	2450/2480	4	10	4	–	6
262.Z	2600/2700	3	10	4	–	6
301.Z	3400/3500	3	18	4	–	14
34501.Z	3450/3480	6	14	4	–	10
1585.01.Z	R157/R158	6	22	4	–	18
1685.01.Z	R167/R168	8	22	4	–	18
481.ZR	R48	4	10	3.5	10	6.5
R2.26.Z	R2.26/R2.26i	4	10	3	–	6
R2.40.Z	R2.40/R2i.40	8	12	3	–	7
31.Z	E4.31L/R4.31L	4	9	4	6	6
38.Z	E4.38L/R4.38L	4	14	4.5	8	15
48.Z	E4.48L/R4.48L	4	14	4.5	8	20
48.ZS	E4.48L/R4.48L	4	14	4.5	8	20
T2103.Z	E4.21	2	8	4	1	4
28.Z	E4.28	4	10	4	–	6
28.ZT	R4.28	4	10	4	15	6
E6.29.02.Z	T3.29	2	8	4	1	4
E6.29.02.Z	E6.29/E61.29	2	8	4	1	4
R6.29.02.Z	R6.29	2	10	4	10	4
E6.35.02.Z	E6.35/E61.35	3	8	4	1	4
E6.40.02.Z	E6.40/E61.40	3	13	4	–	8

\*For KMA mounting bracket only

 For the following igus® series

#### E2.1

- E2.26

#### E2/000

- 1400/1500
- 2400/2500
- 2450/2480
- 2600/2700
- 3400/3500
- 3450/3480

#### E2R100

- R157/R158
- R167/R168

#### E2R

- R48

#### R2.1

- R2.26/R2i.26
- R2i.40/R2i.40

#### E4.1L

- E4.31L/R4.31L
- E4.38L/R4.38L
- E4.48L/R4.48L

#### E4.1

- E4.21
- E4.28/R4.28

#### T3

- T3.29

#### E6.1

- E61.29/EF61.29
- E61.35
- E61.40

#### E6

- E6.29
- R6.29
- E6.35
- E6.40



For series E2/000

		<b>1400/1500</b> <b>e-chains®</b>
		unassembled 21.1.Z
		assembled 21.1.Z.1

		<b>2400/2500</b> <b>e-chains®</b>
		unassembled 2020.Z
		assembled 2120.Z

		<b>2450/2480</b> <b>e-tubes</b>
		unassembled 2020.ZR
		assembled 2120.ZR

		<b>2600/2700</b> <b>e-chains®</b>
		unassembled 262.Z
		assembled 263.Z

		<b>3400/3500</b> <b>e-chains®</b>
		unassembled 301.Z
		assembled 311.Z

		<b>3450/3480</b> <b>e-tubes</b>
		unassembled 34501.Z
		assembled 34511.Z

For series E2.1 e-chains®

		<b>E2.26-E2i.26*</b> <b>e-chains®</b>
		unassembled 26.Z
		assembled 26.Z.1

\*For KMA mounting bracket only

For series R100 E2 e-tubes

		<b>R157/R158</b> <b>e-tubes</b>
		unassembled 1585.01.Z
		assembled 1586.01.Z

		<b>R167/R168</b> <b>e-tubes</b>
		unassembled 1685.01.Z
		assembled 1686.01.Z

For series R E2 e-tubes

		<b>R48</b> <b>e-tubes</b>
		unassembled 481.ZR
		assembled 482.ZR

For series R2.1 e-tubes

		<b>R2.26-R2i.26</b> <b>e-tubes</b>
		unassembled R2.26.Z
		assembled R2.26.Z.1

		<b>R2.40-R2i.40</b> <b>e-tubes</b>
		unassembled R2.40.Z
		assembled R2.40.Z.1

For series E4.1L

		<b>E4.31L/R4.31L</b> <b>e-chains®/e-tubes</b>
		unassembled 31.Z
		assembled 31.Z.1

		<b>E4.38L/R4.38L</b> <b>e-chains®/e-tubes</b>
		unassembled 38.Z
		assembled 38.Z.1

		<b>E4.48L/R4.48L</b> <b>e-chains®/e-tubes</b>
		unassembled 48.Z
		assembled 48.Z.1

		<b>E4.48L/R4.48L</b> <b>e-chains®/e-tubes</b>
		unassembled 48.ZS
		assembled 48.ZS.1

For series E4.1

		<b>E4.28</b> <b>e-chains®</b>
		unassembled 28.Z
		assembled 28.Z.1

		<b>R4.28</b> <b>e-tubes</b>
		unassembled 28.ZT
		assembled 28.ZT.1

		<b>E4.21</b> <b>e-chains®</b>
		unassembled T2103.Z
		assembled T2113.Z

For series T3

		<b>T3.29</b> <b>e-chains®</b>
		unassembled E6.29.02.Z
		assembled E6.29.12.Z

For series E6.1 / E6 / R6

		<b>E6.29/E61.29</b> <b>e-chains®</b>
		unassembled E6.29.02.Z
		assembled E6.29.12.Z

		<b>R6.29</b> <b>e-tubes</b>
		unassembled R6.29.02.Z
		assembled R6.29.12.Z

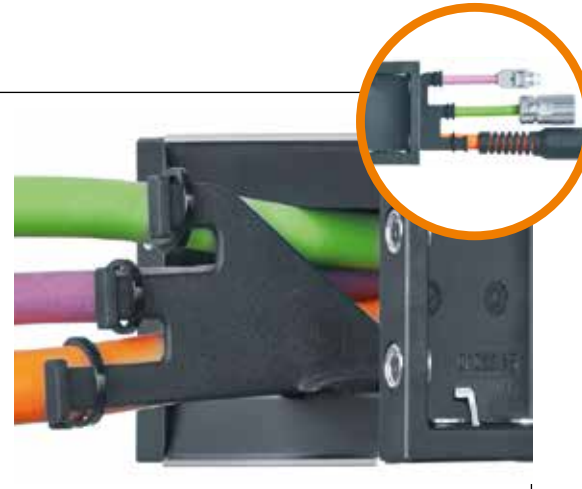
		<b>E6.35/E61.35</b> <b>e-chains®</b>
		unassembled E6.35.02.Z
		assembled E6.35.12.Z

		<b>E6.40/E61.40</b> <b>e-chains®</b>
		unassembled E6.40.02.Z
		assembled E6.40.12.Z



**CFV strain relief element - for a stepped strain relief for use outside of the e-chain® section**

- Easy strain relief for cables, even in fully enclosed tubes and with different connectors
- For e-chains® and e-tubes
- Subsequent installation into KMA mounting bracket or top-hat (DIN) rail 15 (TS92.31) possible



**CFV | Strain relief elements with tie-wrap teeth**

Part No.	For series	Inner height hi [mm]	For use in
CFV.31.N15	E4.31L/R4.31L	31	Top-hat (DIN) rail 15 (TS92.31)
CFV.R2.26.Z	R2.26	26	KMA*
CFV.R2.40.Z	R2.40	40	KMA*
CFV.42.C	2600/2700/2650/2680 3400/3500/3450/3480 E4Q.34/H4Q.34 E4.32/H4.32/R4.32 E4Q.44/H4Q.44 E4.42/H4.42/R4.42 E4.38L/R4.38L E4.48L/R4.48L	35 45 32 32 42 42 38 48	KMA* KMA* KMA* KMA* KMA* KMA* KMA* KMA*
CFV.80.C	R2.75 E4.64L E4Q.58/H4Q.58 E4.56/H4.56/R4.56 E4Q.82/H4Q.82 E4.80/H4.80/R4.80	75 64 56 56 80 80	KMA* KMA* KMA* KMA* KMA* KMA*

\*KMA = polymer metal mounting bracket

**For the following igus® series**

- E2/000**
  - 2600/2700
  - 2650/2680
  - 3400/3500
  - 3450/3480
- R2.1**
  - R2.26
  - R2.40
- E4.1L**
  - E4.31L/R4.31L
  - E4.38L/R4.38L
  - E4.48L/R4.48L
  - E4.64L
- E4Q**
  - E4Q.34/H4Q.34
  - E4Q.44/H4Q.44
  - E4Q.58/H4Q.58
  - E4Q.82/H4Q.82
- E4.1**
  - E4.32/H4.32/R4.32
  - E4.42/H4.42/R4.42
  - E4.56/H4.56/R4.56
  - E4.80/H4.80/R4.80



CFV stepped strain relief element easily clipped in from above

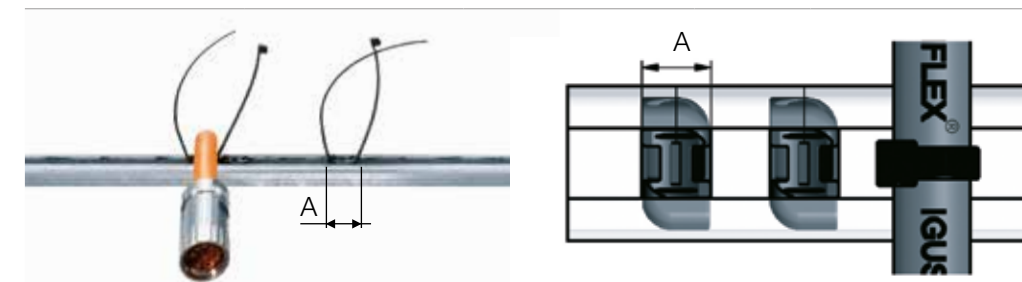
**Option 1: CFN nuggets for C-profile**  
**Option 2: CFN nuggets for top-hat (DIN) rail 35**

- Universal cable fixation in C-profile or clip onto a standard top-hat (DIN) rail 35
- Simple strain relief with cable tiewraps
- Very little space required
- Easy to assemble without any screws and tools
- Adjustable to every e-chain® filling



**Option 1 | CFN nuggets for C-profile**

Part No.	For C-profiles	≤ Ø [mm]	A [mm]
<b>Nugget</b>			
CFN.20	92.42 ... /92.42 ... E	20	10.8
CFN.30.52	92.52 ... /92.52 ... E	30	16.4

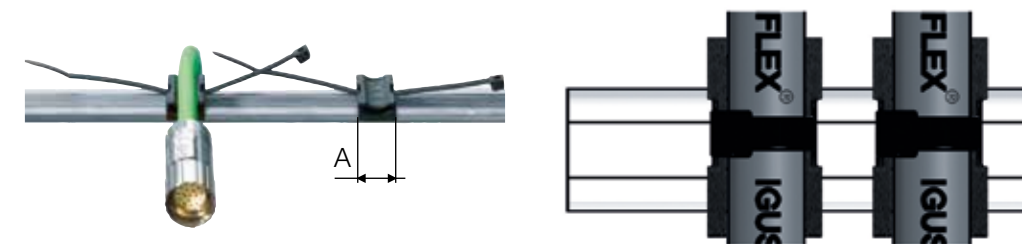


**For the following igus® series**

- C-profile**
  - For all mounting brackets with C-profile

**Option 2 | CFN nuggets for top-hat (DIN) rail 35**

Part No.	For top-hat (DIN) rails	≤ Ø [mm]	A [mm]
<b>Nugget</b>			
CFN.20.N35	Top-hat (DIN) rail 35	20	20



**For the following igus® series**

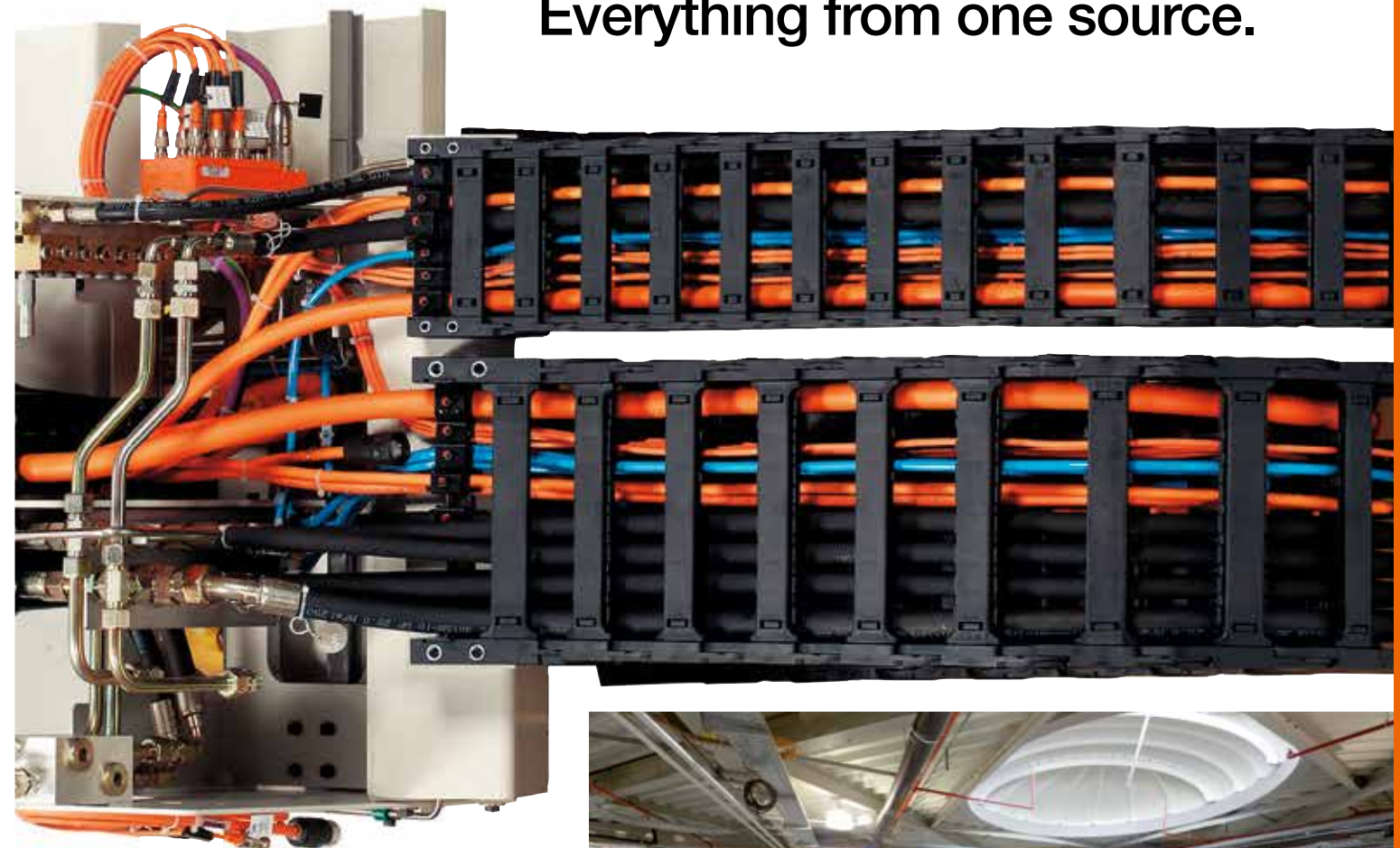
- Top-hat (DIN) rail**
  - Top-hat (DIN) rail 35





# igus<sup>®</sup> readychain<sup>®</sup> & readycable<sup>®</sup>

Ready-to-install energy supply systems.  
Cables with connectors.  
Minimise process costs.  
Everything from one source.





Harnessed energy supply systems, connectors, cables and attachment parts by igus® ...  
Everything from one source - directly from the manufacturer - quick delivery to your machine



Ready-to-install systems, from connectors through assembled cables up to complex energy supply modules, delivered in 1-10 days.



Customer-specific production

readychains® - increase your capacity and cash flow quickly with igus®

- Lower your overhead costs
- Cut your throughput times from days to hours
- Respond flexibly to order variations
- Utilise igus® manufacturing capacities and our know-how in cable assembly



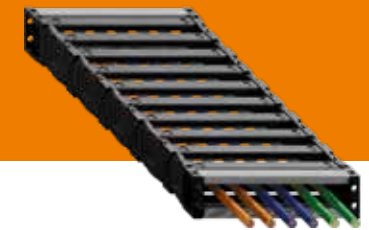
From one off to mass production

Reduce the number of suppliers and orders by 75%

- One order, one invoice, one delivery
- One partner for minimal machine downtimes
- All readychain® components are subjected to extensive quality checks and function tests

Industrial harnessed energy chain modules directly from the manufacturer ... you decide quantity, travel distance and level of harnessing ...

### 3 Benefits: readychain® basic



- 1 ONE supplier - combine suppliers
- 2 Reduced assembly time
- 3 Reduce failures

Reduction of assembly time  
Reduction of logistics cost  
Optimisation of procurement process



Further information, videos, configurators and product finders  
▶ [www.igus.eu/RCbasic](http://www.igus.eu/RCbasic)

### 6 Benefits: readychain® standard



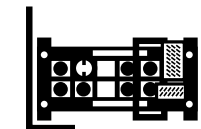
- 4 No electrical termination needed
- 5 100% digitally tested
- 6 No cable surplus

Reduction of assembly time  
Reduction of logistics cost  
Optimisation of procurement process



Further information, videos, configurators and product finders  
▶ [www.igus.eu/RCstandard](http://www.igus.eu/RCstandard)

### 9 Benefits: readychain® standard+



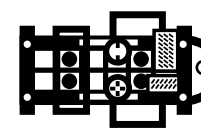
- 7 Reduce interfaces
- 8 Optimise points of connection/interfaces
- 9 Ready-to-install multi-axis system

Reduction of assembly time  
Reduction of logistics cost  
Optimisation of procurement process



Further information, videos, configurators and product finders  
▶ [www.igus.eu/RCstandard+](http://www.igus.eu/RCstandard+)

### 13 Benefits: readychain® premium



- 10 Optimise your transport/assembly
- 11 One single assembly
- 12 One Part No./Product group
- 13 Plug & Play

Reduction of assembly time  
Reduction of logistics cost  
Optimisation of procurement process



Further information, videos, configurators and product finders  
▶ [www.igus.eu/RCpremium](http://www.igus.eu/RCpremium)



600 orders/week, more than 3,000m<sup>2</sup> of floorspace, "chain-cable guarantee" since 1989... 3 shifts, 13 project engineers, 160 employees dedicated only to harnessing



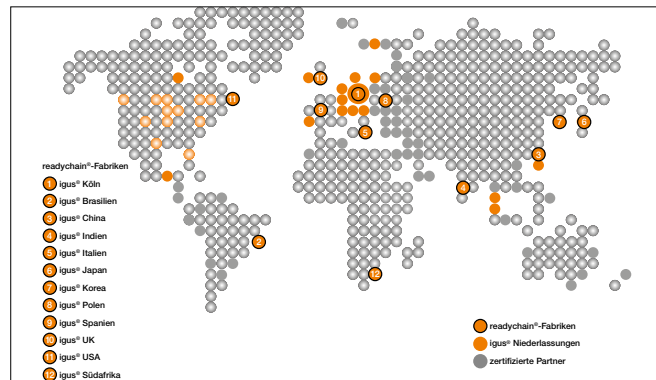
Ready-to-install systems, from connectors through assembled cables up to complex energy supply modules, delivered in 1-10 days



Up-to-date production processes, custom-build or serial production



Customised cable assembling



12 readychain® factories worldwide



Full service from system acceptance to installation

**1 Everything from one source**

The readychain® includes pre-harnessed, customised energy chain systems. The "plug and play" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the transport rack can yield benefits even at low quantities.



**2 Flexible components**  
The telescoping supports and braces of the readychain® rack allow flexible adaption to the installation on site. Changes in mass production can be undertaken easily. Additional components can also be easily attached to the rack due to the modular joining mechanism.

**3 Sustainable use**

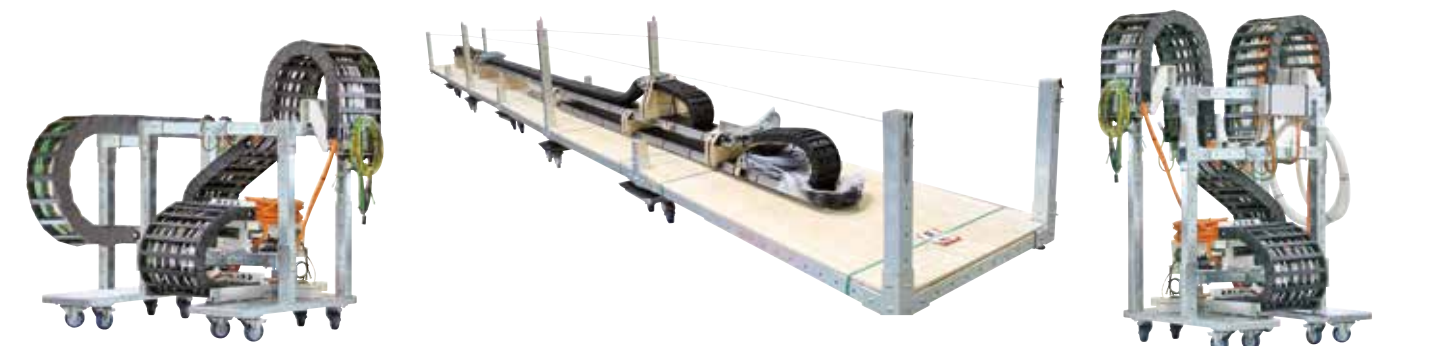
The components of the readychain® rack are galvanised and thus designed for a long life. Each rack is constructed within a few hours. The individual elements can be reused at any time removing the need to dispose of custom made parts - as with conventional welded transport racks.

**4 Precisely fitting plug & play**

All interfaces and attachments are designed in such a way that the installation of the energy chain can be managed quickly and easily. The complete package includes the matching plugs and connectors, plates, sensor actuator boxes, linear bearings, links to the central lubrication, etc., all reducing the installation time considerably.



Save 80% when prototyping: Assembly transport rack for ready-to-install energy supply systems.





igus® connectors



Round connector kit

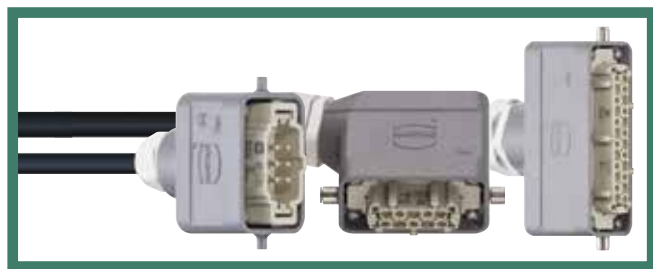


D-Sub as a service kit



Tools and accessories

igus® readycable®



Control cables with industrial connectors



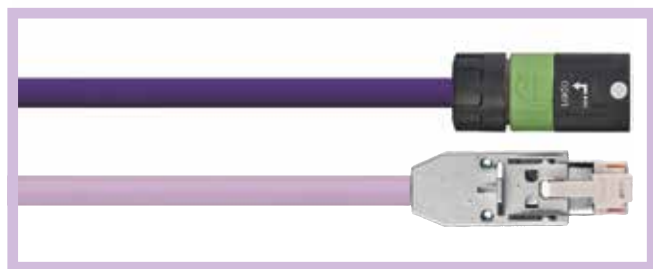
Harnessed dress packs and cables for robots



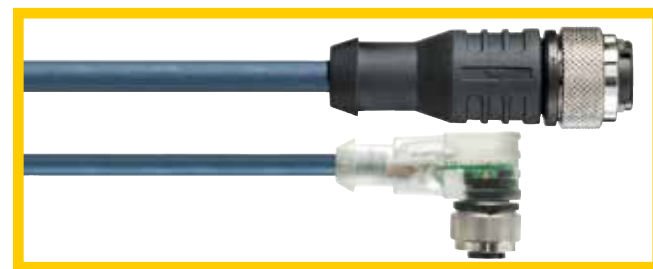
Drive technology: more than 4,200 cables



Catalogue standards: video/vision/bus technology



Catalogue standards: network/Ethernet/FOC/Field bus



Catalogue standards: initiator cables down to 4 x d

igus® hoses and attachments



Configured online with hose cable configurator - to meet your needs



readychain® service

- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule



System acceptance on your machine



readychain® service

- Component selection
- Interface optimisation
- Documentation
- Integrated project management
- Cost optimisation



Project planning



readychain® Skype service\*

- Initial acceptance from your work place
- Build your prototype with an igus® project engineer, live in your meeting
- Your requests for change explained with a model ... or visit us for acceptance in production

\*only available in Germany



Prototype including transport rack



readychain® installation

- System installation by igus® specialists
- igus® supervision service for your own installation
- Transparent, fixed price



Installation on site



Capacity for 600,000 assembled cables a year ... more than 18,000 test programmes ... 1,800 test adapters



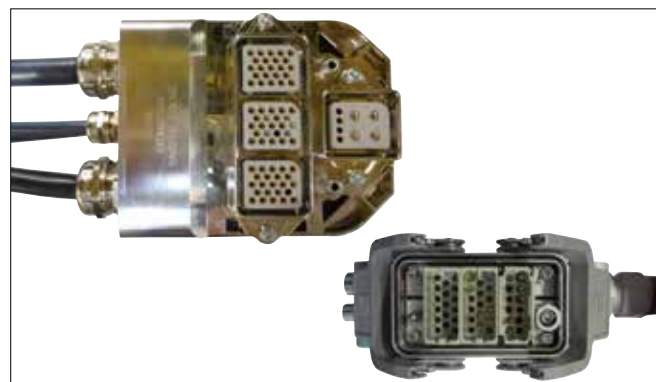
Process reliability ... crimp forces monitored ... automated ... time-optimised ...



Computer-based high-voltage testing and inspection of all assembled cables



Modern machinery ... automatic stripper-crimper



Special cable assemblies



Worldwide system guarantee



Worldwide system guarantee

In our warehouse the material waits for your order...  
... and not your order for the materials!

e-chains® ...



90,000 e-chain® components

... chainflex® cables ...



3 million metres of cable on stock

... harnessing



3,500 connector components



Hundreds of metres of guide troughs



3,800m² igus® test lab - more than 8,000 tests every year



Quickly within reach



Numerous strain relief solutions



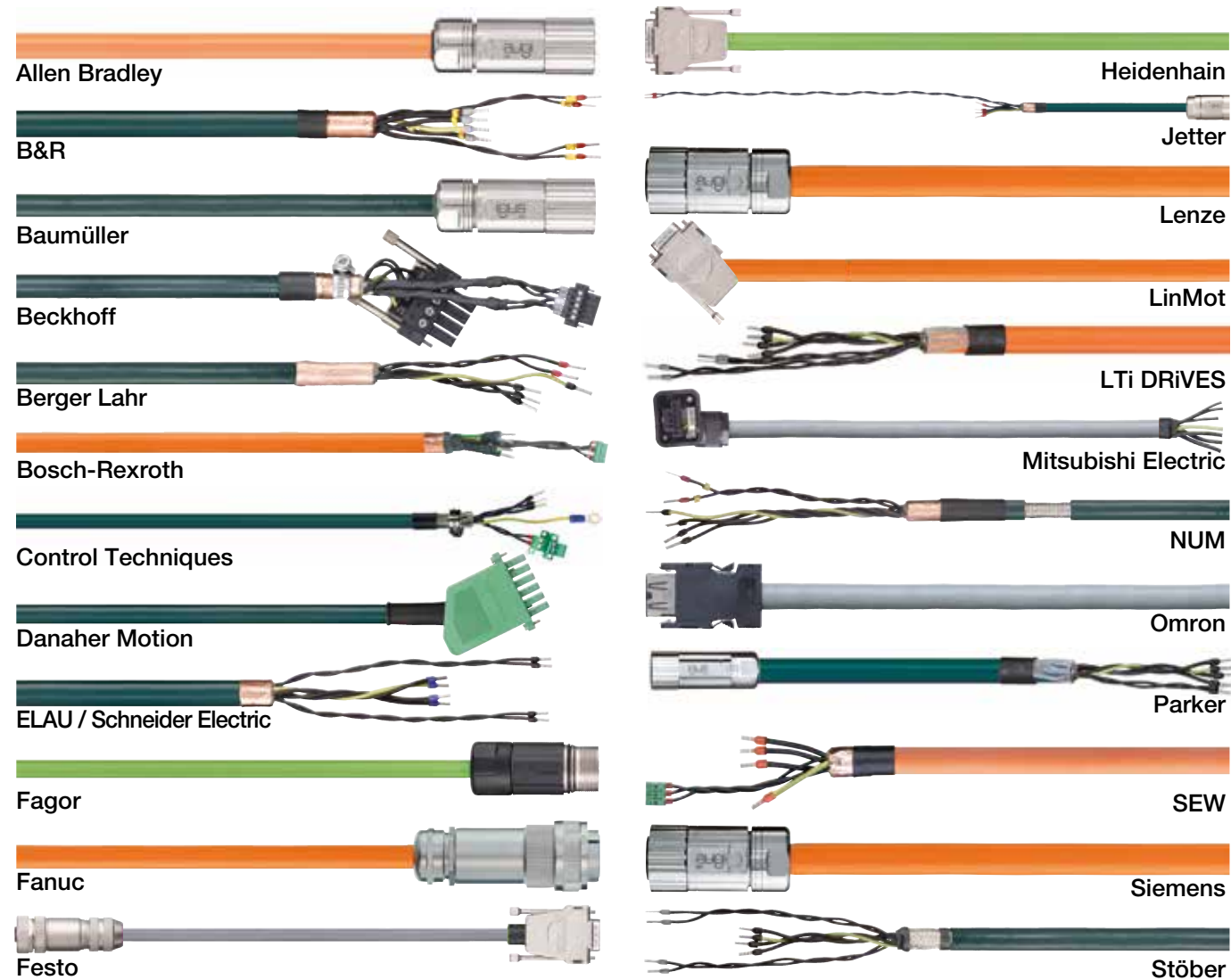
More than 8,000 cables per week



Just in time supply



readycable® – harnessed cables in 24hrs or today



- igus® offers more than 5,000 harnessed cables online
- Servo, motor and signal/encoder cables suitable for 24 manufacturers
- No cutting costs, no surcharges for small quantities and packaging
- Cable length accurate to the centimetre to the customer spec
- Smallest bend radii from 7.5 x d
- Reduce storage costs and increase cashflow
- Available in 24hrs or today

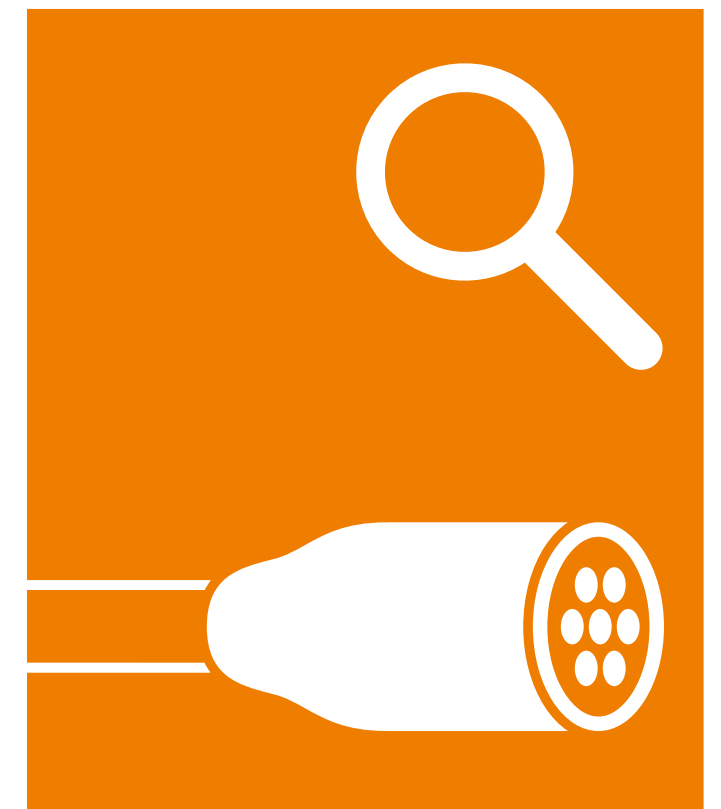
... over 5,000 drive cables ... in just 8 seconds ...  
readycable® finder 2.0



Ready-to-connect drive cables -  
find and choose online in seconds

- Find drive cables suitable for 24 manufacturers quickly and easily online
- Price for different cable lengths and batch sizes available instantly
- Search by manufacturer or igus® part number
- Important information such as jacket material, oil resistance or bend radius at a glance
- Submit an enquiry or order with just one click
- 5,000 drive cables, suitable for 24 manufacturers, to choose from

- 1 Enter manufacturer or igus® part number
- 2 Compare cables with different jacket materials
- 3 Choose and order directly/ submit enquiry



[www.igus.eu/readycable-finder](http://www.igus.eu/readycable-finder)



## Technical appendix

### The tricks and features of the chainflex® design

Know-how from testing	924
Results from the tests	926
Construction and sectional views through the chainflex® cable types	928

### Tested, tested, tested

Test no. 4876 - Tested at -40°C	930
Test no. 4866 - 4 year continuous test chainflex® Profinet	932
Servo cable structure	934
"Millions of double strokes" in an energy chain	936
CF98 with < 4xd!	938
Light in the cold	940
Completely twisted	942
Container crane with 50m travel distance	944
Comparison of jacket materials exposed to different oils	946
Completely twisted, take two	947

### Data

DIN 47100 colour code/copper wire dimensions according to AWG numbers	948
Calculation of the copper surcharge	949
Load-carrying capacity of cores	950
Chemical resistance	952

### Designing with igus®

Cables and hoses - general rules for cables and hoses in e-chains®	956
Cables and hoses - separation in e-chains®	957
Cables and hoses - further information on the separation of cables	958
Round electrical cables	959
Round electrical cables - information on assembly and strain relief of round electrical cables	960
Pneumatic hoses	961

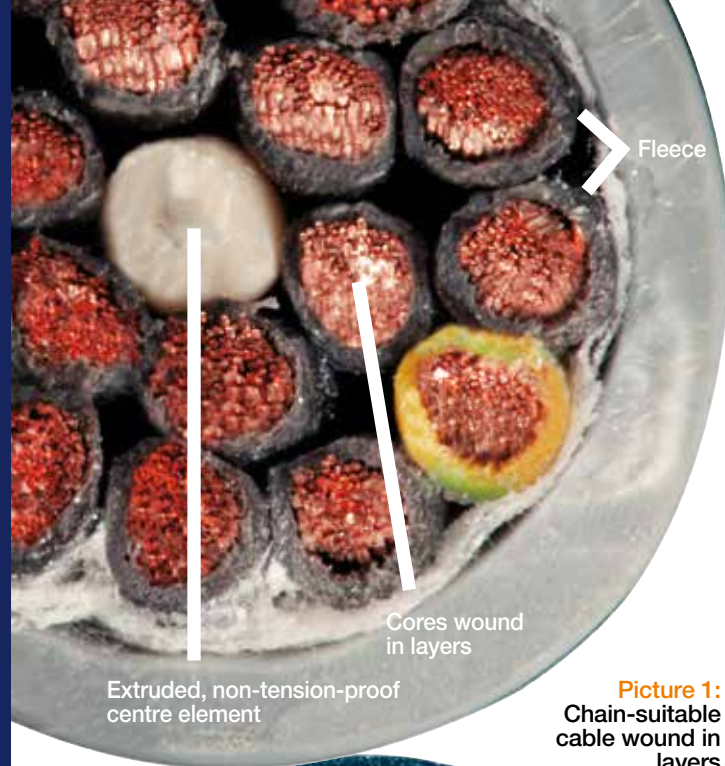
### Information

Approvals and standards	962
General conditions	970
User information, disclaimer, KTG, product illustrations	970
Technical notes	971
chainflex® CASE shipping drum - ship'n store by igus®	972
chainflex® online tools	984
Online data sheets	985
Catalogues and brochures	986
Table of contents according to part number	1,000

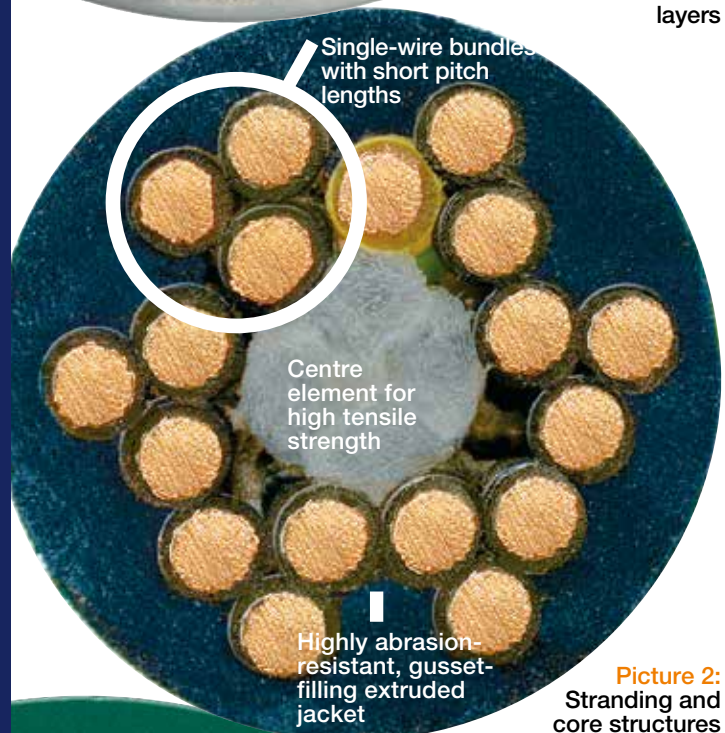
### Contact igus®

igus® worldwide - International map	988
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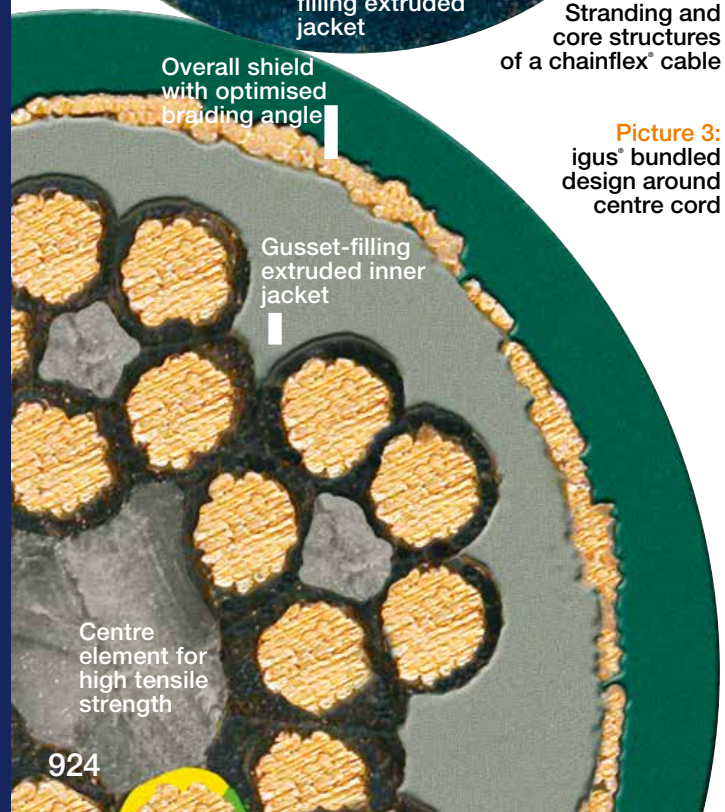




**Picture 1:** Chain-suitable cable wound in layers



**Picture 2:** Stranding and core structures of a chainflex® cable



**Picture 3:** igus® bundled design around centre cord

# chainflex® ...

The tricks and ingenious features of...

From the customer's point of view, a flexible energy supply system needs to function properly. However, this demand assumes the perfect operation of all components, including the cables being used in this system. And this is exactly where problems came up in the early 1980s. Due to constantly increasing loads resulting from the constant movement, guided cables often failed even though the energy supply system itself was functioning perfectly. In extreme cases, failures caused by "corkscrews" and core ruptures brought the entire production process to a standstill and resulted in high costs.

In order to find a solution to this problem for its customers, igus® decided to take the initiative. As the first worldwide company to do so, igus® began to develop complete energy chain systems. chainflex® cables and energy chains are now being offered from one source and with a system guarantee depending on the individual application. Based on the increasing know-how gained since 1989 and on the very sophisticated series of tests that have been conducted since then, design principles were, and still are, being developed that help prevent machine downtime in factories throughout the world today.

## How can "corkscrews" be prevented?

Here, the term "corkscrew" does not refer to a useful instrument for wine connoisseurs. Instead, it refers to the permanent deformation of guided, moving cables caused by excessive strain - which, in most cases, results in core rupture almost immediately afterwards. How does this happen? How can "corkscrews" be prevented? An important factor here - in addition to a sensible design of the total energy chain system - is the construction of the cables. Simply speaking, a clear distinction can be made between cables braided in bundles and cables wound in layers ▶ see pictures 1 and 2.

## Properties of winding in layers

Winding in layers is significantly easier to produce and is therefore offered on the market in so-called "chain-suitable" cables at low cost. But what appears to be tempting at first glance can quickly turn into an expensive mistake when a "corkscrew" immobilises the system being operated with these cables. How do these problems arise? Looking at the cable structure can be quite helpful ▶ see picture 1.

In the case of winding in layers, the cable cores are mostly wound more or less firmly and relatively long in several layers around a centre and are then provided with a jacket extruded to the form of a tube. In the case of shielded cables, the cores are wrapped up with fleece or foils. But what happens to a similarly structured 12-core cable, for example, during normal operation?

The bending process compresses the inner radius of the cable and stretches the outer radius. Initially, this works quite well because the elasticity of the material is sufficient. But very soon, material fatigue causes permanent deformations, and then, due to excursion from the specified paths, the cores make their own compression and tension zones: The corkscrew is created, often followed rather quickly by core ruptures.

# ... lasts or your money back!

...the chainflex® design and why we feel so confident about this design

## Bundled design tried and tested millions of times since 1989

The bundled design eliminates these problems by means of its very sophisticated, internal structure. Here, the core wires are wound with a special pitch length first and then the resulting cores are bundled. For large cross sections, this is done around a strain relief element. The next step is the winding of these bundles around a tension-proof centre cord ▶ see picture 2.

Due to this multiple winding of the cores, all cores move through the inner radius and the outer radius of the cable several times at identical spacing distances. Tensile and compressive forces balance one another around the high-tensile centre cord giving the structure its stability. In this way, the structure remains stable even under maximum bending stress ▶ see picture 3.

**Picture 4:** Shielded "chain-suitable" control cable after only 400,000 double strokes with a bending factor of 10 x d



## What are EMC problems and shield wire breakage?

In principle, cable shields must fulfill two tasks:

- Preventing interference getting into the cable
- Preventing interference being transmitted out of the cable

Both tasks are equally important because faulty signals can cause considerable consequential damage in the system itself as well as to any external systems. Furthermore, this is especially problematic due to the fact that incorrect shielding usually cannot be detected from outside, and this is something that makes the trouble-shooting procedure extremely difficult. How do these kinds of problems arise in the first place?

Once again, the answer is to be found in the internal structure of the cable itself: Is the shielding designed for the movements of the cable? Although it may be very easy to shield a fixed cable, it is much more difficult to guarantee the permanent shielding of a moving cable.

In the case of so-called "chain-suitable" cables, for example, an intermediate layer is formed with foils or fleeces. This layer is supposed to guarantee the separation between the cores and the shield braid. But something that functions quite well for the fixed installation of cables is quite insufficient for moving cables. This has to do with the fact that the foils and fleeces do not stay put between the cores, shield and jacket and may fall apart under stress. Consequently, the metallic shield then rubs on the insulation of the cores - short circuits can then be expected.

## Dictionary of defects

### Broken wires

Failure of electric conductivity due to broken copper wires as a result of subjecting the individual cores to mechanical load under constant bending stress. In most cases, the causes are incorrect strand wires and/or incorrect stranding pitch directions and lengths.

### Insulation damage

Short circuits due to damage to the insulation around the conductor. The cause can be material fatigue under constant bending stress or material abrasion within the core structure. Single wire breakage of the conductor or the shield braid result in perforation of the insulation.

### Corkscrew

An externally detectable corkscrew-like deformation of the entire cable due to broken copper wires as the result of subjecting the individual cores to mechanical load during the bending process. In most cases, the causes are poor structure (winding in layers, missing centre, loose jackets extruded to the form of a "tube") and subjecting the cables to high bending stress.

### Jacket abrasion

The jacket is abraded down to the cores or to the shield. In most cases, the causes are incorrect selection of materials and/or unfavourable extrusion processes resulting in poor surface properties such that abrasion is an unavoidable effect.

### Jacket swelling/jacket breakage

Jacket becomes soft and deformed or breaks until the cores/shield can be seen. The cause can be the incorrect selection of materials with respect to the oils or other chemical substances being used.

### Shielding losses/EMC problems

Electromagnetic interferences inside or outside an electric cable. In most cases, the cause is shield wire breakage due to mechanical overload with incorrect shield braid angles. Other causes include loose braids over foils without supporting effects or very open coverings.



# chainflex® ...

## The tricks and ingenious features of...

The production of the shield itself is very time-consuming and cost-intensive and may have been the reason for the use of open braid shields or even simple wire wrappings. The disadvantages are obvious: open shields only possess a limited shielding effect when moving - motion reduces this effect even further. The type of shield is therefore an important point that is not even mentioned in some catalogues.

In its approx. 70% linear and approx. 90% optical coverage cables, igus® eliminates these weaknesses by means of an optimised internal structure. In virtually all shielded chainflex® cables, a gusset-filling extruded inner jacket over the core structure is used. This "second jacket" fulfils two tasks:

- It holds the core structure together and guides the individual cores as in a channel.
- It serves as a firm, round base for a very tight-fitting shield. ▶ see picture 1.

### Shield wire breakage - and how this can be prevented

Even during the production of the shield, there are many things that can be done correctly - or incorrectly. Here, an important parameter is the braiding angle.

In the case of "chain-suitable" cables, tensile load on the shield wires in the outer radius of the cable must be taken into account. If an unfavourable braiding angle is used, the tensile load increases even further and shield wire breakage is the result. The consequences range from reduced shielding effects right up to short circuits whenever the sharp wire ends penetrate through the fleeces or foils into the cores. Here is a useful tip: If, after the insulation has been stripped off, the shield can be easily pushed back over the jacket, the shield is then usually unsuitable for use in moving energy supply systems! This is a problem that igus® has now solved with its novel approach:

- The shield braiding angle determined in long-term tests efficiently neutralises the tensile strengths and is therefore highly suitable for energy chains.
- Due to the stable inner jacket, the shield cannot become uncontrolled.
- The shield itself has a torsion protection effect on the wound structure.

### Jacket abrasion/jacket breakage

Whilst defects in the internal structure are hardly detectable on the outside, jacket problems are immediately obvious. The jacket is the first protection for the complicated internal structure. This is why broken, worn and swollen jackets are a serious quality defect. To prevent this problem, the igus® customer can select from 7 jacket materials to adapt their energy chain cables to suit the conditions of the respective environment.

# ... lasts or your money back!

## ...the chainflex® design and why we feel so confident about this design

### Gusset-filling extruded jacket

Here, not only is the material an important factor but also the production process. In the case of the so-called "chain-suitable" cables, the jackets are usually produced extruded to the form of a tube and therefore do not provide the structure with the necessary support for constant bending. The wound structure can fall apart.

Therefore, igus® is the first manufacturer of energy chain systems to offer the so-called the "gusset-filling extruded" jacket.

Here, the jacket material is injected between the core structure powdered with talc and ensures that the core structure does not open up and also makes sure that the cores are guided as in a channel. The special characteristic of this type of production is that the intermediate spaces created between

the cores during the winding process, are completely filled with jacket material by the high extrusion pressure. As a result, the jacket material creates a channel-like guide which ensures the cores have a defined longitudinal movement. The jacket also provides a supporting function for the structure. ▶ see picture 2.

### The quality bundles of igus® chainflex® cables

- Strain-relieving centre
- Cores in bundles
- Gusset-filling extruded inner jacket in shielded cables
- Enclosed shield braid
- Optimised shield braiding angle
- Gusset-filling extruded jacket



Picture 2:  
Gusset-filling extruded jacket

## 7 basic rules for a good cable

### 1. Strain-relieving centre

Clear space is created in the centre of a cable according to the number of cores and the cross section of each cable. This centre should be filled, as far as possible, with a genuine centre cord (and not, as frequently the case, with fillers or dummy cores consisting of waste materials). These measures will then efficiently protect the structure and prevent it from wandering into the middle of the cable.

### 2. Stranded core

With respect to the selection of core strand wires, the maximum flexibility has proved to be the best solution. Although very flexible conductors can be made using very thin individual wires, these conductors can allow formation of kinks. Long-term testing provided the result of a combination of strand wire diameter, pitch length and pitch direction as the best overall bending-resistant solution.

### 3. Core insulation

The insulation materials must be made so that they do not stick to one another within the cable. Furthermore, the insulation is also required to support the stranded individual wires of the conductor. Accordingly, only the highest-quality, high-pressure-extruded PVC or TPE materials that have proved their tested reliability in millions of core kilometres are then used in energy chain applications.

### 4. Structure

The structure must be wound around a stable, tension-proof centre with an optimised short pitch length. However, due to the insulating materials being used, this wound structure should still be used. Starting from a quantity of 12 cores, a bundled design should be used.

### 5. Inner jacket

A gusset-filling extruded inner jacket must be used instead of inexpensive fleeces, fillers or accessory fillers. This measure ensures that the core structure is efficiently guided in longitudinal direction. Moreover, the wound structure cannot fall apart or wander off.

### 6. Shielding

The overall shield should be made tight using an optimised shield braiding angle over an extruded inner jacket. Loose open braids or wrapped stranding reduce the EMC protection considerably and can fail very quickly due to shield wire breakage. A tight total braid shield also has a torsion protection effect on the wound structure.

### 7. Outer jacket

The material-optimised outer jacket can fulfil many different requirements: from UV-resistant to low-temperature-flexible, and from oil-resistant to cost-optimised. But these outer jackets must have one thing in common: A jacket material must be highly abrasion-resistant but not be allowed to stick to anything. It must be flexible but also provide a supporting function. In any case, the jacket should also be extruded under pressure (gusset-filling).

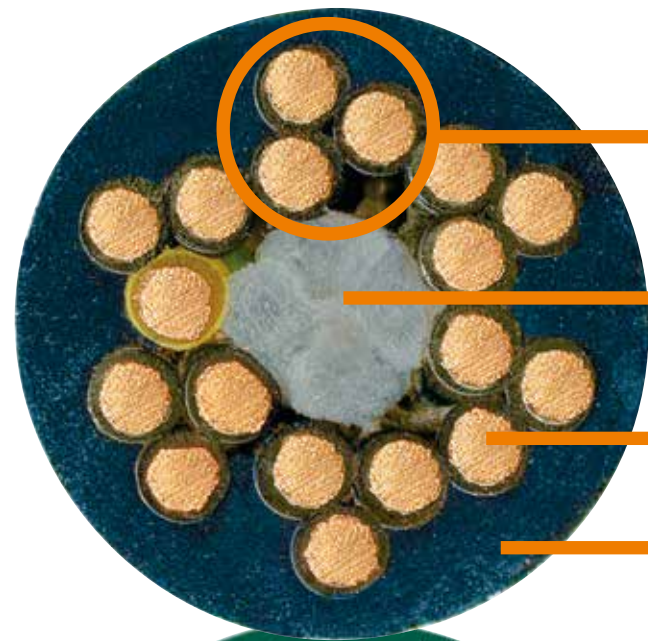
Jacket breakage of (36x0.14mm<sup>2</sup>) after only 900,000 double strokes with a bend radius factor of 7.8 x d

Picture 1: Optimised shield braiding angle over gusset-filling extruded inner jacket



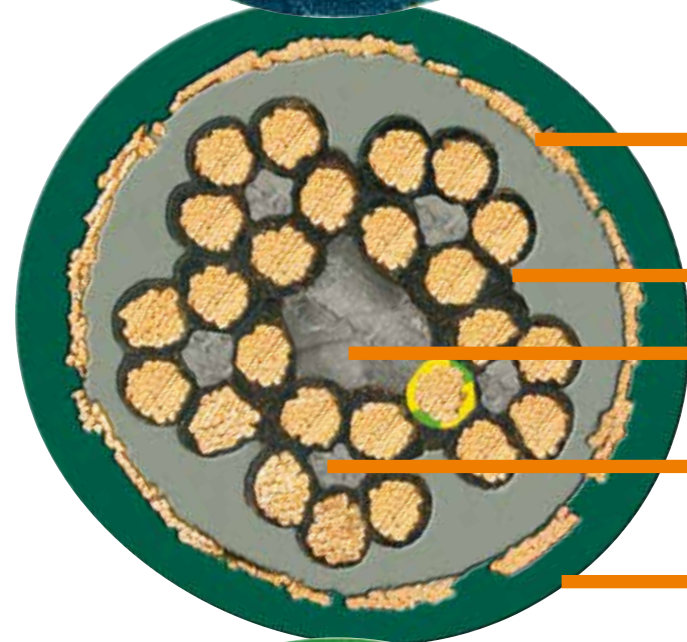
# Sectional views through the

Detailed structure of igus® control, data, servo and motor cables



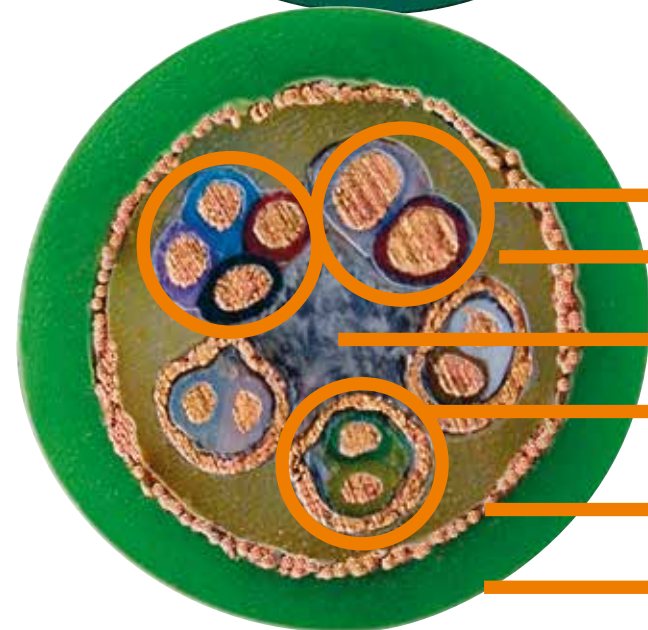
## chainflex® control cable, unshielded

- Individual bundles with optimised pitch length and pitch direction
- Centre element for high tensile strength
- Strand wire diameter optimised for energy chains
- Highly abrasion-resistant, gusset-filling extruded jacket



## chainflex® control cable, shielded

- Overall shield with optimised braiding angle (approx. 70% linear, approx. 90% optical coverage)
- Gusset-filling extruded inner jacket supports bundles
- Centre element for high tensile strength
- Centre element for high tensile strength in the individual bundles
- Pressure-extruded outer jacket



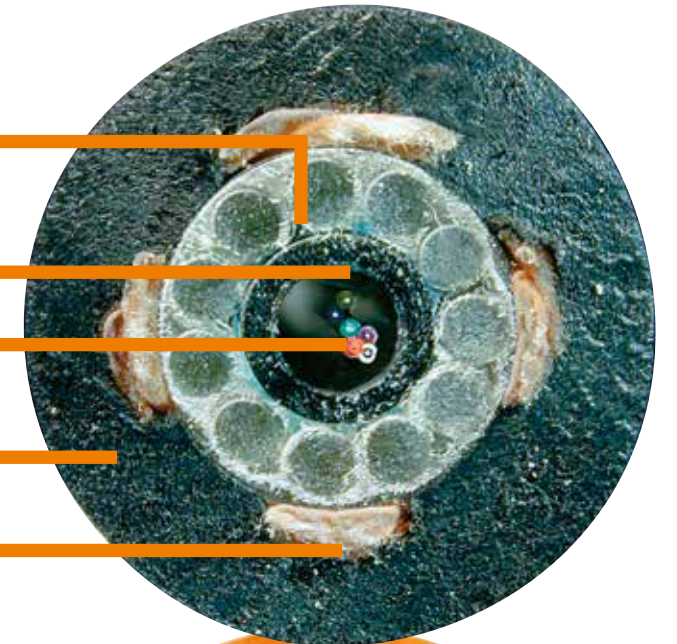
## chainflex® data/sensor cable, shielded

- Stranded elements with optimised pitch length and pitch direction
- Gusset-filling extruded inner jacket supports bundles
- Centre element for high tensile strength
- Pair braided shield
- Overall shield with optimised braiding angle (approx. 70% linear, approx. 90% optical coverage)
- Pressure-extruded outer jacket

# igus® chainflex® cable types

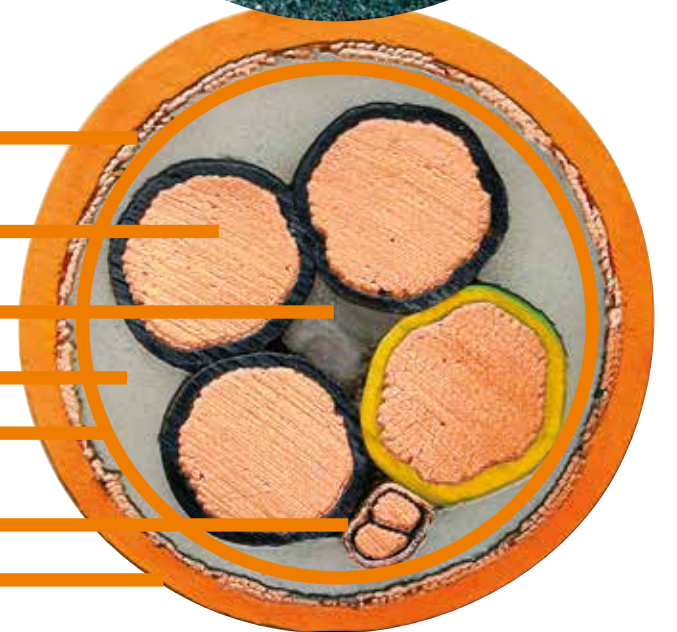
## chainflex® FOC graded index glass-fibre cable

- Supporting braid made of glass-yarn GRP rods
- Gel-filled fibre tube
- FOC fibres
- Highly abrasion-resistant TPE jacket
- Integrated torsion protection



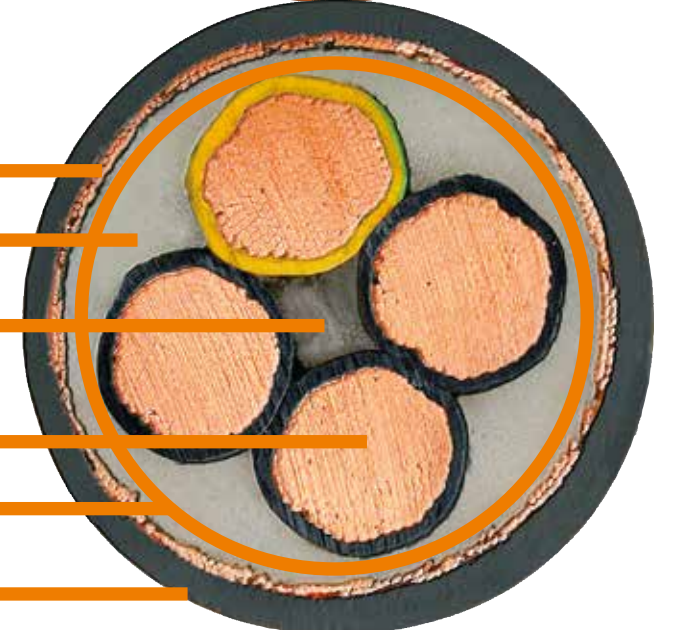
## chainflex® servo cable, shielded

- Overall shield with optimised braiding angle (approx. 70% linear, approx. 90% optical coverage)
- Optimised strand-wire diameter
- Centre element for high tensile strength
- Gusset-filling extruded inner jacket
- Cores wound with optimised pitch length and pitch direction
- Pair braid shield over optimised wound pair
- Highly abrasion-resistant pressure extruded jacket



## chainflex® motor cable, shielded

- Overall shield with optimised braiding angle (approx. 70% linear, approx. 90% optical coverage)
- Gusset-filling extruded inner jacket
- Centre element for high tensile strength
- Optimised strand-wire diameter
- Cores wound with optimised pitch length and pitch direction
- Highly abrasion-resistant pressure extruded jacket





# Example: Test 4876

## Tested at -40°C

Bending tests in cold conditions in e-chains® with amazing results.

25 years of tests in the igus® in-house chainflex® test lab have clearly shown that international standards for the testing of cables are quite useful, but do not meet the special requirements for continuous movement in e-chains®. Thus we have the standard ratings for "Mechanical tests - Low temperature bending tests for insulating sheaths and jackets" according to IEC 60811-504.

According to this international standard, cables, according to the outer diameter, are wound around a mandrel and cooled down for a certain time to the temperature to be tested. After the removal, a visual inspection is carried out. For the material tested, the test is deemed to have been passed if the material (in this case outer jacket) does not show damage, e.g. cracks.

Based on this standard, all cables for movement are tested in this way and the limit temperature is specified in catalogues as the lowest temperature for a moving application.

Thanks to many different series of tests, igus® has shown that these values are in accordance with the standards, but in continuous movement in e-chains® the materials tested in this way do not withstand the temperature.

Example: igus® test 4876. Here, the so-called chain-compatible PUR cables were tested in comparison with those with chainflex® TPE jacket material.

The cables to be tested were moved in continuous motion in the igus® 40-foot cooling container in an e-chain® at -40°C with a bend radius factor of 6.5 x d and a travel of 5m.

**The results of this experiment make for interesting reading:** Cables, which are available on the market as cold-flexible down to -40°C with a PUR outer jacket and are marketed as having a service life of 10 million cycles in the catalogue, fail in a real test in an e-chain® at -40°C with a massive jacket break after less than 41,000 strokes!



Jacket damage after 41,000 strokes ...

The parallel test of the CF9.15.18, however, was discontinued after more than 520,000 double strokes since no change could be detected at all.

On the basis of this and many other test series, igus® is the only supplier on the market that is able to list three different temperature ranges in its catalogue:

For fixed installation, flexible movement according to DIN EN 60811-504, as well as for continuously moving applications in e-chains®.

A test result from the igus® database	
Test no.	4876
Bend radius factor in e-chain®	6.5 x d
Test temperature	-40°C
Result PUR jacket	Breaks after 41,000 strokes
Result chainflex® TPE jacket	520,000 strokes without any damage

 Details of the test online: [www.igus.eu/test4876](http://www.igus.eu/test4876)

Calculate service life online: [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



Media and cold tests of chainflex® cables and e-chains® in the 40-foot climatic container



40-foot climatic container for cable tests in continuous motion at -40°C



520,000 strokes without any damage, which the CF9.15.18 achieved in this test



Result PUR jacket: Broken after 41,000 strokes



Result chainflex® TPE jacket: Cable after the 520,000 strokes test



# Example: Test 4866

## 9 year continuous test

### chainflex® Profinet

Bending tests in e-chain® with chainflex®:  
Profinet bus cable lasts for more than 65 million double strokes.

Due to its extensive equipment, the igus® laboratory with a floor area of 3,800m<sup>2</sup> offers the necessary environment to carry out continuous flexing tests under real-world conditions, even over many years. Only these real long-term tests lead to the necessary understanding of the behaviour of cable design and materials.

These long-term studies are used to equip the chainflex® **online service life calculator** with its data.

The chainflex® **online service life calculator** offers the user the great advantage of being able to determine the expected service life in advance so as not to be surprised by unscheduled breakdowns due to the cable.

In test 4866, the following question was posed:

To what extent is the continuous bending of the Profinet bus cable of the chainflex® CFBUS.060 type affecting the electrical transmission quality.

Or, in other words, if a chainflex® bus cable is moved in an e-chain® for years, can secure data transmission still be expected?

The CFBUS.060 Profinet cable has been in the long-term test since 2013 and has covered over 65 million double strokes without a measurable change in the electrical properties.



Linear chain tests with continuous monitoring of the electrical cable parameters



#### Kabelkennung: 4866-1.1

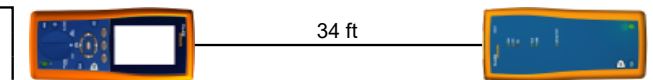
Datum/Uhrzeit: 03/08/2017 11:24:16 AM  
Reserve 15.9 dB (NEXT 12-36)  
Grenzwert: Profinet  
Kabeltyp: Cat 5e F/UTP  
NVP: 66.0%

Bediener: A.FINKE  
Software-Version: 2.7800  
Grenzwerte Version: 1.9500  
Kalibrierungsdatum:  
Hauptgerät (Tester): 03/03/2017  
Remote (Tester): 03/03/2017

#### Testzusammenfassung: PASS

Modell: DTX-ELT  
Hauptgerät S/N: 9751011  
Remote S/N: 9751012  
Adapter Hauptgerät: DTX-CHA002  
Adapter Remote: DTX-CHA002

Länge (ft)	[Paar 12]	34
Laufzeit (ns), Grnz. 555	[Paar 12]	52
Abweichung (ns), Grnz. 20	[Paar 12]	0
Widerstand (Ohm), Grnz. 25.0	[Paar 12]	1.3
Einfüg.-Dämpf. Reserve (dB)	[Paar 12]	20.5
Frequenz (MHz)	[Paar 12]	100.0
Grenzwert (dB)	[Paar 12]	24.0



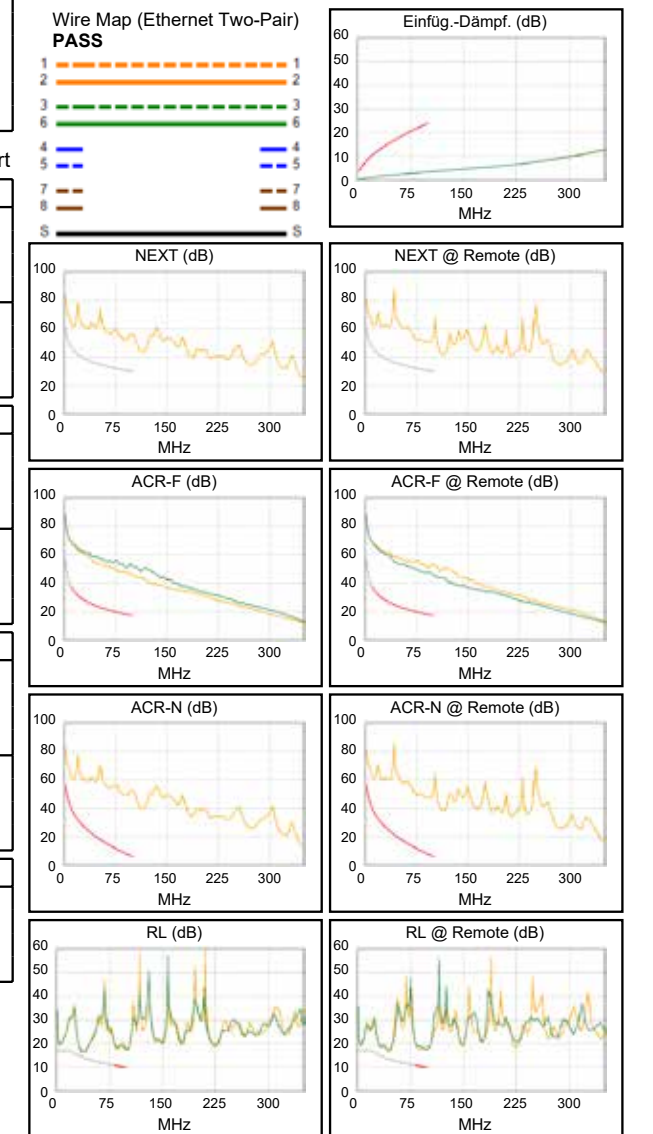
	Min. Abstand		Min. Wert	
N.A.	MAIN	SR	MAIN	SR
Schlechtest Paar	12-36	12-36	12-36	12-36
<b>NEXT (dB)</b>	15.9	16.4	20.8	19.7
Freq. (MHz)	11.9	11.0	86.0	90.0
Grenzwert (dB)	45.8	46.3	31.2	30.9
Schlechtest Paar	12	12	12	12
<b>PS NEXT (dB)</b>	18.9	19.4	23.8	22.7
Freq. (MHz)	11.9	11.0	86.0	90.0
Grenzwert (dB)	42.8	43.3	28.2	27.9

	MAIN		SR	
PASS	MAIN	SR	MAIN	SR
Schlechtest Paar	12-36	36-12	12-36	36-12
<b>ACR-F (dB)</b>	28.1	28.1	28.1	28.1
Freq. (MHz)	99.3	99.3	99.5	99.5
Grenzwert (dB)	17.5	17.5	17.4	17.4
Schlechtest Paar	36	12	36	12
<b>PS ACR-F (dB)</b>	31.1	31.1	31.1	31.1
Freq. (MHz)	99.3	99.3	99.5	99.5
Grenzwert (dB)	14.5	14.5	14.4	14.4

	MAIN		SR	
PASS	MAIN	SR	MAIN	SR
Schlechtest Paar	12-36	12-36	12-36	12-36
<b>ACR-N (dB)</b>	21.8	21.0	39.7	39.4
Freq. (MHz)	3.0	2.1	86.0	91.3
Grenzwert (dB)	51.6	54.0	9.1	7.9
Schlechtest Paar	12	12	12	36
<b>PS ACR-N (dB)</b>	24.8	24.0	42.6	42.4
Freq. (MHz)	3.0	2.1	86.0	91.3
Grenzwert (dB)	48.6	51.0	6.1	4.9

	MAIN		SR	
PASS	MAIN	SR	MAIN	SR
Schlechtest Paar	12	12	12	12
<b>RL (dB)</b>	6.9	6.7	7.2	6.7
Freq. (MHz)	85.5	89.8	99.8	89.8
Grenzwert (dB)	10.7	10.5	10.0	10.5

Erfüllte Network Standards:  
10BASE-T      100BASE-TX      100BASE-T4  
1000BASE-T      ATM-25      ATM-51  
ATM-155      100VG-AnyLan      TR-4  
TR-16 Active      TR-16 Passive



LinkWare™ PC Version 9.6

Projekt: CHAINFLEX  
Unbenannt1

Ort: LABOR



A test result from the igus® database	
Test no.	4866
Bend radius factor in e-chain®	8.5 x d
Measuring device	Fluke DTX-ELT
Double strokes without damage	29 million



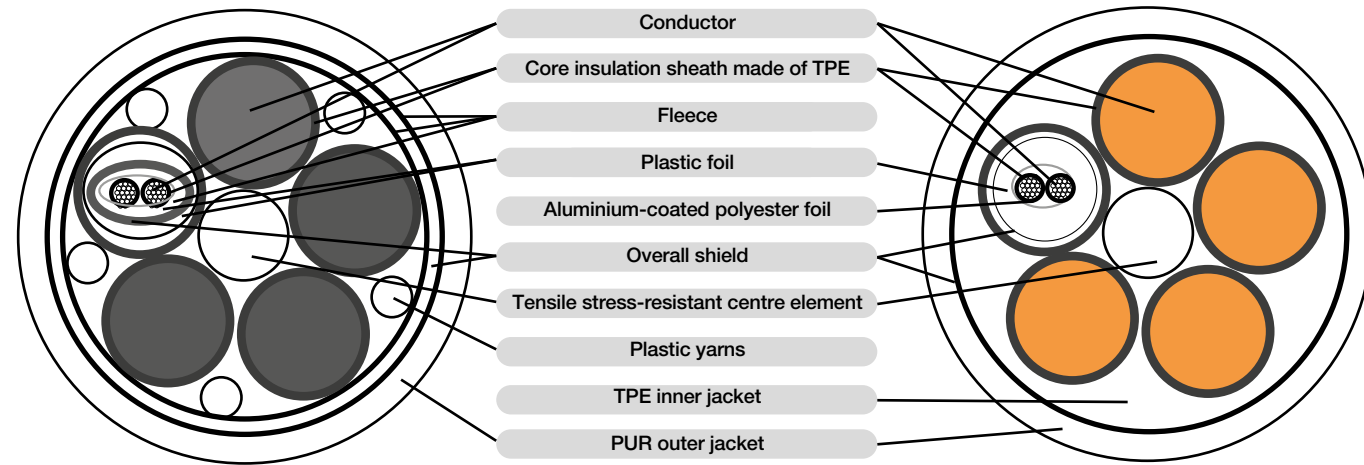
Details of the test online:  
[www.igus.eu/test4866](http://www.igus.eu/test4866)

Calculate service life online:  
[www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)



# Example: tested, tested, tested!

## Servo cable structure



**Sample B with fleece and filler experimental production**  
4x10+(2x1.0) C

The purpose of the test is to determine the advantages of the more expensive internal jacket in shielded servo cables versus the less expensive fleece taping with fillers.



In the case of flexible shielded cables, the shield is usually separated from the core structure. On the one hand, this is done in order to achieve a rounder braid form and, on the other hand, the friction of the core insulation against the braided shield is prevented due to the separation of the cores and shield. This can be achieved with an internal jacket or a fleece taping which is wrapped around the core structure. The internal jacket is more sophisticated and therefore more expensive to produce. Following the twisting process, the core structure must run through the extruder in which the internal jacket is then put on. In contrast to this method, the fleece tape can be put on between twisting and reeling-up during the twisting process and therefore does not require an extra operation.

**Sample A with inner jacket igus® chainflex®**  
CF27.100.10.02.01.D



 **Product information CF27.D**  
▶ Page 296

### Comparison between the igus® solution with the gusset-filling internal jacket and the fleece version with fillers

Here, the servo cables are highly flexible motor cables with a complete copper shield and an integrated, shielded pair of control cores. This cable type was selected due to the fact that the structure is not axisymmetric due to the different core cross sections, and therefore emphasises the bending behaviours of the different production methods.

- **Sample A: CF27.100.10.02.01.D (igus® GmbH)**  
(4x10mm<sup>2</sup>) + (2x1.0mm<sup>2</sup>)
- **Sample B: experimental**  
(4x10mm<sup>2</sup>) + (2x1.0mm<sup>2</sup>)

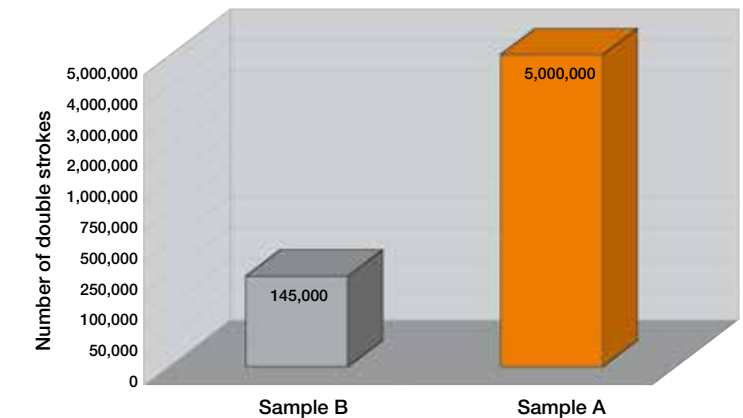
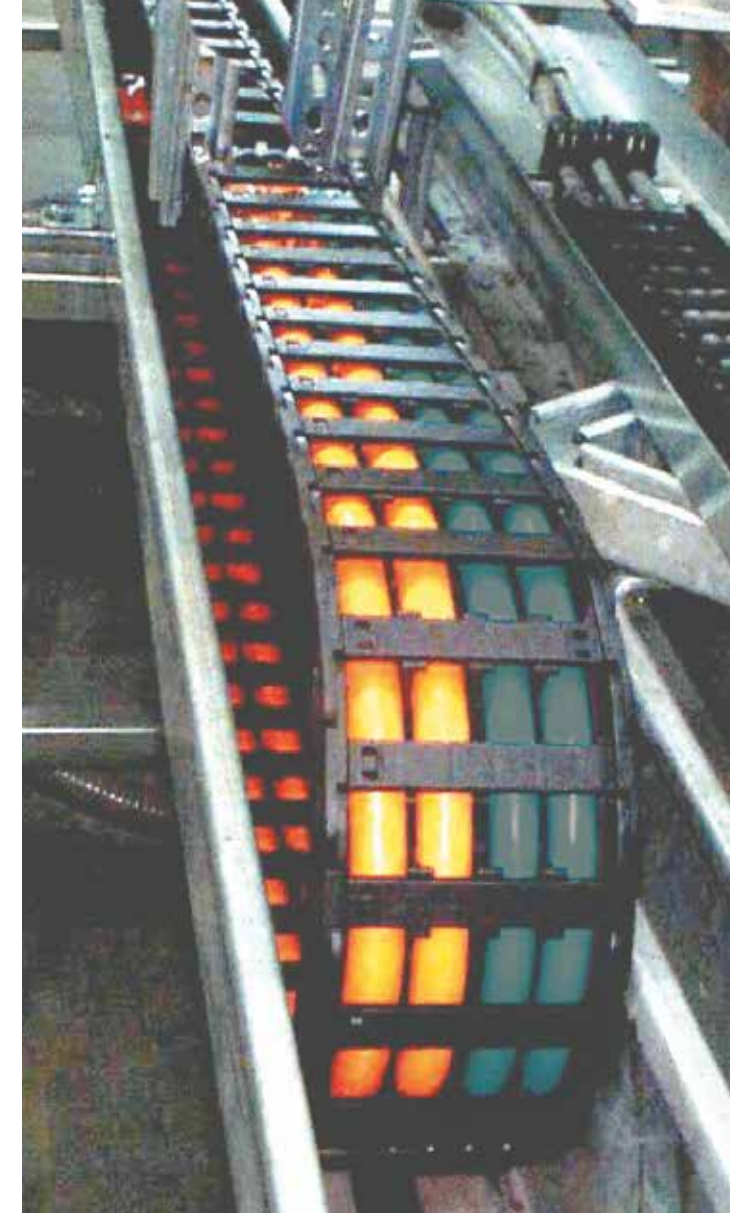
Both cables are provided with identical nominal cross sections and insulation materials. Cable A is equipped with an internal jacket and cable B with a fleece taping and fillers.

The experimental production (sample B) shows the formation of a corkscrew after just 145,000 double strokes. In the case of a cable, the so-called corkscrew refers to the wave-shaped deformation like that seen in the picture of sample B.

In the case of cable A, the internal jacket fills up the gussets and a round braided structure is created as a result, cable B requires fillers in the gussets. Like the core, the fillers are made of fibrated polyethylene. They are easy to compress and are therefore don't offer much support. By contrast, the internal jacket, which is made of TPE, and the cable A centre element hold the cores in a defined position. The cores of cable B are able to move about with no resistance. During the bending process, cores can detach themselves from the braid structure and shift into the inner bend radius or outer radius. This results in the corkscrew-type deformations that repeat themselves periodically along the length.

### Assessment

Despite the extremely low bending factor of 4.76, no signs of wear can be detected in sample A (CF27.100.10.02.01.D) even after 5 million double strokes. Sample B, on the other hand, with its fillers and fleece taping, succumbs to a corkscrew formation after just 145,000 double strokes. Therefore, the result justifies the extra expenditure of the cable with the gusset-filling internal jacket.



Sample A: CF27.100.10.02.01.D



Sample B: experimental production



# Example: tested, tested, tested!

## "Millions of double strokes" in an energy chain

### Profibus cables for constant moving industrial use

For customers, it is hard to get an overview of the cable market. Competition between cable suppliers is intensifying and manufacturers are outshining one another with their promises to "guarantee service life for cables used in energy chains". Catalogues claim ten million - or even as many as 50 million - double strokes service life of cables used in moving applications.

Taking a closer look at figures claimed, one must ask what testing was done, or how realistic the tests carried out actually were (for example length of travel, test radii, etc.) in order to be able to provide such a guarantee. Even information stating that cables are tested in accordance with VDE (Association of German electrical engineers) 0472, part 603, test method H, is not helpful when it comes to determining the service life of a cable in energy chains, since the roller testing stand cannot provide any conclusive results and there is no VDE test for special cables in energy chains.



Picture 1: Gliding e-chain® application as the basis of the test

### Differences in service life

At the beginning of 2002, a test to determine the service life of Profibus cables in a real application was commissioned in igus® test laboratory. The aim was to examine any differences in the service life of igus' CFBUS.001 chainflex® cable and another market leading Profibus cable. The parameters required for the test were selected on the basis of data contained in the competitor's catalogue:

Catalogue details	Test item "A" Twin-core Profibus cable	Test item "B" igus' chainflex® CFBUS.001
Cross section	(2 x AWG24)C	(2 x 0.25mm²)C
Guaranteed service life	Min. 4.0 million cycles	To be determined in a test
Bend radius	> = 60mm	85mm
Diameter	8.0mm	8.5mm
Catalogue details	Issue 2002	Issue 2002

Table 2: Test parameters according to catalogue data of the competition

A gliding application was chosen as a suitable test structure since Profibus cable systems are often used here because of their data integrity, particularly over long travel lengths and transmission distances.

In order to be able to carry out non-destructive testing and achieve a large number of bending cycles in a short period of time, a genuine Profibus transmission path was constructed. In a PC at the fixed end of the test chain there was a Profibus master insert card. A connection to a profibus slave was located on the moving end. This enabled the transmission rate to be determined with the help of a diagnostic program. Any data packets which might have been transmitted incorrectly would be indicated. The highest-possible transmission rate of 12 megabits/s was set.

This important test, which commenced at the beginning of 2002 and is still in progress today, showed that only a relatively low number of cycles (420,000) led to the total failure of test item "A", which, according to the competitor's catalogue, should have functioned safely for at least 4.0 million cycles. Thus the real lifetime reaches only about 10% of the stated catalogue value.

On the other hand test item "B", the CFBUS.001, is still undergoing testing without any faulty data transmissions. So far, it has accomplished more than 14.0 million double strokes.

### Structure and materials

The main reason for the major differences in service life is the differing structural parameters of test item "A" and test item "B" (CFBUS.001), as well as the different materials used for producing the cables.

The conductor insulation of the bus pair comprised of a foam material for both test items. The electrical properties of this material ensured better transmission properties were achieved. A disadvantage of this material, however, was its weakness under mechanical stresses. The forces which affect the bus pair should be absorbed by the element insulation in order to alleviate the mechanical stress on a conductor insulation.

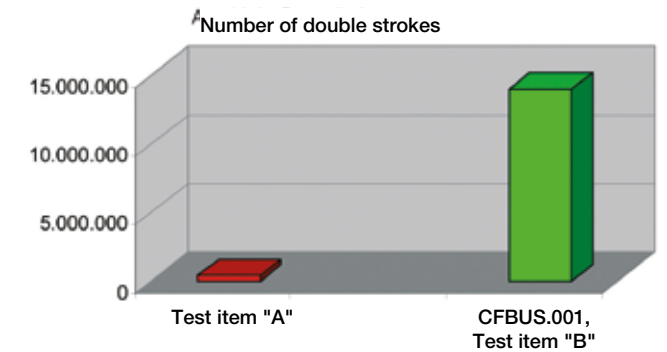
### Highly-elastic element insulation

For this reason, test item "B" (igus®) was provided with a mechanically superior, extruded TPE inner, or element, gusset-filling insulation, in order to protect the bus pair against mechanical influences during the bending procedure. The element insulation must be highly elastic. A mechanically inferior element insulation made of inexpensive filling material only serves to make the bus pair round, just like often used fillers or banding. It is not able to protect the bus pairs from the high degree of mechanical stress present in the chain. Tensile and compressive forces which occur particularly affect those parts of the cable core in which there is a break in the element insulation.

#### Test parameters

Travel distance:	S = 5.0m
Speed, approx.:	V = 3.5m/s
Acceleration, approx.:	a = 7.5m/s²
Bend radius, approx.:	55mm

The insulation of test item "B" (CFBUS.001) is on the one hand characterised by a mechanically superior, gusset-filling TPE element jacket, which mechanically relieves the bus pair, fixes the cores in a defined position.



The extremely short pitch of the core strands ensure that no great tensile or compressive force has an effect on a long length of core. So relatively small bend radii with high cycle rates can be realised.

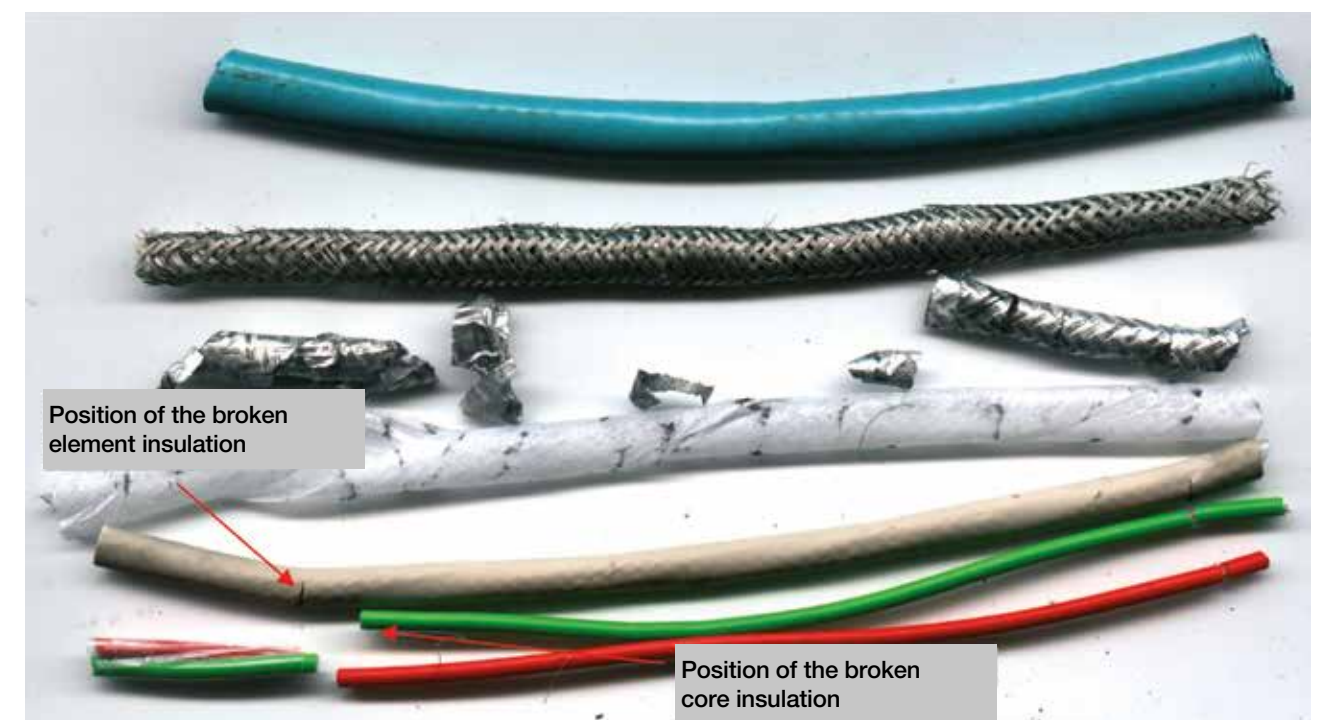
### New: UL and CSA approval

chainflex® CFBUS cables are now also available for all standard field bus systems, complete with UL and CSA approval and DESINA compliance. The highly abrasion-resistant, flame-retardant TPE outer jacket is extruded onto the fully braided shield with an optimised angle in order to provide the cable with additional stability.

The bus elements wound with a particularly short pitch are protected by means of a gap-filling, extruded TPE inner jacket. The bus parameters required are fulfilled by means of a combination of optimised insulating materials and production procedures.

As with all chainflex® cables, the new standard field bus cables of the CFBUS series are now available ex-stock, without any cutting costs or extra charges for small quantities.

 **Product information CFBUS**  
▶ Page 204



Picture 3: A mechanically low-quality element jacket can't protect the bus pair against the high mechanical loads inside an energy chain.



# Example: tested, tested, tested! CF98 with < 4xd!

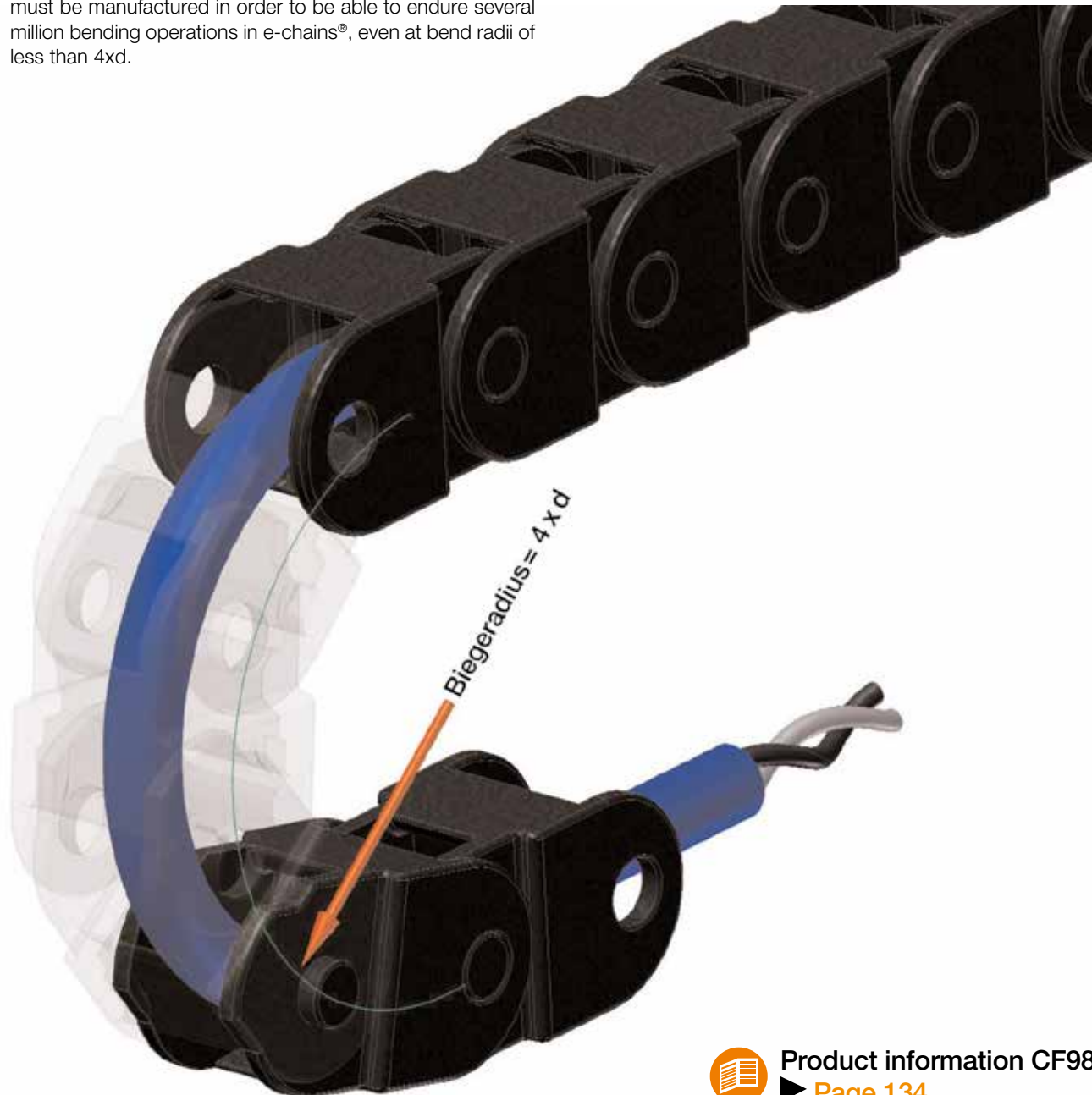
For users of very small energy supply chains with very small bend radii, the question of a suitable cable for very high cycle life has come up many times in the past.

At bend radii of less than 5xd, copper quickly reaches its physical limits, which necessitated the search for suitable substitute conductor materials or for a fundamentally different conductor structure.

Many series of tests with a variety of conductor structures and materials were performed in order to find out how cables must be manufactured in order to be able to endure several million bending operations in e-chains®, even at bend radii of less than 4xd.

## Test setup: Horizontal, short travel distance

Test parameters	
Travel distance:	S = 0.8m
Speed, approx.:	V = 1.5m/s
Acceleration, approx.:	a = 0.5m/s <sup>2</sup>
Bend radius, approx.:	18 m

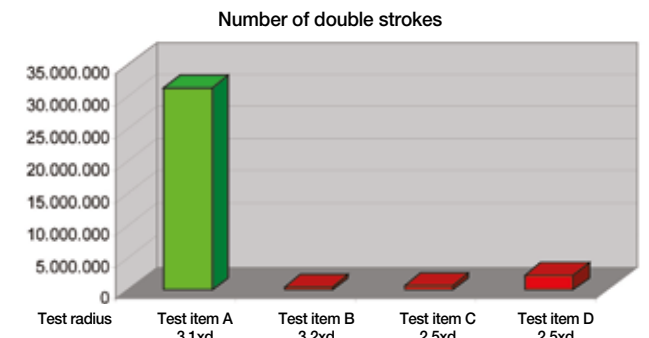


## Test 1: Inspection of four different cable designs

Four different cable designs have been analysed:  
Test item A - conductor in special conductor alloy  
Test item B - conductor same as test item A, but in copper  
Test item C - conductor with braided structure  
Test item D - conductor with layered construction

This long-term inspection, which was carried out over a period of 2 years, provided the following results:

	Number of double strokes	Cross section	d [mm]	Test radius
Test item A	47,434,277	7x0.20	5.8	3.1xd = 18
Test item B	450,000	7x0.20	5.6	3.2xd = 18
Test item C	638,000	7x0.25	7.3	2.5xd = 18
Test item D	2,350,000	7x0.25	7.3	2.5xd = 18

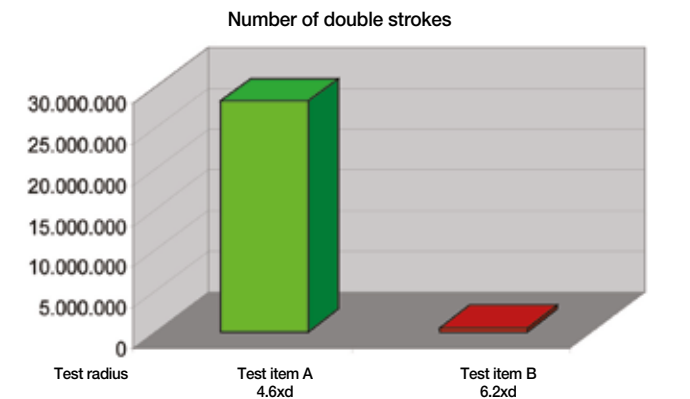


## Test 2:

Two different cable designs were tested, and different core numbers and cross-sections were selected in comparison with test 1:  
Test item A - conductor in special conductor alloy  
Test item B - conductor in copper

In this case, test item B was manufactured completely identically to test item A except for the conductor material. The test showed that not a single case of wire breakage could be detected for test item A even after 28 million double strokes. Test item B, however, only achieved approx. 1.4 million double strokes before complete destruction of the conductor was observed. This test demonstrates that the alloy concept clearly surpasses the life of the copper conductor by more than 19 times and achieves these extraordinary results in the critical area of very small cross sections!

	Number of double strokes	Cross section	d [mm]	Test radius
Test item A	28,267,000	2x0.14	3.9	4.6xd = 18
Test item B	1,450,000	2x0.14	2.9	6.2xd = 18



## Conductivity of alloys

However, the outstanding mechanical properties of this alloy also come with a reduced conductivity versus copper, but this can be compensated for by means of slightly increased cross-sections. This means that the cross-sections mentioned in the catalogue meet the electrically defined cross-section defined using the conductivity value. The conductor diameter of the alloyed conductor increases slightly compared to the conductor diameter of a copper conductor.

This compromise results in a 10% greater external diameter for the CF98 series versus a comparable CF9 type, although the service life differences between the CF98 versus the CF9 speak for themselves and increase by a multiple factor in comparison with other so-called chain-suitable cables.

As in the case of the CF9 series, further characteristics of the chainflex® CF98 include the highly abrasion-resistant, gusset-filling extruded TPE outer jacket, the oil resistance and the UV resistance as well as the absence of any PVC and halogen compounds.

In application areas with minimum space but which demand a large number of strokes, the igus® cable offers an increased degree of operational safety and reliability. Relevant application areas are in the: semiconductor and component parts industry, automation sector as well as the automotive and banking sector. New application possibilities can also be found in automatic doors for motor vehicles and trains as well as in automatic food and self-service machines, and in the packaging industry.



# Example: ...tested! Light in the cold

## Light in the cold - igus® graded index glass-fibre cable in a deep freeze test

The igus® CFLG graded index glass-fibre cable has already become a standard in numerous crane applications for the safe transmission of large amounts of bus data at high speeds and over long distances. Insensitivity to electro-magnetic interference and resistance to tough environmental influences enable this, alongside the energy supply cables in very long travels.



CFLG.G  
TPE  
10 x d

PVC iguPUR PUR TPE

Fibre Optic Cable | TPE | chainfl

36 10 million  
Double strokes guaranteed

10 x d  
Bend radius, e-c

- Glass-fibre cable for heaviest duty applications
- TPE outer jacket
- Oil and bio-oil resistant
- PVC
- Low
- Hyc

Dynamic information

- Bend radius
- Temperature
- v max.
- a max.
- Travel distance

Cable structure

- Fibre
- Core structure
- Core identification
- Outer jacket

Example image

What happens in crane facilities in regions with extremely low temperatures? Does the maximum possible cable length of several hundred metres reduce through increase in attenuation at low temperatures, or can the cable even break in extreme applications, for example at -40 °C?

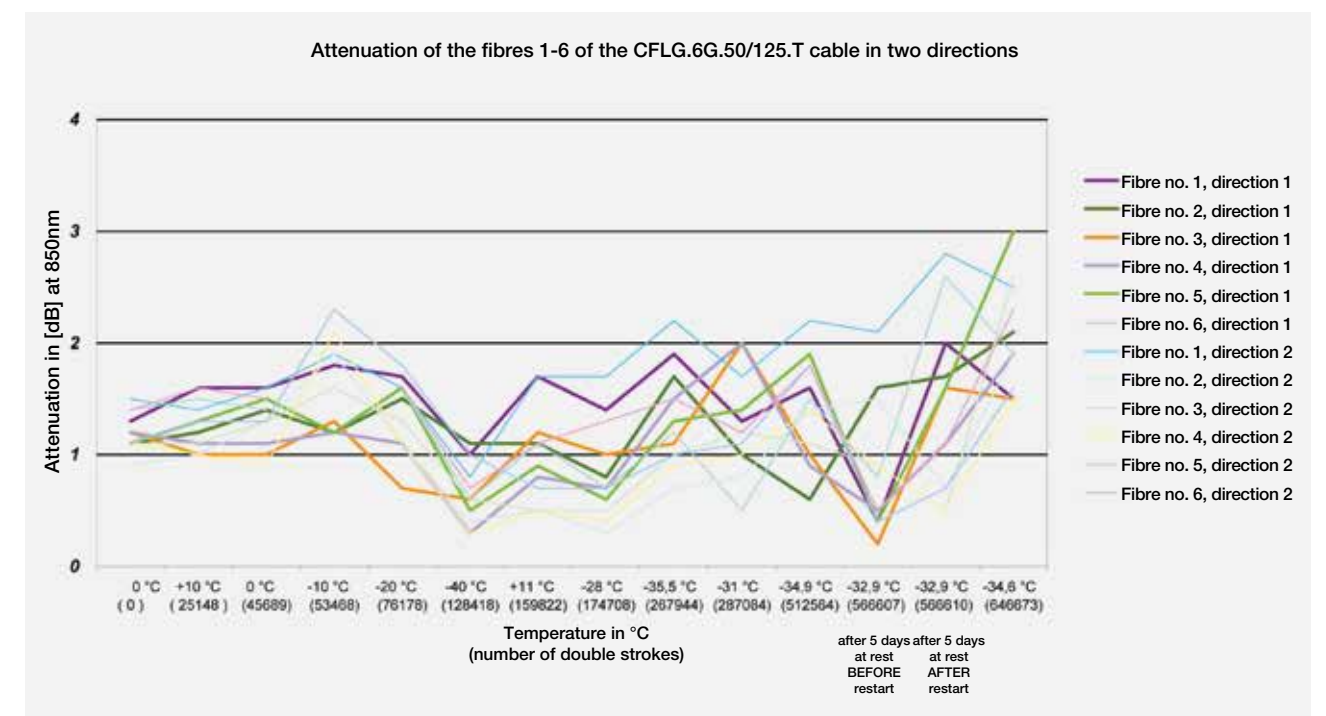
The sensitive glass fibres are carried in a gel-filled tube. How does the gel behave in highly dynamic conditions and what happens in restarts after long downtimes? As no precise information about this could be found in relevant technical journals, and as little was known particularly about the thermal features of the gel, igus® undertook its own tests to determine the reliable specifications for applications in e-chain systems®. To carry out this task, the igus® test laboratory was equipped with a cold chamber that can generate constant temperatures of -40 °C and a test facility was created for long travels up to 7 m with a speed of 1.6 m/s and an acceleration up to 6 m/s<sup>2</sup>. The igus® graded index glass-fibre cable CFLG.6G.50/125.TC was tested with a length of about 15 m as loop within an igus® e-chain system® 3500.125.200.0 with a bend radius of 200 mm. Varied and extreme temperatures simulated environmental influences, particularly when the temperature plunged during downtimes from above freezing to -40 °C in a short time and the motion was restarted afterwards.

Under these application conditions, the attenuation of the cable was not permitted to rise above 3dB at 850nm wave length. After one million double strokes, which correspond to an operational performance of about 7,000 kilometres, the maximum attenuation was reached and remained significantly below 3dB.

The measurements highlighted in the diagram reveal that variations in temperature combined with the constant movement in the e-chain have only minor effects on the attenuation of the CFLG.6G.TC cable. The noticeable high initial attenuation is attributed to the plugs used and also reflects the reality here because, in practice, 90% of the cables used in automation are plugged fibre optic cables.

The test with the igus® cable makes it quite clear that only expensive and realistic tests can offer clarity about the service life of cables.

**Product information CFLG.G**  
▶ **Page 232**





# Example: ...tested! Completely twisted

chainflex® cables for e-chain system® are designed for application in linear movements and their efficiency has been proved a million times.

But industrial applications and their motion sequences are becoming increasingly complex, so that special cables are needed more and more for torsional movements. The service life of the different designs are even harder to calculate for torsion applications, as there are no fixed parameters such as radii, travels etc. Shielded cables however are particularly vulnerable in torsion applications. Braided shields are generally braided in the opposite directions. Whether a cable survives the torsional demands is very strongly dependent on the application and type of installation.

Unshielded cables, particularly bundled chainflex® types, can be successfully used in many twisted applications. In twisting movements with a braided shield, the strand wires wound in one direction are in tension and the other direction in compression. This leads quickly to shield breakage.



At igus®, the emphasis is not only on technology but also on aesthetically designed products. The TRC and TRE series both received the if-Design-Award.

CFROBOT  
TPE  
10 x d  
  
chainflex® CFROBOT  
Example image

PVC
iguPUR
PUR
TPE

### Spindle cable/Single core | TPE

36  
10 million  
Double strokes guaranteed

10 x d  
Bend radius, e-chain

- For torsion applications
- PVC-f
- TPE outer jacket
- UV-re
- Shielded
- Flame
- Oil and bio-oil resistant
- Hydr

**Dynamic information**

- ⤵ Bend radius
- ⤵ Temperature
- ⤵ v max.
- ⤵ a max.
- ⤵ Travel distance
- ⤵ Torsion

**Cable structure**

- ⤵ Conductor
- ⤵ Core insulation
- ⤵ Overall shield
- ⤵ Outer jacket

**Electrical information**

- ⤵ Nominal voltage
- ⤵ Testing voltage

**Product information CFROBOT**  
▶ **Page 404**

The igus® development of a new twistable, shielded single core cable accounts for this and ensures, due to its special shield design and structure, that no, or absolutely minimal, forces act on the shield wire.

As the test clearly shows, massive service life extension can be observed when compared, for example, to a CF310.250.01.

#### Test setup:

The new CFROBOT cable was tested at the igus® laboratory in a specially developed torsion test rig.

The torsion angle is  $\pm 270^\circ$  for a total cable length of about 2.5 m (tested within different versions of the triflex® R).

Cables tested were:

- 3 cables of CFROBOT.037
- 3 cables of the series CF310.250.01.UL
- 3 cables of the series CF310.250.01



igus® test lab: The cables were tested in movements of  $\pm 270^\circ$

The initial test sample of the CF310 with braided shield and the CFROBOT were taken after 250,000 movements with a torsion angle of  $\pm 270^\circ$ .

The cable dissection was undertaken in three areas of the cable length. In the sample illustrated in Picture 1, distinct damage to the overall shield is noticeable in the upper third of the cable.



Picture 1: Damaged overall shield sample of the braid version after 250,000 movements



The detail inspection of the shield braid shows damage on the shield strand wires.

The samples (picture 2) of the CFROBOT.037 (so far samples were taken after 250,000, 1.5 million and 3 million movements) showed no damage in the area of the cable or the overall shield even after above 3 million torsional movements of  $\pm 270^\circ$ .



Picture 2: The CFROBOT shows absolutely no damage after more than 3 million movements

The detailed analyses (picture 3) of the shield wires, buffer fibres, PTFE film and the cable show no damage. The test is being continued further to determine the maximum service life of the cable.



Picture 3: Detail pictures of the CFROBOT after more than 3 million movements of  $\pm 270^\circ$



# Example: tested live! Container crane with 50m travel distance

In the crane engineering industry, energy supply systems are increasingly proving their technical and economic benefits. Flexibility, variability, and space-saving installation are just a few of the important criteria. An important building block of an energy supply system is the cable. Here, users expect a high degree of operational reliability.

In the chainflex® laboratory, igus® cables undergo constant testing which can be used to obtain important information on the service life of a cable and to develop improvements for the future structural design of the cable. However, the situation becomes very exciting if you get the rare opportunity to remove cables from their tough, real-life applications and inspect them.

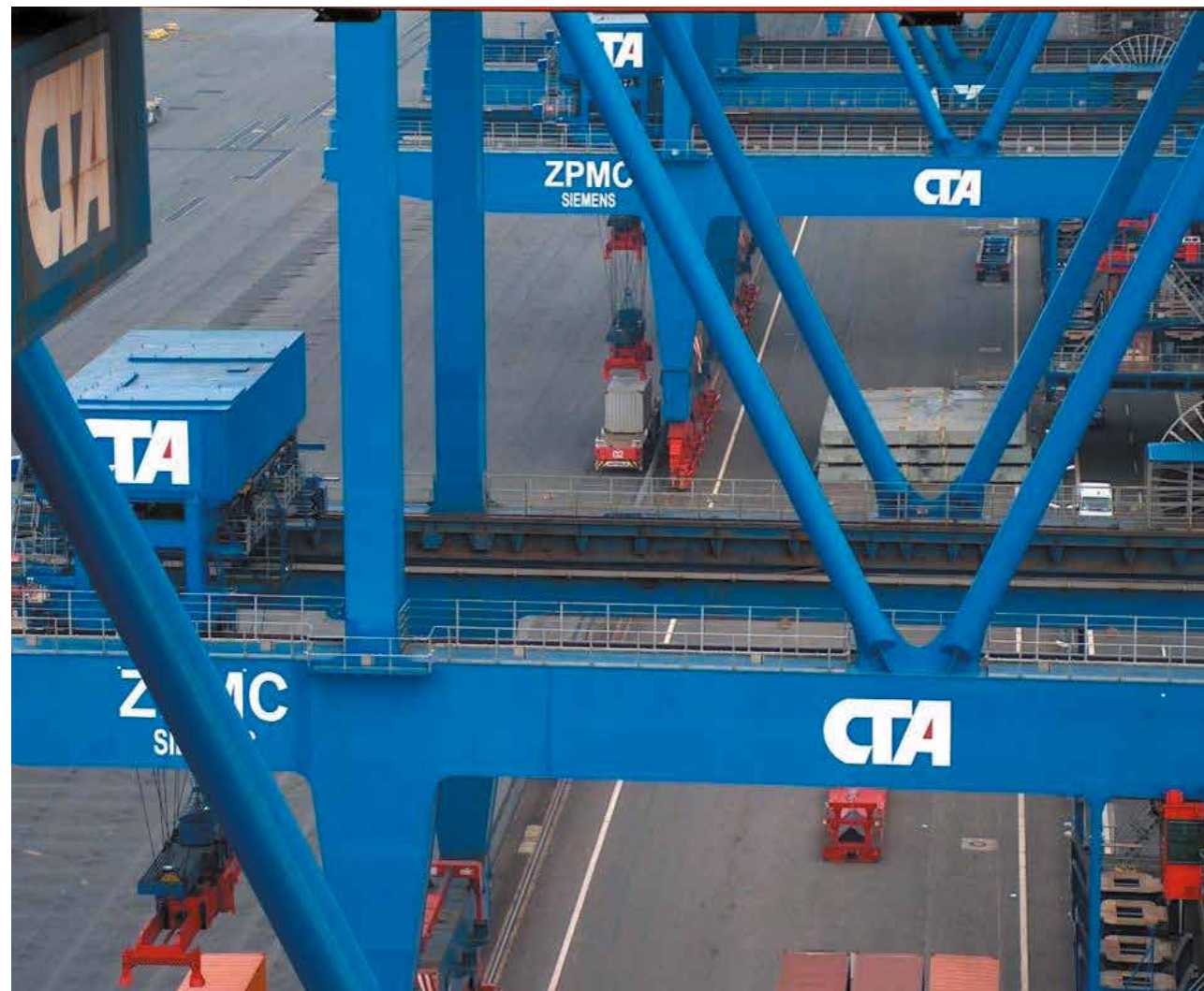
## Current inspection

The chainflex® cable CF9.60.05 has been used in container cranes for many years; in the case here with a total travel distance of approx. 47m.

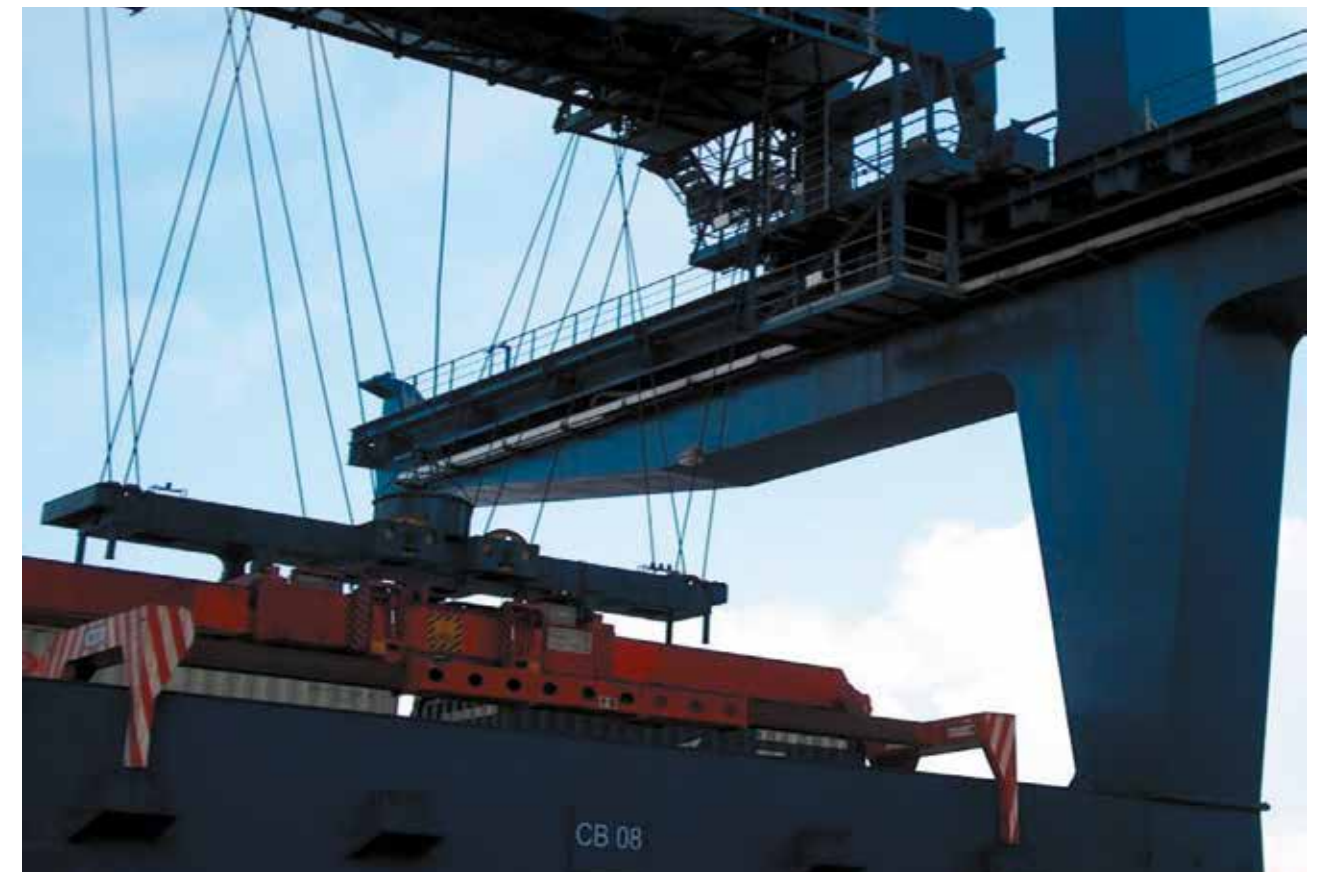
An inspection contract commissioned by the owner-operator was to present a performance balance sheet after more than 40,000 chain kilometres and determine the date for which the next preventive maintenance work should be planned.

Following the removal of the CF9.60.05, inspections were performed with the following objectives:

1. outer jacket, abrasion behaviour, other damage;
2. overall structure, insulation behaviour of the individual cores;
3. strand wire structure, number of any individual broken wires which might be an indication of an early failure of the entire cable.



An igus® energy supply system with a length of approx. 26m in a stainless steel trough.



The energy chain system was filled with many different igus® chainflex® cables, including the CF9.60.05

## Result regarding 1:

No or only barely measurable traces of abrasion could be detected on the highly abrasion-resistant TPE outer jacket. This means that a failure due to abrasion or jacket breakage, despite the extreme environmental factors (temperature differences, UV irradiation, etc.), is not expected.

## Result regarding 2:

The overall structure showed no indications of fatigue and had not changed in its pitch length. Due to the large amount of talc, no abrasion was observed between the TPE-insulated cores. The high-voltage tests did not show any age-related changes.

## Result regarding 3:

The cable was opened all the way to the copper conductor in the most stressed section of the radius. Here too, after more than 40,000 km, the inspection of the individual strand wires also showed no fatigue breakages which would indicate an early failure of the cable.

To sum up, it can be said that this cable, which was used in a real crane application in the trolley of an STS crane, was still completely intact even after more than 40,000 km and that preventive repair work was not required.



An igus® energy supply system with a length of approx. 26m in a stainless steel trough.



The individual elements of the CF9 from the dissected cable.



A close-up of the completely intact copper conductor. The inspection performed over the entire length shows that the conductor is still completely intact and does not have any individual strand wire breakages.



# Example: ...tested!

## Comparison of jacket materials exposed to different oils

For years now, specially developed tests tailored to the individual requirements of igus® customers have been used to obtain more meaningful results than if standard tests were used. The relatively general terms such as "oil-resistant" or "coolant-resistant" are little help in making the right selection in terms of jacket material to be used for an application with oil, lubricant or coolant influence.

Alongside the generally applicable tests according to e.g. DIN EN 60811-2-1 and IEC 60811-1-1, "everyday application conditions" are simulated as realistically as possible in a test set-up matching our customers' requirements. Thus, for example, test samples are mounted in an energy chain that moves into an "oil bath" and then back out of it again. There is direct and alternating contact between the outer jacket and the medium to be tested and the air surrounding the energy chain and cable - just as in a real application.

After a test duration for a customer application or defined according to the igus® standard, test samples can be examined for changes in material characteristics e.g. by comparing material strength, elongation at tear and swelling with the values noted before the test started.

In this way, customers not only get a statement about the different resistance of the various materials such as given by following the above-mentioned standards, but also an estimation of the real service life of the cable in an e-chain® in these conditions.

If the test samples - such as the cables shown - do not complete the prescribed test duration, we advise against use in the respective application.



Cracks in the outer jackets of materials from competitors caused by the use in e-chains®.

# Example: ...tested!

## Completely twisted, take two.

The "torsion-resistant" requirement for cables for energy chains is not new, but is seldom exactly defined. So how is a statement such as "This cable is torsion-resistant up to  $\pm 180^\circ$ " to be understood? This makes it all the more important to be able to deliver comparable and meaningful test results.

In order to satisfy this requirement, the "torsion test bench" was developed according to the igus® standard. Here, various cable types are twisted to a prescribed cable length of 1 metre, which also corresponds to the distance between the fixed points. The degree of torsion can be chosen, and is defined individually according to the test requirement, and the standard test is  $\pm 180^\circ$ .

After a prescribed number of double strokes or a negative electrical or mechanical test result, the test specimen is dissected, and the type and position of any damage can be exactly determined.

The first chainflex® CFROBOT cable types were developed to series with help of the data of these tests.

 Product information CFROBOT  
▶ Page 404



The "torsion test bench" developed according to the igus® standard



## Information | DIN 47100 colour code

**DIN 47100 colour code**  
(however, deviating from DIN: without colour repetition after 44th core)\*

1	white	32	yellow-blue
2	brown	33	green-red
3	green	34	yellow-red
4	yellow	35	green-black
5	grey	36	yellow-black
6	pink	37	grey-blue
7	blue	38	pink-blue
8	red	39	grey-red
9	black	40	pink-red
10	violet	41	grey-black
11	grey-pink	42	pink-black
12	red-blue	43	blue-black
13	white-green	44	red-black
14	brown-green	45	white-brown-black
15	white-yellow	46	yellow-green-black
16	yellow-brown	47	grey-pink-black
17	white-grey	48	red-blue-black
18	grey-brown	49	white-green-black
19	white-pink	50	brown-green-black
20	pink-brown	51	white-yellow-black
21	white-blue	52	yellow-brown-black
22	brown-blue	53	white-grey-black
23	white-red	54	grey-brown-black
24	brown-red	55	white-pink-black
25	white-black	56	pink-brown-black
26	brown-black	57	white-blue-black
27	grey-green	58	brown-blue-black
28	yellow-grey	59	white-red-black
29	pink-green	60	brown-red-black
30	yellow-pink	61	black-white
31	green-blue		

\*Exception: 4-core cables are braided in the colour sequence white, green, brown, yellow.

The first colour indicates the basic colour of the core insulation, and the second colour indicates the colour of the printed-on ring. In the case of three colours, the second and colours are printed on the basic colour.

## Information | Copper price

### Calculation of the copper surcharge

The copper surcharge is the calculation of the difference between the calculated price (copper basis) and the actual price listed on the stock exchange of the copper share in a cable. In calculatory terms, the price of each chainflex® cable listed in the catalogue is based on a copper price to the amount of €150.-/100kg copper.

Calculation of the copper surcharge:

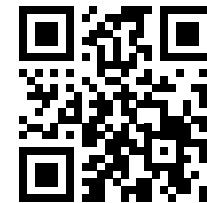
- LME<sup>1</sup> (London Metal Exchange) price in USD/ton
- ECB exchange rate, USD/euro
- Plus surcharges

<sup>1</sup> LME stands for London Metal Exchange.

Together with Shanghai and New York, it is one of the world's largest metal trading centres. This basis has been used in Europe for many decades to determine the copper price listed on the stock.

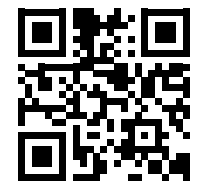
### More Information online

► [igus.eu/CF-copper](https://www.igus.eu/CF-copper)



### Calculate the copper surcharge online

The copper surcharge can be calculated directly for each chainflex® cable and individual length in our copper surcharge calculator on the igus® website:



► [igus.eu/quickcopper](https://www.igus.eu/quickcopper)

### Copper wire dimensions according to Anglo-American AWG numbers

AWG No.	Diameter [mm]	Cross section [mm <sup>2</sup> ]	AWG No.	Diameter [mm]	Cross section [mm <sup>2</sup> ]
500	17.96	253.00	18	1.024	0.823
350	15.03	177.00	20	0.813	0.519
250	12.70	127.00	22	0.643	0.324
4/0	11.88	107.20	24	0.511	0.205
3/0	10.40	85.00	26	0.405	0.128
2/0	9.27	67.50	28	0.320	0.0804
1/0	8.25	53.50	30	0.255	0.0507
1	7.35	42.40	32	0.203	0.0324
2	6.54	33.60	34	0.160	0.0200
4	5.19	21.20	36	0.127	0.0127
6	4.12	13.30	38	0.102	0.00811
8	3.26	8.37	40	0.079	0.00487
10	2.59	5.26	42	0.064	0.00317
12	2.05	3.31	44	0.051	0.00203
14	1.63	2.08			
16	1.29	1.31			

chainflex® type	Control/data cables			Motor/servo cables			Single-core cables	
	CF5, CF6, CF2, CF150.UL, CF160.UL	CF880, CF881, CF130.UL, CF140.UL, CF890, CF891, CF240, CF211, CF884	CF77.UL.D, CF78.UL, CF9, CF10, CF9.UL, CF10.UL, CF98, CF98.PLUS, CF99, CF99.PLUS, CF112, CF11, CF12, CF298, CF299, CF894, CF113.D, CF111.D, CF11.D, CFROBOT2, CFROBOT3, CFROBOT9	CF885, CF886, CF30, CF31, CF887, CF897, CF210.UL, CF220.UL.H, CF21.UL, CF895, CF896	CFROBOT6, CFROBOT7	CF34.UL.D, CF35.UL, CF37.D, CF38, CF270.UL.D, CF280.UL.H, CF27.D, CF29.D	CF885, CF885.PE, CF886	CF270.UL.D, CF300.UL, CF310.UL, CF330.D, CF340, CFPE, CFROBOT
Insulation material	PVC	TPE	TPE	TPE/XLPE	TPE	XLPE	PVC	TPE
Loaded cores	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	2 or 3	1	1
Nominal cross section of copper core [mm <sup>2</sup> ]	Load capacity [A]	Load capacity [A]	Load capacity [A]	Load capacity [A]	Load capacity [A]	Load capacity [A]	Load capacity [A]	Load capacity [A]
0.14	2.5	2.5	2.5	-	-	-	-	-
0.25	4	5	5	-	5	-	-	-
0.34	5	7	7	7	7	-	-	-
0.5	8	10	10	10	10	11	-	-
0.75	12	13	14	13	14	14	-	-
1	15	15	17	15	17	17	-	-
1.5	18	19	21	19	21	21	-	25
2.5	26	27	30	27	30	30	30	34
4	-	37	41	37	41	41	41	46
6	-	48	53	48	53	53	53	58
10	-	-	74	69	74	74	74	81
16	-	-	99	92	99	99	99	110
25	-	-	131	121	131	131	131	144
35	-	-	162	152	-	162	162	179
50	-	-	-	191	-	202	202	228
70	-	-	-	239	-	-	250	285
95	-	-	-	-	-	-	301	348
120	-	-	-	-	-	-	-	394
150	-	-	-	-	-	-	-	466
185	-	-	-	-	-	-	-	532
240	-	-	-	-	-	-	-	610
300	-	-	-	-	-	-	-	754
400	-	-	-	-	-	-	-	903

Table 1: Load-carrying capacity for chainflex® cables fixed or moving in e-chains® and e-tubes

The values in these tables have been taken from the standard DIN VDE 0298, Part 4. These values have been simplified and only apply approximately. For each application, it is advisable to obtain and comply with the regulations that apply to each individual case (e.g. measures for protection in case of indirect contact in accordance with DIN VDE 0100 Part 410, overcurrent protective devices in accordance with DIN VDE 0100 Part 430 or voltage drop in accordance with DIN VDE 0100 Part 520). It is not possible to provide all the regulations or overviews in this catalogue. Due to the harmonisation that has been carried out, it is possible that different load-carrying values may be permissible for the same cable in some cases. For the selection of the relevant cross section, the load capacity in undisturbed operation is the determining factor, i.e. the use with permissible operating temperature or permissible maximum temperature on the core.

The load-carrying capacity according to **Table 1** applies to operating-current-carrying cores.

Normally, these are 2 loaded cores in the case of 2-core and 3-core cables, as well as 3 loaded cores in the case of 4-core and 5-core cables. Please take this into account when planning for the use of multi-core cables in electrical installation conduits or energy chains. This information is based on an ambient temperature of 30°C and a non-loaded cable. Please apply the conversion factors according to **Table 2** if the air temperature is increased due to the heat loss of the cables (please take thermal radiation into account as well, e.g. effects of exposure to the sun).

The possible cable installation types in energy chains result in such a broad range of loading profiles that no generalised conversion factors can be offered for this large range of cables. The installation type and the conversion factors must be taken from **Table 3**, according to each individual application.

Ambient temperature [°C]	Conversion factor	
	PVC insulation	TPE /XLPE insulation
10	1.22	1.15
15	1.17	1.12
20	1.12	1.08
25	1.06	1.04
30	1.00	1.00
35	0.94	0.96
40	0.87	0.91
45	0.79	0.87
50	0.71	0.82
55	0.61	0.76
60	0.50	0.71
65	-	0.65
70	-	0.58
75	-	0.50
80	-	0.41
85	-	0.29
90	-	0.14

Table 2: Conversion factors in case of varying ambient temperature

Loaded cores	Conversion factor
5	0.75
7	0.65
10	0.55
14	0.50
19	0.45
24	0.40
40	0.35
61	0.30

Table 3: Conversion factors for multi-core cables with cable cross sections up to 10 mm<sup>2</sup>

## Chemical resistance | Selection chart

Group	chainflex® cable	Jacket material	1	2	3	4	5	Page
<b>Control cables</b>								
Control cable	CF880	PVC	1					58
Control cable	CF881	PVC	1					62
Control cable	CF130.UL	PVC	1					66
Control cable	CF140.UL	PVC	1					70
Control cable	CF150.UL	PVC		2				74
Control cable	CF160.UL	PVC		2				78
Control cable	CF5	PVC		2				82
Control cable	CF6	PVC		2				86
Control cable	CFSOFT1	PVC		2				90
Control cable	CFSOFT2	PVC		2				92
Control cable	CF890	iguPUR			3			94
Control cable	CF891	iguPUR			3			98
Control cable	CF77.UL.D	PUR				4		102
Control cable	CF78.UL	PUR				4		106
Control cable	CF2	PUR				4		110
Control cable	CF9	TPE					5	114
Control cable	CF10	TPE					5	118
Control cable	CF9.UL	TPE					5	122
Control cable	CF10.UL	TPE					5	126
Control cable	CF98	TPE					5	130
Control cable	CF99	TPE					5	132
Control cable	CF98.PLUS	TPE					5	134
Control cable	CF99.PLUS	TPE					5	138
<b>Data cables</b>								
Data cable	CF240	PVC		2				146
Data cable	CF240.PUR	PUR				4		152
Data cable	CF211	PVC		2				154
Data cable	CF211.PUR	PUR				4		158
Data cable	CF11	TPE					5	162
Data cable	CF112	PUR				4		166
Data cable	CF12	TPE					5	170
Data cable	CF298	TPE					5	172
Data cable	CF299	TPE					5	174
Data cable	CFKoax	TPE					5	176
<b>Bus cables</b>								
Bus cable	CF888	PVC	1					188
Bus cable	CFBUS.PVC	PVC		2				192
Bus cable	CF898	iguPUR			3			196
Bus cable	CFBUS.PUR	PUR				4		200
Bus cable	CFBUS	TPE					5	204
Bus cable	CFBUS.LB	TPE					5	210
<b>Fibre Optic Cables</b>								
Fibre Optic Cable	CFLK	PUR				4		220
Fibre Optic Cable	CFLG88	PVC	1					222
Fibre Optic Cable	CFLG.LB.PUR	PUR				4		224
Fibre Optic Cable	CFLG.LB	TPE					5	228
Fibre Optic Cable	CFLG.G	TPE					5	232
<b>Measuring system cables</b>								
Measuring system cable	CF884	PVC	1					242
Measuring system cable	CF211	PVC		2				246
Measuring system cable	CF894	iguPUR			3			252
Measuring system cable	CF111.D	PUR				4		256
Measuring system cable	CF113.D	PUR				4		262
Measuring system cable	CF11.D	TPE					5	268

## Chemical resistance | Selection chart

Group	1	2	3	4	5
<b>Inorganic chemicals</b>					
<b>Aqueous solutions, neutral</b>					
Water	+	+	0	+	+
Common salt (10%)	+	+	0	+	+
Glauber's salt (10%)	+	+	0	+	+
<b>Aqueous solutions, alkaline</b>					
Soda (10%)	0	+	+	0	+
<b>Aqueous solutions, acid</b>					
Sodium bisulfate (10%)	0	+	+	0	+
<b>Aqueous solutions, oxidising</b>					
Hydrogen peroxide (10%)	+	+	0	+	+
Potassium permanganate (2%)	+	+	0	+	+
<b>Inorganic acids</b>					
Hydrochloric acid, concentrated	-	-	-	-	-
Hydrochloric acid (10%)	0	0	+	0	+
Sulfuric acid, concentrated	-	-	-	-	-
Sulfuric acid (10%)	0	0	+	0	+
Nitric acid, concentrated	-	-	-	-	-
Nitric acid (10%)	0	0	+	-	0
<b>Inorganic caustic solutions</b>					
Sodium hydroxide, concentrated	-	-	-	-	0
Soda lye (10%)	0	0	+	0	+
Caustic potash, concentrated	-	-	-	-	0
Caustic potash (10%)	0	0	+	0	+
Ammonia, concentrated	0	0	-	0	+
Ammonia (10%)	+	+	+	+	+
<b>Organic chemicals</b>					
<b>Organic acids</b>					
Acetic acid, concentrated (glacial acetic acid)	-	-	-	-	0
Acetic acid(10% in H <sub>2</sub> O)	0	+	+	0	+
Tartaric acid (10% in H <sub>2</sub> O)	0	+	+	+	+
Citric acid (10% in H <sub>2</sub> O)	0	+	+	+	+
<b>Ketone</b>					
Acetone	-	-	-	-	0
Methyl ethyl ketone (MEK)	-	-	-	-	0
<b>Alcohols</b>					
Ethyl alcohol (spirit)	-	0	+	0	+
Isopropyl alcohol	-	0	+	0	+
Diethylene glycol	0	0	+	+	+
<b>Aromatic compounds</b>					
Toluol	-	-	-	0	-
Xylol	-	-	-	0	-
<b>Fuels</b>					
Gasoline	-	0	0	+	+
Diesel fuel	-	0	0	+	+
<b>Synthetic oils</b>					
<b>Lubricating oil</b>					
ASTM oil #2	0	+	+	+	+
<b>Hydraulic oil</b>					
Mineral oil base	-	0	+	+	+
Glycol base	0	0	+	+	+
Synthetic ester base	-	0	-	+	+
<b>Vegetable oils</b>					
Rapeseed oil	0	+	0	+	+
Olive oil	0	+	0	+	+
Soya bean oil	0	+	0	+	+
<b>Cold cleaning agent</b>					
Cold cleaning agent	-	0	+	+	0

+ no or minimum negative influence

0 medium reciprocal effect, short-term exposure permissible

- unstable, material partly destroyed

All information applies to room temperature



## Chemical resistance | Selection chart

Group	chainflex® cable	Jacket material	1	2	3	4	5	Page
<b>Servo cables</b>								
Servo cable	CF887	PVC	1					280
Servo cable	CF210.UL	PVC		2				282
Servo cable	CF21.UL	PVC		2				286
Servo cable	CF897	iguPUR			3			290
Servo cable	CF270.UL.D	PUR				4		292
Servo cable	CF27.D	PUR				4		296
Servo cable	CF29.D	TPE					5	300
Servo cable	CF220.UL.H	PVC		2				302
Servo cable	CF280.UL.H	PUR				4		306
<b>Motor cables</b>								
Motor cable	CF885	PVC	1					318
Motor cable	CF886	PVC	1					320
Motor cable	CF210.UL	PVC		2				322
Motor cable	CF30	PVC		2				324
Motor cable	CF31	PVC		2				328
Motor cable	CF895	iguPUR			3			332
Motor cable	CF896	iguPUR			3			334
Motor cable	CF270.UL.D	PUR				4		336
Motor cable	CF27.D	PUR				4		340
Motor cable	CF34.UL.D	TPE					5	344
Motor cable	CF35.UL	TPE					5	348
Motor cable	CF37.D	TPE					5	352
Motor cable	CF38	TPE					5	354
Spindle cable/Single core	CF885	PVC	1					356
Spindle cable/Single core	CF885.PE	PVC	1					358
Spindle cable/Single core	CF886	PVC	1					360
Spindle cable/Single core	CF270.UL.D	PUR				4		362
Spindle cable/Single core	CF300.UL.D	TPE					5	364
Spindle cable/Single core	CFPE	TPE					5	366
Spindle cable/Single core	CF310.UL	TPE					5	368
Spindle cable/Single core	CF330.D	TPE					5	370
Spindle cable/Single core	CF340	TPE					5	372
Medium voltage cable	CFCRANE.PUR	TPE					5	374
<b>Twistable cables</b>								
Twistable cable	CF77.UL.D	PUR				4		384
Twistable cable	CFROBOT2	PUR				4		388
Twistable cable	CFROBOT3	PUR				4		390
Twistable cable	CFROBOT4	PUR				4		392
Twistable cable	CFROBOT5	TPE					5	396
Twistable cable	CFROBOT6	PUR				4		398
Twistable cable	CFROBOT7	PUR				4		400
Twistable cable	CFROBOT	TPE					5	404
Twistable cable	CFROBOT8	PUR				4		406
Twistable cable	CFROBOT8.PLUS	PUR				4		410
Twistable cable	CFROBOT9	PUR				4		414
<b>Special cables</b>								
Special cable	CFTHERMO	PUR				4		420
Special cable	CFFLAT	TPE					5	422
Special cable	CFSPECIAL.182	PUR				4		424
Special cable	CFSPECIAL.192	PUR				4		426
Special cable	CFSPECIAL.532	PUR				4		432
Special cable	CFSPECIAL.562.PE	PUR				4		434
Special cable	CFSPECIAL.572	PUR				4		436
Special cable	CFSPECIAL.592	PUR				4		438
Special cable	CFSPECIAL.792	PUR				4		440

## Chemical resistance | Selection chart

Group	1	2	3	4	5
<b>Inorganic chemicals</b>					
<b>Aqueous solutions, neutral</b>					
Water	+	+	0	+	+
Common salt (10%)	+	+	0	+	+
Glauber's salt (10%)	+	+	0	+	+
<b>Aqueous solutions, alkaline</b>					
Soda (10%)	0	+	+	0	+
<b>Aqueous solutions, acid</b>					
Sodium bisulfate (10%)	0	+	+	0	+
<b>Aqueous solutions, oxidising</b>					
Hydrogen peroxide (10%)	+	+	0	+	+
Potassium permanganate (2%)	+	+	0	+	+
<b>Inorganic acids</b>					
Hydrochloric acid, concentrated	-	-	-	-	-
Hydrochloric acid (10%)	0	0	+	0	+
Sulfuric acid, concentrated	-	-	-	-	-
Sulfuric acid (10%)	0	0	+	0	+
Nitric acid, concentrated	-	-	-	-	-
Nitric acid (10%)	0	0	+	-	0
<b>Inorganic caustic solutions</b>					
Sodium hydroxide, concentrated	-	-	-	-	0
Soda lye (10%)	0	0	+	0	+
Caustic potash, concentrated	-	-	-	-	0
Caustic potash (10%)	0	0	+	0	+
Ammonia, concentrated	0	0	-	0	+
Ammonia (10%)	+	+	+	+	+
<b>Organic chemicals</b>					
<b>Organic acids</b>					
Acetic acid, concentrated (glacial acetic acid)	-	-	-	-	0
Acetic acid (10% in H <sub>2</sub> O)	0	+	+	0	+
Tartaric acid (10% in H <sub>2</sub> O)	0	+	+	+	+
Citric acid (10% in H <sub>2</sub> O)	0	+	+	+	+
<b>Ketone</b>					
Acetone	-	-	-	-	0
Methyl ethyl ketone (MEK)	-	-	-	-	0
<b>Alcohols</b>					
Ethyl alcohol (spirit)	-	0	+	0	+
Isopropyl alcohol	-	0	+	0	+
Diethylene glycol	0	0	+	+	+
<b>Aromatic compounds</b>					
Toluol	-	-	-	0	-
Xylol	-	-	-	0	-
<b>Fuels</b>					
Gasoline	-	0	0	+	+
Diesel fuel	-	0	0	+	+
<b>Synthetic oils</b>					
<b>Lubricating oil</b>					
ASTM oil #2	0	+	+	+	+
<b>Hydraulic oil</b>					
Mineral oil base	-	0	+	+	+
Glycol base	0	0	+	+	+
Synthetic ester base	-	0	-	+	+
<b>Vegetable oils</b>					
Rapeseed oil	0	+	0	+	+
Olive oil	0	+	0	+	+
Soya bean oil	0	+	0	+	+
<b>Cold cleaning agent</b>					
Cold cleaning agent	-	0	+	+	0

+ no or minimum negative influence

0 medium reciprocal effect, short-term exposure permissible

- unstable, material partly destroyed

All information applies to room temperature



**Rules for:**

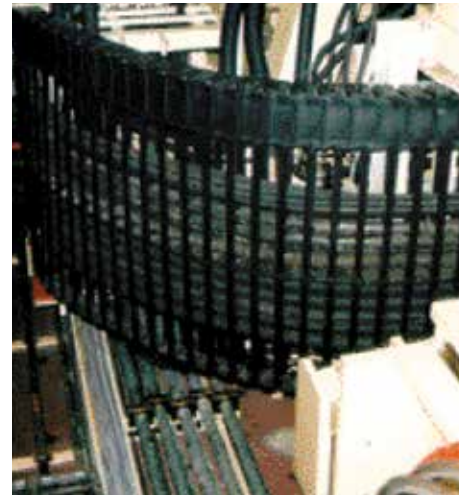
- **Maximum cable diameters**
- **Separation**
- **Bend radius**

## General rules for cables and hoses in e-chains®

### Data and energy supply in all forms – in an energy chain system

The key advantage of an igus® e-chain system® is the safe accommodation of various forms of data cables and energy supply in one system. We recommend the optimal separation layout of the cables and hoses in the e-chain®, but you, the customer, are still afforded the final choice. It is possible, for instance, to maintain minimum distances between bus and motor cables and mix pneumatics, electric and hydraulics in the same compartments.

In addition to the quality of the cables used, the arrangement of each service within the e-chain® and the space allowed, are important for the service life of the system. Various separation options enable the adaptation of the e-chains® to the specific requirements of each respective application. Generalised rules such as "No more than 80% of the clear space of energy chains should be used" no longer make sense given the complexity of present-day applications. In this chapter, we give you detailed recommendations. Due to the variety of the application parameters, we strongly recommend you take advantage of our free consultation services. Simply give us a list of your cable requirements (or merely the required electrical or other services) and you will receive our recommendation.



Hydraulics and electric cables are separated from one another in this example



Well ordered cables with igus® interior separation

### Maximum cable and hose diameters

The maximum cable and/or hose diameter corresponds to the inner height of the selected e-chain®/e-tube, with additional minimum clearance. This minimum clearance would be, for example, 10% for round electrical cables, 20% for hydraulic hoses. An e-chain® is ideal if a minimum lateral gap to the next cable or hose has been factored in. Depending on the nature of the cables, the dynamics, and the expected service life, more clearance must be allowed. In specific cases, clearances may be altered further. Please contact us.

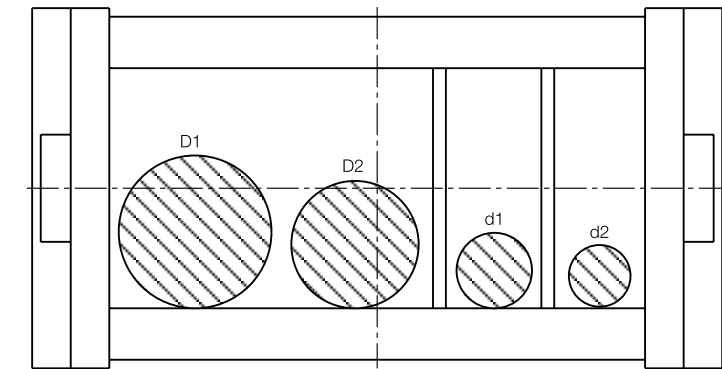


Electrical cables need at least 10% clearance space all around, hydraulic hoses need 20%

The maximum cable diameter is specified for each series in its respective chapter

## Distribution in e-chains®

- Cables and hoses with very different diameters should be laid separately. The separation is achieved using modular separators.
- Cables and hoses must under no circumstances have the opportunity to tangle. Therefore, the clearance height of a compartment with several similar cables or hoses next to one another must **not amount to more than one and a half times the cable/hose diameter.**

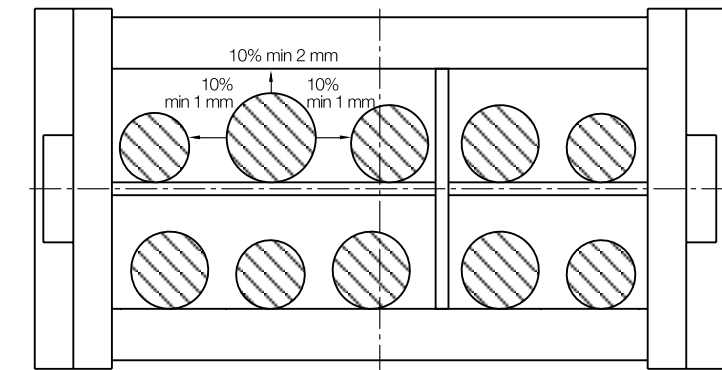


$D1 + D2 > 1.2 \times hi$        $d1 + d2 \leq 1.2 \times hi$

### Expressed in rules, this means:

#### Rule 1:

If  $D1 + D2 > 1.2 \times$  e-chain® inner height, no separation between the two cables/ hoses is necessary. Two cables/ hoses should never be left unguided on top of one another or be allowed to become tangled.



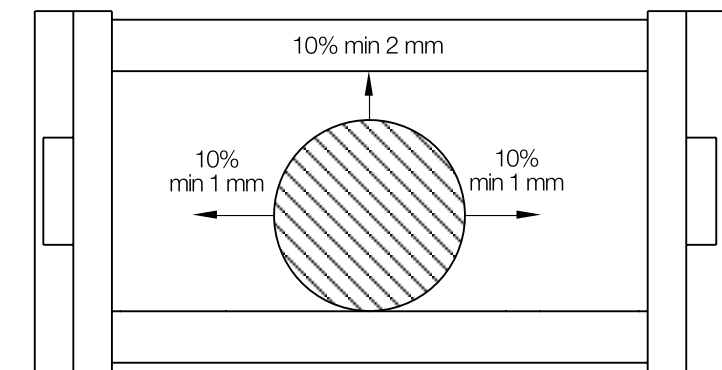
#### Rule 2:

if  $d1 + d2 \leq 1.2 \times$  e-chain® inner height, a vertical separator or a horizontal shelf must be used to reduce the inner height. Thereby preventing the entanglement of d1 and d2.

$d1 + d2 \leq 1.2 \times hi$

#### The reason for this rule is:

The cables and hoses must be laid so that they can move freely at all times and so that no tensile force is exerted at the radius of the e-chains®.



Clearance space for round electrical cables

For high-speed applications and high cycles, cables or hoses **must not be laid on top of each other without horizontal separation.** The standard values for this are:

Travel speed over **0.5m/s** and cycles over **10,000 p.a.**

igus® interior separation offers a safe solution for this situation.

### Clearance space in % for various cables

Cables	Clearance space
Round electrical cables	10%
Electrical flat cables	10%
Pneumatics	5-10%
Hydraulics	20%
Media hoses	15-20%



## Design parameters | Cable and hose packages

### Further guidelines for distribution

- The cable weight should be symmetrically distributed across the width of the e-chain®.
- Cables with different outer jacket materials must not be allowed to rub together. If necessary, they must be laid separately. All igus® chainflex® cables can be combined with each other and other brands of cables.
- The cables should always be fixed at the moving end. The fixed end should also always have strain relief. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses. (refer to "hydraulic hoses").
- Generally, the faster and more frequently the e-chain® operates, the more important the exact positioning of the cables and hoses inside the e-chain® becomes. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications.

### Bend radius R

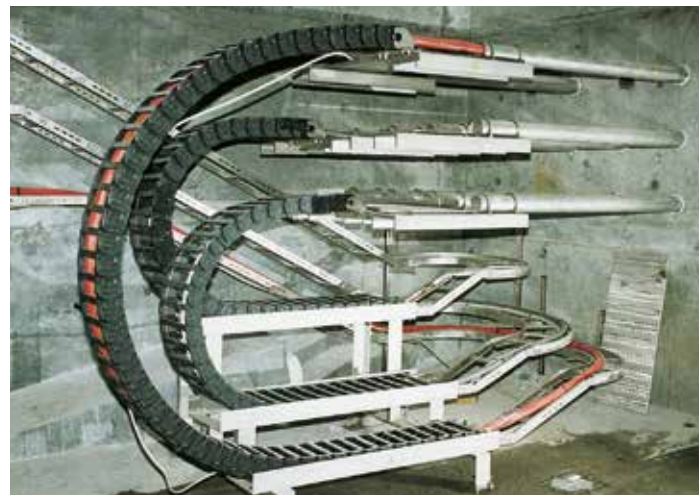
- The bend radius of your e-chain® depends on the thickest or stiffest cable or hose in your application.
- The bend radii of the e-chains® should be adjusted to the recommendations of the cable or hose manufacturer. The selection of a larger radius than the minimum will positively affect service life.
- The specification of minimum bend radii for cables refers to use at normal temperatures. Other bend radii may be recommended. Please ask your cable supplier for details.



The igus® construction kit of energy chain systems solves all the requirements for interior separation known today.



igus® chainflex® cables permit the smallest bend radius of  $5 \times d$  for one million strokes.



The igus® product range offers up to 12 different bend radii for each chain series from stock. Here series 50 in the Storebaelt bridge project.

We recommend complete e-chain systems®, - where bend radii for all cables and hoses, interior separation and service life are optimally matched. Also ask for the igus® system guarantee. ▶ readychain® from page 910

## Design parameters | Round electrical cables

### Round electrical cables

For electrical cables, the round cable is a safe, modular and cost-effective solution for e-chain systems®. We recommend the following criteria for selecting the proper round electrical cables:

#### Selection criteria:

- Small minimum bend radii and mounting heights
- Long service life at minimum bend radius
- Service life expectations for your application (short or long travel, hanging)
- Test data on service life from realistic tests
- Uncomplicated installation process - no hanging, laying out, etc. of cables required
- Strain relief integrated directly into the mounting bracket
- Flexible shields for shielded cables
- Abrasion-resistant and non-adhesive outer jackets
- Large selection to avoid expensive custom designs



Example at igus® test laboratory: constant development and testing of chainflex® cables

For bus cables and fibre optic cables, special attention must be paid to how effective transmission rates and shielding remain after millions of cycles at the minimum bend radius.



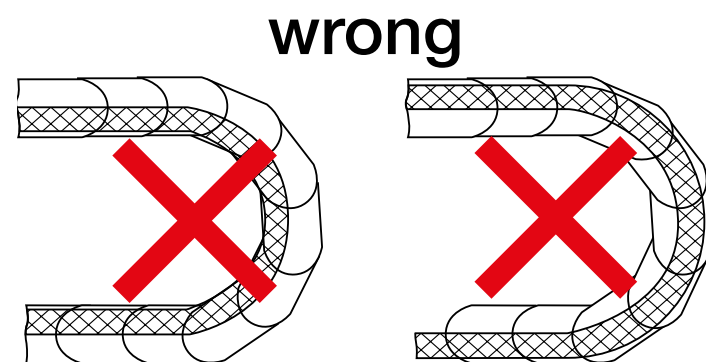
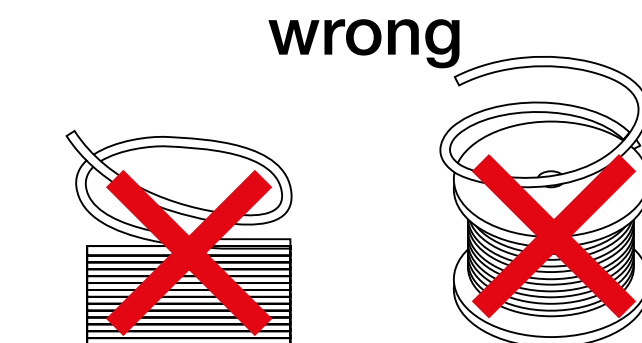
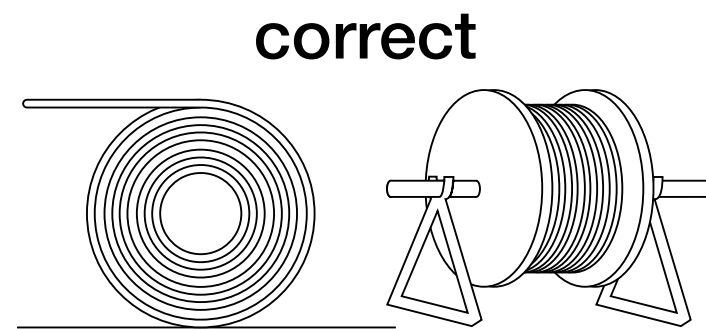
## Design parameters | Round electrical cables

### Installation and strain relief of round electrical cables

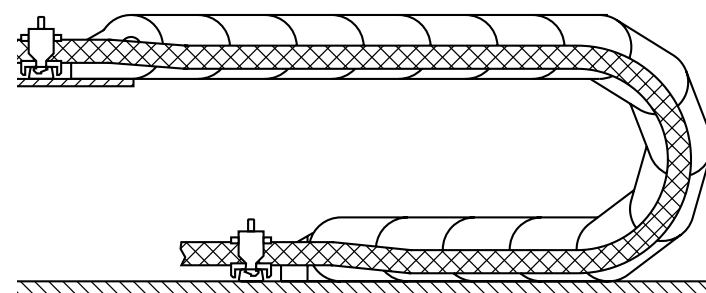
1. The cables must be laid straight, without twisting. Cables must not be uncoiled from the top of the spool. igus® chainflex® cables are immediately ready for fitting directly into the e-chain®. They need not be disconnected or laid out before installation.
2. The cables must be laid so that each individual cable can move freely from side to side.
3. The cables must be able to move freely along the radius. This must be double-checked if the upper run operates at the cable's maximum bend radius.
4. The division of the e-chains® interior using igus® interior separators or shelves is necessary if several cables and/or hoses with varying diameters are laid out. It is important to prevent cables and hoses from tangling.
5. For cables and hoses with different jacket materials, it is important to prevent them from "sticking" to one another. If necessary, they should be separated. igus® chainflex® cables can be combined with all others.
6. Round electrical cables must be secured with strain relief at both ends. In exceptional cases, the cables may be fixed with strain relief at the moving end of the e-chain® only. A gap of 10-30 x cable diameter between the end of the bend segment and the fixed point is recommended for most cables. chainflex® cables can, on the other hand, be secured directly to the mounting bracket with strain relief (this has been confirmed with testing).

We will be pleased to provide you with recommendations for complete e-chain systems®:  
 "readychain®: chain-cable harnessing".

► readychain® from page 910



The cables must be able to move freely along the radius



chainflex® cables can be strain-relieved directly at the mounting bracket.



Corkscrewing: an effect of improper cable and hose placement in an e-chain®

## Design parameters | Pneumatic hoses

### Pneumatic hoses

In principle, the same rules apply for pneumatic hoses as for round cables. In practice, it has been demonstrated that pneumatic hoses are less susceptible to wear. After consultation, they can be laid together more closely than the "10% all-around clearance" rule. A double-sided strain relief is required under these conditions. For pneumatic hoses made of rubber, we recommend strictly following the "10% clearance" rule because they tend to adhere to each other and to other cables and hoses.



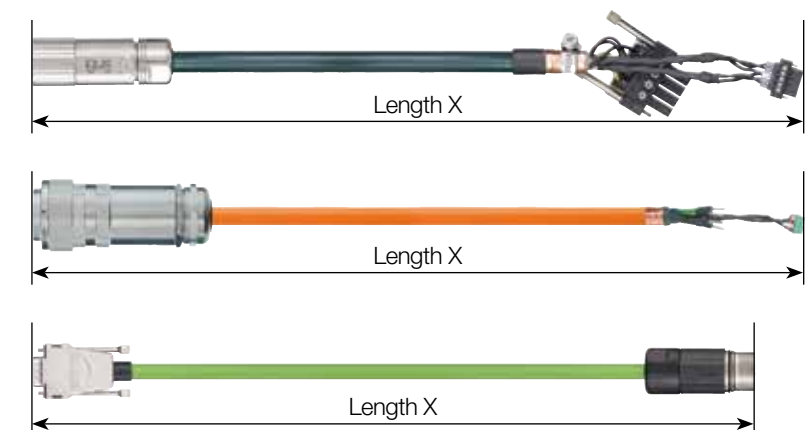
Fully pre-assembled e-chain system® with several pneumatic and hydraulic hoses.

The igus® product range also offers thermo polymer pneumatic hoses called "chainflex® CFAir and CFCleanAir" ► Page 462

## Design parameters | Definition of length

### Harnessed cables

igus® GmbH defines cable length as entire length including connectors or open harnessing. Further length definitions possible on request. Feel free to contact us!



# Welcome to the world ...

The chainflex® approvals and their significance:  
[www.igus.eu/chainflex-certificates](http://www.igus.eu/chainflex-certificates)

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



Guarantee  
igus chainflex  
**36**  
up to 36 months guarantee

## UL Marketing Claim Verification

Today, plant safety or availability can be the decisive reason to choose one machine over another.

As the complexity of the machines and number of electrical parts increases, the difficulty for designers to choose the best product also increases.

This is not helped by the fact that there is a lot of marketing information given, which is not norm based, and therefore difficult for the designer to verify the facts.

This is where the UL Marketing Claim Verification initiated by UL will help the designer.

This is because UL checks the marketing statements of the supplier for the technical data and accuracy.

The UL verified label now proves that the guarantee and quality statements for chainflex® cables and their durability, service life and functionality have been certified by UL. For companies that use these cables in their equipment, they offer more safety from purchasing parts for machine construction, customs clearance and shipping of the machines

to America, right through to commissioning. Those who use chainflex® cables in energy chains can have confidence in terms of parameters such as temperature, type of movement, torsion, media influence or minimum bend radius.

The complex certification procedure (diagram 1) for the "igus® 36-month chainflex® cable guarantee and service life calculator based on 2 billion test cycles per year" claim, was carried out by auditors of the US institute at the igus® HQ in Cologne.

To achieve this, the processes and logic of service life determination were evaluated in a comprehensive audit program of the 3,800 m<sup>2</sup> chainflex® test laboratory, which has over 800 parallel running tests and over 2 billion test cycles per year.

The following four areas were scrutinised:



Figure 1: The complex process to get the UL marketing certificate (source: igus®)

More details online:  
[verify.ul.com/verifications/368](http://verify.ul.com/verifications/368)

More information:  
[www.igus.eu/chainflex-welcome-to-the-world](http://www.igus.eu/chainflex-welcome-to-the-world)

## UL listed

Cables for applications that can be fully described in a standard are certified as "UL Listed". Example: A cable for a washing machine power supply can be clearly described for its application; therefore a normative description of the application of the cable and the associated test setup can be clearly defined. To

certify that the cable is in accordance with "UL Listed" and then to manufacture, test and mark according to "UL Listed". It is not permissible to use a different kind of cable in such a clearly described application in the USA.



## UL/CSA Recognized

The "UL/CSA Recognized" certification marks are issued for components of larger systems. In this case, only components that are not intended for a single, precisely defined installation or application are certified.

Cables for applications that cannot be described normatively and completely are then certified according to "UL/CSA Recognized" (AWM).

Example: Cables for use in energy chains are so diverse and complex that a normative description is impossible. This is where the "UL/CSA Recognized" certification is applicable. It allows cable developers a whole range of different combinable options with respect

to insulation material, jacket material and design. From this cable manufacturers develop a combination that works, which means that it can be used for a specific customer application.

**Be aware:** "UL/CSA Recognized" describes a large, extremely varied range of applications. Here, it is the responsibility of the designer and manufacturer of such an "AWM cable" to work out and carry out appropriate additional tests to prove a specific application, e.g. in an energy chain.



## UL

The institution responsible for approval in the USA is Underwriters Laboratories (UL). The Canadian Standards Association (CSA) is responsible for it in Canada. Certification guidelines and certification processes differ in their complexity, depending on the market and country. A so-called Memorandum of

Understanding allows use in both countries, regardless of the place of certification. Both testing organisations distinguish between the so-called "UL/CSA Listed" and "UL/CSA Recognized" certification, both of which fulfill normative safety requirements that are verified by test procedures.

More details online:  
[iq.ul.com/](http://iq.ul.com/)

More information:  
[www.igus.eu/chainflex-welcome-to-the-world](http://www.igus.eu/chainflex-welcome-to-the-world)



## NFPA

The US **National Fire Protection Association** (NFPA), is a non-profit organisation that has been active in fire protection since 1896.

NFPA publishes numerous safety standards including electrical standards that are used in the USA today.

These include the "NFPA 79 - Electrical Standard for Industrial Machinery". The subject of the standard is primarily the correct applica-

tion of electrical systems in industrial machinery and equipment used in the USA. With the help of the standard, designers can develop safe machines with the highest level of protection for operating personnel.

NFPA 79-2018 includes the topic "*Special Cables and Conductors*" relevant for chainflex cables in section 12.9.

 **More details online:**  
[www.nfpa.org/](http://www.nfpa.org/)



## CLPA

The **CC-Link Partner Association** is an organisation based in Japan and represented in 11 regions of the world.

The purpose of CLPA is to spread and establish the industry network "CC-Link" standard worldwide.

In addition to the marketing of this standard, CC-Link products that are to be used for this standard are tested by this organisation and, if they are technically compliant with the corresponding certificates, are approved for use in CC-Link networks.

 **More details online:**  
[www.cc-link.org/sch/c012List?userSeqNo=76&menuSeqNo=2](http://www.cc-link.org/sch/c012List?userSeqNo=76&menuSeqNo=2)



## DNV approval

The maritime economy is developing towards more automation and digitalisation: Whether vessel manufacture, shipping companies or the gas and oil industry - ships are becoming autonomous factories, shipping companies are becoming fully-fledged logistics providers, and refineries are becoming automated conveyor systems.

DNV is responsible for certifications in the maritime environment, offshore facilities, gas and oil pipelines, and onshore applications such as wind, tidal or solar energy. The classification society was formed in 2012 through the merger of the Norwegian company Det Norske Veritas (DNV) and Germanischer Lloyd (GL).

The components used in maritime environments have to meet different requirements than those of classic factory automation on land.

This requires a separate approval for the operation of these components. The certification society checks compliance with international standards and guidelines, which are applied accordingly to these components. If existing regulations or standards do not describe the application sufficiently, additional testing measures are defined or developed.

If products have DNV approval, it simplifies and speeds up their use in the maritime sector, as it is not necessary to test individual components.

 **More details online:**  
[www.dnv.com](http://www.dnv.com)

 **More information:**  
[www.igus.eu/chainflex-welcome-to-the-world](http://www.igus.eu/chainflex-welcome-to-the-world)



## EAC certificates

EAC (Eurasian Conformity) is a testing standards that is binding for components to be exported to Russia. The proof of compliance with fire protection regulations for Russia, Kazakhstan and Belarus (previously covered by CTP), is now integrated in the EAC certificates. The certifications were introduced after Russia's accession to the World Trade Organisation (WTO) in 2012. They replace the so-called GOST certifications.

The EAC certification is for export products and provides proof that the products conform to the technical requirements of the customs union of Russia, Belarus and Kazakhstan. Without this verification, imports into the customs union are prohibited.

The EAC follows the Russian machinery directive TR-753, which previously had to be taken into account when exporting to the Eurasian economic area.

Prior to certification, companies must submit an application to an accredited certification body in the EAWU (Eurasian Economic Union).

The application includes:

- Detailed product description
- Product designation
- Customs tariff code
- {0}Technical pass
- Security review
- Operating instructions
- Technical drawings
- Technical data sheet
- Test reports
- Already existing certificates: ISO, DIN, CE

The certificate/approval document for a product must generally be available in Russian and in the local language.

If products have EAC and CTP certification, this speeds up their release at customs and thus enables fast and uncomplicated import into the destination country of the customs union.

 **More details online:**  
[www.eaeunion.org/?lang=en#info](http://www.eaeunion.org/?lang=en#info)

 **More information:**  
[www.igus.eu/chainflex-welcome-to-the-world](http://www.igus.eu/chainflex-welcome-to-the-world)





## REACH directive

The term REACH stands for a regulation called **R**egistration, **E**valuation, **A**uthorisation and **R**estriction of **C**hemicals.

Its scope covers manufacturers or importers of more than one tonne of substances per year into the European Union.

The REACH directive is only partially valid for igus®: As a manufacturer of cables, the company is defined as a so-called "downstream user" with regard to the value add chain. Nevertheless, the contents of the REACH directive

and its rules for the production and processing of chemical substances are observed at igus®. For example, no chemicals are used in the production of chainflex® cables that are above the valid REACH limits. The entire range of chainflex® cables is free from materials such as sodium peroxometaborates, cadmium sulphides or also dihexyl phthalates.

 **More details online:**  
[echa.europa.eu/de/regulations/reach/understanding-reach](https://echa.europa.eu/de/regulations/reach/understanding-reach)



## RoHS-II / RoHS-III

**More safety for people and the environment**

The abbreviation RoHS stands for **R**estriction of **H**azardous **S**ubstances and regulates the use of selected hazardous substances in electrical and electronic equipment, which includes cables. By complying with this directive, companies prove that problematic materials such as lead, mercury or phthalates - known as plasticisers - have been banned from electronic waste and also from working environments. One example is lead. It occurs, among other things, in the form of solder on circuit boards, which are installed in complex machine systems in a variety of ways.

Materials research in recent years has also produced new jacket materials which, among other things, do not contain hazardous plasticisers and thus function flexibly in dynamic applications. Until now, plasticisers have been used in industry mainly where plastics had to remain particularly pliable, soft and elastic in use.

igus® develops and tests special jacket materials for use in e-chains in its own laboratory, which are RoHS II /III compliant according to the respective requirements.

 **More details online:**  
[ec.europa.eu/environment/waste/rohs\\_eee/legis\\_en.htm](https://ec.europa.eu/environment/waste/rohs_eee/legis_en.htm)



## CE mark

The CE marking makes it clear that the manufacturer of a product such as chainflex® cables complies with the applicable EU directives. The CE marking is not a seal of approval or quality mark and was created for trade in the European Economic Area.

- The CE certification basis has come to encompass more than 25 EU directives (issue 2020).
- The CE certificate is a kind of voluntary commitment.
- The CE mark on a machine and the corresponding signature confirms that this machine was planned, designed and built in accordance with the applicable standards.
- The CE marking is part of further regulations. These include the Machinery Directive, the Electromagnetic Compatibility (EMC) Directive, the Low Voltage Directive (often referred to as LVD), RoHS substance restrictions and protective equipment, etc.

CE conformity is based on a complex risk assessment.

 **More details online:**  
[c.europa.eu/growth/single-market/ce-marking\\_de](https://c.europa.eu/growth/single-market/ce-marking_de)

 **More information:**  
[www.igus.eu/chainflex-welcome-to-the-world](http://www.igus.eu/chainflex-welcome-to-the-world)

**Risk assessment - the iterative procedure consists of:**

- Verification of the intended use of e.g. e-chain® and chainflex® cables
- Analysis of conceivable, foreseeable misuse
- Determination of relevant and valid standards for the production of chainflex® cables and e-chains®
- Determination of specific requirements and conditions for the use of chainflex® cables
- Research of the responsible "notified body", e.g. at the accreditation body DAkkS (Institute for the monitoring of all certification, testing and inspection bodies)
- (Laboratory) tests of the chainflex® cables and e-chains®
- Data evaluation
- Preparation of technical documentation and translation into target languages
- Creation of the certificate/provision for download
- Attaching the CE mark

## UKCA

Like CE marking, UKCA marking ("United Kingdom Conformity Assessed") is a marking requirement for certain technical products.

With this marking, the manufacturer declares that the products are manufactured according to the applicable directives or regulations of the "United Kingdom". UKCA marking is not a seal of approval or sign of quality and was created for trade with the "United Kingdom". Technical details and further regulations in this regard are still being developed by the English government and trade associations.

Technical details and further regulations in this regard are still being developed by the English government and trade associations.

As a result of the national development of product regulations, it is possible that there will be product requirements that differ from those of the EU and must be complied with by manufacturers and importers wishing to place products on the market in the United Kingdom.

All information: As at 08/2021.





### igus® chainflex® cables for DESINA

DESINA: **DE**central and **St**andardised **IN**stallation technique is a recommendation of the Verein Deutscher Werkzeugmaschinenfabriken (VDW = Association of German machine tool industry) for the purpose of standardising components, interfaces and connecting systems.

DESINA describes an extensive whole concept for standardisation and decentralisation of the fluid technical and electrical installation of machines and plants.

For further information: [www.desina.de](http://www.desina.de)



### Det Norske Veritas Germanischer Lloyd

For further information: [www.dnvgl.com](http://www.dnvgl.com)



### Underwriters Laboratories Inc.

For further information: [www.ul-europe.com](http://www.ul-europe.com)



### Canadian Standards Association

For further information: [www.csa.ca](http://www.csa.ca)



### Commission Électrotechnique Internationale



### Communauté Européenne



### EurAsian Conformity

### chainflex® cables now certified for the Russian market

igus® chainflex® cables are now certified for Russia, Belarus and Kazakhstan. These certificates replace the outdated GOST certificates.

#### EAC

Certified according to the standards of the technical regulations of the customs union

Nr. RU C-DE.ME77.B.01218 (TR ZU)

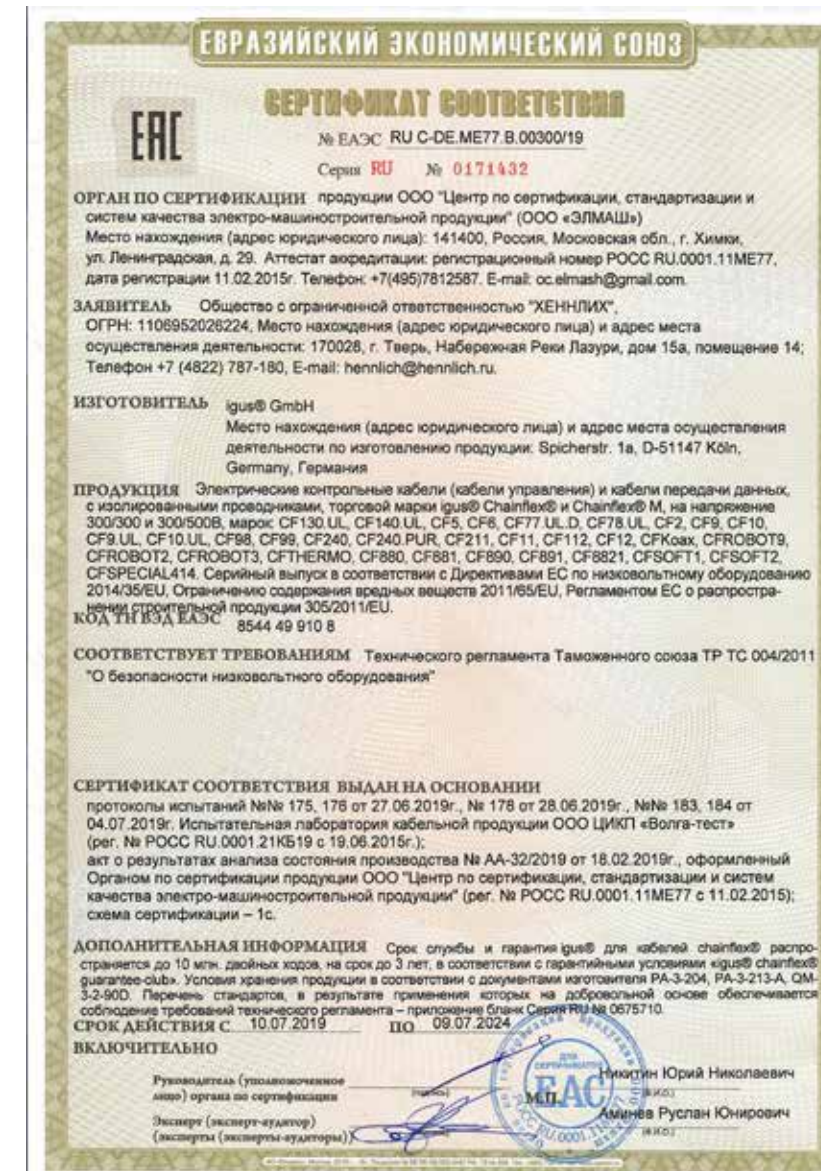
Nr. RU C-DE.ME77.B.02324 (TR ZU)

Nr. RU C-DE.ME77.B.02806 (TR ZU)

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

Nr. RU C-DE.ME77.B.00300/19

Nr. RU C-DE.ME77.B.00302/19



All certificates can be found on ► [www.igus.eu/CTP-EAC](http://www.igus.eu/CTP-EAC)

## General conditions

The General Conditions of Sale of igus® shall apply. Excessive and short deliveries of  $\pm 10\%$  for cables conform with contractual agreements. Deliveries can be made in part-lengths. Statutory VAT must be added to the prices. The General Conditions of Sale and Delivery of igus® GmbH, Cologne, can be found online under [www.igus.eu](http://www.igus.eu).

The prices quoted in the catalogue or other media are subject to alteration. igus® can modify the prices at any time at their own discretion.

## User information

Since our products are constantly being developed further in the interest of our customers, we reserve the right to make technical alterations at any time. With the issue of this catalogue, all previous publications lose their validity. Subject to printing errors.

## Disclaimer

The terms "igus", "chainflex", "CFRIP", "readycable", "readychain", "e-chain", "e-chain systems", "e-ketten", "e-kettensysteme", "flizz", "iglidur", "drylin" are legally protected trademarks in the Federal Republic of Germany and in case also in foreign countries.

## Outer jacket color according to RAL

chainflex® cable jacket colours are given with the similar RAL colour number; for example yellowgreen, similar to RAL 6018. Slight differences can occur from the exact RAL colour, depending on the cable jacket material. However, this has no effect on the quality or functionality of the cable.

A RAL number is used to describe different shades of colour more consistently. For example, RAL 7040 is light grey and RAL 7016 is a dark grey. The RAL number describes the colour, but cannot guarantee the same shade in different applications.

RAL: German Institute for Quality Assurance and Certification e.V. ► [www.RAL.de](http://www.RAL.de)

## KTG

If cable drums are to be used, please visit KTG directly online. ► [www.kabeltrommel.de](http://www.kabeltrommel.de)

## Product illustrations

The products illustrated are photos showing examples for whole series, i.e. the original cable can deviate from the cable shown.

## Technical notes

The USB, FireWire and GigE cables listed on this page have been developed and manufactured for the mechanically demanding industrial application in e-chain systems®. High resistance against oil and lubricants are guaranteed, and also a high protection against electro-magnetic interference fields. This high mechanical service life was reached with the usage of high quality materials which even care for the electrical safeness.

In single cases communication errors can occur, if very different hardware and software is combined. We recommend tests with all components and the cables before starting serial production, to get the proof for a perfectly running system.

Of course we support you with the details of these electrical tests.

The specifications in the catalogue referring to temperature range, bend radius and travel must be seen as limiting value specifications. If two limiting value specifications are combined, this can lead to a reduction of the cable's service life.

The term "oil-resistant" refers to a few selected oil types which have been tested accordingly. This does not mean, however, that the products are automatically resistant to all the oils on the market.

Length printing: Respective printing of the metre length is already on many cables. These are not calibrated measurements, they are only intended as an orientation aid.

Just give us a call!





The chainflex® CASE is a cardboard box that allows cable drum shipping without a pallet. This means that the goods can be sent by a parcel carrier. The chainflex® CASE is not only used for transport, but also works as a storage system for cable drums. The cable can be easily unreeled directly from the box. Thanks to its stackability, you can set up flexible storage facilities. The QR code on the shipping box makes online re-ordering easy. All in all, this system helps you save shipping, process and storage costs.

chainflex® CASE allows cable drums to be shipped in a cardboard box via parcel carriers. Very simple and you can save up to 84% shipping cost compared to standard shipping on a pallet by a freight forwarder.

Remove expensive storage systems for cable drums. Unreel the cable immediately from the chainflex® CASE. Carrying handles and stackability allow for individual storage spaces.

This system makes storage mobile and can be used directly on construction sites, for instance. Expensive special shelving is not required, instead, it can be stored simply in standard shelving systems.

With the QR code on every chainflex® CASE, you can re-order your cable online in a few seconds. Simply use your smartphone's scanner.

► [www.igus.eu/cf-case](http://www.igus.eu/cf-case)



**chainflex® CASE application example from the field: BSH Hausgeräte GmbH**  
"The maintenance staff at the BSH plant in Bad Neustadt an der Saale have implemented a real "out of the box" solution. Electrical cables no longer arrive by hank or cable drum, but in the "chainflex CASE" shipping and storage solution. This saves costs, space and waste."

## Two sizes ... can be ordered separately ...

Just add the required CASE to your order



chainflex® CASE



chainflex® CASE S

## Control cables

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
<b>Control cables</b>							
CF880.05.02	2x0.5	200	200	CF881.15.04	(4G1.5)C	150	100
CF880.05.03	3G0.5	200	200	CF881.15.05	(5G1.5)C	100	100
CF880.05.04	4G0.5	200	200	CF881.15.07	(7G1.5)C	100	-
CF880.05.05	5G0.5	200	200	CF881.25.04	(4G2.5)C	100	100
CF880.05.07	7G0.5	200	150	CF881.25.05	(5G2.5)C	100	-
CF880.05.12	12G0.5	150	100	CF130.02.03.UL	3x0.25	200	200
CF880.05.18	18G0.5	100	100	CF130.02.04.UL	4x0.25	200	200
CF880.07.02	2x0.75	200	200	CF130.02.06.UL	6x0.25	200	200
CF880.07.03	3G0.75	200	200	CF130.02.07.UL	7x0.25	200	200
CF880.07.04	4G0.75	200	200	CF130.02.12.UL	12x0.25	200	100
CF880.07.05	5G0.75	200	150	CF130.02.18.UL	18x0.25	150	100
CF880.07.07	7G0.75	200	150	CF130.02.20.UL	20x0.25	150	-
CF880.07.12	12G0.75	150	100	CF130.02.25.UL	25x0.25	100	-
CF880.07.18	18G0.75	100	-	CF130.02.30.UL	30x0.25	100	-
CF880.10.02	2x1.0	200	200	CF130.03.02.UL	2x0.34	200	200
CF880.10.03	3G1.0	200	200	CF130.03.05.UL	5x0.34	200	200
CF880.10.04	4G1.0	200	150	CF130.05.02.UL	2x0.5	200	200
CF880.10.05	5G1.0	200	150	CF130.05.03.UL	3G0.5	200	200
CF880.10.07	7G1.0	150	100	CF130.05.04.UL	4G0.5	200	200
CF880.10.12	12G1.0	100	-	CF130.05.05.UL	5G0.5	200	200
CF880.15.02	2x1.5	200	200	CF130.05.07.UL	7G0.5	200	150
CF880.15.03	3G1.5	200	150	CF130.05.12.UL	12G0.5	150	100
CF880.15.04	4G1.5	200	150	CF130.05.18.UL	18G0.5	100	-
CF880.15.05	5G1.5	150	100	CF130.07.02.UL	2x0.75	200	200
CF880.15.07	7G1.5	100	100	CF130.07.03.UL	3G0.75	200	200
CF880.25.03	3G2.5	150	100	CF130.07.04.UL	4G0.75	200	200
CF880.25.04	4G2.5	150	100	CF130.07.05.UL	5G0.75	200	150
CF880.25.05	5G2.5	100	100	CF130.07.07.UL	7G0.75	200	150
CF881.05.03	(3G0.5)C	200	200	CF130.07.12.UL	12G0.75	100	-
CF881.05.04	(4G0.5)C	200	200	CF130.10.02.UL	2x1.0	200	200
CF881.05.05	(5G0.5)C	200	150	CF130.10.03.UL	3G1.0	200	200
CF881.05.07	(7G0.5)C	200	150	CF130.10.04.UL	4G1.0	200	150
CF881.05.12	(12G0.5)C	150	100	CF130.10.05.UL	5G1.0	200	150
CF881.05.18	(18G0.5)C	100	-	CF130.10.07.UL	7G1.0	200	100
CF881.07.02	(2x0.75)C	200	200	CF130.10.12.UL	12G1.0	100	-
CF881.07.03	(3G0.75)C	200	150	CF130.15.02.UL	2x1.5	200	200
CF881.07.04	(4G0.75)C	200	150	CF130.15.03.UL	3G1.5	200	150
CF881.07.05	(5G0.75)C	200	150	CF130.15.04.UL	4G1.5	200	150
CF881.07.07	(7G0.75)C	150	100	CF130.15.05.UL	5G1.5	200	100
CF881.07.12	(12G0.75)C	100	-	CF130.15.07.UL	7G1.5	150	-
CF881.10.02	(2x1.0)C	200	200	CF130.15.12.UL	12G1.5	100	-
CF881.10.03	(3G1.0)C	200	150	CF130.25.03.UL	3G2.5	200	100
CF881.10.04	(4G1.0)C	200	150	CF130.25.04.UL	4G2.5	150	100
CF881.10.05	(5G1.0)C	200	150	CF130.25.07.UL	7G2.5	100	-
CF881.10.07	(7G1.0)C	150	100	CF130.40.03.UL	3G4.0	100	100
CF881.10.12	(12G1.0)C	100	-	CF140.02.12.UL	(12x0.25)C	150	-
CF881.15.02	(2x1.5)C	200	150	CF140.03.05.UL	(5x0.34)C	200	150
CF881.15.03	(3G1.5)C	200	150	CF140.05.03.UL	(3G0.5)C	200	150
				CF140.05.05.UL	(5G0.5)C	200	150

## Control cables

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
CF140.07.03.UL	(3G0.75)C	200	150	CF5.07.07	7G0.75	200	100
CF140.07.04.UL	(4G0.75)C	200	100	CF5.07.12	12G0.75	100	-
CF140.07.05.UL	(5G0.75)C	200	100	CF5.10.03	3G1.0	200	200
CF140.07.07.UL	(7G0.75)C	150	100	CF5.10.04	4G1.0	200	150
CF140.07.12.UL	(12G0.75)C	100	-	CF5.10.05	5G1.0	200	150
CF140.10.02.UL	(2x1.0)C	200	150	CF5.10.07	7G1.0	150	100
CF140.10.03.UL	(3G1.0)C	200	100	CF5.10.12	12G1.0	100	-
CF140.10.04.UL	(4G1.0)C	200	100	CF5.15.03	3G1.5	200	150
CF140.10.05.UL	(5G1.0)C	150	100	CF5.15.04	4G1.5	200	150
CF140.10.07.UL	(7G1.0)C	150	-	CF5.15.05	5G1.5	200	100
CF140.15.03.UL	(3G1.5)C	200	100	CF5.15.07	7G1.5	150	-
CF140.15.04.UL	(4G1.5)C	150	100	CF5.25.04	4G2.5	150	100
CF140.15.05.UL	(5G1.5)C	150	100	CF5.25.05	5G2.5	100	-
CF140.15.07.UL	(7G1.5)C	100	-	CF6.02.04	(4x0.25)C	200	150
CF140.25.03.UL	(3G2.5)C	100	-	CF6.03.05	(5x0.34)C	200	150
CF140.25.04.UL	(4G2.5)C	100	-	CF6.05.02	(2x0.5)C	200	150
CF150.UL.10.03	3G1.0	200	150	CF6.05.05	(5G0.5)C	200	100
CF150.UL.10.04	4G1.0	200	100	CF6.05.07	(7G0.5)C	150	100
CF150.UL.10.05	5G1.0	200	100	CF6.05.09	(9G0.5)C	100	-
CF150.UL.10.07	7G1.0	150	-	CF6.05.12	(12G0.5)C	100	-
CF150.UL.15.03	3G1.5	200	100	CF6.07.03	(3G0.75)C	200	150
CF150.UL.15.04	4G1.5	200	100	CF6.07.04	(4G0.75)C	200	100
CF150.UL.15.05	5G1.5	150	100	CF6.07.05	(5G0.75)C	200	100
CF150.UL.15.07	7G1.5	100	-	CF6.07.07	(7G0.75)C	150	-
CF150.UL.25.03	3G2.5	150	100	CF6.10.03	(3G1.0)C	200	150
CF150.UL.25.04	4G2.5	150	100	CF6.10.04	(4G1.0)C	200	100
CF150.UL.25.05	5G2.5	100	-	CF6.10.05	(5G1.0)C	150	100
CF150.UL.25.07	7G2.5	100	-	CF6.10.07	(7G1.0)C	100	-
CF160.UL.10.03	(3G1.0)C	150	100	CF6.15.03	(3G1.5)C	200	100
CF160.UL.10.04	(4G1.0)C	150	100	CF6.15.04	(4G1.5)C	150	100
CF160.UL.10.05	(5G1.0)C	100	-	CF6.15.05	(5G1.5)C	150	-
CF160.UL.10.07	(7G1.0)C	100	-	CF6.15.07	(7G1.5)C	100	-
CF160.UL.15.03	(3G1.5)C	150	100	CF6.25.03	(3G2.5)C	150	-
CF160.UL.15.04	(4G1.5)C	100	-	CF6.25.04	(4G2.5)C	100	-
CF160.UL.15.05	(5G1.5)C	100	-	CFSOFT1.02.03	3x0.25	200	200
CF160.UL.25.03	(3G2.5)C	100	-	CFSOFT1.02.08	8x0.25	200	150
CF160.UL.25.04	(4G2.5)C	100	-	CFSOFT1.03.04	4x0.34	200	200
CF160.UL.25.05	(5G2.5)C	100	-	CFSOFT1.05.04	4x0.5	200	150
CF5.03.18	18x0.34	100	-	CFSOFT2.02.03	(3x0.25)C	200	200
CF5.05.02	2x0.5	200	200	CFSOFT2.02.08	(8x0.25)C	200	150
CF5.05.03	3G0.5	200	200	CFSOFT2.03.04	(4x0.34)C	200	200
CF5.05.04	4G0.5	200	200	CFSOFT2.05.04	(4x0.5)C	200	150
CF5.05.05	5G0.5	200	150	CF890.05.02	2x0.5	200	200
CF5.05.07	7G0.5	200	150	CF890.05.03	3G0.5	200	200
CF5.05.12	12G0.5	100	-	CF890.05.04	4G0.5	200	200
CF5.05.18	18G0.5	100	-	CF890.05.05	5G0.5	200	200
CF5.07.03	3G0.75	200	200	CF890.05.07	7G0.5	200	150
CF5.07.04	4G0.75	200	150	CF890.05.12	12G0.5	150	100
CF5.07.05	5G0.75	200	150	CF890.05.18	18G0.5	100	100



## Control cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
<b>Control cables</b>							
CF890.07.02	2x0.75	200	200	CF77.UL.02.07.D	7x0.25	200	200
CF890.07.03	3G0.75	200	200	CF77.UL.02.12.D	12x0.25	200	100
CF890.07.04	4G0.75	200	200	CF77.UL.02.18.D	18x0.25	150	-
CF890.07.05	5G0.75	200	150	CF77.UL.02.25.D	25x0.25	100	-
CF890.07.07	7G0.75	200	150	CF77.UL.03.04.INI	4x0.34	200	200
CF890.07.12	12G0.75	150	100	CF77.UL.03.05.INI	5x0.34	200	200
CF890.07.18	18G0.75	100	-	CF77.UL.03.05.INI.D	5x0.34	200	200
CF890.10.02	2x1.0	200	200	CF77.UL.05.04.D	4G0.5	200	200
CF890.10.03	3G1.0	200	200	CF77.UL.05.05.D	5G0.5	200	200
CF890.10.04	4G1.0	200	150	CF77.UL.05.07.D	7G0.5	200	150
CF890.10.05	5G1.0	200	150	CF77.UL.05.12.D	12G0.5	150	100
CF890.10.07	7G1.0	150	100	CF77.UL.05.18.D	18G0.5	100	-
CF890.10.12	12G1.0	100	-	CF77.UL.07.03.D	3G0.75	200	200
CF890.15.02	2x1.5	200	200	CF77.UL.07.04.D	4G0.75	200	150
CF890.15.03	3G1.5	200	150	CF77.UL.07.05.D	5G0.75	200	150
CF890.15.04	4G1.5	200	150	CF77.UL.07.07.D	7G0.75	200	100
CF890.15.05	5G1.5	150	100	CF77.UL.07.12.D	12G0.75	100	-
CF890.15.07	7G1.5	100	100	CF77.UL.10.02.D	2x1.0	200	200
CF890.25.03	3G2.5	200	100	CF77.UL.10.03.D	3G1.0	200	200
CF890.25.04	4G2.5	150	100	CF77.UL.10.04.D	4G1.0	200	150
CF890.25.05	5G2.5	100	100	CF77.UL.10.05.D	5G1.0	200	150
CF891.05.02	(2x0.5)C	200	200	CF77.UL.10.07.D	7G1.0	200	100
CF891.05.03	(3G0.5)C	200	200	CF77.UL.10.12.D	12G1.0	100	-
CF891.05.05	(5G0.5)C	200	150	CF77.UL.15.03.D	3G1.5	200	150
CF891.05.12	(12G0.5)C	150	100	CF77.UL.15.04.D	4G1.5	200	150
CF891.05.18	(18G0.5)C	100	-	CF77.UL.15.05.D	5G1.5	200	150
CF891.07.02	(2x0.75)C	200	200	CF77.UL.15.07.D	7G1.5	150	100
CF891.07.03	(3G0.75)C	200	150	CF77.UL.25.03.D	3G2.5	200	100
CF891.07.04	(4G0.75)C	200	150	CF77.UL.25.04.D	4G2.5	150	100
CF891.07.05	(5G0.75)C	200	150	CF77.UL.25.05.D	5G2.5	150	100
CF891.07.07	(7G0.75)C	150	100	CF77.UL.25.07.D	7G2.5	100	-
CF891.07.12	(12G0.75)C	100	-	CF77.UL.40.04.D	4G4.0	100	-
CF891.10.02	(2x1.0)C	200	200	CF78.UL.05.04	(4G0.5)C	200	150
CF891.10.03	(3G1.0)C	200	150	CF78.UL.05.05	(5G0.5)C	200	150
CF891.10.04	(4G1.0)C	200	150	CF78.UL.05.07	(7G0.5)C	150	100
CF891.10.05	(5G1.0)C	200	150	CF78.UL.05.09	(9G0.5)C	100	-
CF891.10.07	(7G1.0)C	150	100	CF78.UL.05.12	(12G0.5)C	100	-
CF891.10.12	(12G1.0)C	100	-	CF78.UL.07.03	(3G0.75)C	200	150
CF891.15.02	(2x1.5)C	200	150	CF78.UL.07.04	(4G0.75)C	200	100
CF891.15.03	(3G1.5)C	200	150	CF78.UL.07.05	(5G0.75)C	150	100
CF891.15.04	(4G1.5)C	150	100	CF78.UL.07.07	(7G0.75)C	150	-
CF891.15.05	(5G1.5)C	100	100	CF78.UL.10.03	(3G1.0)C	200	100
CF891.15.07	(7G1.5)C	100	-	CF78.UL.10.04	(4G1.0)C	200	100
CF891.25.04	(4G2.5)C	100	100	CF78.UL.10.05	(5G1.0)C	150	100
CF891.25.05	(5G2.5)C	100	-	CF78.UL.10.07	(7G1.0)C	100	-
CF77.UL.02.03.INI	3x0.25	200	200	CF78.UL.15.03	(3G1.5)C	150	100
CF77.UL.02.04.D	4x0.25	200	200	CF78.UL.15.04	(4G1.5)C	150	100
CF77.UL.02.05.D	5x0.25	200	200	CF78.UL.15.05	(5G1.5)C	150	-
				CF78.UL.15.07	(7G1.5)C	100	-

## Control cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
CF78.UL.25.03	(3G2.5)C	150	100	CF10.01.12	(12x0.14)C	200	150
CF78.UL.25.04	(4G2.5)C	100	-	CF10.01.18	(18x0.14)C	150	100
CF78.UL.25.05	(5G2.5)C	100	-	CF10.02.04	(4x0.25)C	200	200
CF2.01.04	(4x0.14)C	200	200	CF10.02.08	(8x0.25)C	200	150
CF2.01.08	(8x0.14)C	200	150	CF10.02.12	(12x0.25)C	150	100
CF2.01.12	(12x0.14)C	150	100	CF10.02.25	(25x0.25)C	100	-
CF2.01.18	(18x0.14)C	150	-	CF10.03.05.INI	(5x0.34)C	200	150
CF2.01.24	(24x0.14)C	100	-	CF10.05.04	(4x0.5)C	200	150
CF2.02.04	(4x0.25)C	200	150	CF10.05.05	(5x0.5)C	200	150
CF2.02.08	(8x0.25)C	200	150	CF10.05.07	(7x0.5)C	200	100
CF2.02.18	(18x0.25)C	100	-	CF10.05.12	(12x0.5)C	100	-
CF9.02.02	2x0.25	200	200	CF10.07.04	(4G0.75)C	200	150
CF9.02.03.INI	3x0.25	200	200	CF10.07.05	(5G0.75)C	200	150
CF9.02.06	6x0.25	200	200	CF10.07.07	(7G0.75)C	150	100
CF9.02.07	7x0.25	200	200	CF10.07.12	(12G0.75)C	100	-
CF9.02.08	8x0.25	200	200	CF10.10.02	(2x1.0)C	200	150
CF9.02.12	12x0.25	200	150	CF10.10.03	(3G1.0)C	200	150
CF9.02.18	18x0.25	150	100	CF10.10.04	(4G1.0)C	200	150
CF9.02.20	20x0.25	150	100	CF10.10.05	(5G1.0)C	200	100
CF9.02.25	25x0.25	100	-	CF10.10.07	(7G1.0)C	150	100
CF9.03.04.INI	4x0.34	200	200	CF10.15.04	(4G1.5)C	150	100
CF9.03.05.INI	5x0.34	200	200	CF10.15.05	(5G1.5)C	150	100
CF9.03.06	6x0.34	200	200	CF10.15.07	(7G1.5)C	100	-
CF9.03.08	8x0.34	200	150	CF10.25.04	(4G2.5)C	100	-
CF9.03.16.07.03.INI	16x0.34+3x0.75	100	-	CF9.UL.02.02	2x0.25	200	200
CF9.05.02	2x0.5	200	200	CF9.UL.02.03.INI	3x0.25	200	200
CF9.05.03	3x0.5	200	200	CF9.UL.02.04	4x0.25	200	200
CF9.05.04	4x0.5	200	200	CF9.UL.02.06	6x0.25	200	200
CF9.05.05	5x0.5	200	200	CF9.UL.02.08	8x0.25	200	150
CF9.05.07	7x0.5	200	150	CF9.UL.02.12	12x0.25	200	100
CF9.05.12	12x0.5	150	100	CF9.UL.03.04.INI	4x0.34	200	200
CF9.05.18	18x0.5	100	-	CF9.UL.03.05.INI	5x0.34	200	200
CF9.05.25	25x0.5	100	-	CF9.UL.03.06	6x0.34	200	200
CF9.07.04	4G0.75	200	200	CF9.UL.03.08	8x0.34	200	150
CF9.07.05	5G0.75	200	200	CF9.UL.05.02	2x0.5	200	200
CF9.07.07	7G0.75	200	150	CF9.UL.05.03	3x0.5	200	200
CF9.07.12	12G0.75	100	-	CF9.UL.05.04	4x0.5	200	150
CF9.10.03	3G1.0	200	200	CF9.UL.05.05	5x0.5	200	150
CF9.10.04	4G1.0	200	200	CF9.UL.05.07	7x0.5	200	100
CF9.10.05	5G1.0	200	150	CF9.UL.05.12	12x0.5	150	-
CF9.10.12	12G1.0	100	-	CF9.UL.05.18	18x0.5	100	-
CF9.15.02	2x1.5	200	200	CF9.UL.07.05	5G0.75	200	150
CF9.15.04	4G1.5	200	150	CF9.UL.07.07	7G0.75	200	100
CF9.15.05	5G1.5	200	150	CF9.UL.07.12	12G0.75	100	-
CF9.15.07	7G1.5	150	100	CF9.UL.10.03	3G1.0	200	150
CF9.25.04	4G2.5	150	100	CF9.UL.10.04	4G1.0	200	150
CF9.25.05	5G2.5	150	100	CF9.UL.10.12	12G1.0	100	-
CF9.25.07	7G2.5	100	-	CF9.UL.15.04	4G1.5	200	100
CF9.40.04	4G4.0	100	-	CF9.UL.15.05	5G1.5	200	100



Control and data cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
<b>Control cables</b>							
CF9.UL.15.07	7G1.5	150	-	CF99.PLUS.01.04	(4x0.14)C	200	200
CF9.UL.25.04	4G2.5	100	-	CF99.PLUS.01.08	(8x0.14)C	200	150
CF9.UL.25.05	5G2.5	100	-	CF99.PLUS.02.04	(4x0.25)C	200	150
CF9.UL.40.04	4G4.0	100	-	CF99.PLUS.03.08	(8x0.34)C	200	100
CF10.UL.02.04	(4x0.25)C	200	150	<b>Data cables</b>			
CF10.UL.02.08	(8x0.25)C	200	100	CF240.01.03	(3x0.14)C	200	200
CF10.UL.02.12	(12x0.25)C	150	-	CF240.01.04	(4x0.14)C	200	200
CF10.UL.02.25	(25x0.25)C	100	-	CF240.01.05	(5x0.14)C	200	200
CF10.UL.05.04	(4x0.5)C	200	100	CF240.01.07	(7x0.14)C	200	200
CF10.UL.05.05	(5x0.5)C	200	100	CF240.01.14	(14x0.14)C	200	150
CF10.UL.05.12	(12x0.5)C	100	-	CF240.01.18	(18x0.14)C	200	150
CF10.UL.07.04	(4G0.75)C	200	100	CF240.01.24	(24x0.14)C	200	100
CF10.UL.07.05	(5G0.75)C	200	100	CF240.02.03	(3x0.25)C	200	200
CF10.UL.07.07	(7G0.75)C	150	-	CF240.02.04	(4x0.25)C	200	200
CF10.UL.07.12	(12G0.75)C	100	-	CF240.02.05	(5x0.25)C	200	200
CF10.UL.10.02	(2x1.0)C	200	100	CF240.02.07	(7x0.25)C	200	200
CF10.UL.10.03	(3G1.0)C	200	100	CF240.02.08	(8x0.25)C	200	150
CF10.UL.10.04	(4G1.0)C	200	100	CF240.02.14	(14x0.25)C	200	150
CF10.UL.10.05	(5G1.0)C	200	-	CF240.02.18	(18x0.25)C	200	100
CF10.UL.10.07	(7G1.0)C	100	-	CF240.02.24	(24x0.25)C	150	100
CF10.UL.15.04	(4G1.5)C	100	-	CF240.03.02	(2x0.34)C	200	200
CF10.UL.15.05	(5G1.5)C	150	-	CF240.03.03	(3x0.34)C	200	200
CF10.UL.15.07	(7G1.5)C	100	-	CF240.03.04	(4x0.34)C	200	200
CF10.UL.25.04	(4G2.5)C	100	-	CF240.03.05	(5x0.34)C	200	200
CF98.01.02	2x0.14	200	200	CF240.03.07	(7x0.34)C	200	150
CF98.01.03	3x0.14	200	200	CF240.03.10	(10x0.34)C	200	150
CF98.01.04	4x0.14	200	200	CF240.03.14	(14x0.34)C	200	150
CF98.01.08	8x0.14	200	200	CF240.03.18	(18x0.34)C	150	100
CF98.02.03.INI	3x0.25	200	200	CF240.03.24	(24x0.34)C	100	100
CF98.02.04	4x0.25	200	200	CF240.PUR.01.04	(4x0.14)C	200	200
CF98.02.08	8x0.25	200	150	CF240.PUR.01.07	(7x0.14)C	200	200
CF98.03.04.INI	4x0.34	200	200	CF240.PUR.01.08	(8x0.14)C	200	150
CF98.05.04	4x0.5	200	200	CF240.PUR.01.14	(14x0.14)C	200	150
CF98.PLUS.01.02	2x0.14	200	200	CF240.PUR.01.18	(18x0.14)C	200	150
CF98.PLUS.01.03	3x0.14	200	200	CF240.PUR.01.25	(25x0.14)C	150	100
CF98.PLUS.01.04	4x0.14	200	200	CF240.PUR.02.03	(3x0.25)C	200	200
CF98.PLUS.01.08	8x0.14	200	200	CF240.PUR.02.04	(4x0.25)C	200	200
CF98.PLUS.02.03.INI	3x0.25	200	200	CF240.PUR.02.05	(5x0.25)C	200	200
CF98.PLUS.02.04	4x0.25	200	200	CF240.PUR.02.07	(7x0.25)C	200	150
CF98.PLUS.02.08	8x0.25	200	150	CF240.PUR.02.08	(8x0.25)C	200	150
CF98.PLUS.03.04.INI	4x0.34	200	200	CF240.PUR.02.14	(14x0.25)C	200	150
CF98.PLUS.05.04	4x0.5	200	200	CF240.PUR.02.18	(18x0.25)C	200	100
CF99.01.02	(2x0.14)C	200	200	CF240.PUR.02.25	(25x0.25)C	150	-
CF99.01.04	(4x0.14)C	200	200	CF240.PUR.03.03	(3x0.34)C	200	200
CF99.01.08	(8x0.14)C	200	150	CF240.PUR.03.04	(4x0.34)C	200	200
CF99.02.04	(4x0.25)C	200	150	CF240.PUR.03.05	(5x0.34)C	200	200
CF99.03.08	(8x0.34)C	200	100	CF240.PUR.03.07	(7x0.34)C	200	200
CF99.PLUS.01.02	(2x0.14)C	200	200	CF240.PUR.03.14	(14x0.34)C	150	150
				CF240.PUR.03.18	(18x0.34)C	150	100

Data, coax and bus cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
CF211.02.01.02	(2x0.25)C	200	200	CF112.02.02.02	(2x(2x0.25)C)C	150	100
CF211.02.02.02	(2x(2x0.25))C	200	200	CF112.02.03.02	(3x(2x0.25)C)C	150	100
CF211.02.03.02	(3x(2x0.25))C	200	150	CF112.02.04.02	(4x(2x0.25)C)C	100	-
CF211.02.04.02	(4x(2x0.25))C	200	150	CF112.02.05.02	(5x(2x0.25)C)C	100	-
CF211.02.05.02	(5x(2x0.25))C	200	100	CF112.05.02.02	(2x(2x0.5)C)C	100	-
CF211.02.06.02	(6x(2x0.25))C	200	100	CF112.05.04.02	(4x(2x0.5)C)C	100	-
CF211.02.08.02	(8x(2x0.25))C	150	-	CF12.02.04.02	(4x(2x0.25)C)C	100	-
CF211.02.10.02	(10x(2x0.25))C	100	-	CF298.01.02	2x0.14	200	200
CF211.02.14.02	(14x(2x0.25))C	100	-	CF298.01.04	4x0.14	200	200
CF211.03.03.02	(3x(2x0.34))C	200	150	CF298.01.08	8x0.14	200	150
CF211.03.08.02	(8x(2x0.34))C	100	-	CF298.02.03	3x0.25	200	200
CF211.05.01.02	(2x0.5)C	200	200	CF298.02.04	4x0.25	200	200
CF211.05.02.02	(2x(2x0.5))C	200	100	CF298.02.07	7x0.25	200	150
CF211.05.03.02	(3x(2x0.5))C	200	100	CF298.02.08	8x0.25	200	150
CF211.05.04.02	(4x(2x0.5))C	150	100	CF298.03.04	4x0.34	200	200
CF211.05.05.02	(5x(2x0.5))C	150	-	CF298.03.07	7x0.34	200	150
CF211.05.06.02	(6x(2x0.5))C	100	-	CF298.05.04	4x0.5	200	200
CF211.05.08.02	(8x(2x0.5))C	100	-	CF299.01.02	(2x0.14)C	200	200
CF211.PUR.02.01.02	(2x0.25)C	200	200	CF299.01.04	(4x0.14)C	200	200
CF211.PUR.02.02.02	(2x(2x0.25))C	200	200	CF299.01.08	(8x0.14)C	200	100
CF211.PUR.02.03.02	(3x(2x0.25))C	200	150	CF299.02.04	(4x0.25)C	200	150
CF211.PUR.02.04.02	(4x(2x0.25))C	200	150	CF299.02.07	(7x0.25)C	200	100
CF211.PUR.02.05.02	(5x(2x0.25))C	200	100	<b>Coax cables</b>			
CF211.PUR.02.06.02	(6x(2x0.25))C	200	100	CFKoaX1.01	1xHF75-0.3/1.6	200	200
CF211.PUR.02.08.02	(8x(2x0.25))C	150	-	CFKoaX1.05	5xHF75-0.3/1.6	150	100
CF211.PUR.02.10.02	(10x(2x0.25))C	100	-	CFKoaX2.01	1xHF50-0.9/2.95	200	200
CF211.PUR.03.03.02	(3x(2x0.34))C	200	150	CFKoaX3.01	1xHF50-0.3/0.84	200	200
CF211.PUR.03.08.02	(8x(2x0.34))C	100	-	<b>Bus cables</b>			
CF211.PUR.05.01.02	(2x0.5)C	200	200	CFBUS.LB.001	(2x0.25)C	200	100
CF211.PUR.05.02.02	(2x(2x0.5))C	200	100	CFBUS.LB.020	(4x0.25)C	200	200
CF211.PUR.05.03.02	(3x(2x0.5))C	200	100	CFBUS.LB.021	(2x0.5)C	200	150
CF211.PUR.05.04.02	(4x(2x0.5))C	150	100	CFBUS.LB.022	(4x0.5)C	200	150
CF211.PUR.05.05.02	(5x(2x0.5))C	150	-	CFBUS.LB.040	(4x0.25)C	200	150
CF211.PUR.05.06.02	(6x(2x0.5))C	100	-	CFBUS.LB.045	(4x(2x0.15))C	200	100
CF211.PUR.05.08.02	(8x(2x0.5))C	100	-	CFBUS.LB.049	(4x(2x0.15))C	200	100
CF11.01.04.02	(4x(2x0.14))C	200	150	CFBUS.LB.060	(4x0.38)C	200	150
CF11.01.18.02	(18x(2x0.14))C	100	-	CF888.001	(2x0.25)C	200	150
CF11.02.01.02	(2x0.25)C	200	200	CF888.021	(2x0.5)C	200	100
CF11.02.02.02	(2x(2x0.25))C	200	200	CF888.045	(4x(2x0.14))C	200	150
CF11.02.03.02	(3x(2x0.25))C	200	150	CF888.060	(4x0.34)C	200	150
CF11.02.04.02	(4x(2x0.25))C	200	100	CFBUS.PVC.001	(2x0.25)C	200	100
CF11.02.05.02	(5x(2x0.25))C	200	100	CFBUS.PVC.020	(4x0.25)C	200	150
CF11.02.06.02	(6x(2x0.25))C	150	100	CFBUS.PVC.021	(2x0.5)C	200	100
CF11.02.10.02	(10x(2x0.25))C	100	-	CFBUS.PVC.022	(4x0.5)C	200	100
CF11.03.08.02	(8x(2x0.34))C	100	-	CFBUS.PVC.035	(3x0.5)C	200	150
CF11.05.04.02	(4x(2x0.5))C	150	100	CFBUS.PVC.040	(4x0.25)C	200	200
CF11.05.06.02	(6x(2x0.5))C	100	-	CFBUS.PVC.045	(4x(2x0.15))C	200	150
CF11.07.03.02	(3x(2x0.75))C	150	-	CFBUS.PVC.049	(4x(2x0.15))C	200	150
CF11.10.04.02	(4x(2x1.0))C	100	-	CFBUS.PVC.050	4x(2x0.20)C	150	100

# Cables available in the chainflex® CASE

## Bus, FOC and measuring system cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
<b>Bus cables</b>				<b>Fibre Optic Cable</b>			
CFBUS.PVC.052	(4x(2x0.15)C)C	150	100	CFLK.L1.01	1x980/1,000	200	200
CFBUS.PVC.060	(4x0.38)C	200	150	CFLK.L1.02	2x980/1,000	200	150
CFBUS.PVC.068	(2x(2xAWG28)+2x(2xAWG28)C)C	200	150	CFLG88.2.50/125	2x50/125	200	150
CF898.001	(2x0.25)C	200	150	CFLG88.2.62.5/125	2x62.5/125	200	150
CF898.021	(2x0.5)C	200	100	CFLG.2LB.PUR.62.5/125	2x62.5/125	200	100
CF898.045	(4x(2x0.14)C)	200	150	CFLG.4LB.PUR.62.5/125	4x62.5/125	200	100
CF898.060	(4x0.34)C	200	150	CFLG.6LB.PUR.50/125	6x50/125	100	-
CF898.061.FC	(4x0.34)C	200	150	CFLG.6LB.PUR.62.5/125	6x62.5/125	100	-
CFBUS.PUR.001	(2x0.25)C	200	100	CFLG.6LB.PUR.9/125	6x9/125	100	-
CFBUS.PUR.020	(4x0.25)C	200	150	CFLG.2LB.200/230	2x200/230	200	100
CFBUS.PUR.021	(2x0.5)C	150	100	CFLG.2LB.50/125	2x50/125	200	100
CFBUS.PUR.022	(4x0.5)C	200	100	CFLG.2LB.62.5/125	2x62.5/125	200	100
CFBUS.PUR.035	(3x0.5)C	200	150	CFLG.4LB.50/125	4x50/125	200	100
CFBUS.PUR.040	(4x0.25)C	200	200	CFLG.4LB.62.5/125	4x62.5/125	200	100
CFBUS.PUR.042	(2x0.15)C	200	200	CFLG.6LB.50/125	6x50/125	100	-
CFBUS.PUR.045	(4x(2x0.15)C)	150	150	CFLG.6LB.62.5/125	6x62.5/125	100	-
CFBUS.PUR.049	(4x(2x0.15)C)	150	150	CFLG.12E.9/125.TC	12x9/125	150	100
CFBUS.PUR.050	4x(2x0.20)C	200	100	CFLG.12G.50/125.TC	12x50/125	150	100
CFBUS.PUR.052	(4x(2x0.15)C)C	200	100	CFLG.12G.62.5/125.TC	12x62.5/125	150	100
CFBUS.PUR.056	(2x(2x0.15)C+2x0.38)C	200	100	CFLG.6G.62.5/125.TC	6x62.5/125	150	100
CFBUS.PUR.060	(4x0.38)C	200	150	<b>Measuring system cables</b>			
CFBUS.PUR.068	(2x(2xAWG28)+2x(2xAWG28)C)C	200	150	CF884.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100
CFBUS.PUR.H01.049	((4x(2x0.15)C+4x1.5)C)	200	-	CF884.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	200	100
CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	150	-	CF884.009	(4x(2x0.25)+2x0.5)C	200	150
CFBUS.001	(2x0.25)C	100	100	CF884.011	(4x(2x0.34)+4x0.5)C	150	100
CFBUS.002	(2x0.25)C+4x1.5	100	-	CF884.015	(4x(2x0.14)+4x0.5)C	200	100
CFBUS.003	(2x0.25)C+3G0.75	200	-	CF884.022	((2x0.25)+5x0.5)C	200	150
CFBUS.010	(3x(2x0.25)C)	100	100	CF884.028	(2x(2x0.15)+(2x0.38))C	200	150
CFBUS.011	(3x(2x0.25)+(3G1.0))C	100	-	CF211.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100
CFBUS.020	(4x0.25)C	200	200	CF211.002	(3x(2x0.14)C+2x(0.5)C)C	150	100
CFBUS.021	(2x0.5)C	200	150	CF211.004	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	150	100
CFBUS.022	(4x0.5)C	200	150	CF211.006	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	150	100
CFBUS.030	((2xAWG24)C+2xAWG22)C	150	150	CF211.009	(4x(2x0.25)+2x0.5)C	200	150
CFBUS.031	((2xAWG18)C+2xAWG15)C	150	-	CF211.010	(4x(2x0.25)+2x1.0)C	200	100
CFBUS.035	(3xAWG20)C	100	100	CF211.011	(4x(2x0.34)+4x0.5)C	200	100
CFBUS.040	(4x0.25)C	100	150	CF211.014	(4x(2x0.25)C+(2x0.5))C	150	-
CFBUS.045	(4x(2x0.15)C)	200	100	CF211.015	(4x(2x0.14)+4x0.5)C	200	100
CFBUS.049	(4x(2x0.15)C)	200	100	CF211.016	(3x(2x0.25)C)C	200	100
CFBUS.050	(4x(2x0.15)C)C	200	-	CF211.017	(4x(2x0.14)+(4x0.14)C+4x1.0)C	150	100
CFBUS.052	(4x(2x0.15)C)C	200	-	CF211.018	(2x(2x0.25)+2x0.5)C	200	200
CFBUS.055	2x(2x0.15)C+2x(0.34)C	200	150				
CFBUS.060	(4x0.38)C	200	150				
CFBUS.065	((2xAWG28)+2xAWG20)C	150	200				
CFBUS.066	((2xAWG24)+2xAWG20)C	100	200				
CFBUS.070	(4x(2xAWG28)C+(2xAWG28)+3xAWG28)C	100	100				

# Cables available in the chainflex® CASE

## Measuring system cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
CF211.019	(3x(2x0.25)C+(3x0.25)+2x1.0)C	150	100	CF111.042.D	(2x(2x0.18)+5x0.5)C	200	150
CF211.022	((2x0.25)+5x0.5)C	200	150	CF211.024	((4x0.14)+2x(2x0.34))C	200	150
CF211.024	((4x0.14)+2x(2x0.34))C	200	150	CF211.027	(5x(2x0.14)+2x0.5)C	200	150
CF211.027	(5x(2x0.14)+2x0.5)C	200	150	CF211.028	(2x(2x0.15)+(2x0.38))C	200	150
CF211.028	(2x(2x0.15)+(2x0.38))C	200	150	CF211.032	3x(2x0.14)C+(3x0.14)C	200	150
CF211.032	3x(2x0.14)C+(3x0.14)C	200	150	CF211.033	4x(2x0.14)C+2x(1.0)C	150	100
CF211.033	4x(2x0.14)C+2x(1.0)C	150	100	CF211.036	(5x(2x0.25))C	200	150
CF211.036	(5x(2x0.25))C	200	150	CF211.037	(6x(2x0.25))C	200	100
CF211.037	(6x(2x0.25))C	200	100	CF211.038	(3x(2x0.14)+(2x0.34))C	200	150
CF211.038	(3x(2x0.14)+(2x0.34))C	200	150	CF211.039	(4x(2x0.14)C+2x(0.5)C)C	150	100
CF211.039	(4x(2x0.14)C+2x(0.5)C)C	150	100	CF211.041	(2x(2x0.18)+5x0.5)C	200	150
CF211.041	(2x(2x0.18)+5x0.5)C	200	150	CF211.042	(3x(2x0.18)+6x0.5)C	200	100
CF211.042	(3x(2x0.18)+6x0.5)C	200	100	CF894.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100
CF894.001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100	CF894.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	200	100
CF894.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5))C	200	100	CF894.009	(4x(2x0.25)+2x0.5)C	200	150
CF894.009	(4x(2x0.25)+2x0.5)C	200	150	CF894.011	(4x(2x0.34)+4x0.5)C	150	100
CF894.011	(4x(2x0.34)+4x0.5)C	150	100	CF894.015	(4x(2x0.14)+4x0.5)C	200	100
CF894.015	(4x(2x0.14)+4x0.5)C	200	100	CF894.022	((2x0.25)+5x0.5)C	200	150
CF894.022	((2x0.25)+5x0.5)C	200	150	CF894.028	(2x(2x0.15)+(2x0.38))C	200	150
CF894.028	(2x(2x0.15)+(2x0.38))C	200	150	CF111.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100
CF111.001.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	200	100	CF111.002.D	(3x(2x0.14)C+2x(0.5)C)C	150	100
CF111.002.D	(3x(2x0.14)C+2x(0.5)C)C	150	100	CF111.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	150	-
CF111.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	150	-	CF111.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	150	100
CF111.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	150	100	CF111.009.D	(4x(2x0.25)+2x0.5)C	200	150
CF111.009.D	(4x(2x0.25)+2x0.5)C	200	150	CF111.010.D	(4x(2x0.25)+2x1.0)C	200	100
CF111.010.D	(4x(2x0.25)+2x1.0)C	200	100	CF111.011.D	(4x(2x0.34)+4x0.5)C	200	100
CF111.011.D	(4x(2x0.34)+4x0.5)C	200	100	CF111.014.D	(4x(2x0.25)C+(2x0.5))C	150	-
CF111.014.D	(4x(2x0.25)C+(2x0.5))C	150	-	CF111.015.D	(4x(2x0.14)+4x0.5)C	200	100
CF111.015.D	(4x(2x0.14)+4x0.5)C	200	100	CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5))C	200	100
CF111.020.D	(3x(2x0.14)+2x(4x0.14)+(2x0.5))C	200	100	CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5))C	150	100
CF111.021.D	((4x0.25)+3x(2x0.25+2x0.5))C	150	100	CF111.022.D	((2x0.25)+5x0.5)C	200	150
CF111.022.D	((2x0.25)+5x0.5)C	200	150	CF111.024.D	((4x0.14)+2x(2x0.34))C	200	150
CF111.024.D	((4x0.14)+2x(2x0.34))C	200	150	CF111.026.D	(6x(2x0.25)+(2x0.34)C+(2x0.5))C	150	-
CF111.026.D	(6x(2x0.25)+(2x0.34)C+(2x0.5))C	150	-	CF111.027.D	(5x(2x0.14)+2x0.5)C	200	150
CF111.027.D	(5x(2x0.14)+2x0.5)C	200	150	CF111.028.D	(2x(2x0.15)+(2x0.38))C	200	150
CF111.028.D	(2x(2x0.15)+(2x0.38))C	200	150	CF111.032.D	3x(2x0.14)C+(3x0.14)C	200	100
CF111.032.D	3x(2x0.14)C+(3x0.14)C	200	100	CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	200	100
CF111.040.D	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	200	100	CF111.041.D	(2x(2x0.18)+5x0.5)C	200	150
CF111.041.D	(2x(2x0.18)+5x0.5)C	200	150	CF111.042.D	(2x(2x0.18)+5x0.5)C	200	150
CF111.042.D	(2x(2x0.18)+5x0.5)C	200	150	CF113.002.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	150	100
CF113.002.D	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	150	100	CF113.003.D	(3x(2x0.14)C+2x1.0)C	200	150
CF113.003.D	(3x(2x0.14)C+2x1.0)C	200	150	CF113.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	100	-
CF113.004.D	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5))C	100	-	CF113.005.D	(4x(2x0.14)+4x0.5)C	150	100
CF113.005.D	(4x(2x0.14)+4x0.5)C	150	100	CF113.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	100	-
CF113.006.D	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	100	-	CF113.007.D	(4x0.34)C	200	200
CF113.007.D	(4x0.34)C	200	200	CF113.008.D	(3x(2x0.25))C	200	150
CF113.008.D	(3x(2x0.25))C	200	150	CF113.009.D	(4x(2x0.25)+2x0.5)C	150	100
CF113.009.D	(4x(2x0.25)+2x0.5)C	150	100	CF113.010.D	(4x(2x0.25)+2x1.0)C	150	100
CF113.010.D	(4x(2x0.25)+2x1.0)C	150	100	CF113.011.D	(4x(2x0.34)+4x0.5)C	100	100
CF113.011.D	(4x(2x0.34)+4x0.5)C	100	100	CF113.013.D	(3x(2x0.14)C+2x0.5)C	150	100
CF113.013.D	(3x(2x0.14)C+2x0.5)C	150	100	CF113.014.D	(4x(2x0.25)C+(2x0.5))C	100	-
CF113.014.D	(4x(2x0.25)C+(2x0.5))C	100	-	CF113.015.D	(4x(2x0.14)+4x0.5)C	150	100
CF113.015.D	(4x(2x0.14)+4x0.5)C	150	100	CF113.016.D	(3x(2x0.25)C)C	150	100
CF113.016.D	(3x(2x0.25)C)C	150	100	CF113.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C	100	100
CF113.017.D	(4x(2x0.14)+(4x0.14)C+4x1.0)C	100	100	CF113.018.D	(2x(2x0.25)+2x0.5)C	200	200
CF113.018.D	(2x(2x0.25)+2x0.5)C	200	200	CF113.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C		

Measuring system, servo and motor cables

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
<b>Measuring system cables</b>							
CF11.009.D	(4x(2x0.25)+2x0.5)C	150	100	CF220.UL.H101.10.04	(4G1.0+(2x0.75)C+(2xAWG22)C)C	100	-
CF11.010.D	(4x(2x0.25)+2x1.0)C	150	100	CF220.UL.H304.15.04.D	(4G1.5+(2x1.5)C+(4xAWG26)C)C	100	-
CF11.011.D	(4x(2x0.34)+4x0.5)C	100	100	CF280.UL.H100.07.04.D	(4G0.75+(2x0.34)C+(2xAWG22)C)C	100	-
CF11.012.D	(3x(2x0.14)C+(3x0.14)C+(4x0.14)C+(2x0.14+2x0.5)C)	100	-	CF280.UL.H101.10.04.D	(4G1.0+(2x0.75)C+(2xAWG22)C)C	100	-
CF11.013.D	(3x(2x0.14)C+2x0.5)C	150	100	CF280.UL.H203.15.04.D	(4G1.5+(3x1.0)C)C	100	-
CF11.014.D	(4x(2x0.25)C+(2x0.5)C)	100	-	CF280.UL.H300.03.04.D	(4G0.34+(2x0.34)C+(4xAWG26)C)C	150	100
CF11.015.D	(4x(2x0.14)+4x0.5)C	200	100	CF280.UL.H301.07.04.D	(4G0.75+(2x0.5)C+(4xAWG26)C)C	100	-
CF11.017.D	(4x(2x0.14)C+(4x0.14)C+4x1.0)C	100	100	CF280.UL.H304.15.04.D	(4G1.5+(2x1.5)C+(4xAWG26)C)C	100	-
CF11.018.D	(2x(2x0.25)+2x0.5)C	200	200	CF280.UL.H401.07.04.D	(4G0.75+(2x0.5)C+(4xAWG24)C)C	100	-
CF11.019.D	(3x(2x0.25)C+(3x0.25)+2x1.0)C	100	100	<b>Motor cables</b>			
CF11.021.D	((4x0.25)C+3x(2x0.25+2x0.5)C)	100	100	CF885.15.04	4G1.5	200	150
CF11.022.D	((2x0.25)+5x0.5)C	200	150	CF885.25.04	4G2.5	150	100
CF11.025.D	(3x(2x0.14)C+(2x0.5)C)C	150	100	CF885.40.04	4G4.0	100	-
CF11.027.D	(5x(2x0.14)+2x0.5)C	200	100	CF886.15.04	(4G1.5)C	150	100
CF11.028.D	(2x(2x0.20)+(2x0.38)C)	200	150	CF886.25.04	(4G2.5)C	100	-
CF11.031.D	(2x(2x0.25)C+2x1.0)C	150	100	CF886.40.04	(4G4.0)C	100	-
CF11.032.D	3x(2x0.14)C+(3x0.14)C	150	150	CF210.UL.05.04	(4G0.5)C	200	150
CF11.033.D	4x(2x0.14)C+2x(1.0)C	100	100	CF210.UL.15.04	(4G1.5)C	150	100
CF11.034.D	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	100	-	CF210.UL.25.04	(4G2.5)C	100	-
CF11.035.D	(4x(2x0.25)C+2x(2x0.5)C)	100	-	CF30.15.04	4G1.5	200	150
CF11.038.D	(3x(2x0.14)+(2x0.34)C)	200	150	CF30.25.04	4G2.5	150	100
<b>Servo cables</b>							
CF887.07.05.02.01	(4G0.75+(2x0.5)C)C	150	100	CF30.25.05	5G2.5	100	-
CF887.10.07.02.02	(4G1.0+2x(2x0.75)C)	100	-	CF30.40.04	4G4.0	100	-
CF887.15.15.02.01	(4G1.5+(2x1.5)C)	100	-	CF31.15.04	(4G1.5)C	150	100
CF210.UL.15.15.02.01	(4G1.5+(2x1.5)C)	100	-	CF31.25.04	(4G2.5)C	100	-
CF21.07.03.02.02.UL	(4G0.75+2x(2x0.34)C)C	100	-	CF895.15.04	4G1.5	200	150
CF21.07.05.02.01.UL	(4G0.75+(2x0.5)C)C	100	-	CF895.25.04	4G2.5	150	100
CF21.15.15.02.01.UL	(4G1.5+(2x1.5)C)	100	-	CF895.40.04	4G4.0	100	-
CF897.15.15.02.01	(4G1.5+(2x1.5)C)	100	-	CF896.07.04	(4G0.75)C	200	150
CF270.UL.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	100	-	CF896.15.04	(4G1.5)C	200	100
CF270.UL.10.07.02.02.D	(4G1.0+2x(2x0.75)C)	100	-	CF896.25.04	(4G2.5)C	150	-
CF270.UL.15.15.02.01.D	(4G1.5+(2x1.5)C)	100	-	CF896.40.04	(4G4.0)C	100	-
CF27.07.03.02.02.D	(4G0.75+2x(2x0.34)C)C	100	-	CF270.UL.07.04.D	(4G0.75)C	200	150
CF27.07.05.02.01.D	(4G0.75+(2x0.5)C)C	100	-	CF270.UL.15.04.D	(4G1.5)C	150	100
CF27.15.05.04.D	(4G1.5+(4x0.5)C)C	100	-	CF270.UL.25.04.D	(4G2.5)C	100	-
CF27.15.15.02.01.D	(4G1.5+(2x1.5)C)	100	-	CF270.UL.10.06.D	(6G1.0)C	150	100
CF29.15.15.02.01.D	(4G1.5+(2x1.5)C)	100	-	CF27.07.04.D	(4G0.75)C	200	100
<b>Hybrid servo cables</b>							
CF220.UL.H100.07.04	(4G0.75+(2x0.34)C+(2xAWG22)C)C	100	-	CF27.15.04.D	(4G1.5)C	150	-
				CF27.25.04.D	(4G2.5)C	100	-
				CF34.UL.15.04.D	4G1.5	200	150

Motor/spindle and torsion cables & pneumatic hoses

Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]		Part No.	Number of cores and conductor nominal cross section [mm²]	Max. cable length [m]	
		CASE M	CASE S			CASE M	CASE S
CF34.UL.25.04.D	4G2.5	150	100	CFROBOT3.02.04.02	(4x(2x0.25))C	150	-
CF34.UL.40.04.D	4G4.0	100	-	CFROBOT3.02.06.02	(6x(2x0.25))C	100	-
CF35.UL.05.04	(4G0.5)C	200	150	CFROBOT3.05.05.02	(5x(2x0.5))C	100	-
CF35.UL.07.04	(4G0.75)C	200	150	CFROBOT4.001	(3x(2x0.14)C+(4x0.14)+(2x0.5)C)	150	-
CF35.UL.15.04	(4G1.5)C	150	100	CFROBOT4.006	(3x(2x0.14)C+(4x0.14)+(4x0.22)+(2x0.5)C)	100	-
CF35.UL.25.04	(4G2.5)C	100	-	CFROBOT4.009	(4x(2x0.25)+(2x0.5)C)	150	100
CF37.15.04.D	4G1.5	200	150	CFROBOT4.015	(4x(2x0.14)+4x0.5)C	200	100
CF37.25.04.D	4G2.5	150	100	CFROBOT4.028	(2x(2x0.20)+(2x0.38)C)	200	150
CF37.40.04.D	4G4.0	100	-	CFROBOT5.500	2x62.5/125	200	100
CF38.15.04	(4G1.5)C	150	100	CFROBOT5.501	2x50/125	200	100
CF38.25.04	(4G2.5)C	100	-	CFROBOT7.07.03.02.02.C	(4G0.75+2x(2x0.34)C)C	100	-
<b>Spindle cables/Single cores</b>							
CF885.40.01	1x4.0	200	150	CFROBOT7.15.03.C	(3G1.5)C	200	100
CF885.60.01	1x6.0	200	150	CFROBOT7.15.04.C	(4G1.5)C	200	100
CF885.100.01	1x10	150	100	CFROBOT7.25.03.C	(3G2.5)C	150	100
CF885.160.01	1x16	100	-	CFROBOT7.25.04.C	(4G2.5)C	150	-
CF885.PE.25.01	1G2.5	200	200	CFROBOT.035	(1x10)C	100	-
CF885.PE.40.01	1G4.0	200	150	CFROBOT8.001	(2x0.35)C	200	150
CF885.PE.60.01	1G6.0	200	150	CFROBOT8.022	(4x0.5)C	200	150
CF885.PE.100.01	1G10	150	100	CFROBOT8.030	(2xAWG24)C+(2xAWG22)C	150	100
CF885.PE.160.01	1G16	100	-	CFROBOT8.045	4x(2x0.15)C	150	100
CF886.160.01	(1x16)C	100	-	CFROBOT8.049	4x(2x0.15)C	150	100
CF270.UL.60.01.D	(1x6.0)C	200	150	CFROBOT8.050	4x(2x0.15)C	150	-
CF270.UL.160.01.D	(1x16)C	100	100	CFROBOT8.052	4x(2x0.15)C	150	-
CF300.UL.40.01.D	1x4.0	200	200	CFROBOT8.056	4x(2x0.15)C	150	-
CF300.UL.60.01.D	1x6.0	200	150	CFROBOT8.060	(2x(2x0.34))C	200	100
CF300.UL.100.01.D	1x10	200	150	CFROBOT8.PLUS.001	(2x0.25)C	200	100
CF300.UL.160.01.D	1x16	100	100	CFROBOT8.PLUS.022	(4x0.5)C	200	150
CFPE.15.01	1G1.5	200	200	CFROBOT8.PLUS.045	(4x(2x0.15))C	200	150
CFPE.25.01	1G2.5	200	200	CFROBOT8.PLUS.049	(4x(2x0.15))C	200	150
CFPE.40.01	1G4.0	200	200	CFROBOT8.PLUS.050	(4x(2x0.15)C)C	200	150
CFPE.60.01	1G6.0	200	150	CFROBOT8.PLUS.060	(4x0.34)C	200	150
CFPE.100.01	1G10	200	150	CFROBOT9.010	(4x(2x0.25)C)C	150	-
CFPE.160.01	1G16	100	100	<b>Pneumatic hoses</b>			
CF310.UL.25.01	(1x2.5)C	200	200	CAPE.A.06.0	4.0x1.0x6.0	200	-
CF310.UL.40.01	(1x4.0)C	200	200	CAPE.A.08.0	5.7x1.15x8.0	200	-
CF310.UL.60.01	(1x6.0)C	200	150	CAPU.A.06.0	4x1.0x6.0	200	-
CF310.UL.100.01	(1x10)C	150	100	CAPU.A.08.0	5.7x1.15x8.0	200	-
CF310.UL.160.01	(1x16)C	100	100				
CF330.60.01.D	1x6.0	200	150				
CF330.100.01.D	1x10	200	150				
CF330.160.01.D	1x16	150	100				
CF340.40.01	(1x4.0)C	200	200				
CF340.160.01	(1x16)C	100	100				
<b>Twistable cables</b>							
CFROBOT2.07.04.C	(4G0.75)C	200	150				
CFROBOT2.07.05.C	(5G0.75)C	200	100				
CFROBOT2.07.07.C	(7G0.75)C	150	100				
CFROBOT3.02.03.02	(3x(2x0.25))C	150	100				





## Find & compare cables

Quickcable



The chainflex® product finder simply shows which of our cables is best suited for your e-chain® application:

Select the cable type ❶, the connection and other desired product properties as well as the number of cores and the cross-section ❷, the nominal voltage and type of the e-chain® for your application. Select the bend radius, the maximum and minimum operating temperature ❸, torsion, maximum speed and acceleration, as well as the travel ❹.

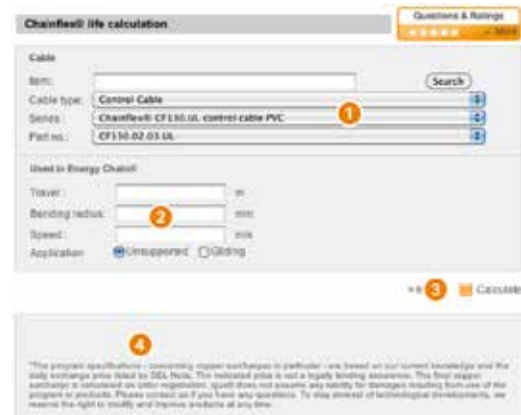
The results are displayed at the bottom edge of the screen ❺.

► [www.igus.eu/quickcable](http://www.igus.eu/quickcable)



## Calculate service life of cables

QuickLife



Calculate the service life of your required cable online with a few clicks. Enter the name of your system and select cable type, series and part number ❶. Enter the system information ❷ of your energy chain and select whether you have an unsupported or gliding application.

Click on "Calculate" ❸ to be shown the results ❹.

► [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife)

## Data sheets online

Technical details for all chainflex® cables series ... to be found online as PDF file:

► [www.igus.eu/download](http://www.igus.eu/download)

**Data sheet chainflex® CFBUS.PUR**  
Bus cable (Class 4.3.3.1) • 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

**Cable structure**  
Conductor: Standard conductor in especially bending-resistant version consisting of bare copper wires following DIN EN 60228.  
Core insulation: According to bus specification.  
Core structure: According to bus specification.  
Core identification: According to bus specification.  
Overall shield: Bending-resistant braiding made of copper approx. 55% tinned, high requirements in relation to colour and flammability (similar to PA6.6, printing track).  
Outer jacket: Low adhesion, halogen-free, high requirements in relation to colour and flammability (similar to PA6.6, printing track).

**Guaranteed service life according to guaranteed service life**

Temperature, flexibility (°C)	R min. (factor x d)
-20/+10	15
+10/+60	12.5
+60/+70	15

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

**Data sheet chainflex® CFBUS.PUR**  
Bus cable (Class 4.3.3.1) • 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

**Properties and approvals**

- UL resistance: Medium
- Oil resistance: Oil resistant following DIN EN 50268-10-2, Class 3
- Oilshore: MUD resistant following NIK 606 - status 2009
- 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)
- Halogen-free: Following DIN EN 60754
- UL verified: Certificates No. 8129029, 8129030, 8129031, 8129032, 8129033, 8129034, 8129035, 8129036, 8129037, 8129038, 8129039, 8129040, 8129041, 8129042, 8129043, 8129044, 8129045, 8129046, 8129047, 8129048, 8129049, 8129050, 8129051, 8129052, 8129053, 8129054, 8129055, 8129056, 8129057, 8129058, 8129059, 8129060, 8129061, 8129062, 8129063, 8129064, 8129065, 8129066, 8129067, 8129068, 8129069, 8129070, 8129071, 8129072, 8129073, 8129074, 8129075, 8129076, 8129077, 8129078, 8129079, 8129080, 8129081, 8129082, 8129083, 8129084, 8129085, 8129086, 8129087, 8129088, 8129089, 8129090, 8129091, 8129092, 8129093, 8129094, 8129095, 8129096, 8129097, 8129098, 8129099, 8129100, 8129101, 8129102, 8129103, 8129104, 8129105, 8129106, 8129107, 8129108, 8129109, 8129110, 8129111, 8129112, 8129113, 8129114, 8129115, 8129116, 8129117, 8129118, 8129119, 8129120, 8129121, 8129122, 8129123, 8129124, 8129125, 8129126, 8129127, 8129128, 8129129, 8129130, 8129131, 8129132, 8129133, 8129134, 8129135, 8129136, 8129137, 8129138, 8129139, 8129140, 8129141, 8129142, 8129143, 8129144, 8129145, 8129146, 8129147, 8129148, 8129149, 8129150, 8129151, 8129152, 8129153, 8129154, 8129155, 8129156, 8129157, 8129158, 8129159, 8129160, 8129161, 8129162, 8129163, 8129164, 8129165, 8129166, 8129167, 8129168, 8129169, 8129170, 8129171, 8129172, 8129173, 8129174, 8129175, 8129176, 8129177, 8129178, 8129179, 8129180, 8129181, 8129182, 8129183, 8129184, 8129185, 8129186, 8129187, 8129188, 8129189, 8129190, 8129191, 8129192, 8129193, 8129194, 8129195, 8129196, 8129197, 8129198, 8129199, 8129200, 8129201, 8129202, 8129203, 8129204, 8129205, 8129206, 8129207, 8129208, 8129209, 8129210, 8129211, 8129212, 8129213, 8129214, 8129215, 8129216, 8129217, 8129218, 8129219, 8129220, 8129221, 8129222, 8129223, 8129224, 8129225, 8129226, 8129227, 8129228, 8129229, 8129230, 8129231, 8129232, 8129233, 8129234, 8129235, 8129236, 8129237, 8129238, 8129239, 8129240, 8129241, 8129242, 8129243, 8129244, 8129245, 8129246, 8129247, 8129248, 8129249, 8129250, 8129251, 8129252, 8129253, 8129254, 8129255, 8129256, 8129257, 8129258, 8129259, 8129260, 8129261, 8129262, 8129263, 8129264, 8129265, 8129266, 8129267, 8129268, 8129269, 8129270, 8129271, 8129272, 8129273, 8129274, 8129275, 8129276, 8129277, 8129278, 8129279, 8129280, 8129281, 8129282, 8129283, 8129284, 8129285, 8129286, 8129287, 8129288, 8129289, 8129290, 8129291, 8129292, 8129293, 8129294, 8129295, 8129296, 8129297, 8129298, 8129299, 8129300, 8129301, 8129302, 8129303, 8129304, 8129305, 8129306, 8129307, 8129308, 8129309, 8129310, 8129311, 8129312, 8129313, 8129314, 8129315, 8129316, 8129317, 8129318, 8129319, 8129320, 8129321, 8129322, 8129323, 8129324, 8129325, 8129326, 8129327, 8129328, 8129329, 8129330, 8129331, 8129332, 8129333, 8129334, 8129335, 8129336, 8129337, 8129338, 8129339, 8129340, 8129341, 8129342, 8129343, 8129344, 8129345, 8129346, 8129347, 8129348, 8129349, 8129350, 8129351, 8129352, 8129353, 8129354, 8129355, 8129356, 8129357, 8129358, 8129359, 8129360, 8129361, 8129362, 8129363, 8129364, 8129365, 8129366, 8129367, 8129368, 8129369, 8129370, 8129371, 8129372, 8129373, 8129374, 8129375, 8129376, 8129377, 8129378, 8129379, 8129380, 8129381, 8129382, 8129383, 8129384, 8129385, 8129386, 8129387, 8129388, 8129389, 8129390, 8129391, 8129392, 8129393, 8129394, 8129395, 8129396, 8129397, 8129398, 8129399, 8129400, 8129401, 8129402, 8129403, 8129404, 8129405, 8129406, 8129407, 8129408, 8129409, 8129410, 8129411, 8129412, 8129413, 8129414, 8129415, 8129416, 8129417, 8129418, 8129419, 8129420, 8129421, 8129422, 8129423, 8129424, 8129425, 8129426, 8129427, 8129428, 8129429, 8129430, 8129431, 8129432, 8129433, 8129434, 8129435, 8129436, 8129437, 8129438, 8129439, 8129440, 8129441, 8129442, 8129443, 8129444, 8129445, 8129446, 8129447, 8129448, 8129449, 8129450, 8129451, 8129452, 8129453, 8129454, 8129455, 8129456, 8129457, 8129458, 8129459, 8129460, 8129461, 8129462, 8129463, 8129464, 8129465, 8129466, 8129467, 8129468, 8129469, 8129470, 8129471, 8129472, 8129473, 8129474, 8129475, 8129476, 8129477, 8129478, 8129479, 8129480, 8129481, 8129482, 8129483, 8129484, 8129485, 8129486, 8129487, 8129488, 8129489, 8129490, 8129491, 8129492, 8129493, 8129494, 8129495, 8129496, 8129497, 8129498, 8129499, 8129500, 8129501, 8129502, 8129503, 8129504, 8129505, 8129506, 8129507, 8129508, 8129509, 8129510, 8129511, 8129512, 8129513, 8129514, 8129515, 8129516, 8129517, 8129518, 8129519, 8129520, 8129521, 8129522, 8129523, 8129524, 8129525, 8129526, 8129527, 8129528, 8129529, 8129530, 8129531, 8129532, 8129533, 8129534, 8129535, 8129536, 8129537, 8129538, 8129539, 8129540, 8129541, 8129542, 8129543, 8129544, 8129545, 8129546, 8129547, 8129548, 8129549, 8129550, 8129551, 8129552, 8129553, 8129554, 8129555, 8129556, 8129557, 8129558, 8129559, 8129560, 8129561, 8129562, 8129563, 8129564, 8129565, 8129566, 8129567, 8129568, 8129569, 8129570, 8129571, 8129572, 8129573, 8129574, 8129575, 8129576, 8129577, 8129578, 8129579, 8129580, 8129581, 8129582, 8129583, 8129584, 8129585, 8129586, 8129587, 8129588, 8129589, 8129590, 8129591, 8129592, 8129593, 8129594, 8129595, 8129596, 8129597, 8129598, 8129599, 8129600, 8129601, 8129602, 8129603, 8129604, 8129605, 8129606, 8129607, 8129608, 8129609, 8129610, 8129611, 8129612, 8129613, 8129614, 8129615, 8129616, 8129617, 8129618, 8129619, 8129620, 8129621, 8129622, 8129623, 8129624, 8129625, 8129626, 8129627, 8129628, 8129629, 8129630, 8129631, 8129632, 8129633, 8129634, 8129635, 8129636, 8129637, 8129638, 8129639, 8129640, 8129641, 8129642, 8129643, 8129644, 8129645, 8129646, 8129647, 8129648, 8129649, 8129650, 8129651, 8129652, 8129653, 8129654, 8129655, 8129656, 8129657, 8129658, 8129659, 8129660, 8129661, 8129662, 8129663, 8129664, 8129665, 8129666, 8129667, 8129668, 8129669, 8129670, 8129671, 8129672, 8129673, 8129674, 8129675, 8129676, 8129677, 8129678, 8129679, 8129680, 8129681, 8129682, 8129683, 8129684, 8129685, 8129686, 8129687, 8129688, 8129689, 8129690, 8129691, 8129692, 8129693, 8129694, 8129695, 8129696, 8129697, 8129698, 8129699, 8129700, 8129701, 8129702, 8129703, 8129704, 8129705, 8129706, 8129707, 8129708, 8129709, 8129710, 8129711, 8129712, 8129713, 8129714, 8129715, 8129716, 8129717, 8129718, 8129719, 8129720, 8129721, 8129722, 8129723, 8129724, 8129725, 8129726, 8129727, 8129728, 8129729, 8129730, 8129731, 8129732, 8129733, 8129734, 8129735, 8129736, 8129737, 8129738, 8129739, 8129740, 8129741, 8129742, 8129743, 8129744, 8129745, 8129746, 8129747, 8129748, 8129749, 8129750, 8129751, 8129752, 8129753, 8129754, 8129755, 8129756, 8129757, 8129758, 8129759, 8129760, 8129761, 8129762, 8129763, 8129764, 8129765, 8129766, 8129767, 8129768, 8129769, 8129770, 8129771, 8129772, 8129773, 8129774, 8129775, 8129776, 8129777, 8129778, 8129779, 8129780, 8129781, 8129782, 8129783, 8129784, 8129785, 8129786, 8129787, 8129788, 8129789, 8129790, 8129791, 8129792, 8129793, 8129794, 8129795, 8129796, 8129797, 8129798, 8129799, 8129800, 8129801, 8129802, 8129803, 8129804, 8129805, 8129806, 8129807, 8129808, 8129809, 8129810, 8129811, 8129812, 8129813, 8129814, 8129815, 8129816, 8129817, 8129818, 8129819, 8129820, 8129821, 8129822, 8129823, 8129824, 8129825, 8129826, 8129827, 8129828, 8129829, 8129830, 8129831, 8129832, 8129833, 8129834, 8129835, 8129836, 8129837, 8129838, 8129839, 8129840, 8129841, 8129842, 8129843, 8129844, 8129845, 8129846, 8129847, 8129848, 8129849, 8129850, 8129851, 8129852, 8129853, 8129854, 8129855, 8129856, 8129857, 8129858, 8129859, 8129860, 8129861, 8129862, 8129863, 8129864, 8129865, 8129866, 8129867, 8129868, 8129869, 8129870, 8129871, 8129872, 8129873, 8129874, 8129875, 8129876, 8129877, 8129878, 8129879, 8129880, 8129881, 8129882, 8129883, 8129884, 8129885, 8129886, 8129887, 8129888, 8129889, 8129890, 8129891, 8129892, 8129893, 8129894, 8129895, 8129896, 8129897, 8129898, 8129899, 8129900, 8129901, 8129902, 8129903, 8129904, 8129905, 8129906, 8129907, 8129908, 8129909, 8129910, 8129911, 8129912, 8129913, 8129914, 8129915, 8129916, 8129917, 8129918, 8129919, 8129920, 8129921, 8129922, 8129923, 8129924, 8129925, 8129926, 8129927, 8129928, 8129929, 8129930, 8129931, 8129932, 8129933, 8129934, 8129935, 8129936, 8129937, 8129938, 8129939, 8129940, 8129941, 8129942, 8129943, 8129944, 8129945, 8129946, 8129947, 8129948, 8129949, 8129950, 8129951, 8129952, 8129953, 8129954, 8129955, 8129956, 8129957, 8129958, 8129959, 8129960, 8129961, 8129962, 8129963, 8129964, 8129965, 8129966, 8129967, 8129968, 8129969, 8129970, 8129971, 8129972, 8129973, 8129974, 8129975, 8129976, 8129977, 8129978, 8129979, 8129980, 8129981, 8129982, 8129983, 8129984, 8129985, 8129986, 8129987, 8129988, 8129989, 8129990, 8129991, 8129992, 8129993, 8129994, 8129995, 8129996, 8129997, 8129998, 8129999, 8130000, 8130001, 8130002, 8130003, 8130004, 8130005, 8130006, 8130007, 8130008, 8130009, 8130010, 8130011, 8130012, 8130013, 8130014, 8130015, 8130016, 8130017, 8130018, 8130019, 8130020, 8130021, 8130022, 8130023, 8130024, 8130025, 8130026, 8130027, 8130028, 8130029, 8130030, 8130031, 8130032, 8130033, 8130034, 8130035, 8130036, 8130037, 8130038, 8130039, 8130040, 8130041, 8130042, 8130043, 8130044, 8130045, 8130046, 8130047, 8130048, 8130049, 8130050, 8130051, 8130052, 8130053, 8130054, 8130055, 8130056, 8130057, 8130058, 8130059, 8130060, 8130061, 8130062, 8130063, 8130064, 8130065, 8130066, 8130067, 8130068, 8130069, 8130070, 8130071, 8130072, 8130073, 8130074, 8130075, 8130076, 8130077, 8130078, 8130079, 8130080, 8130081, 8130082, 8130083, 8130084, 8130085, 8130086, 8130087, 8130088, 8130089, 8130090, 8130091, 8130092, 8130093, 8130094, 8130095, 8130096, 8130097, 8130098, 8130099, 8130100, 8130101, 8130102, 8130103, 8130104, 8130105, 8130106, 8130107, 8130108, 8130109, 8130110, 8130111, 8130112, 8130113, 8130114, 8130115, 8130116, 8130117, 8130118, 8130119, 8130120, 8130121, 8130122, 8130123, 8130124, 8130125, 8130126, 8130127, 8130128, 8130129, 8130130, 8130131, 8130132, 8130133, 8130134, 8130135, 8130136, 8130137, 8130138, 8130139, 8130140, 8130141, 8130142, 8130143, 8130144, 8130145, 8130146, 8130147, 8130148, 8130149, 8130150, 8130151, 8130152, 8130153, 8130154, 8130155, 8130156, 8130157, 8130158, 8130159, 8130160, 8130161, 8130162, 8130163, 8130164, 8130165, 8130166, 8130167, 8130168, 8130169, 8130170, 8130171, 8130172, 8130173, 8130174, 8130175, 8130176, 8130177, 8130178, 8130179, 8130180, 8130181, 81301

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## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Control cable CF2</b>		CF6.05.12	86	CF9.15.04	114
CF2.01.04	110	CF6.05.18	86	CF9.15.05	114
CF2.01.08	110	CF6.05.25	86	CF9.15.07	114
CF2.01.12	110	CF6.07.03	86	CF9.15.12	114
CF2.01.18	110	CF6.07.04	86	CF9.15.18	114
CF2.01.24	110	CF6.07.05	86	CF9.15.25	114
CF2.01.36	110	CF6.07.07	86	CF9.15.36	114
CF2.02.04	110	CF6.07.12	86	CF9.25.04	114
CF2.02.08	110	CF6.07.18	86	CF9.25.05	114
CF2.02.18	110	CF6.07.25	86	CF9.25.07	114
CF2.02.48	110	CF6.10.03	86	CF9.25.12	114
<b>Control cable CF5</b>		CF6.10.04	86	CF9.25.16	114
CF5.02.36	82	CF6.10.05	86	CF9.25.18	114
CF5.03.15	82	CF6.10.07	86	CF9.25.25	114
CF5.03.18	82	CF6.10.12	86	CF9.40.04	114
CF5.03.25	82	CF6.10.18	86	CF9.60.04	114
CF5.05.02	82	CF6.10.25	86	CF9.60.05	114
CF5.05.03	82	CF6.15.03	86	CF9.100.04	114
CF5.05.04	82	CF6.15.04	86	CF9.160.04	114
CF5.05.05	82	CF6.15.05	86	<b>Control cable CF9.UL</b>	
CF5.05.07	82	CF6.15.07	86	CF9.UL.02.02	122
CF5.05.12	82	CF6.15.12	86	CF9.UL.02.03.INI	122
CF5.05.18	82	CF6.15.18	86	CF9.UL.02.04	122
CF5.05.25	82	CF6.15.25	86	CF9.UL.02.06	122
CF5.05.30	82	CF6.25.03	86	CF9.UL.02.08	122
CF5.07.03	82	CF6.25.04	86	CF9.UL.02.12	122
CF5.07.04	82	<b>Control cable CF9</b>		CF9.UL.03.04.INI	122
CF5.07.05	82	CF9.02.02	114	CF9.UL.03.05.INI	122
CF5.07.07	82	CF9.02.03.INI	114	CF9.UL.03.06	122
CF5.07.12	82	CF9.02.06	114	CF9.UL.03.08	122
CF5.07.18	82	CF9.02.07	114	CF9.UL.05.02	122
CF5.07.25	82	CF9.02.08	114	CF9.UL.05.03	122
CF5.07.36	82	CF9.02.12	114	CF9.UL.05.04	122
CF5.07.42	82	CF9.02.18	114	CF9.UL.05.05	122
CF5.10.03	82	CF9.02.20	114	CF9.UL.05.07	122
CF5.10.04	82	CF9.02.25	114	CF9.UL.05.12	122
CF5.10.05	82	CF9.03.04.INI	114	CF9.UL.05.18	122
CF5.10.07	82	CF9.03.05.INI	114	CF9.UL.07.05	122
CF5.10.12	82	CF9.03.06	114	CF9.UL.07.07	122
CF5.10.18	82	CF9.03.08	114	CF9.UL.07.12	122
CF5.10.25	82	CF9.03.16.07.03.INI	114	CF9.UL.07.25	122
CF5.15.03	82	CF9.05.02	114	CF9.UL.10.03	122
CF5.15.04	82	CF9.05.03	114	CF9.UL.10.04	122
CF5.15.05	82	CF9.05.04	114	CF9.UL.10.12	122
CF5.15.07	82	CF9.05.05	114	CF9.UL.10.18	122
CF5.15.12	82	CF9.05.07	114	CF9.UL.10.25	122
CF5.15.18	82	CF9.05.12	114	CF9.UL.15.04	122
CF5.15.25	82	CF9.05.18	114	CF9.UL.15.05	122
CF5.15.36	82	CF9.05.25	114	CF9.UL.15.07	122
CF5.25.04	82	CF9.05.36	114	CF9.UL.15.12	122
CF5.25.05	82	CF9.07.04	114	CF9.UL.15.18	122
CF5.25.07	82	CF9.07.05	114	CF9.UL.15.25	122
CF5.25.12	82	CF9.07.07	114	CF9.UL.25.04	122
CF5.25.18	82	CF9.07.12	114	CF9.UL.25.05	122
CF5.25.25	82	CF9.07.20	114	CF9.UL.25.07	122
<b>Control cable CF6</b>		CF9.07.25	114	CF9.UL.25.12	122
CF6.02.04	86	CF9.10.03	114	CF9.UL.25.18	122
CF6.02.25	86	CF9.10.04	114	CF9.UL.25.25	122
CF6.03.05	86	CF9.10.05	114	CF9.UL.40.04	122
CF6.05.02	86	CF9.10.12	114	<b>Control cable CF10</b>	
CF6.05.05	86	CF9.10.18	114	CF10.01.12	118
CF6.05.07	86	CF9.10.25	114	CF10.01.18	118
CF6.05.09	86	CF9.15.02	114	CF10.02.04	118

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF10.02.08	118	<b>Data cable CF11</b>		CF21.10.07.02.02.UL	286
CF10.02.12	118	CF11.01.04.02	162	CF21.15.07.02.02.UL	286
CF10.02.25	118	CF11.01.18.02	162	CF21.25.15.02.02.UL	286
CF10.03.05.INI	118	CF11.02.01.02	162	CF21.40.15.02.02.UL	286
CF10.05.04	118	CF11.02.02.02	162	CF21.60.15.02.02.UL	286
CF10.05.05	118	CF11.02.03.02	162	CF21.100.15.02.02.UL	286
CF10.05.07	118	CF11.02.04.02	162	CF21.160.15.02.02.UL	286
CF10.05.12	118	CF11.02.05.02	162	<b>Motor cable CF27.D</b>	
CF10.05.18	118	CF11.02.06.02	162	CF27.07.04.D	340
CF10.05.25	118	CF11.02.10.02	162	CF27.15.04.D	340
CF10.07.04	118	CF11.02.14.02	162	CF27.25.04.D	340
CF10.07.05	118	CF11.03.08.02	162	CF27.500.04.D	340
CF10.07.07	118	CF11.05.04.02	162	<b>Servo cable CF27.D</b>	
CF10.07.12	118	CF11.05.06.02	162	CF27.07.05.02.01.D	296
CF10.07.20	118	CF11.05.08.02	162	CF27.15.15.02.01.D	296
CF10.07.25	118	CF11.07.03.02	162	CF27.25.15.02.01.D	296
CF10.10.02	118	CF11.10.04.02	162	CF27.40.15.02.01.D	296
CF10.10.03	118	CF11.15.06.02	162	CF27.60.15.02.01.D	296
CF10.10.04	118	<b>Measuring system cable CF11.D</b>		CF27.100.15.02.01.D	296
CF10.10.05	118	CF11.001.D	268	CF27.160.15.02.01.D	296
CF10.10.07	118	CF11.002.D	268	CF27.250.15.02.01.D	296
CF10.10.12	118	CF11.003.D	268	CF27.350.15.02.01.D	296
CF10.10.18	118	CF11.004.D	268	CF27.07.03.02.02.D	296
CF10.10.25	118	CF11.005.D	268	CF27.10.07.02.02.D	296
CF10.15.04	118	CF11.006.D	268	CF27.15.07.02.02.D	296
CF10.15.05	118	CF11.007.D	268	CF27.25.15.02.02.D	296
CF10.15.07	118	CF11.008.D	268	CF27.40.15.02.02.D	296
CF10.15.12	118	CF11.009.D	268	CF27.60.15.02.02.D	296
CF10.15.18	118	CF11.010.D	268	CF27.100.15.02.02.D	296
CF10.25.04	118	CF11.011.D	268	CF27.160.15.02.02.D	296
CF10.25.07	118	CF11.012.D	268	CF27.250.15.02.02.D	296
CF10.25.12	118	CF11.013.D	268	CF27.15.05.04.D	296
CF10.40.04	118	CF11.014.D	268	CF27.25.05.04.D	296
CF10.40.05	118	CF11.015.D	268	CF27.40.05.04.D	296
<b>Control cable CF10.UL</b>		CF11.017.D	268	CF27.07.04.D	296
CF10.UL.02.04	126	CF11.018.D	268	CF27.15.04.D	296
CF10.UL.02.08	126	CF11.019.D	268	CF27.25.04.D	296
CF10.UL.02.12	126	CF11.021.D	268	CF27.500.04.D	296
CF10.UL.02.25	126	CF11.022.D	268	<b>Servo cable CF29.D</b>	
CF10.UL.05.04	126	CF11.025.D	268	CF29.15.15.02.01.D	300
CF10.UL.05.05	126	CF11.027.D	268	CF29.25.15.02.01.D	300
CF10.UL.05.12	126	CF11.028.D	268	CF29.40.15.02.01.D	300
CF10.UL.05.25	126	CF11.031.D	268	<b>Motor cable CF30</b>	
CF10.UL.07.04	126	CF11.032.D	268	CF30.15.04	324
CF10.UL.07.05	126	CF11.033.D	268	CF30.25.04	324
CF10.UL.07.07	126	CF11.038.D	268	CF30.25.05	324
CF10.UL.07.12	126	<b>Data cable CF12</b>		CF30.40.04	324
CF10.UL.07.25	126	CF12.02.04.02	170	CF30.40.05	324
CF10.UL.10.02	126	CF12.05.03.02	170	CF30.60.04	324
CF10.UL.10.03	126	CF12.05.04.02	170	CF30.60.05	324
CF10.UL.10.04	126	CF12.05.06.02	170	CF30.100.04	324
CF10.UL.10.05	126	CF12.05.08.02	170	CF30.100.05	324
CF10.UL.10.07	126	CF12.05.10.02	170	CF30.160.04	324
CF10.UL.10.25	126	CF12.05.14.02	170	CF30.160.05	324
CF10.UL.15.04	126	CF12.10.06.02	170	CF30.250.04	324
CF10.UL.15.05	126	<b>Servo cable CF21.UL</b>		CF30.350.04	324
CF10.UL.15.07	126	CF21.07.05.02.01.UL	286	CF30.500.04	324
CF10.UL.15.12	126	CF21.15.15.02.01.UL	286	<b>Motor cable CF31</b>	
CF10.UL.15.18	126	CF21.25.15.02.01.UL	286	CF31.15.04	328
CF10.UL.25.04	126	CF21.40.15.02.01.UL	286	CF31.25.04	328
CF10.UL.25.07	126	CF21.60.15.02.01.UL	286	CF31.25.05	328
CF10.UL.25.12	126	CF21.100.15.02.01.UL	286	CF31.40.04	328
CF10.UL.40.04	126	CF21.07.03.02.02.UL	286	CF31.40.05	328

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF31.60.04	328	CF77.UL.03.04.INI	102	CF77.UL.07.03.D	384
CF31.60.05	328	CF77.UL.03.05.INI	102	CF77.UL.07.04.D	384
CF31.100.04	328	CF77.UL.03.05.INI.D	102	CF77.UL.07.05.D	384
CF31.100.05	328	CF77.UL.05.04.D	102	CF77.UL.07.07.D	384
CF31.160.04	328	CF77.UL.05.05.D	102	CF77.UL.07.12.D	384
CF31.250.04	328	CF77.UL.05.07.D	102	CF77.UL.07.18.D	384
CF31.350.04	328	CF77.UL.05.12.D	102	CF77.UL.07.20.D	384
CF31.500.04	328	CF77.UL.05.18.D	102	CF77.UL.07.25.D	384
CF31.700.04	328	CF77.UL.05.25.D	102	CF77.UL.07.36.D	384
<b>Motor cable CF34.UL.D</b>		CF77.UL.05.30.D	102	CF77.UL.07.42.D	384
CF34.UL.15.04.D	344	CF77.UL.07.03.D	102	CF77.UL.10.02.D	384
CF34.UL.25.04.D	344	CF77.UL.07.04.D	102	CF77.UL.10.03.D	384
CF34.UL.40.04.D	344	CF77.UL.07.05.D	102	CF77.UL.10.04.D	384
CF34.UL.60.04.D	344	CF77.UL.07.07.D	102	CF77.UL.10.05.D	384
CF34.UL.60.05.D	344	CF77.UL.07.12.D	102	CF77.UL.10.07.D	384
CF34.UL.100.04.D	344	CF77.UL.07.18.D	102	CF77.UL.10.12.D	384
CF34.UL.100.05.D	344	CF77.UL.07.20.D	102	CF77.UL.10.18.D	384
CF34.UL.160.04.D	344	CF77.UL.07.25.D	102	CF77.UL.10.25.D	384
CF34.UL.160.05.D	344	CF77.UL.07.36.D	102	CF77.UL.10.42.D	384
CF34.UL.250.04.D	344	CF77.UL.07.42.D	102	CF77.UL.15.03.D	384
<b>Motor cable CF35.UL</b>		CF77.UL.10.02.D	102	CF77.UL.15.04.D	384
CF35.UL.05.04	348	CF77.UL.10.03.D	102	CF77.UL.15.05.D	384
CF35.UL.07.04	348	CF77.UL.10.04.D	102	CF77.UL.15.07.D	384
CF35.UL.15.04	348	CF77.UL.10.05.D	102	CF77.UL.15.12.D	384
CF35.UL.25.04	348	CF77.UL.10.07.D	102	CF77.UL.15.18.D	384
CF35.UL.40.04	348	CF77.UL.10.12.D	102	CF77.UL.15.25.D	384
CF35.UL.60.04	348	CF77.UL.10.18.D	102	CF77.UL.15.36.D	384
CF35.UL.100.04	348	CF77.UL.10.25.D	102	CF77.UL.25.03.D	384
CF35.UL.160.04	348	CF77.UL.10.42.D	102	CF77.UL.25.04.D	384
CF35.UL.250.04	348	CF77.UL.15.03.D	102	CF77.UL.25.05.D	384
CF35.UL.60.03.O.PE	348	CF77.UL.15.04.D	102	CF77.UL.25.07.D	384
CF35.UL.250.03.O.PE	348	CF77.UL.15.05.D	102	CF77.UL.25.12.D	384
<b>Motor cable CF37.D</b>		CF77.UL.15.07.D	102	<b>Control cable CF78.UL</b>	
CF37.15.04.D	352	CF77.UL.15.12.D	102	CF78.UL.05.04	106
CF37.25.04.D	352	CF77.UL.15.18.D	102	CF78.UL.05.05	106
CF37.40.04.D	352	CF77.UL.15.25.D	102	CF78.UL.05.07	106
CF37.60.04.D	352	CF77.UL.15.36.D	102	CF78.UL.05.09	106
CF37.60.05.D	352	CF77.UL.25.03.D	102	CF78.UL.05.12	106
CF37.100.04.D	352	CF77.UL.25.04.D	102	CF78.UL.05.18	106
CF37.100.05.D	352	CF77.UL.25.05.D	102	CF78.UL.05.25	106
CF37.160.04.D	352	CF77.UL.25.07.D	102	CF78.UL.07.03	106
CF37.160.05.D	352	CF77.UL.25.12.D	102	CF78.UL.07.04	106
CF37.250.04.D	352	CF77.UL.40.04.D	102	CF78.UL.07.05	106
CF37.500.03.O.PE.D	352	CF77.UL.40.05.D	102	CF78.UL.07.07	106
<b>Motor cable CF38</b>		CF77.UL.60.05.D	102	CF78.UL.07.12	106
CF38.15.04	354	<b>Twistable cable CF77.UL.D</b>		CF78.UL.07.18	106
CF38.25.04	354	CF77.UL.02.03.INI	384	CF78.UL.07.36	106
CF38.40.04	354	CF77.UL.02.04.D	384	CF78.UL.10.03	106
CF38.60.04	354	CF77.UL.02.05.D	384	CF78.UL.10.04	106
CF38.100.04	354	CF77.UL.02.07.D	384	CF78.UL.10.05	106
CF38.160.04	354	CF77.UL.02.12.D	384	CF78.UL.10.07	106
CF38.250.04	354	CF77.UL.02.18.D	384	CF78.UL.10.12	106
CF38.100.03.O.PE	354	CF77.UL.02.25.D	384	CF78.UL.10.18	106
CF38.160.03.O.PE	354	CF77.UL.03.04.INI	384	CF78.UL.10.25	106
CF38.500.03.O.PE	354	CF77.UL.03.05.INI	384	CF78.UL.15.03	106
<b>Control cable CF77.UL.D</b>		CF77.UL.03.05.INI.D	384	CF78.UL.15.04	106
CF77.UL.02.03.INI	102	CF77.UL.05.04.D	384	CF78.UL.15.05	106
CF77.UL.02.04.D	102	CF77.UL.05.05.D	384	CF78.UL.15.07	106
CF77.UL.02.05.D	102	CF77.UL.05.07.D	384	CF78.UL.15.12	106
CF77.UL.02.07.D	102	CF77.UL.05.12.D	384	CF78.UL.15.18	106
CF77.UL.02.12.D	102	CF77.UL.05.18.D	384	CF78.UL.15.25	106
CF77.UL.02.18.D	102	CF77.UL.05.25.D	384	CF78.UL.15.36	106
CF77.UL.02.25.D	102	CF77.UL.05.30.D	384	CF78.UL.15.42	106

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF78.UL.25.03	106	CF112.05.04.02	166	CF130.10.02.UL	66
CF78.UL.25.04	106	CF112.05.06.02	166	CF130.10.03.UL	66
CF78.UL.25.05	106	<b>Measuring system cable CF113.D</b>		CF130.10.04.UL	66
CF78.UL.25.07	106	CF113.001.D	262	CF130.10.05.UL	66
CF78.UL.25.12	106	CF113.002.D	262	CF130.10.07.UL	66
CF78.UL.40.04	106	CF113.003.D	262	CF130.10.12.UL	66
<b>Control cable CF98</b>		CF113.004.D	262	CF130.10.18.UL	66
CF98.01.02	130	CF113.005.D	262	CF130.10.25.UL	66
CF98.01.03	130	CF113.006.D	262	CF130.15.02.UL	66
CF98.01.04	130	CF113.007.D	262	CF130.15.03.UL	66
CF98.01.08	130	CF113.008.D	262	CF130.15.04.UL	66
CF98.02.03.INI	130	CF113.009.D	262	CF130.15.05.UL	66
CF98.02.04	130	CF113.010.D	262	CF130.15.07.UL	66
CF98.02.08	130	CF113.011.D	262	CF130.15.12.UL	66
CF98.03.04.INI	130	CF113.013.D	262	CF130.15.18.UL	66
CF98.05.04	130	CF113.014.D	262	CF130.15.25.UL	66
<b>Control cables CF98.PLUS</b>		CF113.015.D	262	CF130.15.36.UL	66
CF98.PLUS.01.02	134	CF113.016.D	262	CF130.25.03.UL	66
CF98.PLUS.01.03	134	CF113.017.D	262	CF130.25.04.UL	66
CF98.PLUS.01.04	134	CF113.018.D	262	CF130.25.07.UL	66
CF98.PLUS.01.08	134	CF113.019.D	262	CF130.25.12.UL	66
CF98.PLUS.02.03.INI	134	CF113.022.D	262	CF130.40.03.UL	66
CF98.PLUS.02.04	134	CF113.025.D	262	CF130.40.05.UL	66
CF98.PLUS.02.08	134	CF113.027.D	262	CF130.60.04.UL	66
CF98.PLUS.03.04.INI	134	CF113.028.D	262	CF130.60.05.UL	66
CF98.PLUS.05.04	134	CF113.029.D	262	<b>Control cable CF140.UL</b>	
<b>Control cable CF99</b>		CF113.031.D	262	CF140.02.12.UL	70
CF99.01.02	132	CF113.032.D	262	CF140.03.05.UL	70
CF99.01.04	132	CF113.033.D	262	CF140.05.03.UL	70
CF99.01.08	132	CF113.036.D	262	CF140.05.05.UL	70
CF99.02.04	132	CF113.037.D	262	CF140.05.18.UL	70
CF99.03.08	132	CF113.038.D	262	CF140.05.36.UL	70
<b>Control cables CF99.PLUS</b>		CF113.040.D	262	CF140.07.03.UL	70
CF99.PLUS.01.02	138	<b>Control cable CF130.UL</b>		CF140.07.04.UL	70
CF99.PLUS.01.04	138	CF130.02.03.UL	66	CF140.07.05.UL	70
CF99.PLUS.01.08	138	CF130.02.04.UL	66	CF140.07.07.UL	70
CF99.PLUS.02.04	138	CF130.02.06.UL	66	CF140.07.12.UL	70
CF99.PLUS.03.08	138	CF130.02.07.UL	66	CF140.07.18.UL	70
<b>Measuring system cable CF111.D</b>		CF130.02.12.UL	66	CF140.07.25.UL	70
CF111.001.D	256	CF130.02.18.UL	66	CF140.10.02.UL	70
CF111.002.D	256	CF130.02.20.UL	66	CF140.10.03.UL	70
CF111.004.D	256	CF130.02.25.UL	66	CF140.10.04.UL	70
CF111.006.D	256	CF130.02.30.UL	66	CF140.10.05.UL	70
CF111.009.D	256	CF130.03.02.UL	66	CF140.10.07.UL	70
CF111.010.D	256	CF130.03.05.UL	66	CF140.10.12.UL	70
CF111.011.D	256	CF130.05.02.UL	66	CF140.10.18.UL	70
CF111.014.D	256	CF130.05.03.UL	66	CF140.10.25.UL	70
CF111.015.D	256	CF130.05.04.UL	66	CF140.15.03.UL	70
CF111.020.D	256	CF130.05.05.UL	66	CF140.15.04.UL	70
CF111.021.D	256	CF130.05.07.UL	66	CF140.15.05.UL	70
CF111.022.D	256	CF130.05.12.UL	66	CF140.15.07.UL	70
CF111.024.D	256	CF130.05.18.UL	66	CF140.15.12.UL	70
CF111.026.D	256	CF130.05.25.UL	66	CF140.15.18.UL	70
CF111.027.D	256	CF130.07.02.UL	66	CF140.15.25.UL	70
CF111.028.D	256	CF130.07.03.UL	66	CF140.15.36.UL	70
CF111.032.D	256	CF130.07.04.UL	66	CF140.25.03.UL	70
CF111.040.D	256	CF130.07.05.UL	66	CF140.25.04.UL	70
<b>Data cable CF112</b>		CF130.07.07.UL	66	<b>Control cable CF150.UL</b>	
CF112.02.02.02	166	CF130.07.12.UL	66	CF150.UL.10.03	74
CF112.02.03.02	166	CF130.07.18.UL	66	CF150.UL.10.04	74
CF112.02.04.02	166	CF130.07.25.UL	66	CF150.UL.10.05	74
CF112.02.05.02	166	CF130.07.36.UL	66	CF150.UL.10.07	74
CF112.05.02.02	166	CF130.07.42.UL	66	CF150.UL.10.12	74



## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF150.UL.10.18	74	CF211.05.01.02	154	CF220.UL.H102.25.04	302
CF150.UL.15.03	74	CF211.05.02.02	154	CF220.UL.H102.25.04	302
CF150.UL.15.04	74	CF211.05.03.02	154	CF220.UL.H304.15.04	302
CF150.UL.15.05	74	CF211.05.04.02	154	<b>Data cable CF240</b>	
CF150.UL.15.07	74	CF211.05.05.02	154	CF240.01.03	146
CF150.UL.15.12	74	CF211.05.06.02	154	CF240.01.04	146
CF150.UL.15.18	74	CF211.05.08.02	154	CF240.01.05	146
CF150.UL.25.03	74	CF211.05.10.02	154	CF240.01.07	146
CF150.UL.25.04	74	CF211.05.14.02	154	CF240.01.14	146
CF150.UL.25.05	74	<b>Measuring system cable CF211</b>		CF240.01.18	146
CF150.UL.25.07	74	CF211.001	246	CF240.01.24	146
CF150.UL.25.12	74	CF211.002	246	CF240.02.03	146
CF150.UL.25.18	74	CF211.004	246	CF240.02.04	146
<b>Control cable CF160.UL</b>		CF211.006	246	CF240.02.05	146
CF160.UL.10.03	78	CF211.009	246	CF240.02.07	146
CF160.UL.10.04	78	CF211.010	246	CF240.02.08	146
CF160.UL.10.05	78	CF211.011	246	CF240.02.14	146
CF160.UL.10.07	78	CF211.014	246	CF240.02.18	146
CF160.UL.10.12	78	CF211.015	246	CF240.02.24	146
CF160.UL.10.18	78	CF211.016	246	CF240.03.02	146
CF160.UL.15.03	78	CF211.017	246	CF240.03.03	146
CF160.UL.15.04	78	CF211.018	246	CF240.03.04	146
CF160.UL.15.05	78	CF211.019	246	CF240.03.05	146
CF160.UL.15.07	78	CF211.022	246	CF240.03.07	146
CF160.UL.15.12	78	CF211.024	246	CF240.03.10	146
CF160.UL.15.18	78	CF211.027	246	CF240.03.14	146
CF160.UL.25.03	78	CF211.028	246	CF240.03.18	146
CF160.UL.25.04	78	CF211.032	246	CF240.03.24	146
CF160.UL.25.05	78	CF211.033	246	<b>Data cable CF240.PUR</b>	
CF160.UL.25.07	78	CF211.036	246	CF240.PUR.01.04	150
CF160.UL.25.12	78	CF211.037	246	CF240.PUR.01.07	150
CF160.UL.25.18	78	CF211.038	246	CF240.PUR.01.08	150
<b>Motor cable CF210.UL</b>		CF211.039	246	CF240.PUR.01.14	150
CF210.UL.05.04	322	<b>Data cable CF211.PUR</b>		CF240.PUR.01.18	150
CF210.UL.15.04	322	CF211.PUR.02.01.02	158	CF240.PUR.01.25	150
CF210.UL.25.04	322	CF211.PUR.02.02.02	158	CF240.PUR.02.03	150
CF210.UL.40.04	322	CF211.PUR.02.03.02	158	CF240.PUR.02.04	150
<b>Servo cable CF210.UL</b>		CF211.PUR.02.04.02	158	CF240.PUR.02.05	150
CF210.UL.15.15.02.01	282	CF211.PUR.02.05.02	158	CF240.PUR.02.07	150
CF210.UL.25.15.02.01	282	CF211.PUR.02.06.02	158	CF240.PUR.02.08	150
CF210.UL.40.15.02.01	282	CF211.PUR.02.08.02	158	CF240.PUR.02.14	150
CF210.UL.60.15.02.01	282	CF211.PUR.02.10.02	158	CF240.PUR.02.18	150
CF210.UL.15.07.02.02	282	CF211.PUR.02.14.02	158	CF240.PUR.02.25	150
CF210.UL.25.15.02.02	282	CF211.PUR.03.03.02	158	CF240.PUR.03.03	150
CF210.UL.40.15.02.02	282	CF211.PUR.03.08.02	158	CF240.PUR.03.04	150
CF210.UL.60.15.02.02	282	CF211.PUR.05.01.02	158	CF240.PUR.03.05	150
CF210.UL.05.04	282	CF211.PUR.05.02.02	158	CF240.PUR.03.07	150
CF210.UL.15.04	282	CF211.PUR.05.03.02	158	CF240.PUR.03.14	150
CF210.UL.25.04	282	CF211.PUR.05.04.02	158	CF240.PUR.03.18	150
CF210.UL.40.04	282	CF211.PUR.05.05.02	158	<b>Motor cable CF270.UL.D</b>	
<b>Data cable CF211</b>		CF211.PUR.05.06.02	158	CF270.UL.07.04.D	336
CF211.02.01.02	154	CF211.PUR.05.08.02	158	CF270.UL.10.06.D	336
CF211.02.02.02	154	CF211.PUR.05.10.02	158	CF270.UL.15.04.D	336
CF211.02.03.02	154	CF211.PUR.05.14.02	158	CF270.UL.25.04.D	336
CF211.02.04.02	154	<b>Hybrid servo cable CF220.UL.H</b>		CF270.UL.40.04.D	336
CF211.02.05.02	154	CF220.UL.H102.25.04	302	CF270.UL.60.04.D	336
CF211.02.06.02	154	CF220.UL.H102.25.04	302	CF270.UL.100.04.D	336
CF211.02.08.02	154	CF220.UL.H102.25.04	302	CF270.UL.160.04.D	336
CF211.02.10.02	154	CF220.UL.H102.25.04	302	CF270.UL.250.04.D	336
CF211.02.14.02	154	CF220.UL.H102.25.04	302	CF270.UL.350.04.D	336
CF211.03.03.02	154	CF220.UL.H102.25.04	302	<b>Single core CF270.UL.D</b>	
CF211.03.08.02	154	CF220.UL.H102.25.04	302	CF270.UL.60.01.D	362

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF270.UL.100.01.D	362	CF280.UL.H401.07.04.D	306	CF340.250.01	372
CF270.UL.160.01.D	362	CF280.UL.H501.15.04.D	306	CF340.350.01	372
CF270.UL.250.01.D	362	CF280.UL.H502.40.04.D	306	CF340.500.01	372
CF270.UL.350.01.D	362	<b>Data cable CF298</b>		CF340.700.01	372
CF270.UL.500.01.D	362	CF298.01.02	172	CF340.950.01	372
CF270.UL.700.01.D	362	CF298.01.04	172	CF340.1200.01	372
<b>Servo cable CF270.UL.D</b>		CF298.01.08	172	CF340.1500.01	372
CF270.UL.15.15.02.01.D	292	CF298.02.03	172	CF340.1850.01	372
CF270.UL.25.15.02.01.D	292	CF298.02.04	172	CF340.2400.01	372
CF270.UL.40.15.02.01.D	292	CF298.02.07	172	<b>Control cable CF880</b>	
CF270.UL.60.15.02.01.D	292	CF298.02.08	172	CF880.05.02	58
CF270.UL.100.15.02.01.D	292	CF298.03.04	172	CF880.05.03	58
CF270.UL.160.15.02.01.D	292	CF298.03.07	172	CF880.05.04	58
CF270.UL.07.03.02.02.D	292	CF298.05.04	172	CF880.05.05	58
CF270.UL.10.07.02.02.D	292	<b>Data cable CF299</b>		CF880.05.07	58
CF270.UL.15.07.02.02.D	292	CF299.01.02	174	CF880.05.12	58
CF270.UL.25.15.02.02.D	292	CF299.01.04	174	CF880.05.18	58
CF270.UL.40.15.02.02.D	292	CF299.01.08	174	CF880.05.25	58
CF270.UL.60.15.02.02.D	292	CF299.02.04	174	CF880.07.02	58
CF270.UL.100.15.02.02.D	292	CF299.02.07	174	CF880.07.03	58
CF270.UL.160.15.02.02.D	292	<b>Single core CF300.UL.D</b>		CF880.07.04	58
CF270.UL.250.15.02.02.D	292	CF300.UL.40.01.D	364	CF880.07.05	58
CF270.UL.07.04.D	292	CF300.UL.60.01.D	364	CF880.07.07	58
CF270.UL.10.06.D	292	CF300.UL.100.01.D	364	CF880.07.12	58
CF270.UL.15.04.D	292	CF300.UL.160.01.D	364	CF880.07.18	58
CF270.UL.25.04.D	292	CF300.UL.250.01.D	364	CF880.07.25	58
CF270.UL.40.04.D	292	CF300.UL.350.01.D	364	CF880.10.02	58
CF270.UL.60.04.D	292	CF300.UL.500.01.D	364	CF880.10.03	58
CF270.UL.100.04.D	292	CF300.UL.700.01.D	364	CF880.10.04	58
CF270.UL.160.04.D	292	CF300.UL.950.01.D	364	CF880.10.05	58
CF270.UL.250.04.D	292	CF300.UL.1200.01.D	364	CF880.10.07	58
CF270.UL.350.04.D	292	CF300.UL.1500.01.D	364	CF880.10.12	58
CF270.UL.60.01.D	292	CF300.UL.1850.01.D	364	CF880.10.18	58
CF270.UL.100.01.D	292	<b>Single core CF310.UL</b>		CF880.10.25	58
CF270.UL.160.01.D	292	CF310.UL.25.01	368	CF880.15.02	58
CF270.UL.250.01.D	292	CF310.UL.40.01	368	CF880.15.03	58
CF270.UL.350.01.D	292	CF310.UL.60.01	368	CF880.15.04	58
CF270.UL.500.01.D	292	CF310.UL.100.01	368	CF880.15.05	58
CF270.UL.700.01.D	292	CF310.UL.160.01	368	CF880.15.07	58
<b>Hybrid servo cable CF280.UL.H</b>		CF310.UL.250.01	368	CF880.15.12	58
CF280.UL.H100.07.04.D	306	CF310.UL.350.01	368	CF880.15.18	58
CF280.UL.H101.10.04.D	306	CF310.UL.500.01	368	CF880.15.25	58
CF280.UL.H101.15.04.D	306	CF310.UL.700.01	368	CF880.25.03	58
CF280.UL.H102.25.04.D	306	CF310.UL.950.01	368	CF880.25.04	58
CF280.UL.H102.40.04.D	306	CF310.UL.1200.01	368	CF880.25.05	58
CF280.UL.H102.60.04.D	306	CF310.UL.1500.01	368	CF880.25.07	58
CF280.UL.H200.15.07.D	306	CF310.UL.1850.01	368	CF880.25.12	58
CF280.UL.H200.25.07.D	306	<b>Single core CF330.D</b>		<b>Control cable CF881</b>	
CF280.UL.H201.15.04.D	306	CF330.60.01.D	370	CF881.05.03	62
CF280.UL.H201.25.04.D	306	CF330.100.01.D	370	CF881.05.04	62
CF280.UL.H203.15.04.D	306	CF330.160.01.D	370	CF881.05.05	62
CF280.UL.H203.25.04.D	306	CF330.250.01.D	370	CF881.05.07	62
CF280.UL.H204.15.04.D	306	CF330.350.01.D	370	CF881.05.12	62
CF280.UL.H206.40.04.D	306	CF330.500.01.D	370	CF881.05.18	62
CF280.UL.H206.60.04.D	306	CF330.700.01.D	370	CF881.05.25	62
CF280.UL.H207.15.04.D	306	CF330.950.01.D	370	CF881.07.02	62
CF280.UL.H207.25.04.D	306	CF330.1200.01.D	370	CF881.07.03	62
CF280.UL.H300.03.04.D	306	CF330.1500.01.D	370	CF881.07.04	62
CF280.UL.H301.07.04.D	306	CF330.1850.01.D	370	CF881.07.05	62
CF280.UL.H304.15.04.D	306	<b>Single core CF340</b>		CF881.07.07	62
CF280.UL.H304.25.04.D	306	CF340.40.01	372	CF881.07.12	62
CF280.UL.H400.25.05.D	306	CF340.160.01	372	CF881.07.18	62

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF881.07.25	62	CF886.250.01	360	CF891.07.03	98
CF881.10.02	62	CF886.350.01	360	CF891.07.04	98
CF881.10.03	62	<b>Servo cable CF887</b>		CF891.07.05	98
CF881.10.04	62	CF887.07.05.02.01	280	CF891.07.07	98
CF881.10.05	62	CF887.15.15.02.01	280	CF891.07.12	98
CF881.10.07	62	CF887.25.15.02.01	280	CF891.07.18	98
CF881.10.12	62	CF887.40.15.02.01	280	CF891.07.25	98
CF881.10.18	62	CF887.10.07.02.02	280	CF891.10.02	98
CF881.10.25	62	CF887.15.15.02.02	280	CF891.10.03	98
CF881.15.02	62	CF887.25.15.02.02	280	CF891.10.04	98
CF881.15.03	62	<b>Bus cable CF888</b>		CF891.10.05	98
CF881.15.04	62	CF888.001	188	CF891.10.07	98
CF881.15.05	62	CF888.021	188	CF891.10.12	98
CF881.15.07	62	CF888.045	188	CF891.10.18	98
CF881.15.12	62	CF888.060	188	CF891.10.25	98
CF881.15.18	62	<b>Control cable CF890</b>		CF891.15.02	98
CF881.15.25	62	CF890.05.02	94	CF891.15.03	98
CF881.25.04	62	CF890.05.03	94	CF891.15.04	98
CF881.25.05	62	CF890.05.04	94	CF891.15.05	98
CF881.25.07	62	CF890.05.05	94	CF891.15.07	98
CF881.25.12	62	CF890.05.07	94	CF891.15.12	98
<b>Measuring system cable CF884</b>		CF890.05.12	94	CF891.15.25	98
CF884.001	242	CF890.05.18	94	CF891.25.04	98
CF884.006	242	CF890.05.25	94	CF891.25.05	98
CF884.009	242	CF890.07.02	94	CF891.25.07	98
CF884.011	242	CF890.07.03	94	<b>Measuring system cable CF894</b>	
CF884.015	242	CF890.07.04	94	CF894.001	252
CF884.022	242	CF890.07.05	94	CF894.006	252
CF884.028	242	CF890.07.07	94	CF894.009	252
<b>Motor cable CF885</b>		CF890.07.12	94	CF894.011	252
CF885.15.04	318	CF890.07.18	94	CF894.015	252
CF885.25.04	318	CF890.07.25	94	CF894.022	252
CF885.40.04	318	CF890.10.02	94	CF894.028	252
CF885.60.04	318	CF890.10.03	94	<b>Motor cable CF895</b>	
CF885.100.04	318	CF890.10.04	94	CF895.15.04	332
CF885.160.04	318	CF890.10.05	94	CF895.25.04	332
<b>Single core CF885</b>		CF890.10.07	94	CF895.40.04	332
CF885.40.01	356	CF890.10.12	94	CF895.60.04	332
CF885.60.01	356	CF890.10.18	94	CF895.100.04	332
CF885.100.01	356	CF890.10.25	94	CF895.160.04	332
CF885.160.01	356	CF890.15.02	94	<b>Motor cable CF896</b>	
CF885.250.01	356	CF890.15.03	94	CF896.07.04	334
CF885.350.01	356	CF890.15.04	94	CF896.15.04	334
CF885.500.01	356	CF890.15.05	94	CF896.25.04	334
CF885.700.01	356	CF890.15.07	94	CF896.40.04	334
CF885.950.01	356	CF890.15.12	94	CF896.60.04	334
<b>Single core CF885.PE</b>		CF890.15.18	94	CF896.100.04	334
CF885.PE.25.01	358	CF890.15.25	94	CF896.160.04	334
CF885.PE.40.01	358	CF890.25.03	94	<b>Servo cable CF897</b>	
CF885.PE.60.01	358	CF890.25.04	94	CF897.15.15.02.01	290
CF885.PE.100.01	358	CF890.25.05	94	CF897.25.15.02.01	290
CF885.PE.160.01	358	CF890.25.07	94	CF897.40.15.02.01	290
CF885.PE.250.01	358	CF890.25.12	94	CF897.15.15.02.02	290
<b>Motor cable CF886</b>		CF890.25.25	94	<b>Bus cable CF898</b>	
CF886.15.04	320	<b>Control cable CF891</b>		CF898.001	196
CF886.25.04	320	CF891.05.02	98	CF898.021	196
CF886.40.04	320	CF891.05.03	98	CF898.045	196
CF886.60.04	320	CF891.05.05	98	CF898.060	196
CF886.100.04	320	CF891.05.12	98	CF898.061.FC	196
CF886.160.04	320	CF891.05.18	98	CF898.082	196
<b>Single core CF886</b>		CF891.05.25	98	CF898.083	196
CF886.160.01	360	CF891.07.02	98		

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Pneumatic hose CFAIR</b>		<b>Bus cable CFBUS.PVC</b>		CFPE.350.01	366
CAPU.A.04.0	462	CFBUS.PVC.001	192	CFPE.500.01	366
CAPU.A.06.0	462	CFBUS.PVC.020	192	CFPE.700.01	366
CAPU.A.08.0	462	CFBUS.PVC.021	192	CFPE.950.01	366
CAPU.A.10.0	462	CFBUS.PVC.022	192	<b>Twistable cable CFROBOT</b>	
CAPU.A.12.0	462	CFBUS.PVC.035	192	CFROBOT.035	404
CAPU.A.16.0	462	CFBUS.PVC.040	192	CFROBOT.036	404
<b>Pneumatic hose CFCleanAIR</b>		CFBUS.PVC.045	192	CFROBOT.037	404
CAPE.A.04.0	464	CFBUS.PVC.049	192	CFROBOT.038	404
CAPE.A.06.0	464	CFBUS.PVC.050	192	<b>Twistable cable CFROBOT2</b>	
CAPE.A.08.0	464	CFBUS.PVC.052	192	CFROBOT2.07.04.C	388
CAPE.A.10.0	464	CFBUS.PVC.060	192	CFROBOT2.07.05.C	388
CAPE.A.12.0	464	CFBUS.PVC.068	192	CFROBOT2.07.07.C	388
CAPE.A.16.0	464	<b>Medium voltage cable CFCRANE.PUR</b>		CFROBOT2.07.12.C	388
<b>Bus cable CFBUS</b>		CFCRANE.PUR.350.01.6/10kV	374	CFROBOT2.07.18.C	388
CFBUS.001	204	CFCRANE.PUR.500.01.6/10kV	374	<b>Twistable cable CFROBOT3</b>	
CFBUS.002	204	CFCRANE.PUR.700.01.6/10kV	374	CFROBOT3.02.03.02	390
CFBUS.003	204	CFCRANE.PUR.950.01.6/10kV	374	CFROBOT3.02.04.02	390
CFBUS.010	204	<b>Special cable CFFLAT</b>		CFROBOT3.02.06.02	390
CFBUS.011	204	CFFLAT.40.01	422	CFROBOT3.02.08.02	390
CFBUS.020	204	<b>Coax cable CFKCoax</b>		CFROBOT3.05.05.02	390
CFBUS.021	204	CFKCoax1.01	176	<b>Twistable cable CFROBOT4</b>	
CFBUS.022	204	CFKCoax1.05	176	CFROBOT4.001	392
CFBUS.030	204	CFKCoax2.01	176	CFROBOT4.006	392
CFBUS.031	204	CFKCoax3.01	176	CFROBOT4.009	392
CFBUS.035	204	<b>Fibre Optic Cable CFLG88</b>		CFROBOT4.015	392
CFBUS.040	204	CFLG88.2.62.5/125	222	CFROBOT4.028	392
CFBUS.045	204	CFLG88.2.50/125	222	<b>Twistable cable CFROBOT5</b>	
CFBUS.049	204	<b>Fibre Optic Cable CFLG.G</b>		CFROBOT5.500	396
CFBUS.050	204	CFLG.6G.62.5/125.TC	232	CFROBOT5.501	396
CFBUS.052	204	CFLG.12G.62.5/125.TC	232	<b>Twistable cable CFROBOT6</b>	
CFBUS.055	204	CFLG.6G.50/125.TC	232	CFROBOT6.160.03	398
CFBUS.060	204	CFLG.12G.50/125.TC	232	CFROBOT6.250.03	398
CFBUS.065	204	CFLG.12E.9/125.TC	232	<b>Twistable cable CFROBOT7</b>	
CFBUS.066	204	<b>Fibre Optic Cable CFLG.LB</b>		CFROBOT7.07.03.02.02.C	400
CFBUS.070	204	CFLG.2LB.62.5/125	228	CFROBOT7.15.15.02.02.C	400
<b>Bus cable CFBUS.LB</b>		CFLG.4LB.62.5/125	228	CFROBOT7.25.15.02.02.C	400
CFBUS.LB.001	210	CFLG.6LB.62.5/125	228	CFROBOT7.40.02.02.04.C	400
CFBUS.LB.020	210	CFLG.12LB.62.5/125	228	CFROBOT7.15.03.C	400
CFBUS.LB.021	210	CFLG.2LB.50/125	228	CFROBOT7.15.04.C	400
CFBUS.LB.022	210	CFLG.4LB.50/125	228	CFROBOT7.25.03.C	400
CFBUS.LB.040	210	CFLG.6LB.50/125	228	CFROBOT7.25.04.C	400
CFBUS.LB.045	210	CFLG.12LB.50/125	228	CFROBOT7.60.04.C	400
CFBUS.LB.049	210	<b>Fibre Optic Cable CFLG.LB.PUR</b>		<b>Twistable cable CFROBOT8</b>	
CFBUS.LB.060	210	CFLG.2LB.PUR.62.5/125	224	CFROBOT8.001	406
<b>Bus cable CFBUS.PUR</b>		CFLG.4LB.PUR.62.5/125	224	CFROBOT8.022	406
CFBUS.PUR.001	200	CFLG.6LB.PUR.62.5/125	224	CFROBOT8.030	406
CFBUS.PUR.020	200	CFLG.12LB.PUR.62.5/125	224	CFROBOT8.045	406
CFBUS.PUR.021	200	CFLG.6LB.PUR.50/125	224	CFROBOT8.049	406
CFBUS.PUR.022	200	CFLG.12LB.PUR.50/125	224	CFROBOT8.050	406
CFBUS.PUR.035	200	CFLG.6LB.PUR.9/125	224	CFROBOT8.052	406
CFBUS.PUR.040	200	<b>Fibre Optic Cable CFLK</b>		CFROBOT8.060	406
CFBUS.PUR.042	200	CFLK.L1.01	220	<b>Twistable cable CFROBOT8.PLUS</b>	
CFBUS.PUR.045	200	CFLK.L1.02	220	CFROBOT8.PLUS.001	410
CFBUS.PUR.049	200	<b>Single core CFPE</b>		CFROBOT8.PLUS.022	410
CFBUS.PUR.H01.049	200	CFPE.15.01	366	CFROBOT8.PLUS.045	410
CFBUS.PUR.050	200	CFPE.25.01	366	CFROBOT8.PLUS.049	410
CFBUS.PUR.052	200	CFPE.40.01	366	CFROBOT8.PLUS.050	410
CFBUS.PUR.056	200	CFPE.60.01	366	CFROBOT8.PLUS.060	410
CFBUS.PUR.060	200	CFPE.100.01	366	<b>Twistable cable CFROBOT9</b>	
CFBUS.PUR.H01.060	200	CFPE.160.01	366	CFROBOT9.007	414
CFBUS.PUR.068	200	CFPE.250.01	366	CFROBOT9.010	414

## Information | Table of contents by part number

igus® Part No.	Page	igus® Part No.	Page
<b>Control cable CFSOFT1</b>		<b>Motor element CFCLEAN7</b>	
CFSOFT1.02.03	90	CFCLEAN7.15.03.02.01	458
CFSOFT1.02.08	90	CFCLEAN7.15.04	458
CFSOFT1.03.04	90	CFCLEAN7.PE.25.01	458
CFSOFT1.05.04	90	<b>Bus element CFCLEAN8</b>	
<b>Control cable CFSOFT2</b>		CFCLEAN8.045	460
CFSOFT2.02.03	92		
CFSOFT2.02.08	92		
CFSOFT2.03.04	92		
CFSOFT2.05.04	92		
<b>Special cable CFSPECIAL.182</b>			
CFSPECIAL.182.045	424		
CFSPECIAL.182.060	424		
<b>Special cable CFSPECIAL.414</b>			
CFSPECIAL.182.045	428		
CFSPECIAL.182.060	428		
<b>Special cable CFSPECIAL.484</b>			
CFSPECIAL.484.049	430		
<b>Special cable CFSPECIAL.532</b>			
CFSPECIAL.532.15.08.02	432		
CFSPECIAL.532.15.16.02	432		
<b>Special cable CFSPECIAL.562.PE</b>			
CFSPECIAL.562.PE.700.01	434		
<b>Special cable CFSPECIAL.572</b>			
CFSPECIAL.572.2400.01	436		
CFSPECIAL.572.3000.01	436		
CFSPECIAL.572.4000.01	436		
<b>Special cable CFSPECIAL.592</b>			
CFSPECIAL.592.001	438		
<b>Special cable CFSPECIAL.792</b>			
CFSPECIAL.792.011	440		
CFSPECIAL.792.012	440		
CFSPECIAL.792.013	440		
CFSPECIAL.792.014	440		
CFSPECIAL.792.015	440		
CFSPECIAL.792.016	440		
<b>Special cable CF THERMO</b>			
CF THERMO.J.001	420		
CF THERMO.K.001	420		
CF THERMO.K.002	420		
<b>Control element CFCLEAN1</b>			
CFCLEAN1.02.04	450		
CFCLEAN1.03.02	450		
CFCLEAN1.03.07	450		
CFCLEAN1.05.04	450		
CFCLEAN1.07.04	450		
CFCLEAN1.07.05	450		
CFCLEAN1.10.02	450		
<b>Coax element CFCLEAN2</b>			
CFCLEAN2.KOAX1.03	452		
<b>Data element CFCLEAN3</b>			
CFCLEAN3.01.05.02	454		
CFCLEAN3.01.06.02	454		
CFCLEAN3.01.08.02	454		
CFCLEAN3.02.03.02	454		
CFCLEAN3.02.04.02	454		
CFCLEAN3.02.05.02	454		
CFCLEAN3.02.06.02	454		
<b>Measuring system element CFCLEAN4</b>			
CFCLEAN4.015	456		