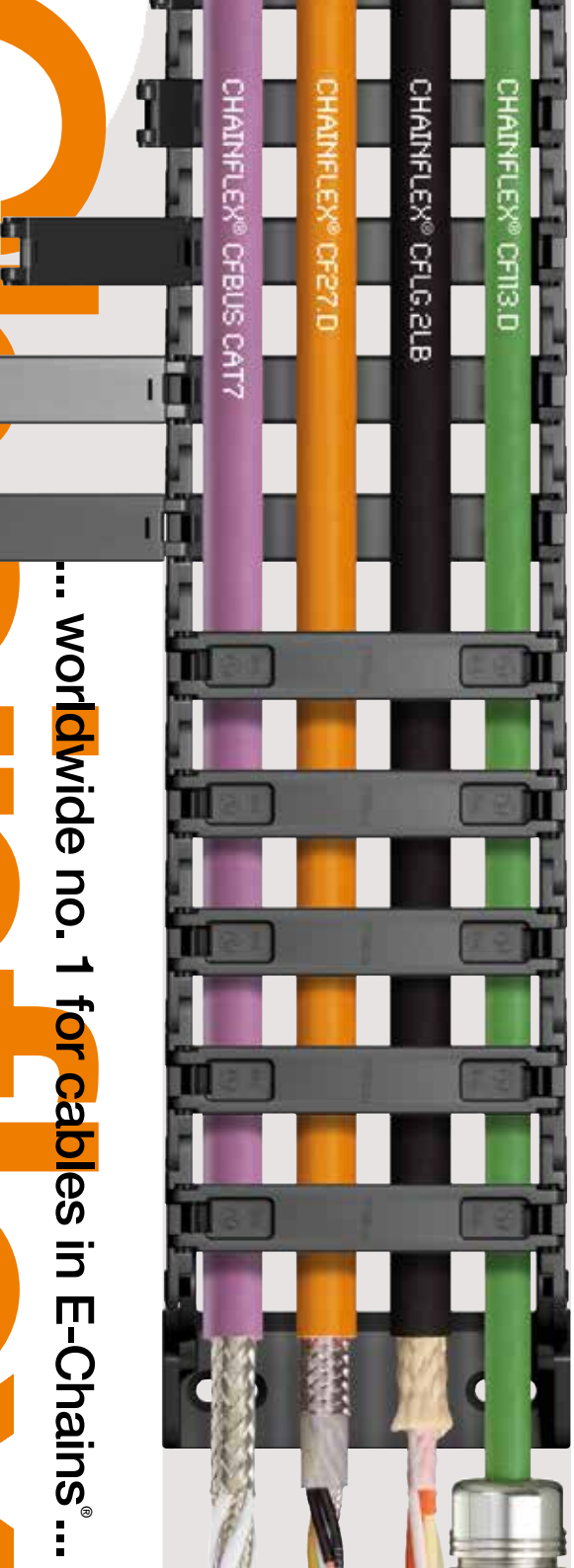


# Cables

igus.com ... Chainflex® cables ... 2016 ... plastics for longer life ...



... worldwide no. 1 for cables in E-Chains® ...

# Chainflex®

# Chainflex®: Wordwide no. 1 in cable tests

... and in variety  
... and with 36 month guarantee  
... and with 25 years experience

... Chainflex® works.

---

## 24hrs delivery time



Your order ships from igus® in as little as 24 hrs. Please inform us about your specific delivery time requirements.

## No minimum order



igus® has no minimum order. Just order the amount you need – without cutting charges.

## From 1m



Because Chainflex® cables are high quality you only need to order the length you require. We appreciate every order from 1 ft.

## With guarantee



Our standard guarantee is defined in the catalog specifications. We will help you figure out these values specific to your application.

**With guarantee certification!**

[www.chainflex.com](http://www.chainflex.com)



# Tell us what you think!



Don Nester  
Product Manager  
Chainflex® cables

## Yes, we can! Catalog improvement.

Dear customers,

with every new Chainflex® catalog we work hard to make it better and easier to use. We know our catalog so well that many details are clear to us, but maybe not to everyone else!

That's why we ask you for your opinion. What do you like in the catalog? And more importantly what don't you like?














































Send us an e-mail to  
[chainflex@igus.com](mailto:chainflex@igus.com)

Every comment is welcome - whether it's about usability, design, delivery tables, the tests or technical data. Thanks in advance for your feedback.

Best regards  
Don Nester  
Product Manager  
Chainflex® cables



# Definition of the icons used in the catalog

 Bend radius	 Temperature	 v max. unsupported/gliding	 a max.	 Travel distance
 Torsion	 UV-resistant	 Nominal voltage	 Testing voltage	 Oil
 Offshore	 Flame-retardant	 Silicon-free	 Halogen-free	 Lead free
 Outer jacket	 Outer jacket	 CFRIP®	 Inner jacket	 Core stranding
 Core identification	 Conductor	 Fibre cables	 Core insulation	 Overall shield
 Center element	 Filling	 Element shield	 Element jacket	 Material
 Dimensions	 Operating pressure	 Vacuum	 UL/CSA	 CSA
 CEI	 CE	 DESINA	 Clean room	 NFPA
 CTP	 EAC	 DNV-GL	 Toxicity	 Low gas density

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

The Chainflex® class is composed of 4 parts:

Requirements	Travel distance	Oil resistance	Torsion
1 to 7	1 to 6	1 to 4	1 to 3
1 Requirements	low	1 2 3 4 5 6 7 highest	
2 Travel distance	unsupported	1 2 3 4 5 6 1,312 ft +	
3 Oil-resistance	none	1 2 3 4 highest	
4 Torsion	none	1 2 3 ±180°	

- 1 Requirements**
- 1: Flexible cables
  - 2: Highly flexible cables
  - 3: Chain-suitable cables without special design (e.g. braiding in layers) for application in E-Chains®.
  - 4: Cables with special design for permanent movement in E-Chains®, medium duty application, radii from 7.5 x d, speed up to 9.843 ft/s
  - 5: Cables for permanent movement in E-Chains® for heavy duty application and radii from 6.8 x d, speed up to 32.81 ft/s
  - 6: Cables for permanent movement in E-Chains® for extremely heavy duty application and radii from 5 x d, speed up to 32.81 ft/s
  - 7: Cables for permanent movement in E-Chains® for extremely heavy duty application and smallest radii, indoor and outdoor, radii from 4 x d, speed up to 32.81 ft/s and more

- 2 Travel distance**
- 1: Unsupported up to 32.81 ft
  - 2: Gliding travels up to 32.81 ft
  - 3: Gliding travels up 65.62 ft
  - 4: Gliding travels up 164 ft
  - 5: Gliding travels up 328.1 ft
  - 6: Gliding travels up 1,312 ft 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 DIN EN 60811-2-1), bio-oilresistant (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

To make selection easier, we have classified all Chainflex® cables according to 3 criteria: application requirements, travel distance and oil resistance. The higher the number the better the cable.

**Example:** If you are looking for a cable which is suitable for the highest mechanical load. It has to be oil-resistant following DIN-EN 60811-404 and bio-oil resistant following VDMA 24568, up to 100 m for unsupported and gliding applications and torsion resistant 90° at 1 m cable length.

Choose from the classification overview:

- 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.

**TPE Control cable | CF98**

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

**Dynamic information:**

- Bend radius: 4x d min, 5x d max
- Temperature: -40°C to +100°C
- Speed: 0 to 32.81 ft/s
- Travel distance: 0 to 1,312 ft
- Torsion: ± 90° / ± 180°

**Technical specifications:**

- Nominal voltage: 300/500V
- Testing voltage: 1000V
- UV resistance: R10
- 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

**Classification overview:**

**Class 7.5.4.2**

**Part No. | Number of cores and shielded conductors (mm²) | Outer diameter (mm) | Weight (kg/100m)**

Part No.	Number of cores and shielded conductors (mm²)	Outer diameter (mm)	Weight (kg/100m)
CF98.01.02	2 x 0.18	4.0	8
CF98.01.03	4 x 0.18	5.5	9
CF98.01.04	4 x 0.24	6.0	9
CF98.01.05	7 x 0.18	6.0	11
CF98.01.06	6 x 0.24	6.5	10
CF98.01.07	2 x 0.25	5.5	10
CF98.01.08	3 x 0.25	7.0	10
CF98.01.09	3 x 0.24	7.0	10
CF98.01.10	4 x 0.24	6.5	10
CF98.01.11	4 x 0.24	7.0	10
CF98.01.12	4 x 0.24	7.5	10
CF98.01.13	4 x 0.24	8.0	10
CF98.01.14	4 x 0.24	8.5	10

**1,244 types from stock ... no cutting costs\***  
**36 month guarantee on each Chainflex® cable ... up to 10 mio. double strokes guaranteed ...**

In theory the following classes would be possible:  
 Lowest "Class 1.1.1.1", highest "Class 7.6.4.3"

	Control cables	62
	Data/Coax cables	138
	Bus cables	172
	Fiber optic cables (FOC)	212
	Measuring system cables	234
	Servo cables	274
	Motor cables	308
	Twistable cables	376
	Special cables	412
	Pneumatic hoses	428

CHAINFLEX® CF CLEA

Pneumatic hoses

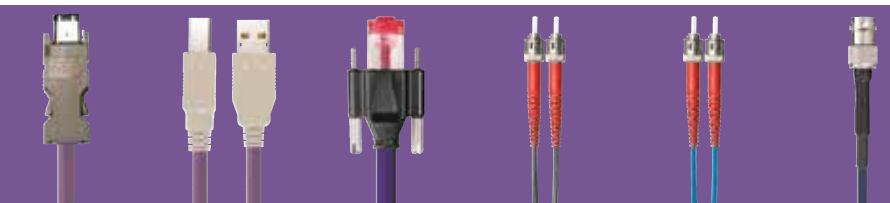



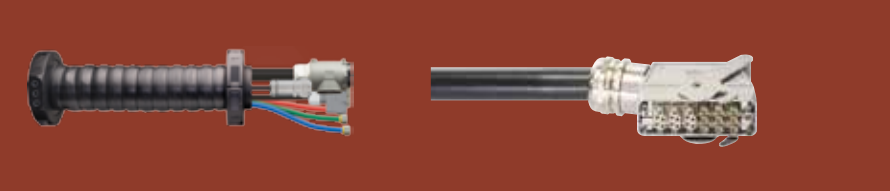


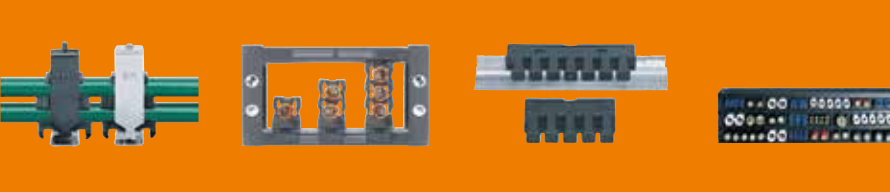


428



# Chainflex® Selection according to “Class”

Chainflex® series	Requirements	Travel distance	Oil-resistance	Torsion
CF880	3	1	1	1
CF881	3	1	1	1
CF884	3	1	1	1
CF885	3	1	1	1
CF885-PE <i>New</i>	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
CFLG88 <i>New</i>	3	1	1	1
CFLG-EC	4	2	2	1
CF210-UL	4	2	2	1
CF211 (Measuring)	4	2	2	1
CF220-UL-H	4	2	2	1
CF111-D	4	2	3	1
CF270-UL-D	4	2	3	1
CF270-UL-D (Motor)	4	2	3	1
CF280-UL-H	4	2	3	1
CFBUS-PVC	4	3	2	1
CFBUS-PUR	4	3	3	1
CF130-UL	4	4	1	2
CF140-UL	4	4	1	1
CF240	4	4	2	1
CF240-PUR	4	4	3	1
CFLK	5	3	3	1
CF THERMO	5	4	3	1
CF5	5	5	2	2
CF6	5	5	2	1
CF21-UL	5	5	2	1
CF211 (Data)	5	5	2	1
CF30	5	5	2	2
CF31	5	5	2	1
CF77-UL-D	5	5	3	3
CF78-UL	5	5	3	1
CF211-PUR (Data)	5	5	3	1
CF77-UL-D (Robot)	5	1	3	3
CFROBOT2	6	1	3	3




















Chainflex® series	Requirements	Travel distance	Oil-resistance	Torsion
CFROBOT3	6	1	3	3
CFROBOT4	6	1	3	3
CFROBOT6	6	1	3	3
CFROBOT7	6	1	3	3
CFROBOT8	6	1	3	3
CFROBOT9	6	1	3	3
CFROBOT	6	1	4	3
CFROBOT5	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
CFGRANE	6	6	3	1
CF9-UL	6	6	4	2
CF10-UL	6	6	4	1
CF11	6	6	4	1
CF11-D	6	6	4	1
CF11-LC	6	6	4	1
CF11-LC-D	6	6	4	1
CF12	6	6	4	1
CF14-CAT5	6	6	4	1
CF34-UL-D	6	6	4	2
CF35-UL	6	6	4	1
CF300-UL-D	6	6	4	2
CF310-UL	6	6	4	1
CFBRAID/C	6	5	4	1
CFBUS	6	6	4	1
CFKoaX	6	6	4	1
CFPE	6	6	4	2
CF98	7	5	4	2
CF99	7	5	4	1
CFLG-LB	7	5	4	1
CF FLAT	7	5	4	1
CF9	7	6	4	2
CF10	7	6	4	1
CF37-D	7	6	4	2
CF38	7	6	4	1
CF330-D	7	6	4	2
CF340	7	6	4	1
CF430-D	7	6	4	2
CF440	7	6	4	1
CFLG-G	7	6	4	1

	Chainflex® Video/vision/bus technology	432
	Chainflex® Network technology	470
	Chainflex® CF-INI Cordsets for Automation	504
	Chainflex® cables with industrial connectors	520
	Harnessed hose packages and cables for robots	530
	ReadyCable Harnessed cables	536
	Connectors	698
	Chainfix Strain relief devices	752
	ReadyChain® Ready-made Energy Chain systems®	780
	Designing with igus® Tables and data	792

More information about Chainflex® class ► Page 26-27

# Chainflex® types

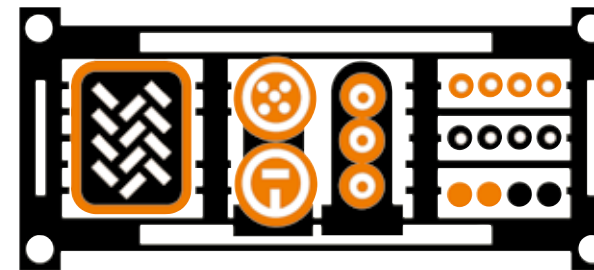
# Chainflex® types

Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x dj]	Temperature, E-Chain® from/to [°F]	Price index	Approvals and standards	Flame-retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion resistant	v max. unsupported [ft/s]	v max. gliding [ft/s]	a max. [ft/s²]	Chainflex® Class	Page
<b>Control cables</b>																
<b>Exclusive!</b> Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25														<b>Selection table</b> ▶ Page 64		
	CF880 <i>New</i>	PVC	12.5	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓					9.84	65.62	3.1.1.1	66	
	CF881 <i>New</i>	PVC	✓	12.5	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓				9.84	65.62	3.1.1.1	70	
	CF130US	PVC	8	+41/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓		✓	✓	9.84	6.56	65.62	3.1.4.2	74
	CF140US	PVC	✓	10	+41/ +176	●●●	UL US ENEC EAC CE ✓	✓		✓		9.84	6.56	65.62	3.1.4.1	78
	CF130-UL	PVC	7.5	+41/ +158	●●●	UL US ENEC EAC CE ✓					✓	9.84	6.56	65.62	4.4.1.2	82
	CF140-UL	PVC	✓	7.5	+41/ +158	●●●	UL US ENEC EAC CE ✓					9.84	6.56	65.62	4.4.1.1	86
	CF5	PVC	6.8	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓			✓	✓	32.81	16.41	262.5	5.5.2.2	90
	CF6	PVC	✓	6.8	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓			✓	32.81	16.41	262.5	5.5.2.1	94
	CF890 <i>New</i>	iguPUR	12.5	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓				✓	9.84	65.62	3.1.3.1	98	
	CF891 <i>New</i>	iguPUR	✓	12.5	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓			✓	9.84	65.62	3.1.3.1	102	
	CF77-UL-D <i>New</i>	PUR	6.8	-13/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	✓	32.81	16.41	262.5	5.5.3.2	106
	CF78-UL <i>New</i>	PUR	✓	6.8	-13/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	32.81	16.41	262.5	5.5.3.1	110
	CF2	PUR	✓	5	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓			✓	32.81	16.41	262.5	6.5.3.1	114
	CF9	TPE	5	-31/ +212	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	✓	32.81	19.69	328.1	7.6.4.2	118
	CF10	TPE	✓	5	-31/ +212	●●●	UL US ENEC EAC CE ✓	✓	✓	✓		32.81	19.69	328.1	7.6.4.1	122
	CF9-UL	TPE	5	-31/ +212	●●●	UL US ENEC EAC CE ✓	✓	✓		✓	✓	32.81	19.69	328.1	6.6.4.2	126
	CF10-UL	TPE	✓	5	-31/ +212	●●●	UL US ENEC EAC CE ✓	✓	✓		✓	32.81	19.69	328.1	6.6.4.1	130
	CF98	TPE	4	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓		32.81	19.69	328.1	7.5.4.2	134
	CF99	TPE	✓	4	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓	✓	✓		32.81	19.69	328.1	7.5.4.1	136

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

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

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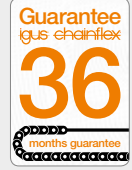
Table of contents according to part numbers ▶ Page 813





# Chainflex® types

# Chainflex® types



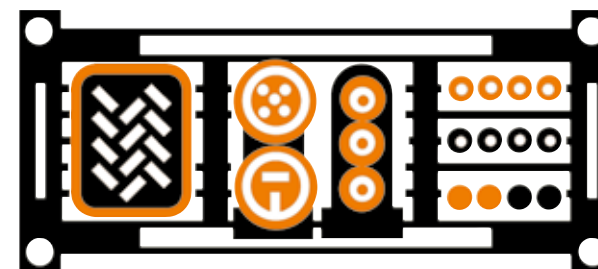
Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Price index	Approvals and standards	Flame-retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion resistant	v max. unsupported [ft/s]	v max. gliding [ft/s]	a max. [ft/s²]	Chainflex® Class	Page
<b>Bus cables</b>																
<b>Exclusive!</b> Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25															<b>Selection table</b> ▶ Page 174	
	CF888	PVC	15	+41/ +158	●●●	UL US, ENEC, EAC, CE, CE	✓					9.84	65.62		3.1.1.1	180
	CFBUS-PVC <i>New</i>	PVC	12.5	+41/ +158	●●●	UL US, ENEC, EAC, CE, CE	✓	✓		✓		9.84	6.56	98.43	4.3.2.1	182
	CF898 <i>New</i>	iguPUR	15	-4/ +176	●●●	UL US, ENEC, EAC, CE, CE	✓	✓		✓		9.84	65.62		3.1.3.1	186
	CFBUS-PUR <i>New</i>	PUR	12.5	-4/ +158	●●●	UL US, ENEC, EAC, CE, CE	✓	✓	✓	✓		9.84	6.56	98.43	4.3.3.1	190
	CFBUS <i>New</i>	TPE	10-12.5	-31/ +158	●●●	UL US, ENEC, EAC, CE, CE	✓	✓		✓		32.81	19.69	328.1	6.6.4.1	194
	CF11-LC	TPE	10	-31/ +158	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	19.69	328.1	6.6.4.1	200
	CF11-LC-D	TPE	10	-31/ +158	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	19.69	328.1	6.6.4.1	204
	CF14US	PUR	12.5	-4/ +158	●●●	UL US, ENEC, EAC, CE, CE		✓				32.81	19.69	328.1	6.3.4.1	208
	CF14-CAT5	TPE	10	-31/ +158	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	19.69	328.1	6.6.4.1	210
<b>Fiber optic cables</b>																
<b>Exclusive!</b> Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25															<b>Selection table</b> ▶ Page 216	
	CFLK	PUR	12.5	-4/ +140	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	16.41	65.62	5.3.3.1	218
	CFLG88 <i>New</i>	PVC	7.5	+41/ +158	●●●	UL US, ENEC, EAC, CE, CE	✓			✓		9.84	6.56	65.62	3.1.1.1	220
	CFLG-LB-PUR <i>New</i>	PUR	5-7.5	-31/ +176	●●●	UL US, ENEC, EAC, CE, CE	✓	✓	✓	✓		32.81	19.69	65.62	6.5.3.1	222
	CFLG-LB <i>New</i>	TPE	5	-31/ +176	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	19.69	65.62	7.5.4.1	226
	CFLG-G	TPE	10	-40/ +176	●●●	UL US, ENEC, EAC, CE, CE		✓	✓	✓		32.81	19.69	65.62	7.6.4.1	230

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

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Table of contents according to part numbers ▶ Page 813



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# Chainflex® types

# Chainflex® types



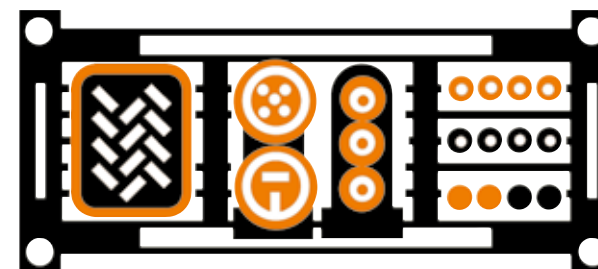
Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x dj]	Temperature, E-Chain® from/to [°F]	Price index	Approvals and standards	Flame-retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion resistant	v max. unsupported [ft/s]	v max. gliding [ft/s]	a max. [ft/s²]	Chainflex® Class	Page
<b>Measuring system cables</b>																234
<b>Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25</b>																<b>Selection table ▶ Page 236</b>
	CF884	PVC	✓	15	+41/ +158	●●●	UL US ENEC EAC CE ✓					9.84		65.62	3.1.1.1	240
	CF211	PVC	✓	10	+41/ +158	●●●	UL US ENEC EAC CE ✓ ✓					16.41	9.84	98.43	4.2.2.1	244
	CF894	iguPUR	✓	15	-4/ +176	●●●	UL US ENEC EAC CE ✓ ✓			✓		9.84		65.62	3.1.3.1	250
	CF111-D	PUR	✓	10	-13/ +176	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					16.41	9.84	98.43	4.2.3.1	254
	CF113-D	PUR	✓	7.5	-13/ +176	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					32.81	16.41	164.05	6.5.3.1	260
	CF11-D	TPE	✓	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					32.81	19.69	328.1	6.6.4.1	268
<b>Servo cables</b>																274
<b>Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25</b>																<b>Selection table ▶ Page 276</b>
	CF887 <i>New</i>	PVC	✓	15	+41/ +158	●●●	UL US ENEC EAC CE ✓					9.84		65.62	3.1.1.1	280
	CF210-UL	PVC	✓	10	+41/ +158	●●●	UL US ENEC EAC CE ✓ ✓			✓		32.81	6.56	164.05	4.2.2.1	282
	CF220-UL-H <i>New</i>	PVC	✓	10	+41/ +158	●●●	UL US ENEC EAC CE ✓ ✓			✓		32.81	6.56	164.05	4.2.2.1	286
	CF21-UL	PVC	✓	7.5	+41/ +158	●●●	UL US ENEC EAC CE ✓ ✓			✓		32.81	16.41	262.48	5.5.2.1	290
	CF897 <i>New</i>	iguPUR	✓	15	-4/ +176	●●●	UL US ENEC EAC CE ✓ ✓			✓		9.84		65.62	3.1.3.1	294
	CF270-UL-D <i>New</i>	PUR	✓	10	-13/ +176	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					32.81	6.56	164.05	4.2.3.1	296
	CF280-UL-H <i>New</i>	PUR	✓	10	-13/ +176	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					32.81	6.56	164.05	4.2.3.1	300
	CF27-D	PUR	✓	7.5	-13/ +176	●●●	UL US ENEC EAC CE ✓ ✓ ✓ ✓					32.81	16.41	262.48	6.5.3.1	304

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

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

Get online and use all the advantages of [www.igus.com](http://www.igus.com)

Table of contents according to part numbers ▶ Page 813



### Chain – Cable – Guarantee!

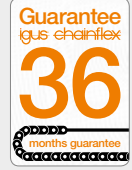
Ask for fully harnessed and pre-assembled ReadyChains® – increase your cash-flow and profit immediately. The igus® system guarantee also covers individual components.

[www.readychain.com](http://www.readychain.com)



# Chainflex® types

# Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x dj]	Temperature, E-Chain® from/to [°F]	Price index	Approvals and standards	Flame-retardant	Oil-resistant	Halogen-free	UV-resistant	Torsion resistant	v max. unsupported [ft/s]	v max. gliding [ft/s]	a max. [ft/s²]	Chainflex® Class	Page
<b>Motor cables</b>																
<b>Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ▶ Page 22-25</b>														<b>Selection table ▶ Page 310</b>		
	CF885	PVC	15	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓					9.84	65.62		3.1.1.1	314
	CF886	PVC	✓	15	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓				9.84	65.62		3.1.1.1	316
	CF30	PVC	7.5	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓	✓		✓	✓	32.81	16.41	262.48	5.5.2.2	318
	CF31	PVC	✓	7.5	+41/ +158	●●●	UL US ENEC EAC CE ✓	✓		✓		32.81	16.41	262.48	5.5.2.1	322
	CF895	iguPUR	15	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓			✓		9.84	65.62		3.1.3.1	326
	CF896	iguPUR	✓	15	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓		✓		9.84	65.62		3.1.3.1	328
	CF270-UL-D	PUR	✓	10	-13/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	32.81	6.56	164.05	4.2.3.1	330
	CF27-D	PUR	✓	7.5	-13/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	32.81	16.41	262.48	6.5.3.1	334
	CF34-UL-D	TPE	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓			✓	✓	32.81	19.69	262.48	6.6.4.2	338
	CF35-UL	TPE	✓	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓		✓		32.81	19.69	262.48	6.6.4.1	342
	CF37-D	TPE	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	✓	32.81	19.69	262.48	7.6.4.2	346
	CF38	TPE	✓	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	32.81	19.69	262.48	7.6.4.1	348
<b>Motor cables – Spindle cable/Single core</b>																
	CF885	PVC	15	+41/ +158	●●●	UL US ENEC EAC CE ✓						9.84	65.62		3.1.1.1	352
	CF885-PE <i>New</i>	PVC	15	+41/ +158	●●●	UL US ENEC EAC CE ✓						9.84	65.62		3.1.1.1	354
	CF886	PVC	✓	15	+41/ +158	●●●	UL US ENEC EAC CE ✓					9.84	65.62		3.1.1.1	356
	CF270-UL-D	PUR	✓	10	-13/ +176	●●●	UL US ENEC EAC CE ✓	✓	✓	✓	✓	32.81	6.56	164.05	4.2.3.1	358
	CF300-UL-D	TPE	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓			✓	✓	32.81	19.69	328.1	6.6.4.2	360
	CFPE	TPE	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓			✓	✓	32.81	19.69	328.1	6.6.4.2	362
	CF310-UL	TPE	✓	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓	✓		✓		32.81	19.69	328.1	6.6.4.1	364
	CF330-D	TPE	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	✓	32.81	19.69	328.1	7.6.4.2	366
	CF340	TPE	✓	7.5	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	32.81	19.69	328.1	7.6.4.1	368
	CF430-D	TPE	10	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	✓	32.81	19.69	328.1	7.6.4.2	370
	CF440	TPE	✓	10	-31/ +194	●●●	UL US ENEC EAC CE ✓		✓	✓	✓	32.81	19.69	328.1	7.6.4.1	372
	CFCRANE	igupren	✓	10	-4/ +176	●●●	UL US ENEC EAC CE ✓	✓		✓		32.81	19.69	164.05	6.6.3.1	374

















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

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


Table of contents according to part numbers ▶ Page 813



# Chainflex® ReadyCable



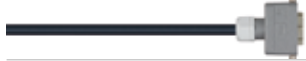








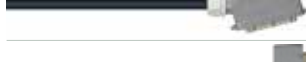
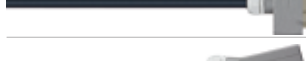





	Cable type	Jacket	Page	
<b>Video, vision and bus technology (with camera reference list ▶ 462)</b>			<b>432</b>	
	FireWire	Pre-harnessed cable	TPE	434
	USB	Pre-harnessed cable	PVC/PUR/TPE	438
	GigE	Pre-harnessed cable	TPE	444
	LWL <i>New</i>	Pre-harnessed cable	PVC	446
	LWL	Pre-harnessed cable	TPE	448
	LWL	Pre-harnessed cable (Robots)	TPE	452
	Koax	Pre-harnessed cable (BNC/SMA)	TPE	454
	VGA/ DVI-D/HDMI	Pre-harnessed cable	TPE	461
<b>Network / Ethernet / FOC / Fieldbus</b>			<b>470</b>	
	CFLG-LB	Gradient fiber glass cable, pre-harnessed	TPE	472
	CFLG-G	Gradient fiber glass cable, pre-harnessed	TPE	474
	CAT5	Ethernet cable, pre-harnessed	PVC/PUR/TPE	477
	CAT5	Ethernet cable, pre-harnessed, L-/T- angle	PVC/PUR/TPE	482
	CAT6	Ethernet cable, pre-harnessed	TPE	487
	CAT7 <i>New</i>	Ethernet cable, pre-harnessed	PUR/TPE	492
	Profibus	Profibus cable, pre-harnessed	PVC/PUR/TPE	494
	Profinet	Profinet cable, pre-harnessed	PVC/PUR/TPE	500

# Chainflex® ReadyCable

























	Cable type	Jacket	Page
<b>Initiators CF9 - CF-INI (minimum bend radius 5 x d)</b>			<b>504</b>
	Connecting cable M12 x 1, straight/angled	TPE	506
	Connecting cable M12 x 1, straight/angled, LED	TPE	507
	Linking cable M12 x 1, straight/angled	TPE	508
	Connecting cable M8 x 1, straight/angled	TPE	509
	Connecting cable M8 x 1, angled, LED	TPE	510
	Linking cable M8 x 1, straight/angled	TPE	511
<b>Initiators CF10 – CF-INI (minimum bend radius 5 x d) 360° shielded</b>			
	Connecting cable M12 x 1, straight/angled	TPE	512
	Linking cable M12 x 1, straight/angled	TPE	513
<b>Initiators CF98 - CF-INI (minimum bend radius 4 x d)</b>			
	Connecting cable M12 x 1, straight/angled	TPE	514
	Linking cable M12 x 1, straight/angled	TPE	515
	Connecting cable M8 x 1, straight/angled	TPE	516
	Linking cable M8 x 1, straight/angled	TPE	517
<b>Chainflex® cables for actuator/sensor distribution box</b>			
	Connecting cable M23, gerade	TPE	518
	Linking cable M23, straight/angled	TPE	518





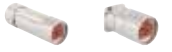








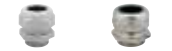









# Chainflex® ReadyCable

Cable type	Page
<b>Chainflex® cables with industrial connectors</b>	<b>520</b>
 <b>Han 6B New</b> Harnessed cable, Single locking lever on both sides, straight	522
 <b>Han 6B New</b> Harnessed cable, Single locking lever on both sides, angled	522
 <b>Han 10B New</b> Harnessed cable, Single locking lever on both sides, straight	524
 <b>Han 10B New</b> Harnessed cable, Single locking lever on both sides, angled	524
 <b>Han 10B New</b> Harnessed cable, Double locking lever on both sides, straight	524
 <b>Han 10B New</b> Harnessed cable, Single locking lever on both sides, angled	524
 <b>Han 16B New</b> Harnessed cable, Single locking lever on both sides, straight	526
 <b>Han 16B New</b> Harnessed cable, Single locking lever on both sides, angled	526
 <b>Han 16B New</b> Harnessed cable, Double locking lever on both sides, straight	526
 <b>Han 16B New</b> Harnessed cable, Single locking lever on both sides, angled	526
 <b>Han 24B New</b> Harnessed cable, Single locking lever on both sides, straight	528
 <b>Han 24B New</b> Harnessed cable, Single locking lever on both sides, angled	528
 <b>Han 24B New</b> Harnessed cable, Double locking lever on both sides, straight	528
 <b>Han 24B New</b> Harnessed cable, Single locking lever on both sides, angled	528
<b>HARTING Connector sets (chapter Connectors from page 698)</b>	
 Connector sets with pin-inserts	740
 Connector sets Premium (pin + socket)	742
<b>Hose packages for robots</b>	
 <b>ReadyChain® Robot New</b> Harnessed hose packages for welding robots	532
<b>Harnessed cables for axis 7 of robots</b>	
 <b>CFSPECIAL-792 New</b> Harnessed connecting cables for KUKA robots	534

# Chainflex® ReadyCable

Selection according to manufacturers	Jacket	Page
<b>Drive cables</b>		<b>536</b>
 <b>Allen Bradley</b> Motor/Servo/Servo-Hybrid-/ Brake/Feedback cables	PVC/PUR/TPE	544
 <b>B&amp;R</b> Motor/Servo/EnDat-/Encoder/ Resolver/Bus cables	PVC/PUR/TPE	544
 <b>Baumüller</b> Servo/Resolver/Pulse encoder cables	PVC/PUR/TPE	545
 <b>Beckhoff</b> Motor/Servo/Servo-Hybrid/Encoder/ Thermal protection/Resolver cables	PVC/PUR/TPE	547
 <b>Berger Lahr</b> Servo/Resolver cables	PVC/PUR/TPE	548
 <b>Control Techniques</b> Motor/Servo/Encoder cables	PVC/PUR/TPE	548
 <b>Danaher Motion</b> Motor/Servo/Signal cables	PVC/PUR/TPE	549
 <b>ELAU/Schneider Electric NEW!</b> Servo/Encoder/Hybrid Servo cables	PVC/PUR/TPE	552
 <b>FAGOR</b> Path measuring cables	PUR/TPE	553
 <b>Fanuc</b> Power/Servo/Brake/ Encoder/Signal cables	PVC/PUR/TPE	553
 <b>Festo NEW!</b> Servo/Encoder/Data/ Bus/Control cables	PVC/PUR/TPE	554
 <b>Heidenhain</b> Servo/Adapter cables	PVC/PUR/TPE	554
 <b>Jetter</b> Motor/Servo/Resolver cables	PVC/PUR/TPE	555
 <b>Lenze</b> Servo/Resolver/Encoder/Feedback/ Decoder/Fan cables	PVC/PUR/TPE	555
 <b>LinMot NEW!</b> Motor/Servo/Encoder cables	PVC/PUR	556
 <b>LTi DRIVES</b> Servo/Encoder cables	PVC/PUR/TPE	556
 <b>Mitsubishi Electric NEW!</b> Motor/Encoder cables	PVC/PUR	557
 <b>NUM</b> Power/Servo/Encoder/Fan cables	PVC/PUR/TPE	557
 <b>Omron</b> Motor/Encoder/Control cables	PVC/PUR/TPE	557
 <b>Parker</b> Motor/Resolver cables	PVC/PUR/TPE	558
 <b>Rexroth</b> Power/Encoder cables	PVC/PUR/TPE	558
 <b>SEW NEW!</b> Power/Servo/Encoder/ Hybrid Servo cables	PVC/PUR/TPE	560
 <b>Siemens</b> Power/Servo/Signal cables	PVC/PUR/TPE	562
 <b>Stöber</b> Servo/Encoder cables	PVC/PUR/TPE	565



	Page
<b>Connectors</b>	<b>698</b>
 Test order - test igus®!	
 Series A 623 Signal connector	700
 Series B 923 Power connector	705
 Series C 940 Power connector	710
 Series D 958 Power connector	713
Springtec Signal and power connector	715
 Series M17 617/917 Signal and power connector	723
 Series S 623 Power connector	728
Custom connector service packs	730
 Tools and accessories	732
 SUB-D Signal connector	734
 Yamaichi Y-CONKIT	738
 HARTING <b>New</b> Signal connector	740
 Glands	744
<b>Chainfix strain relief</b>	<b>752</b>
 Clamps, steel or stainless steel - for maximum tensile strength	760
 C-profiles	766
 Universal tiwrap clamps screw or clip mounted	768
 Tiewrap plates with clip-on connection for the C-profile	770
 Clips high tensile strength, modular clip-on strain relief	772
 Strain relief separators with integrated teeth	774
 Nuggets for top hat rail and C-profile	776
 Strain relief blocks special strain reliefs for hoses	777
<b>ReadyChain®</b>	<b>780</b>
 igus® ReadyChain® pre-harnessed E-Chain Systems®	780



	Page
<b>Technical data and schedules/ user information/ contact</b>	<b>792</b>
<b>Designing with igus®</b>	
Cables and hoses - General rules for cables and hoses in E-Chains®	794
Cables and hoses - Separation in E-Chain®	795
Cables and hoses - Further information on the separation of cables	796
Electrical round cables	797
Electrical round cables - Information on assembly and strain relief of electrical round cables	798
Pneumatic hoses	799
<b>Data and schedules</b>	
DIN 47100 color code/ Copper wire dimensions according to AWG numbers	800
Calculation of the copper surcharge	800
Load-carrying capacity of cables	801
Chemical resistance	802
<b>Information</b>	
Approvals and standards	808
Configure and order products online, igus® & eplan	808
igus® online	811
Catalogs and brochures	812
Table of contents according to part number	813
<b>Contact igus®</b>	
International map	822
North American Locations	832
<b>Exclusive! Chainflex® guarantee</b>	<b>22</b>
Chainflex® cables classification / What does the Chainflex® "class"(ification) mean?	Cover front/26
Catalog improvement – Query and suggestions	Cover back
Definition of the icons used in the catalog	Cover back

# Chainflex® guarantee ...

We are confident enough to give a guarantee because...

...we conduct more than 2.0 billion test strokes and 1.4 billion electrical measurements per year.

Our customers often give guarantees to their end-users; giving complete confidence in their equipment's safety and reliability. This, however, can pose a risk for system manufacturers. With the Chainflex® Guarantee Program, we are able to offer the same confidence to customers.

## Predictable reliability

On the component or cable level, customers do not require an extended warranty, but instead want a clear statement on the lifetime of the cable they purchase. The Chainflex® Guarantee offers this clear statement. For over 20 years, we have been conducting tests in what may be the world's largest test laboratory for cables and cable carriers. Based on our series of tests, we are now able to offer clear statements, allowing cable users to plan more effectively in regards to service life.



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



Quality assurance: permanent batch testing to ensure the quality level

# ... unique!

## Cycles selection tables – guaranteed service life

For each Chainflex series, you will find a lifetime calculation table, expressed in cycles, using technical parameters for the specific cable series. For the Chainflex® Guarantee to remain valid, the cables must be used in accordance with these parameters.

- 1 Temperature, from/to °F
- 2 v max. unsupported/gliding ft/s
- 3 a max. ft/s<sup>2</sup>
- 4 Travel in ft.
- 5 Min. bend radius [factor x diameter] at 5, 7.5 or 10 million cycles

### Example: Selection table "Guaranteed Lifetime" for CF9 cable

Cycles*	1	2	3	4	5 million	7.5 million	10 million
Temperature, from/to [°F]	-31 / -13						
v max. [ft/s] unsupported / gliding		32.81	19.69				
a. max [ft/s <sup>2</sup> ]			328.1				
Travel distance [ft]				> 1,312			
R min. [factor x d]					6.8	7.5	8.5
R min. [factor x d]					5	6	7
R min. [factor x d]					6.8	7.5	8.5

\* higher number of cycles possible.

### Example:

You operate a cable with a diameter of 12 mm in an Energy Chain® with a radius of 100 mm. This results in a bending factor of 8.3 (100 mm/12 mm). You now want to know what the guaranteed service life is.

To find this out, select the technical framework conditions from areas 1-4. In area 5, you can now see that when using 8.3 x d the effective bending factor is above the limit of 7 and the cable has a guaranteed service life for 10 million cycles.

If the temperature is higher or lower, the number of guaranteed cycles falls to 7.5 million.

This statement creates dependability and planning reliability for your entire system.

Guarantee  
igus chainflex

# 36

months guarantee



# igus® lab and development ...

29,600 ft<sup>2</sup> lab... more than 700 cables tested in parallel...  
2 billion test cycles... Reliability through practical experience



**Test for combined motions:** simulation of complex motions in robot applications



**Media test:** test of the durability in adverse chemical effects in motion



All types of Chainflex® cables are tested in moving applications in E-Chains®



**Special design** for special solutions



**Rotary movement tests:** Demanding chain applications with small radii



**Cold tests** on cables and Energy Chains® at -40°F



# Chainflex® are the special cables for Energy Chain Systems® – tested, tested, tested and tested.

Partial view of igus® experimental laboratory – testing, testing, testing of Chainflex® cables



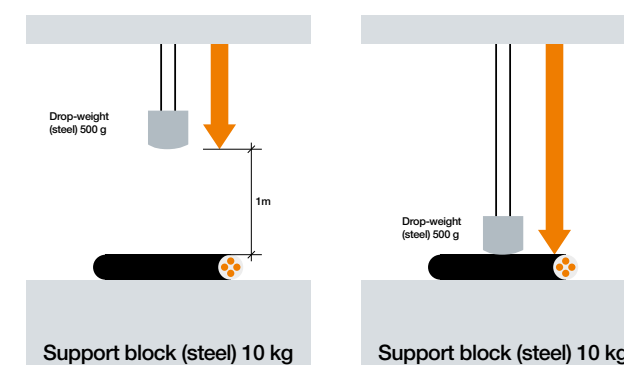
## From the igus® laboratory: New temperature information for all cables

In most cable manufacturer's catalogs, it is common to find two different temperatures at which cables can be used safely – one for each static and dynamic applications. Often, a reference to a standard is made to enable customer comparisons. However, standards for movement within an Energy Chain® are not available, as the load and movement are different than those testing standards of cables alone.

For this reason, igus® has retrospectively tested all offered jacket materials. Cables were tested while moving within an Energy Chain®, in a temperature controlled cooling container under realistic conditions. 400 million completed test strokes allow us to introduce three categories for all cables in the new Chainflex® catalog. The entire catalog range has been subjected to comprehensive testing in accordance with DIN (German institute for standardization) and assigned to one of three categories: "Fixed according to DIN," "Moving according to DIN," or "Chain tested under real conditions." These categories and corresponding information provides our customers with necessary assurance while backing up the Chainflex® cable guarantee.

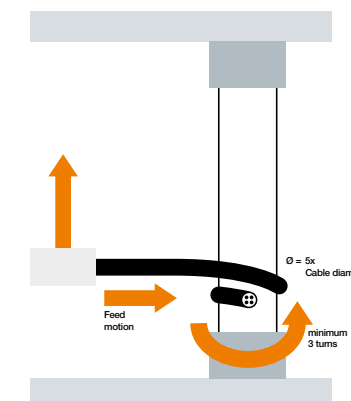
### Description of testing procedures

#### Test for Fixed installations in accordance with DIN 50305



In this case, the cable is held in place at the designated test temperature, then a test weight is dropped onto the cable for so-called "cold impact testing." The test is regarded as passed if the cable jacket remains undamaged.

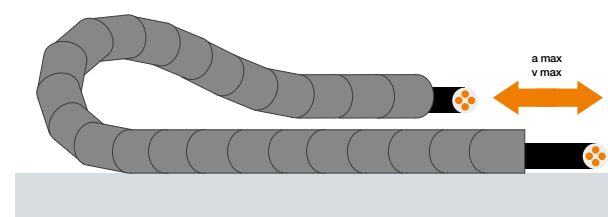
#### Test for "Moved" in accordance with EN 60811-504



Here, the temperature of the cable is reduced and held at the designated test temperature for at least 16 hours, then wrapped around a shaft. The test is regarded as passed if the cable jacket remains undamaged.

#### Test for suitability of use within Energy Chains®

-40 °C



In this test, the cable is fit within the chain as recommended, taking into account the bend radius, interior separation, and strain relief. After installation, the cable is moved within the recommended limits for acceleration and speed in a chamber cooled as low as -40° F. The test is regarded as passed if the cable is undamaged after being removed from the chain.



[www.igus.com/lab](http://www.igus.com/lab)



# What does Chainflex® class(ification) mean?

igus® has been supplying cables for dynamic applications in E-Chains® for more than 20 years with one major purpose – reliable function.

To achieve this reliability, all Chainflex® cables in Energy Chain® applications must cope with demanding requirements including tight bending radii, high cycle rates, compact design space, and a wide range of chemical influences and dynamic parameters.

igus® carries out basic cable qualification tests according to igus® standards in-house in a 29,600 square foot test lab. These Chainflex® qualification standards include a series of tests, the results of which determine the cable's respective igus® class.

## 1. Chainflex® standard qualification – Materials

Materials used for the production of Chainflex® cables must pass a series of endurance tests in E-Chains® in addition to passing standard cable-specific tests, such as permanent alternate bending tests, ageing, abrasion, media resistance, etc. igus®-specific test programs, which can last up to 3 years, are always based on motion tests in and with E-Chains®/E-Chain materials. These tests include:

- Continuous bending tests in E-Chains® at room temperature with both gliding and unsupported travels.
- Continuous bending tests in E-Chains® at low temperatures (as low as -40° F dependent on material) at a travel distance of 26.2 ft. (8 m).
- Continuous bending tests in E-Chains® in different liquid media with a travel distance of approximately 1.6 ft. (0.5 m).
- Abrasion tests combined with E-Chain® materials.

## 2. Chainflex® standard qualification – Design Validation

Mechanical flex testing for Chainflex® cables can take between 1 and 3 years depending on the defined test objective, and are always based on movement in and with E-Chains®. These tests include:

- Continuous bending tests in E-Chains® at room temperature with both gliding and unsupported travels. These tests were run at a smaller bend radii than later defined in the Chainflex® catalog.
- Continuous bending tests in E-Chains® with varying temperatures, ranging from -40° - 140° F (depending on design and material), with gliding travel distances. These tests were run at a smaller bend radii than later defined in the Chainflex® catalog.
- Continuous torsion tests in Triflex® Energy Chains® with ±180°/m torsion, using 3.28 ft. (1 m) length of Triflex® E-Chain®.
- Continuous torsion tests in Triflex® E-Chains® with automated movement patterns on 6-axis robots.

## 3. Chainflex® standard qualification – Approvals

These series of tests are based on the standards specified by the approval authorities and are carried out according to these specifications.

## 4. Chainflex® standard qualification – Product Optimization

Following several years of qualification for the materials and design of Chainflex® cables, the production method of the cables is then broken down and defined exactly at the machine level. This process allows the production process of the cables to remain optimized for each cable.

Cables are also taken off the production line continually and systematically and subjected to batch testing. At igus®, batch testing indicates the following:

- Executing continuous bending tests in E-Chains® over unsupported, high speed travel distances.
- Recording and examining production parameters of the Chainflex® cable

On the basis of these series of tests, igus® has introduced a new cable classification system, allowing for the fast, straight-forward selection of cables for specific requirements. A cable's classification describes that cable's load and travel recommendations as well as media/chemical resistance. The higher a cable's classification, the more complex the cable's design principles and materials used. The lower a cable's classification, the more favorable the price of the cable based on the same electrical structure.

To make the selection of Chainflex® cables easier, we have classified all Chainflex® cables according to the following criteria: Requirements (scale 1-7), Travel Distance (scale 1-6), Oil Resistance (scale 1-4), and Torsion (scale 1-4). The higher the number on each requirement's designated scale, the better suited a cable is in a particular environment.



igus® has recently expanded its testing laboratory to 29,600 sq.ft. – New standard products and customer-specific Energy Chains® and Chainflex® cables can be tested on more than 70 test stands.

**Example:** You are looking for a cable which is suitable for the highest mechanical load. In addition, it should be oil-resistant following DIN EN 50363-10-2. The travel distance should be up to 328 ft. (100 m) for unsupported and gliding applications.

You choose from the classification overview:

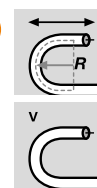
Requirements: 6  
Travel distance: 5  
Oil resistance: 3  
Torsion: 1

This results in the cable's class – here class 6.5.3.1, that you can find on each product's page.

## The Chainflex® class is composed of 4 parts:

	Requirements 1 to 7	Travel distance 1 to 6	Oil resistance 1 to 4	Torsion 1 to 4
Requirements ①	low	1 2 3 4 5 6 7 highest	1 2 3 4 highest	1 2 3 ±180°
Travel distance ②	1 2 3 4 5 6 1,312 ft +	1 2 3 4 5 6 1,312 ft +	1 2 3 4 highest	1 2 3 ±180°
Oil resistance ③	1 2 3 4 highest	1 2 3 4 5 6 1,312 ft +	1 2 3 4 highest	1 2 3 ±180°
Torsion ④	1 2 3 4 highest	1 2 3 4 5 6 1,312 ft +	1 2 3 4 highest	1 2 3 ±180°

①



### Requirements

- 1: Flexible cables
- 2: Highly flexible cables
- 3: Chain-suitable cables without special design (e.g. braiding in layers) for application in E-Chains®.
- 4: Cables with special design for permanent movement in E-Chains®, medium duty application, radii from 7.5 x d, speed up to 9.843 ft/s
- 5: Cables for permanent movement in E-Chains® for heavy duty application and radii from 6.8 x d, speed up to 32.81 ft/s
- 6: Cables for permanent movement in E-Chains® for extremely heavy duty application and radii from 5 x d, speed up to 32.81 ft/s
- 7: Cables for permanent movement in E-Chains® for extremely heavy duty application and smallest radii, indoor and outdoor, radii from 4 x d, speed up to 32.81 ft/s and more

②



### Travel distance

- 1: Unsupported up to 32.81 ft
- 2: Gliding travels up to 32.81 ft
- 3: Gliding travels up 65.62 ft
- 4: Gliding travels up 164 ft
- 5: Gliding travels up 328.1 ft
- 6: Gliding travels up 1,312 ft 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 according to DIN EN 60811-2-1, resistant to organic oils according to VDMA 24568 with Plantocut 8 S-MB by DEA

④

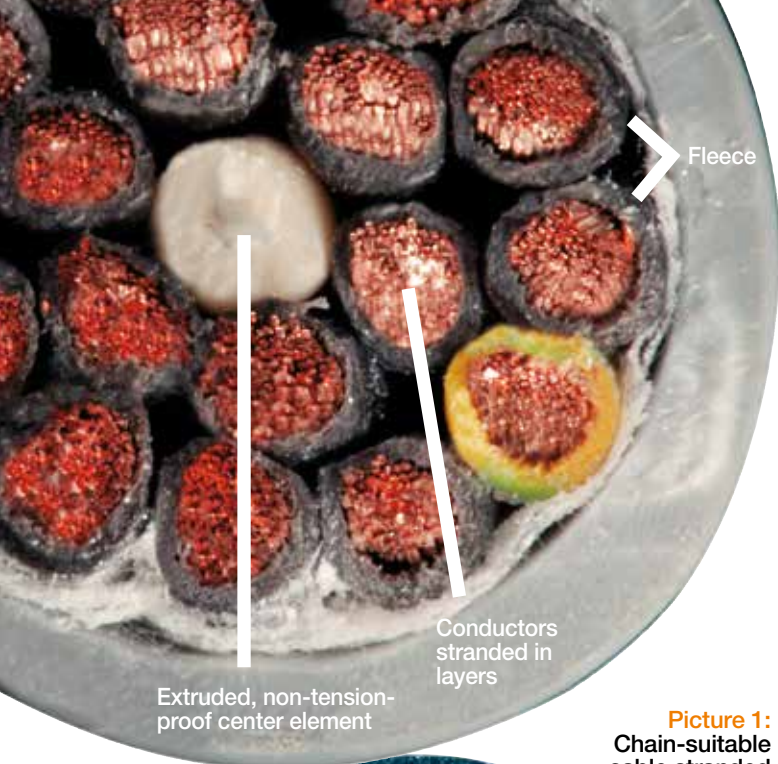


### Torsion

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

In theory the following classes would be possible: lowest class 1.1.1.1, highest class 7.7.4.3





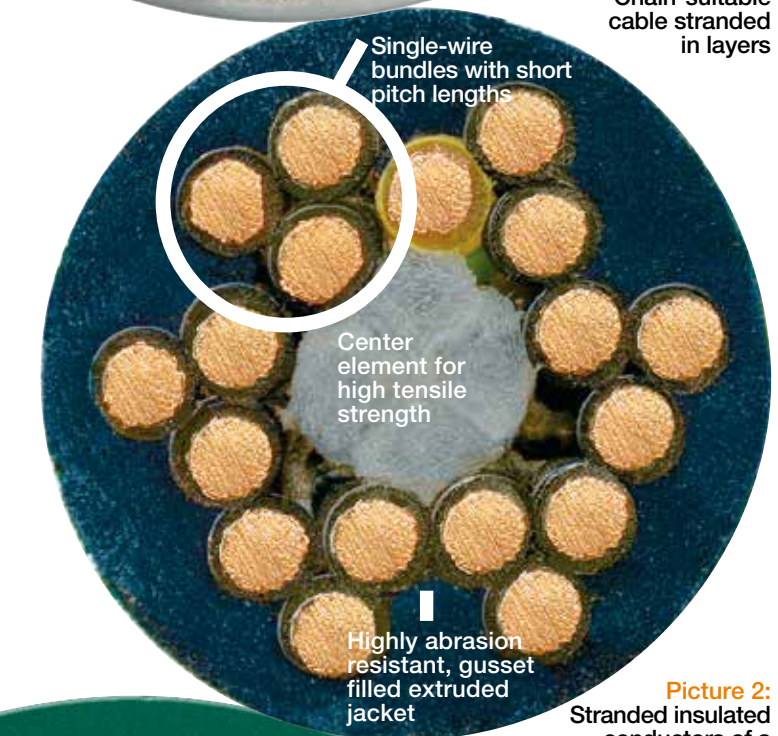
# Chainflex<sup>®</sup> ...

The ingenious features of...

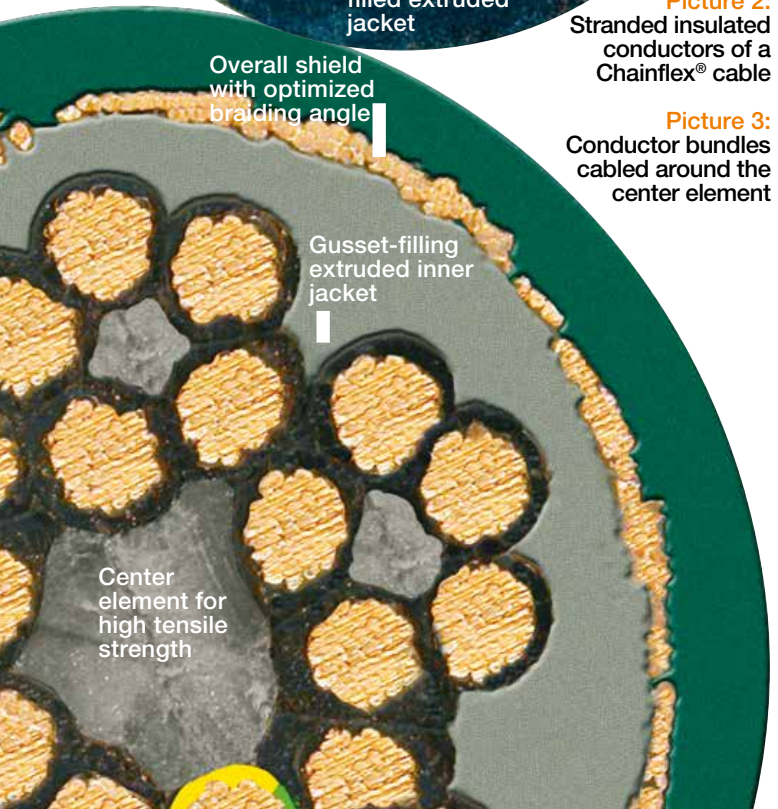
From a customer's point of view, a flexible energy supply system only needs to function properly. However, this requires all components, including cables, to be incredibly reliable. In the 1980's, constant and tremendous increases in loads in automation technology began resulting in frequent cable failure in otherwise functional energy supply systems. In extreme cases, cable corkscrewing and core ruptures had brought entire production lines to a standstill, resulting in lost profits coupled with high repair/replacement costs.

To find a solution to this problematic and expensive customer issue, igus<sup>®</sup> began the development of complete energy supply systems, including E-Chain<sup>®</sup> cable carriers and Chainflex<sup>®</sup> continuous-flex cables offered from a single source. Based on more than 25 years of experience and testing, certain design principles for Chainflex<sup>®</sup> cables have been developed to prevent maintenance and downtime in factories around the world

**Picture 1:** Chain-suitable cable stranded in layers



**Picture 2:** Stranded insulated conductors of a Chainflex<sup>®</sup> cable



**Picture 3:** Conductor bundles cabled around the center element

## How can corkscrews be prevented?

"Corkscrewing" of a cable refers to the permanent deformation of moving cables caused by excessive stress. In almost all cases, a corkscrewed cable's core will rupture as well. An important factor in preventing corkscrews, in addition to the guidance of a cable in the proper Energy Chain System<sup>®</sup>, is the construction of the cable itself, especially in terms of stranding in bundles as opposed to layers ▶ see picture 4.

## Properties of cable constructed in layers

Cabling conductors in layers is significantly easier and less expensive to produce, and are therefore available on the market as so-called "chain-suitable," low-cost cables. However tempting this may seem, these cheap cables can quickly turn expensive when a corkscrew immobilizes the system and needs emergency repairs. A visual reference of a layered, chain-suitable cable is featured in ▶ picture 1.

Cables made with layered conductors are combined in progressive layers with various pitch lengths around the center element, then a jacket material is extruded to form a tube. Shielded cables add protection in the form of fleece or foil shielding around the cores. In normal continuous-flex operation, the movement of the conductors in the inner radius is compressed, while simultaneously being stretched in the outer radius. Initially, the elasticity of the materials allows this to work quite well, but material fatigue will, over time, cause permanent deformations. At the same time, conductors are able to move from their specified paths within the jacket, creating their own compressing and stretching zones, creating the corkscrew, followed quickly by core ruptures.

# ... works or your money back!

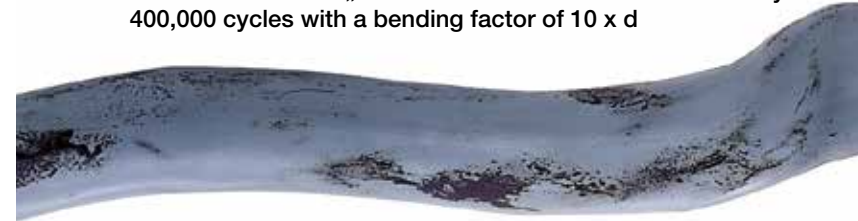
...the Chainflex<sup>®</sup> cable design

## Properties of cables made with bundles

Cables made with bundled conductors eliminate the problems of layered cables due to the internal groups of conductors. In the bundling process, conductors are cabled in groups with a special pitch length first, then the resulting groups are cabled into bundles. For large cross-sections, this is done around a strain-relief center element.

The overall cable construction allows the inner and outer radius of the cable to bend at identical intervals. Pulling and compressing forces balance around the high-tensile center element, giving necessary inner stability. This keeps the stranding of the cable stable, even under maximum bending components. ▶ see picture 3.

**Picture 4:** Shielded „chain-suitable“ control cable after only 400,000 cycles with a bending factor of 10 x d



## EMC problems and shield breakage

In principle, a cable's shields must fulfill two tasks: protecting the cables from external influences, and shielding interferences before transmitting them to outside the cable. Both these tasks are equally important, as faulty signals can cause considerable and consequential damage within and outside of the cable system. As incorrect shielding cannot be detected from the outside, troubleshooting EMC and other problems due to a faulty shield can be extremely difficult.

Problems with a cable's shield can arise if the cable shield is not designed specifically for continuous-bending stresses. Although it is very simple to shield a fixed cable, dynamic applications prove much more difficult.

In the chain suitable cables referred to earlier in this section, the stranding bond of an intermediate layer is wrapped with foils or fleeces. This stranding bond is supposed to ensure separation between the conductors and the braided shield. While this is sufficient for fixed or static cables, it is often not enough for moving cables, as the foils/fleeces do not create a bond between the stranding, allowing the shield and jacket to fall apart under stress. Consequently, the metallic shield can then rub on the conductor insulation causing short circuiting.

## Dictionary of cable defects

### Loss of continuity

The copper conductors can break or become severed causing a loss of continuity when insulated conductors are twisted with incorrect pitch length/direction. The cable core cannot absorb the mechanical load caused by the cable's flexing, transferring the force to the copper conductors and causing them to break under the increased tensile load.

### Insulation damage

Insulation damage occurs when the insulation integrity of a cable's conductors are compromised. This is caused by material fatigue under constant bending stress, abrasion within the cable structure and/or conductor strand breakage, which in turn perforates the insulation.

### Corkscrewing

This failure type is named for its easily recognizable mechanical deformation of the entire cable. The corkscrew, sometimes called pigtail, effect is caused when the torsional forces incurred during the cabling process are allowed to release during continuous-flexing operation. These forces are released because the cable configuration, pitch length and pitch direction are incorrect. Cables constructed using the layering process are typically more susceptible to corkscrewing

### Jacket abrasion

When the outer jacket of a cable wears through to the underlying layers of shielding or conductors, jacket abrasion occurs. This mechanical failure is common when soft jacket materials or a thin jacket extrusion is used.

### Jacket swelling/cracking

A cable's outer jacket usually swells because of exposure to oil or chemicals the cable was not designed to withstand. Jacket cracking occurs when the jacket breaks so that the shield can be seen, and is an effect of excessively high/low temperatures

### Shielding losses/EMC problems

Increased electromagnetic interferences (EMI) occurs when the shield designed to protect the cable signals from electromagnetic fields break and abrade due to continuous flexing.



# Chainflex® ...

## The ingenious features of...

As the production of a cable's shield is very time consuming and cost-intensive, open braid shields or simple wire wrappings are sometime used. However, these alternatives to the braided shield have significant disadvantages. For one, open shields only possess a limited shielding effect when used in motion, and additional movement can reduce their efficacy even further. The shielding of a cable is an important design point, but is not mentioned in some catalogs. By offering approximately 90% optical coverage of their cables, igus® eliminates these weak points by means of an optimized internal cable structure. In virtually all shielded Chainflex® cables, a gusset-filled inner jacket over the cable core is used to fulfill two tasks:

- To hold the cable core together and guide individual conductors.
- To serve as a firm, round base structure for a very tight-fitting shield.

### Prevent shield wire breakage

During the production of the shield, many things can be done correctly, or incorrectly, including using the correct braiding angle. In many chain-suitable cables, a tensile load of the shield wires along the outer radius of the cable must be taken into account. If an unfavorable braiding angle is added, the tensile load can increase even further causing shield wire breakage. This breakage can result in reduced shielding properties or short circuits if the sharp broken wires penetrate the protective fleeces/foils into the conductors.

Tip: If after the jacket has been stripped the shield can easily be pushed back over the insulation, the shield is generally unsuitable for use in flexible energy supply systems. igus® Chainflex® cables use a direct approach to solve this problem of loose and ineffective shielding:

- Use braid angles determined in long-term testing to efficiently balance tensile forces
- Use a stable inner jacket to keep conductors in place.

### Jacket abrasion/breakage

While defects of a cable's inner structure is not detectable from the outside, jacket problems are immediately visible. A cable's jacket is the first line of protection for the complicated inner structure, therefore, broken, worn, and swollen jackets should be considered a serious quality defect. To prevent these problems, igus® customers can select from 7 jacket material options to best suit the application at hand.

Jacket breakage at (36x0.14<sup>2</sup>)  
after only 900,000 cycles with  
a bending factor of 7.8 x d

# ... works or your money back!

## ...the Chainflex® cable design

### Gusset-filled extruded jacket

In the case of standard chain-suitable cables, the cable jackets are usually extruded as a tube, which does not support the stranded conductors during constant bending, allowing the cable core to fall apart over time. To avoid this, igus® designs its Chainflex® cables with an extruded jacket.

With an extruded jacket design, the jacket material is injected between the insulated conductors to ensure the cable core cannot come apart. This method of production creates intermediate spaces between conductors, which are then filled with the extruded material, creating a channel-like guidance system which allows the conductors to carry out a defined longitudinal movement.

## 7 basic rules for a good cable

### 1. Strain-relieving center element

The center core should be filled with a high-quality, high tensile strength center element to protect conductors from falling into the center of the cable.

### 2. Conductor structure

The copper stranding in Chainflex® continuous-flex cables is chosen in accordance with tested and proven designs. The test results from the igus® lab indicate that a medium to fine conductor strand diameter is preferable. Many competitive cable manufacturers will employ an extra-fine conductor strand, which has the tendency to kink when subjected to a high number of cycles. Using findings from long-term cable testing, igus® uses a combination of conductor strand diameter, pitch-length, and pitch direction to achieve the best service life and performance, even in the most demanding applications.

### 3. Conductor insulation

Insulation materials within the cable must be resistant to adhering to one another. The insulation must also support the stranded individual wires of the conductor. Only the highest quality high-pressure extruded PVC or TPE materials should be used.

### 4. Cable core

Individual conductors are bundled into groups, which are cabled together in a single layer surrounding the cable core. This design enables pulling and compressing forces of the bending motion to balance and cancel out torsional forces. Special attention is given to pitch length and direction. The cable's

inner jacket will also help to maintain the integrity of the cable core and provide a continuous surface for the shield.

### 5. Inner jacket

A pressure extruded inner jacket should be used for cables subjected to continuous-flexing, as opposed to inexpensive fleece wrap or filler. This extruded inner jacket both ensures that the insulated conductors are efficiently guided, as well as maintaining the integrity of the cable core and providing a continuous surface for the overall shield.

### 6. Shield design

A high-quality braided shield provides electromagnetic interference (EMI) protection for the cable. An optimized braid angle prevents the shield strands from breaking over the linear axis and increases torsional stability. The shield has an optical coverage of approximately 90%, providing maximum shield effectiveness.

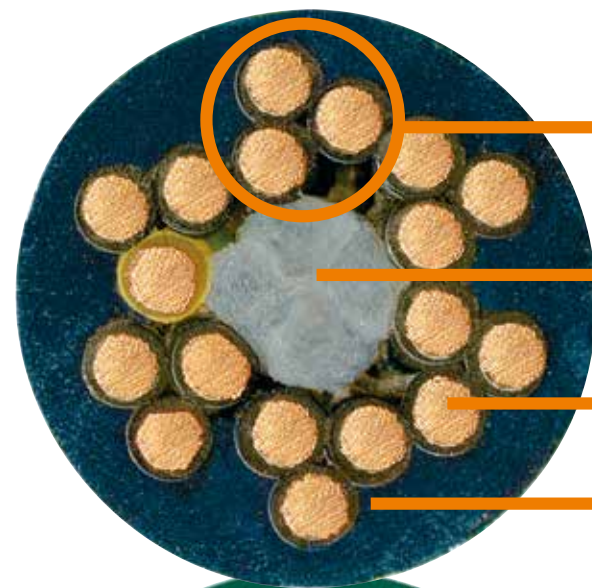
### 7. Outer jacket

The outer jacket material must be resistant to UV radiation, abrasion, oils, and chemicals, as well as being cost-effective. However, the outer jacket of a cable for dynamic applications must be resistant to abrasion, and remain flexible while providing support. For best wear rates and service life, the outer jacket should be extruded under pressure.



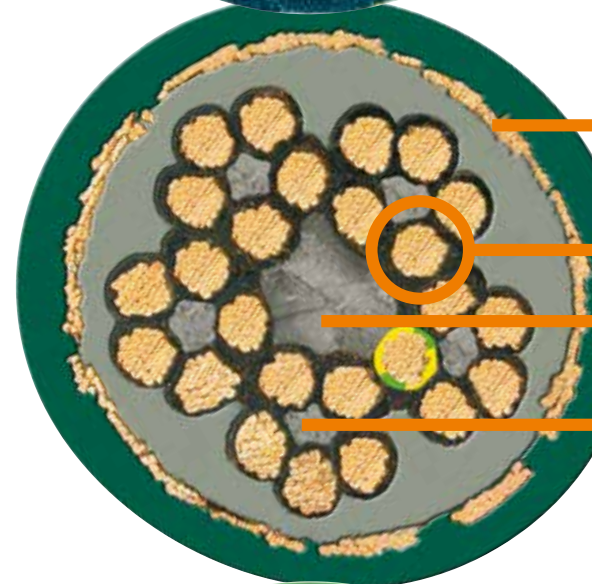
# Sectional views through the igus® cable types

Detailed structure of igus® control, data, servo and motor cables



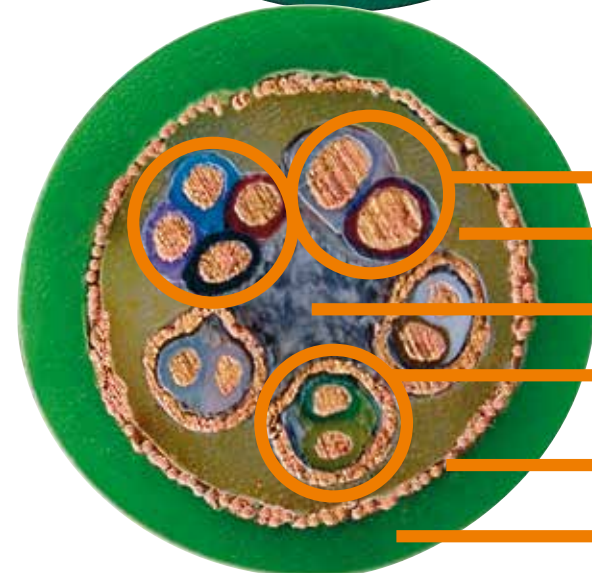
## Chainflex® control cable, unshielded

- Individual bundles with optimized pitch length and pitch direction
- Center element for high tensile strength
- Single-wire diameter optimized for Energy Chains®
- Highly abrasion-resistant, gusset-filled extruded jacket



## Chainflex® control cable, shielded

- Overall shield with optimized braiding angle (covering approx. 90% optical)
- Gusset-filled extruded inner jacket supports stranding
- Center element for high tensile strengths
- Center element for high tensile strengths in individual bundles

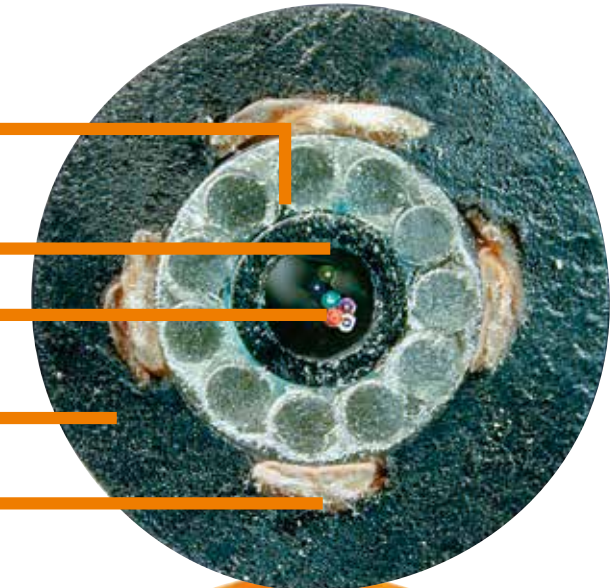


## Chainflex® data/sensor cable, shielded

- Stranded elements with optimized pitch length and pitch direction
- Gusset-filled extruded inner jacket supports stranding
- Center element for high tensile strength
- Pair braid shield
- Overall shield with optimized braiding angle (covering approx. 70% linear, approx. 90% optical)
- Pressure extruded jacket

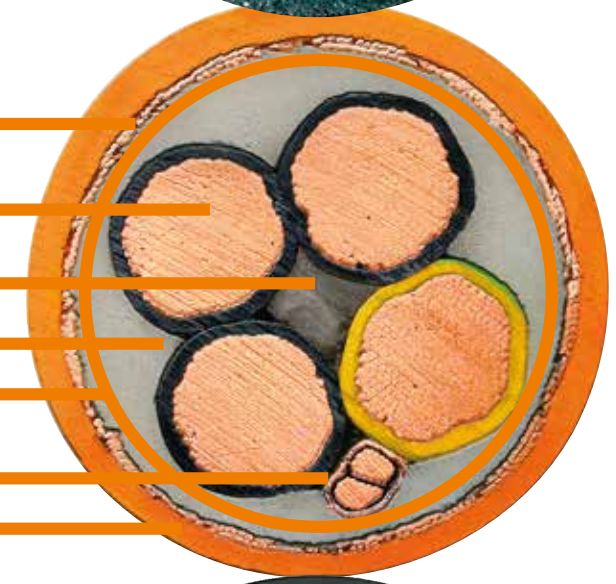
## Chainflex® FOC gradient fiber cable

- Supporting braid made of glass-yarn-stranded GRP rods
- Gel-filled fiber sheath
- FOC fibers
- Highly abrasion-resistant TPE jacket
- Integrated torsion protection



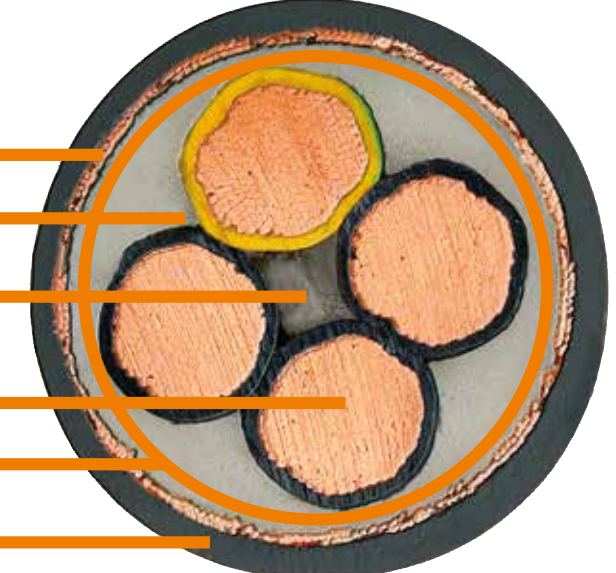
## Chainflex® servo cable, shielded

- Overall shield with optimized braiding angle (covering approx. 90% optical)
- Optimized single-wire diameter
- Center element for high tensile strength
- Gusset-filled extruded inner jacket
- Stranding with optimized pitch length and pitch direction
- Pair braid shield over optimized stranded core pair
- Highly abrasion-resistant pressure extruded jacket



## Chainflex® motor cable, shielded

- Overall shield with optimized braiding angle (covering approx. 90% optical)
- Gusset-filled extruded inner jacket
- Center element for high tensile strength
- Optimized single-wire diameter
- Stranding with optimized pitch length and pitch direction
- Highly abrasion-resistant pressure extruded jacket







Test no.  
3089 online  
Further tests,  
lifetime,  
finder & shop online

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

- ▶ Ethernet-Bus cable CFBUS-045 tested in E-Chain®. More than 76 million strokes with a bending factor of 9.4 x d.
- ▶ Chainflex® lasts - proven in test No. 3089 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CFBUS-045
Test parameter	Testing with a bending factor of 9.4 x d
Lifetime	76,984,222 strokes
Test no.	3089



 Catalog from page 194

 [www.chainflex.com/test3089](http://www.chainflex.com/test3089)



Test no.  
3479 Online  
Further tests,  
lifetime,  
finder & shop online

## Test 3479: Measuring system cable 65 million strokes tested ...

- ▶ Measuring system cable CF11-D tested in E-Chain®. More than 65 million strokes with a bending factor of 7.1 x d.
- ▶ Chainflex® lasts - proven in test No. 3479 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CF11-002-D
Test parameter	Testing with a bending factor of 7.1 x d
Lifetime	65,544,508 strokes
Test no.	3479



 Catalog from page 268

 [www.chainflex.com/test3479](http://www.chainflex.com/test3479)



Test no.  
3105 online  
Further tests,  
lifetime,  
finder & shop online

## Test 3105: Fiber optic cables for robots 27 million times twisted ...

- ▶ Multimode twistable fiber optic cable CFROBOT5-501 tested in torsion. More than 27 million cycles at torsion of +/- 180°/m
- ▶ Chainflex® lasts - proven in test No. 3105 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CFROBOT5-501
Test parameter	Torsion test ± 180°
Lifetime	27,542,214 cycles
Test no.	3105



Catalog from page 394



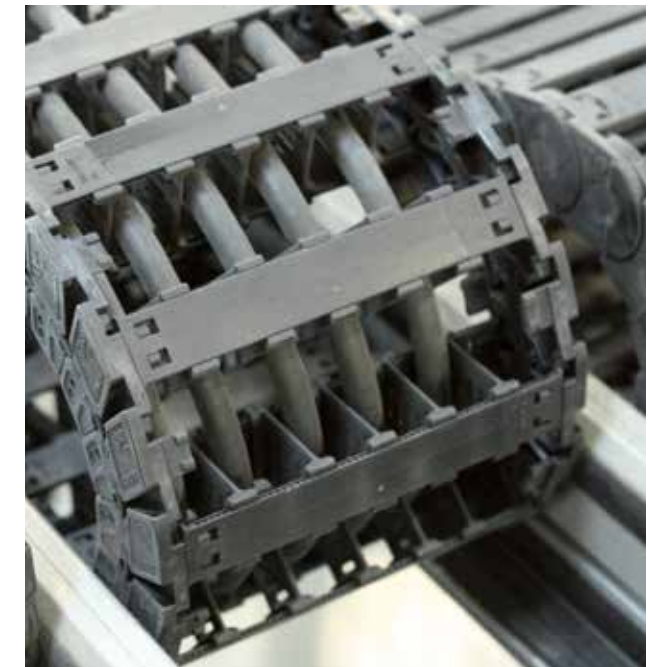
[www.chainflex.com/test3105](http://www.chainflex.com/test3105)

Test no.  
4011 online  
Further tests,  
lifetime,  
finder & shop online

## Test 4011: Fiber optic cable 50 million strokes tested ...

- ▶ Multimode fiber optic cable CFLG-2LB tested in E-Chain® with more than 50 mio. strokes with a bending factor of 4.2 x d
- ▶ Chainflex® lasts - proven in test No. 4011 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CFLG-2LB
Test parameter	Testing with a bending factor of 4.2 x d
Lifetime	50,012,352 strokes
Test no.	4011



Catalog from page 226



[www.chainflex.com](http://www.chainflex.com)



Test no.  
3621 online  
Further tests,  
lifetime,  
finder & shop online

## Test 3621: Control cable 138 million strokes tested ...

- ▶ Control cable CF98-05-04 tested in E-Chain®. More than 138 million strokes with a bending factor of 3.2 x d (18 mm)
- ▶ Chainflex® lasts - proven in test No. 3621 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CF98-05-04
Test parameter	Testing with a bending factor of 3.2 x d
Lifetime	138,719,526 strokes
Test no.	3621



Catalog from page 134



[www.chainflex.com/test3621](http://www.chainflex.com/test3621)

Test no.  
4009 online  
Further tests,  
lifetime,  
finder & shop online

## Test 4009: Thermocouple cables 97 million strokes tested ...

- ▶ Thermocouple cable CF THERMO-K001 tested in E-Chain®. More than 97 million strokes with a bending factor of 9.2 x d.
- ▶ Chainflex® lasts - proven in test No. 4009 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CF THERMO-K001
Test parameter	Testing with a bending factor of 9.2 x d
Lifetime	97,006,936 strokes
Test no.	4009



Catalog from page 414



[www.chainflex.com/test4009](http://www.chainflex.com/test4009)

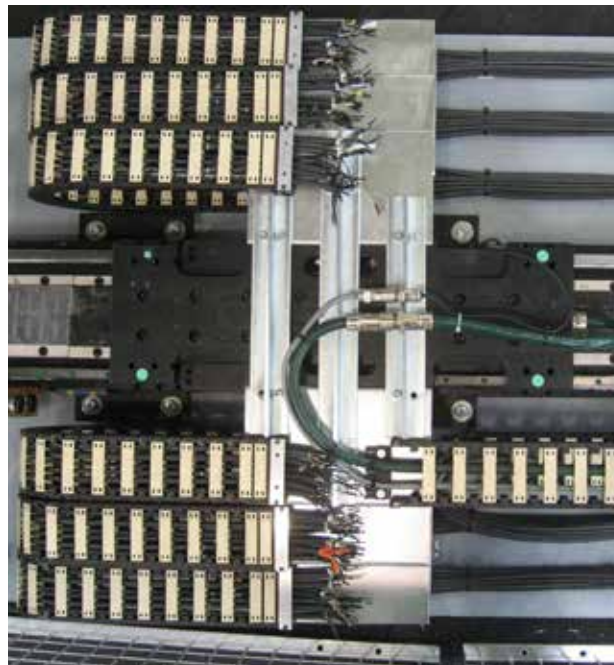


Test no.  
3841 online  
Further tests,  
lifetime,  
finder & shop online

## Test 3841: Servo cables 53 million strokes tested ...

- ▶ Servo cable CF21 tested in E-Chain®. More than 53 million strokes with a bending factor of 6.1 x d.
- ▶ Chainflex® lasts - proven in test No. 3841 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CF21-25-15-02-02-UL
Test parameter	Testing with a bending factor of 6.1 x d
Lifetime	53,759,440 strokes
Test no.	3841



Catalog from page 290



[www.chainflex.com/test3841](http://www.chainflex.com/test3841)

Test no.  
3351 online  
Further tests,  
lifetime,  
finder & shop online

## Test 3351: Robot motor cables 17 million times twisted ...

- ▶ Single core motor robot cable CFROBOT-036 tested in E-Chain®. More than 17 million cycles at torsion of +/- 180°/m.
- ▶ Chainflex® lasts - proven in test No. 3351 of more than 700 parallel tests conducted by the 29,600 ft<sup>2</sup> test lab, the largest of its kind for flexible cables.
- ▶ Online calculation available

Test setup	
Cable type	CFROBOT-036
Test parameter	Torsion test ± 180°
Lifetime	17,099,049 strokes
Test no.	3351



Catalog from page 402

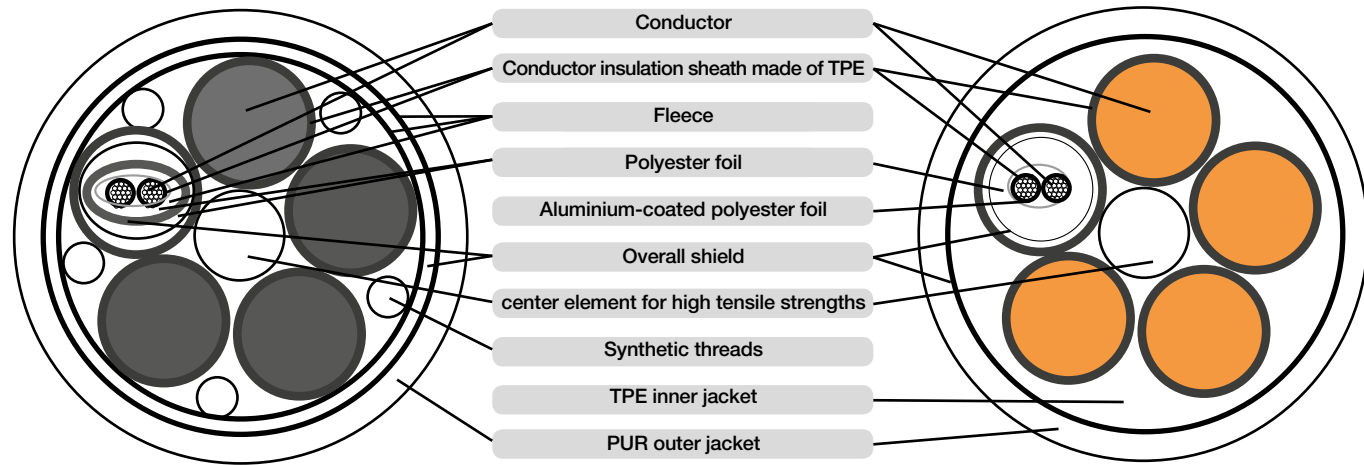


[www.chainflex.com/test3351](http://www.chainflex.com/test3351)



# Example: tested, tested, tested!

## Servo cable structure




**Sample B with fleece and filler experimental production**  
4x10+(2x1.0) C



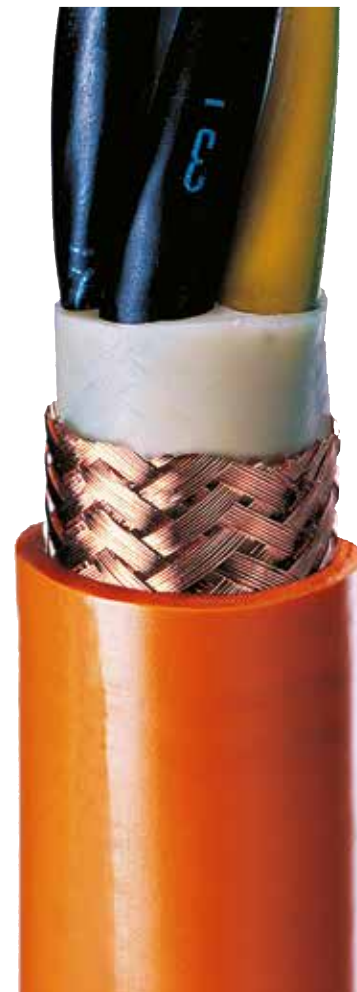
Testing a servo cable's structure is done to determine advantages of more expensive internal jackets in shielded servo cables when compared to less expensive cables that utilize fleece taping with fillers.

Typically, with flexible shielded cables, the shield is separated from the composite conductor structure. This is done to create a rounder braid form as well as prevent friction between the conductor insulation and the braided shield. This separation can be achieved via an internal jacket, or a fleece taping, which is wrapped around the composite conductor structure.

More technically sophisticated, and therefore expensive, an internal jacket is extruded around the composite conductor structure after the twisting process. A fleece wrap, on the other hand, can be applied during the twisting process, and does not require its own work operation, making it a less expensive, yet less stable option.

 **Product information**  
CF27-D  
▶ Page 304

**Sample A with inner jacket igus® Chainflex®**  
CF27-100-10-02-01-D



## Comparison: Chainflex® cables with extruded inner jacket vs. fleece wrapped cables

In this testing, the servo cables are highly flexible motion connection cables with complete copper shielding and an integrated, shielded pair of control conductors. With different size conductor cross sections, creating a round base for the braided shield can be problematic, emphasizing the various bending behaviors of both production methods.

- **Sample A: CF27-100-10-02-01-D (igus® GmbH)**  
(4x 8AWG ) + (2x 17AWG )
- **Sample B: experimental**  
(4x 8AWG ) + (2x 17AWG )

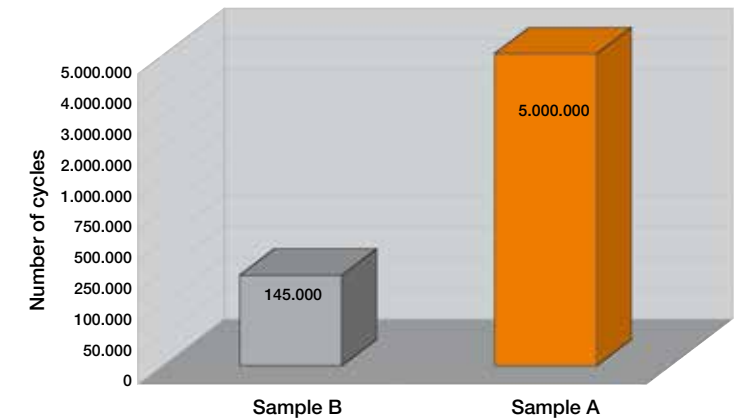
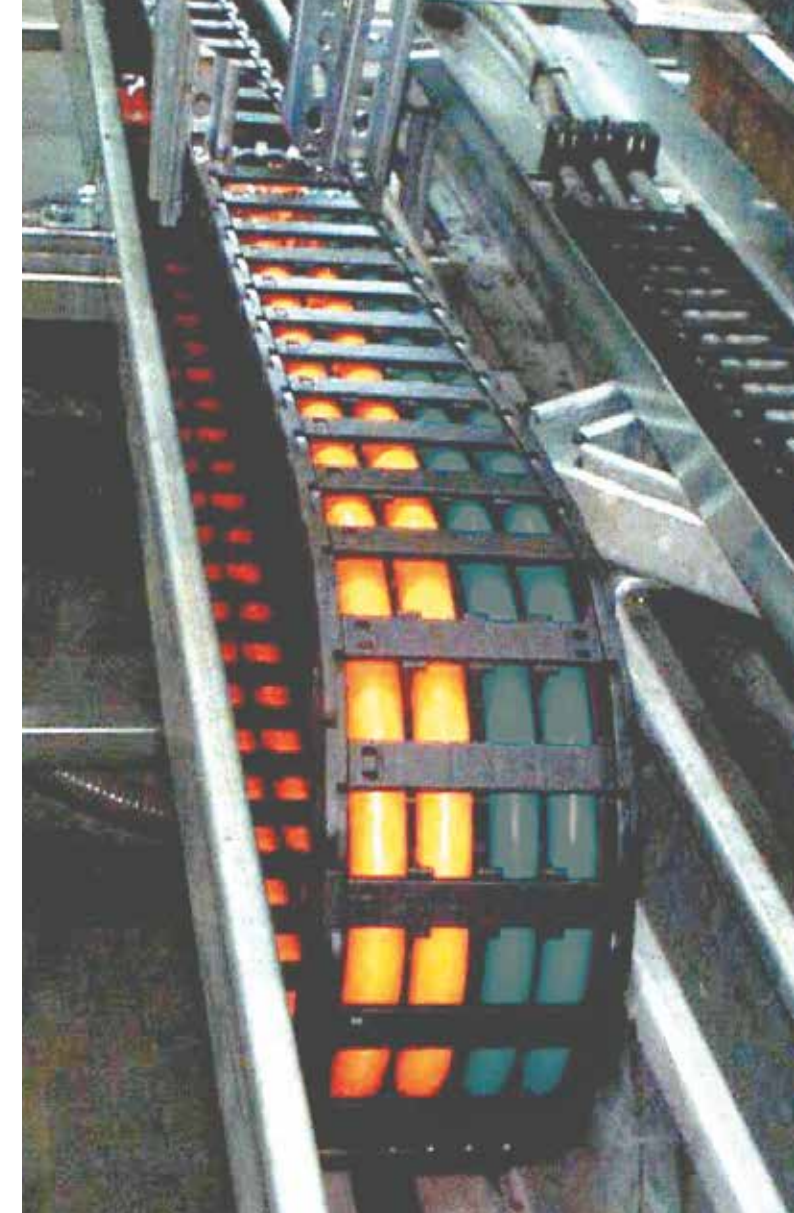
Both cables are created with identical conductor cross sections and insulation materials. Cable A is produced with an extruded inner jacket; cable B with a fleece wrapping and fillers, made up of fibrillated polyethylene. These fillers are easily compressible, and allow the conductors to move within the cable during bending.

In a dynamic test setting, cable B began showing a corkscrew formation after only 145,000 cycles (see image below). The extruded inner jacket used in cable A filled all gussets, creating a structure which holds the conductors in a defined position during movement.

During the bending process, while cable A's conductors were held in place and saw no signs of corkscrewing, the conductors in cable B detached from the composite braid structure, allowing the corkscrew effect to take hold.

## Assessment

Despite the low bend factor (4.76), no signs of wear could be detected in cable sample A (CF27-100-10-02-01-D), even after 5 million cycles. The fleece wrap and fillers of cable sample B, on the other hand, were not able to hold conductors in place, allowing the cable to succumb to the corkscrew effect after only 145,000 cycles, justifying the use of an extruded inner jacket, despite the higher initial cost.



Sample A: CF27-100-10-02-01-D



Sample B: experimental production



# Millions of cycles in an Energy Chain®: tested!

## Profibus cables in continuously moving industrial applications

Gaining a clear overview of the cable market can be difficult. Competition between suppliers is intensifying, and manufacturers are always trying to out-do each other with promises of guaranteed service life for cables used in a cable carrier. Some suppliers even go so far as to claim the ability to sustain service life of cables in carrier systems for 10-50 million flexing cycles. Close examination of these purported figures begs the question, how was this testing completed? Or, how true-to-life, in regards to travel length, test environment, bend radii, etc., are these tests?

Even information stating that cables are tested in accordance with VDE (Association of German electrical engineers) 0472, Part 603, test method H, is irrelevant when it comes to determining the service life of a cable in an Energy Chain® cable carrier, as the roller testing stand cannot provide conclusive results, and there is no VDE test for special cables in Energy Chains®.



Picture 1: Sliding application as the basis of the test structure

## Differences in service life

In 2002, a test was created in the igus® laboratory to determine the service life of Profibus cables in real-world applications, with the aim to examine differences in service life between a Chainflex® CFBUS-001 cable and a competitive Profibus cable (test item A). The parameters of the test were selected based on data collected from the competitor's catalog.

As Profibus cables are typically used in long travels and transmission distances due to their data integrity, a gliding application was chosen as a suitable test structure.

Details	Test item "A" Competitor Profibus	Test item "B" Chainflex® CFBUS-001
Cross section	(2 x AWG24)C	(2x 24AWG)C
Recommended Bend Radius	≥ 60 mm	85 mm
Cable Diameter	8.0 mm	8.5 mm

Table 2: Test parameters according to Catalog data of the competition

In order to carry out non-destructive testing while still achieving a large number of bend cycles in a short time, a genuine Profibus transmission path was constructed. A PC configured as a Profibus master was installed at the fixed end of the test carrier, and a Profibus slave connection on the moving end. With the help of diagnosis programming, the transmission rate could be determined, and any incorrect data transmissions could be indicated. Transmission for the test was set at 12 megabits/s.

The test, started in 2002, is still being run today. Results have shown that after a relatively low number of cycles (420,000), test item A resulted in a total failure. According to the manufacturer of the test cable, however, the same cable was rated to have been able to function safely for at least 4 million cycles, deviating from the real-world testing by a factor of ten.

On the other hand, the CFBUS-001 Chainflex® cable is still undergoing testing without faulty data transmissions, even after carrying out more than 14 million test cycles to date.

## Structure and materials

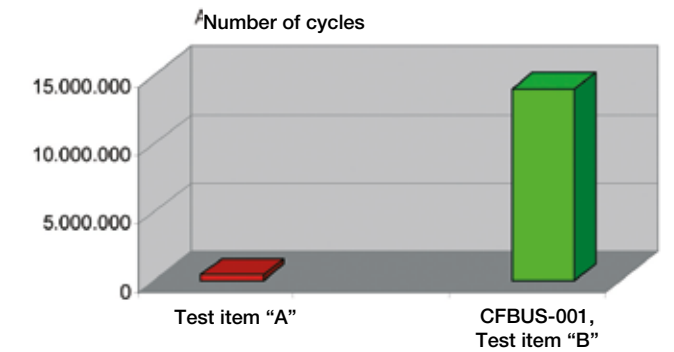
The reason for the major differences in the service life of the two cables is that the CFBUS-001 is constructed with special attention to key design factors and specially selected materials conducive to continuous flexing. In contrast, the competitor cable is constructed with attention to electrical performance only, making its design easily compromised by continuous movement.

The conductor insulation of both cables is comprised of a foam material, which is needed to achieve better transmission rates. The foam material, however, is weakened under stress. The test proved that, in order to alleviate mechanical stress on a conductor's insulation, an inner jacket is recommended to absorb forces that affect the bus pair.

Test parameters	
Distance of travel:	S=16.41 ft. (5 m)
Speed, approximate:	V=11.48 ft/s (3.5 m/s)
Acceleration, approximate:	a=24.61 ft/s <sup>2</sup> (7.5 m/s <sup>2</sup> )
Radius, approximately:	2.16" (55 mm)

## Highly elastic inner jacketing

The CFBUS-001 cable was produced with an extruded TPE inner jacket, which protects the bus pair against mechanical influences in bending applications, and controls the movement of the conductors as the cable is flexed. An inner jacket must be highly elastic in order to function properly. A mechanically inferior inner jacket, such as inexpensive fillers, only serves to make the bus pair round, and is not able to protect from the high levels of mechanical stress present in the chain. These tensile and compressive forces mainly influence the parts of the cable in which there is a break in an element's jacketing. The jacketing of test item B (CFBUS-001), is produced with a mechanically superior, extruded inner TPE jacket which mechanically relieves the bus pair, fixing conductors in defined




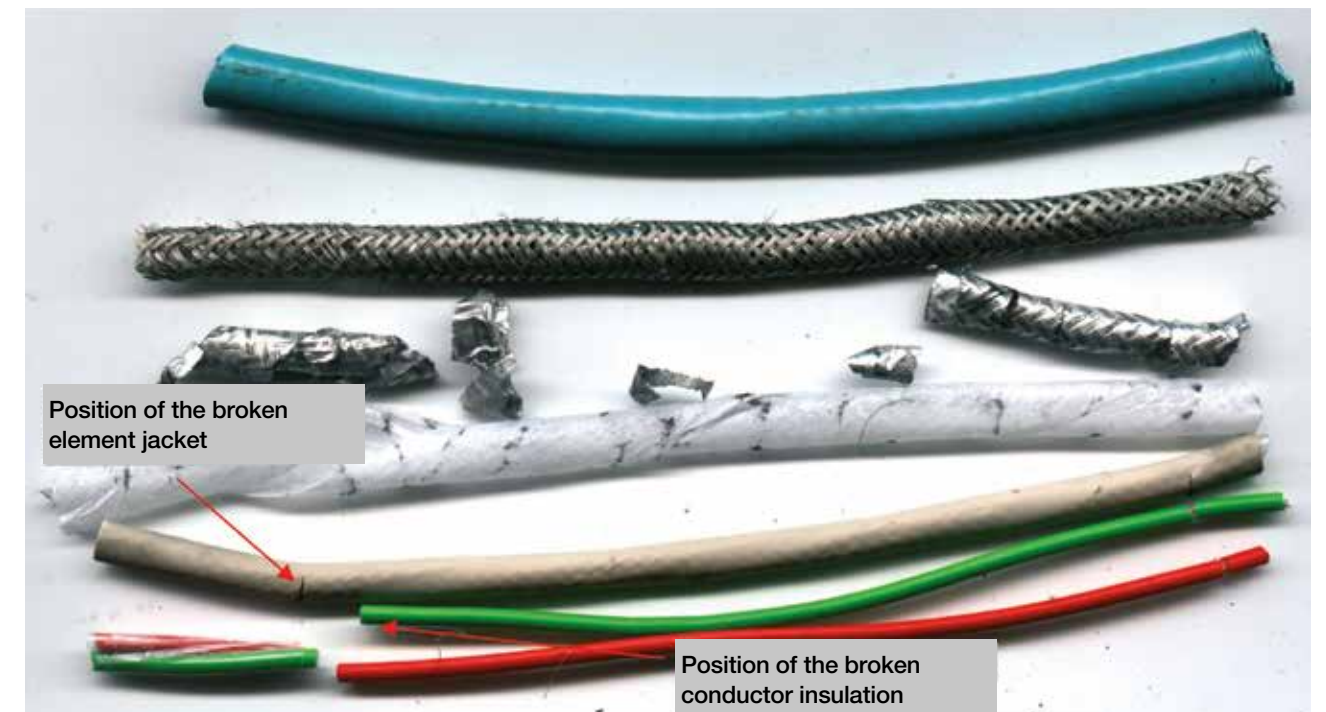
position and bends. The extremely short pitch of the conductor strands and special bundling of the conductors also ensure that no great tensile or compression forces have an effect on a long conductor length. This allows relatively small bend radii with high cycle rates to be achieved.

## New: cRUus UL AWM compliance

Chainflex® CFBUS cables are now also available for all standard field bus system, complete with CDA and UL cRUus compliance, as well as DESINA compliance. The highly abrasion-resistant, flame retardant TPE outer jacket is extruded onto the fully braided shield with a twisted angle adjusted to provide the cable with additional stability.

The bus elements, braided with a particularly short strand pitch, are protected by means of extruded TPE inner jacket, which fills all gaps. The required bus parameters are fulfilled by means of a choice of coordinating insulating materials and production methods. As with all Chainflex® cables, the new standard field bus cables in the CFBUS series are now available from stock with no cutting costs or minimum orders.

 **Product information CFBUS**  
▶ Page 194



Picture 3: A mechanically low-quality element jacket can't protect the bus pair against the high mechanical loads inside the Energy Chain®.



# Tested, tested, tested with $< 4 \times d$ !


For users of very small cable carriers or Energy Chains® with narrow bend radii, finding a suitable cable with a long service life has been a frequent challenge in the past. At bend radii of less than  $5 \times d$ , copper quickly reaches its physical limits, necessitating the search for suitable alternative conductor materials, or for fundamentally different conductor superstructures.

Many series of tests were performed on a variety of conductor materials and superstructures in order to determine how cables must be manufactured to endure millions of flexing cycles in Energy Chains® with bend radii of less than  $4 \times d$ .

## Test setup: Horizontal, short travel distance

Test parameters:	
Travel distance	S = 2.625 ft. (0.8 m)
Speed, approximate	V = 16.07 ft/s (4.9 m/s)
Acceleration, approximate	a = 5.38 ft/s <sup>2</sup> (1.64 m/s <sup>2</sup> )
Radius, approximate	0.71 inch (18 mm)



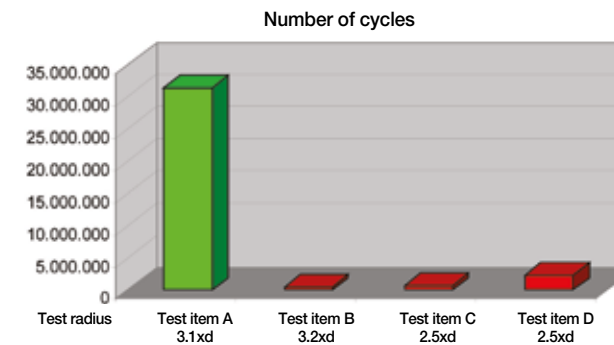
 Product information CF98  
▶ Page 134

## Test 1: Inspection of four cable designs

Four different cable constructions have been analyzed here:  
Test Item A – Special Alloy Conductor  
Test Item B – Copper Conductor  
Test Item C – Copper conductor with braided structure  
Test Item D – Copper conductor with concentric stranding

This long-term inspection, which was carried out over a period of two years, provided the following results:

	Number of cycles	Cross section	d [inch]	Test radius
Test item A	47,434,277	7x0.20	0.23	3.1xd = 18
Test item B	450,000	7x0.20	0.22	3.2xd = 18
Test item C	638,000	7x0.25	0.29	2.5xd = 18
Test item D	2,350,000	7x0.25	0.29	2.5xd = 18



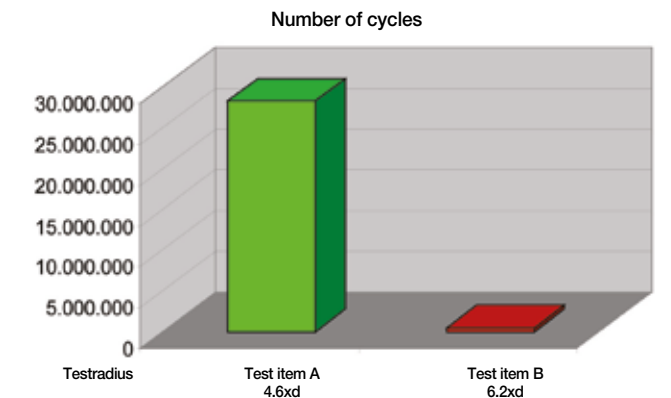
## Test 2:

Two different cable designs were tested, whereby different numbers of conductors and conductor cross sections were selected and compared to test 1.

Test Item A – Conductor with special alloy  
Test Item B – Conductor with copper

In this test, item B was manufactured completely identically to A, with the exception of 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 cycles. Test item B, on the other hand, only achieved approximately 1.4 million cycles before complete destruction of the conductor was determined. This test also demonstrates that the alloy material 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 cycles	Cross section	d [inch]	Test radius
Test item A	28,267,000	2x0.14	0.15	4.6xd = 18
Test item B	1,450,000	2x0.14	0.11	6.2xd = 18



## Conductivity of alloys

The outstanding mechanical properties of the alloyed material must make do with a reduced conductivity compared to copper, which can be compensated by slightly increasing the cross sections. This means that the cross sections mentioned in the catalog meet the electrically defined cross sections defined using the conductivity value. The diameter of an alloyed conductor increase slightly when compared to the diameter of a copper conductor. This compromise results in a 10% greater external diameter for the CF98 series when compared to a comparable CF9 cable, although the service life differences to be expected between the two speak for themselves, and increase by a multiple factor in comparison to 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-filled extruded TPE outer jacket, the oil and UV resistance, as well as the absence of PVC and halogen compounds.

Especially in applications that have minimum construction space as well as the demand for a high number of cycles, Chainflex® cables offer an increased degree of operational safety and efficiency. Some areas of application include semi-conductor and component part industries, as well as in automotive and automation applications. New possible applications for cables with a tight bend radius include automatic doors on motor vehicles and trains, in vending machines, and throughout the packaging industry.



# Fast images: tested!

The growing resolution and sampling rates of modern digital visual display systems are inevitably accompanied by the rapid increase in the data quantities to be transmitted. Fast bus systems designed to handle this quantity of data were taken from the industry and are now available on the consumer market under names like Fire Wire (1394a/1394b), USB (2.0), Gigabit

Ethernet and CameraLink. All these bus systems require special cables, which are offered to consumers by a number of manufacturers at low prices. Many of these, frequently pre-assembled, cables are developed and produced only for static applications or minor mechanical stressing.

If these standard industry cables were used in dynamic applications, costly downtimes occur. Mechanical failures include wire damage or short circuits of the conductors. More importantly is the gradual increase of data errors that occurs through alteration of the capacitive features with a reduction of the possible transmission rates and increased attenuation. A genuine troubleshooting of bus cables is possible only with very expensive equipment and a lot of time. Depending on the position of the damage, the errors may also occur sporadically during operation and cannot be found once operation comes to a stop

Positive outcomes from thousands of applications with classic field bus systems like Profibus, Interbus, and DeviceNet as well as the desire of customers for comparable cables for the abovementioned high speed bus systems, led igus® to create their own series, with the following cable types:

- CFBUS-055 for FireWire 1394a
- CFBUS-065 and CFBUS-066 for USB 2.0

The main focus of the development of these cables was on creating mechanically stable cable designs in order to offer the capacitive, inductive, and optical features over a high numbers of cycles. Special production processes also helped to achieve long service life for the mechanical structure of the shields as well.

Camera FireWire TPE

PVC iguPUR PUR TPE

### TPE Bus cable | FireWire

- FireWire cable (1394a)
- For very high mechanical load requireme
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

**Dynamic information**

- Bend radius
- Temperature
- v max.
- a. max.
- Travel distance

**Cable structure**

- Conductors
- Conductor insulatic
- Core construction
- Color code
- Element shield
- Outer jacket

**Electrical information**

- Nominal voltage
- Test voltage

**Properties and approvals**

- UV resistance
- Oil resistance
- Flame resistance



In the industrial environment, it is not only the electrical and mechanical features that play a role, but also the ability to resist a range of different media, such as oils and coolants. The TPE jacket material has proven its durability in thousands of applications in other Chainflex® cables.

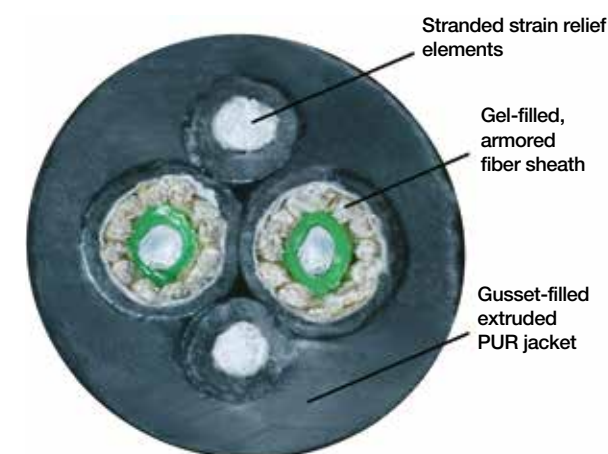
All Chainflex® cables are subject to ample testing in the igus® laboratory; however, no conclusive testing procedure for these types of cables existed. To conduct testing, igus® engineers developed a pragmatic method. Several industrial cameras

traversed on a fast-moving linear slider at a speed of 6.6 ft/s (2 m/s), acceleration of 16.4 ft/s<sup>2</sup> (5 m/s<sup>2</sup>), and a travel of 1.9 ft. (600 mm), while the bus system moved continuously inside Energy Chains®.

**Test setup:**  
32 ft. (10 m) CFBUS-055 FireWire 1394a tested in a B10-015-125 series Energy Chain®. Completed over 6 million movements with a FireWire 1394a camera.

32 ft. (10 m) CFBUS-066 (USB 2.0) tested in a B10-015-075 series Energy Chain®. Completed over 3.5 million movements with a USB 2.0 camera.

Despite the long cable lengths, particularly for USB and FireWire, no adverse effects on the picture quality could be determined even according to this stroke rate. This non-scientific, but practical test distinctly proves the industrial capabilities of these high speed bus cables. This test is still ongoing.



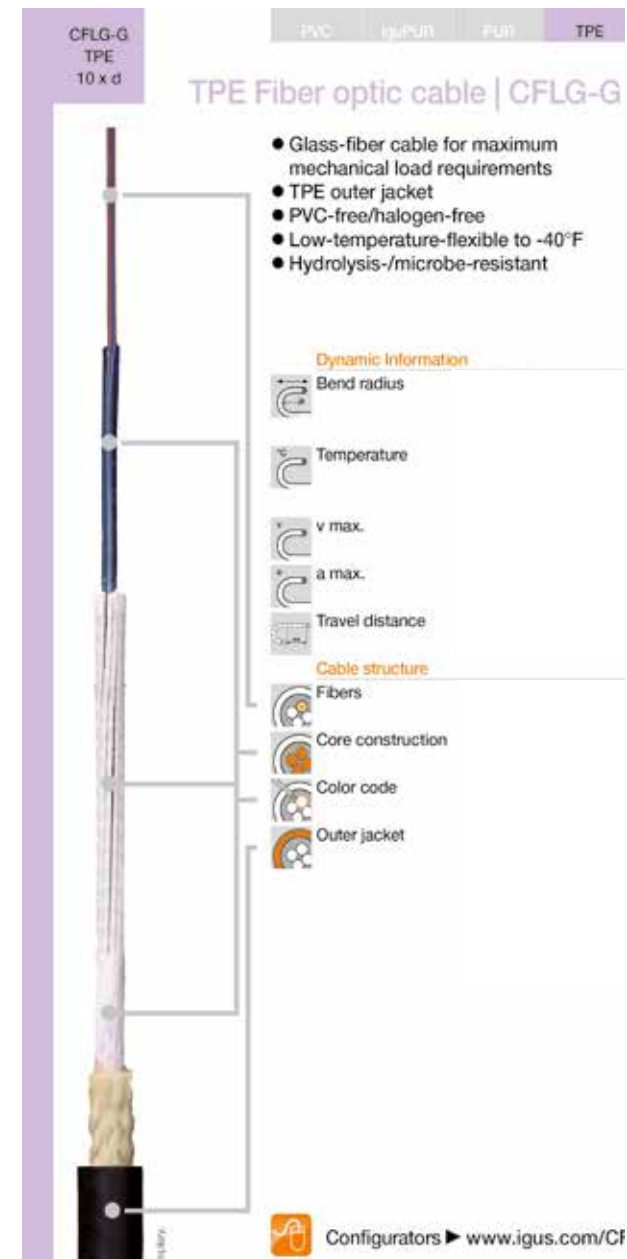
Cross section Chainflex® fiber optic cable from igus®.



# Fiber and ice: tested!

## Chainflex® gradient fiber-optic cable in the deep freeze test

For the safe transmission of large amounts of data in bus systems at high speeds and over long distances, Chainflex® gradient fiber glass CFLG cable has already become a standard in numerous crane applications. Insensitivity to electromagnetic load and resistance to rough environmental factors allow for use, alongside energy supply cables, in very long travels.



What happens in crane facilities in regions with extremely low temperatures? Does the maximum possible cable length of several hundred meters increase attenuation, or does the cable jacket break at extreme low temperatures?

In these cables, sensitive glass fibers are held in a gel-filled hollow space. How does the gel behave in highly dynamic applications, and what happens in restarts after long periods of downtime? As no precise answer to these questions could be found in relevant technical journals, and little was known about the thermal features of the gel, igus®, as part of its philosophy, undertook testing to determine the reliable specifications for applications in Energy Chain® cable carriers.

For this task, the igus® test lab was equipped with a freezer able to generate temperatures of -40° F (-40°C), and a test rig was created with travels up to 22.9 ft. (7 m) at a speed of 5.2 ft/s (1.6 m/s), and accelerations up to 19.6 ft/s<sup>2</sup> (6 m/s<sup>2</sup>). The Chainflex® gradient fiber glass cable CFLG-6G-50/125-TC was tested at a length of approximately 50 feet in a 3500-125-200-0 Energy Chain® with a radius of 7.8 in. (200 mm). Varied and extreme temperature fluctuations served as the simulation of environmental influences, particularly when temperatures plunged to -40° F during downtime and motion was restarted afterwards.

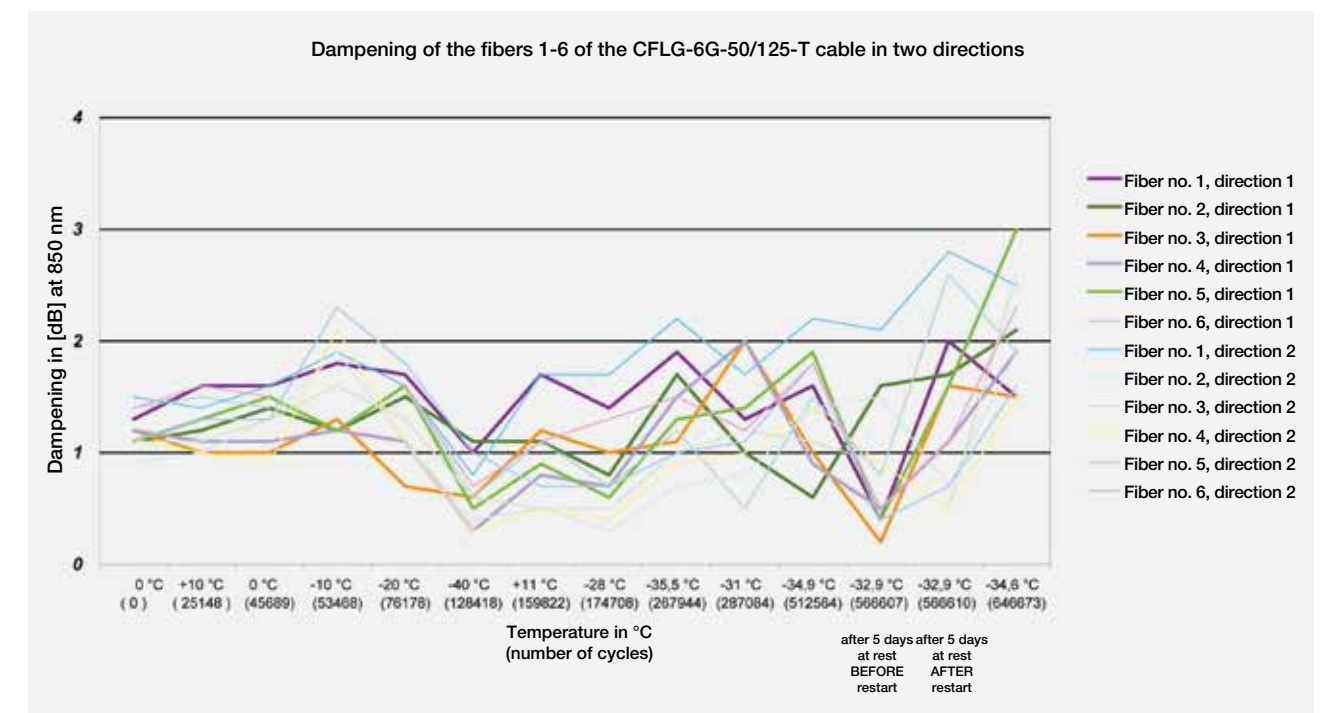
Under these application conditions, the attenuation of the cable also should not rise above 3 dB at 850 nm wave length. After one million cycles, which corresponds to an operational performance of approximately 4,350 miles (7,000 km), the maximum attenuation is reached and still remains significantly below 3 dB.

The measurements highlighted in the diagram reveal that distinct variations in temperature, combined with the constant movement in the Energy 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 reality, as in practice, approximately 90% of the cables used in automation are pluggable fiber optic cables.

**Product information CFLG-G**  
▶ Page 230



The test with the igus® cable makes it quite clear that only realistic and absolutely very expensive tests can fetch clarity about the service life of cables.





# Torsion cables: tested!


Chainflex® cables for Energy Chains® are designed for applications in linear movement, and their efficiency has been proven countless times in a wide variety of applications. However, as industrial applications and their necessary motion sequences are becoming more complex, special cables for torsional movements are being requested more and more. The service life of the differing constructions of these cables is harder to calculate for torsional applications, as no fixed values, such as radii, travels, etc., have been defined.

Shielded cables are very difficult to use in torsional applications. Braided shields are generally woven in opposing directions. In torsional movements, the shield's wires are drawn in one winding direction, and then turned in the other direction. The woven arrangement and the entailing constriction of each winding direction lead to quick breakage of the shield from the resulting expansion of the shield wires.



At igus®, the emphasis is not only on technology but also on beautifully designed products. The Triflex® TRC and TRE series both received the iF-Design-Award.

Unshielded cables, particularly bundled Chainflex® cables, can, on the other hand, be successfully used in many torsional applications. Whether a cable can maintain torsional demands is dependent strongly on the application and type of installation.

 **Product information CFROBOT**  
► Page 402

The development of a new Chainflex® shielded single conductor cable picks up on this point and ensures that only the smallest possible forces act on the shield wire due to the special design and understructure of the shield.

### Test setup:

The new CFROBOT cable was tested at the igus® laboratory on a test rig specially designed for torsional movement of  $\pm 270^\circ$  for a total length of approximately 8.2 feet. The cable was tested in different versions of Triflex® R multi-axis cable carriers.

Fitted for the test were:

- 3 CFROBOT-037 cables
- 3 CF310-250-01-UL cables
- 3 CF310-250-01 cables



igus® test lab: The cables were tested in movements of  $\pm 270^\circ$

The initial test sample of the CF310 with braided shield, and CFROBOT were taken after 250,000 test movements at a torsional angle of  $\pm 270^\circ$ .

Analysis of the cables (taken apart), show, in Picture 1, distinct damage to the overall shield, noticeable in the upper third of the cable.



Picture 1: Damaged overall shield sample of the braid version after 250,000 torsional movements



The detail inspection of the shield braid shows distinct damage on the shield wires.

The analyzed samples of the CFROBOT-037 (Picture 2), were taken at 250,000, 1.5 million, and 3 million torsional movements, and all show no damage.



Picture 2: The CFROBOT shows absolutely no damage after more than 3 million movements

The detailed analyses of the shield wires, buffer fibers, PTFE film (Picture 3) of the cable show no apparent wear. It was decided to extend the testing to determine the maximum service life of the cables.



Picture 3: Detail pictures of the CFROBOT after more than 3.0 million movements of  $\pm 270^\circ$



# Service life comparison: tested!

Regular production inspections increase the operational reliability of machinery. In addition to tests performed in the igus® in-house lab, where new superstructural parts, materials, and customer requirements are constantly inspected, igus® also performs production-accompanied inspections.

Aside from batch testing, which immediately reveals production-related defects and provides maximum reliability, long term inspections are performed again and again. These long-term inspections, which can take up to four years and emphasize the effort and expenditure required for such systematic tests, are necessary if constantly growing market demands are to be met.

This applies to the long-term inspection of Chainflex® servo cable families CF21-UL and CF27-D. These servo cables, based on a modular system and only differing in production details by inner and outer jacket material, were tested for more than 2.5 years at a radius of 3.9 in. (100 mm), travel distance of approximately 26 ft. (8 m), acceleration of approximately 19.7 ft/s (6 m/s<sup>2</sup>), and a velocity of approximately 11.5 ft/s (3.5 m/s).

A conductor number/cross section combination, widely accepted in the mechanical engineering field, was deliberately selected, though the cable, regarded as "chain suitable," results in failures due to the extreme asymmetric setup.



CF21-UL: Overall stranding including the outer jacket without damage



CF27-D: Overall stranding including the outer jacket without damage



CF21-40-10-02-01-UL: After more than 10 million bending movements, no shield wire breakages



CF27-40-10-02-01-D: After more than 10 million bending movements, no shield wire breakages



Deliberately non-conforming chain filling in order to simulate a real application.

The test items, CF21-40-10-02-01-UL (4x12AWG+2x17AWG) and CF27-40-10-02-01-D (4x12AWG + 2x17AWG), were placed in a realistic chain-equipped application test in continuous operation, and constantly electrically monitored.

#### Result:

After more than 5 million cycles, the cables were disassembled into their individual components and inspected. As seen in the images above, no damage was seen on the conductors or the insulation. Only slight traces of abrasion were visible on the outer jacket, which does not affect any of the cable's functions.

#### Summary:

The long service life in real-world applications when compared to competitive, fiber-filled cables, validates the design philosophy of Chainflex® cables, using gusset-filled extruded inner jackets and pressure extruded outer jackets.



#### Product information

CF21-UL ► Page 290

CF27-D ► Page 304



# 164 ft. container crane travel: tested!

In the crane engineering industry, energy supply systems must adapt to the ever increasing technical and economic demands of their customers. Flexibility, variability, and space-saving installation options are only a few of a number of criteria very important to crane designers and maintenance teams. A major building block of a reliable energy supply system is always the cables.

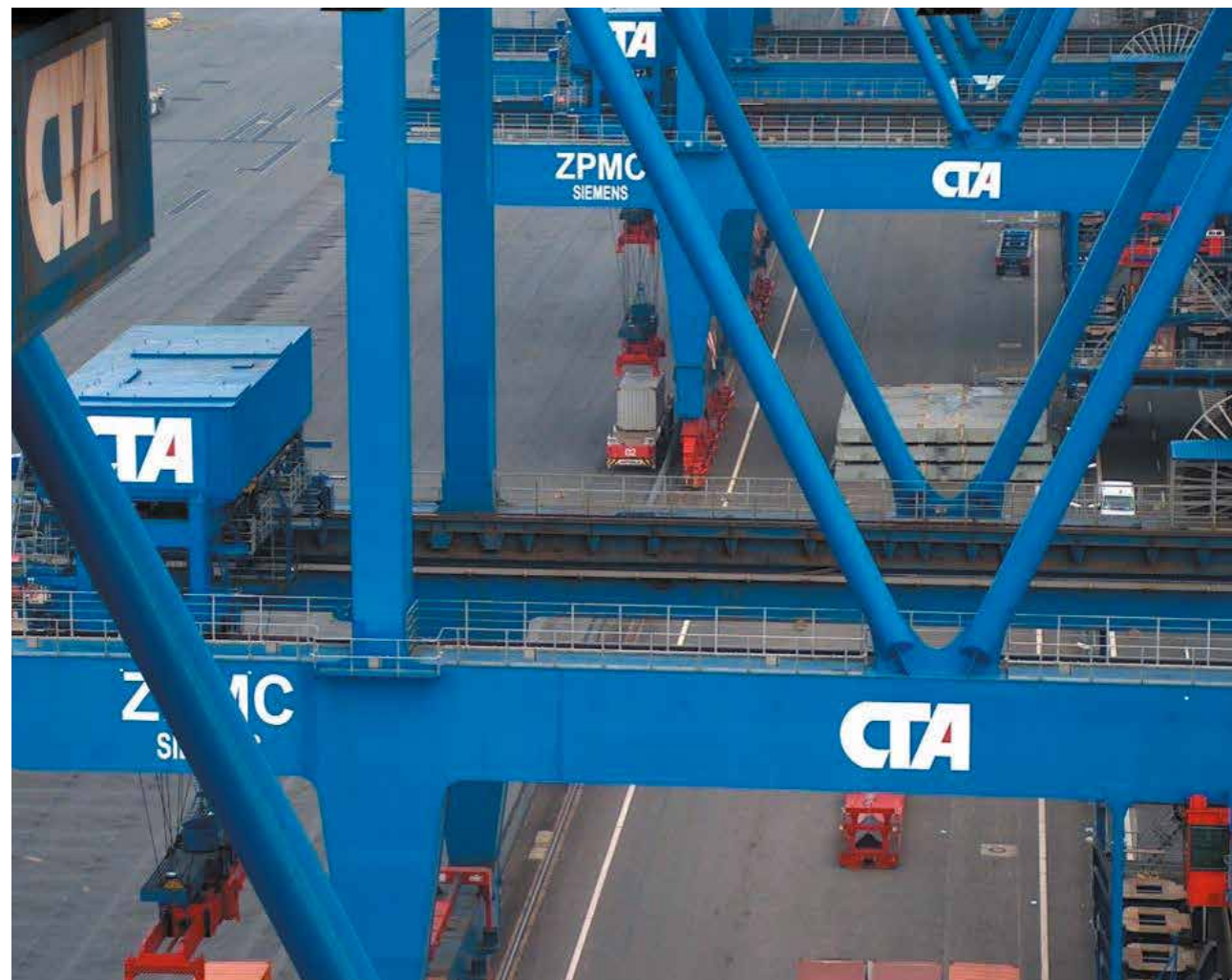
In the igus® laboratory, Chainflex® cables undergo constant testing to obtain important information about the service life of particular cables, and to determine improvements for future cable designs. However, the occasional chance comes along to examine and record inspection data from cables removed from real, tough applications.

## Current inspection:

The Chainflex® cable CF9-60-05 was used in a container crane for many years, repeating a travel distance of approximately 154 ft. (47 m). An inspection contract commissioned by the crane owner-operator was tasked with presenting a performance balance sheet and determine when preventative maintenance should next be scheduled after more than 24,854 miles (40,000 km) of chain travel were completed.

Following the removal of the CF9-60-05 cable, inspections were performed with the following objectives:

1. Observe and record outer jacket abrasion and other damage
2. Observe and record the overall stranding and insulation of the individual conductors
3. Observe and record the structural wire design and the number of broken or possibly broken wires.



An 82 ft. igus® Energy Chain harnesses with Chainflex® cables in a stainless steel trough.



The Energy Chain system® was filled with many different igus® Chainflex® cables, e.g. the CF9-60-05

## Inspection objective 1:

Only slight traces of abrasion could be detected on the TPE outer jacket. No failures could be expected due to jacket breakage, despite extreme environmental factors, such as temperature fluctuation and UV rays.

## Inspection objective 2:

The overall stranding showed that no indications of conductor fatigue or changes in pitch length thanks to the extruded outer jacket. The large share of talc protected from any abrasion between the TPE-insulated conductors. Additionally, high voltage tests showed no changes.

## Inspection objective 3:

The cable was fully opened to the copper conductor in the most stressed section of the radius. Here too, after more than 24,854 miles, no damage was seen to the individual wires.

## Summary:

The Chainflex® cable, used in a real crane application on the second trolley of a ship to shore crane was completely intact and no preventative maintenance was required, even after 24,854 miles of travel.




An igus® energy supply system with an approx. length of 85 ft. in a stainless steel trough.



The individual elements of the CF9 from the cable piece dissected for the test setup.



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 wire breakages.

 **Product information CF9**  
▶ Page 118



# Jacket material oil resistance: tested!

For years, specially developed tests have been utilized to obtain results tailored to customer requirements. The relatively generalized claim of "oil resistance" or "coolant resistance" are little help in selecting the right jacket material to be used in an application with exposure to oils, coolants, or lubricants.

In the igus® test lab, generally applicable tests like those set by DIN EN 60811-2-1 and IEC 60811-1-1 are run alongside tests that replicate everyday application conditions as realistically as possible. One such test mounts samples of Chainflex® cables in Energy Chains® which are moved in and out of an oil bath.

Throughout and after testing, samples can be examined to determine changes in material characteristics, like material strength, swelling, or tearing, with values noted. This method of testing and examining offers customers not just a statement on the resistance of a cable against media, but also an expected service life.

If the test samples, such as the cables depicted below, do not stand up to testing, they are not advised for use in the respective application.



Cracks in the outer sheathing of materials from competitors caused by the "use of oil" in E-Chains®.




# Torsion-resistance: tested take two!

The requirement for torsion resistant cables for Energy Chains® is not new, but exact requirements are rarely specifically defined. So, how is a statement like "torsion resistant up to  $\pm 180^\circ$ " to best be evaluated?

To carry out this testing, the "torsion test bench" was developed in the igus® test lab. Here, various cable types, all 3.3 ft. (1 m) in length, are subject to twisting. The degree of torsion is adjustable for testing different requirements, with standard torsional testing moving at  $\pm 180^\circ$ .

After a predetermined number of torsional movements, or a negative electrical or mechanical result, the tested cables are taken apart and inspected to determine the type and position of any damage.

The complete Chainflex® CFROBOT cable series was tested to this standard before its release to the market.

 [Product information CFROBOT](#)  
▶ [Page 402](#)



The "torsion test bench" especially developed according to the igus® standard



# Control cables































































































































































































































































































## Chainflex® types

Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	Oil-resistant	Torsion resistant v max. [ft/s], unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
Control cables										

Exclusive! Chainflex® guarantee – guaranteed lifetime

▶ Selection table page 64

CF880	PVC		12.5	+41/ +158	             	9.84	65.62	66	New	
CF881	PVC	✓	12.5	+41/ +158	             	9.84	65.62	70	New	
CF130US	PVC		8	+41/ +176	                       	9.84	6.56	65.62	74	
CF140US	PVC	✓	10	+41/ +176	                       	9.84	6.56	65.62	78	
CF130-UL	PVC		7.5	+41/ +158	             	9.84	6.56	65.62	82	
CF140-UL	PVC	✓	7.5	+41/ +158	             	9.84	6.56	65.62	86	
CF5	PVC		6.8	+41/ +158	             	32.81	16.4	262.5	90	
CF6	PVC	✓	6.8	+41/ +158	             	32.81	16.4	262.5	94	
CF890	iguPUR		12.5	-4/ +176	             	9.84	65.62	98	New	
CF891	iguPUR	✓	12.5	-4/ +176	             	9.84	65.62	102	New	
CF77-UL-D	PUR		6.8	-13/ +176	             	32.81	16.4	262.5	106	New
CF78-UL	PUR	✓	6.8	-13/ +176	             	32.81	16.4	262.5	110	
CF2	PUR	✓	5	-4/ +176	             	32.81	16.4	262.5	114	
CF9	TPE		5	-31/ +212	             	32.81	19.69	328.1	118	
CF10	TPE	✓	5	-31/ +212	             	32.81	19.69	328.1	122	
CF9-UL	TPE		5	-31/ +212	             	32.81	19.69	328.1	126	
CF10-UL	TPE	✓	5	-31/ +212	             	32.81	19.69	328.1	130	
CF98	TPE		4	-31/ +194	             	32.81	19.69	328.1	134	
CF99	TPE	✓	4	-31/ +194	             	32.81	19.69	328.1	136	



Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page
		unsupported	gliding			< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	
		Control cables				5 million (1 million) cycles *	7.5 million (3 million) cycles *	10 million (5 million) cycles *				
CF880	+41 / +59 +59 / +140 +140 / +158	9.84	-	65.62	≤ 32.81	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	66
CF881	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	70
CF130US	+23 / +59 +59 / +140 +140 / +176	9.84	6.56	65.62	≤ 29.52	10 8 10	- - -	12 10 12	- - -	13 12 13	- - -	74
CF140US	+23 / +59 +59 / +140 +140 / +176	9.84	6.56	65.62	≤ 29.52	12 10 12	- - -	13 12 13	- - -	15 13 15	- - -	78
CF130-UL	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	65.62	≤ 164	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	82
CF140-UL	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	65.62	≤ 164	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	86
CF5	+41 / +59 +59 / +140 +140 / +158	32.81	16.4	262.5	≤ 164	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	90
CF6	+41 / +59 +59 / +140 +140 / +158	32.81	16.4	262.5	≤ 164	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	94
CF890	-4 / +14 +14 / +158 +158 / +176	9.843	-	65.62	≤ 32.81	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	98
CF891	-4 / +14 +14 / +158 +158 / +176	9.843	-	65.62	≤ 32.81	15 12.5 15	- - -	16 13.5 16	- - -	17 14.5 17	- - -	102
CF77-UL-D	-13 / +5 +5 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	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
CF78-UL	-13 / +5 +5 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	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	110
CF2	-4 / +14 +14 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	6.8 5 6.8	- - -	7.5 6.8 7.5	- - -	8.5 7.5 8.5	- - -	114
CF9	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312	6.8 5 6.8	- - -	7.5 6 7.5	- - -	8.5 7 8.5	- - -	118
CF10	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312	6.8 5 6.8	- - -	7.5 6 7.5	- - -	8.5 7 8.5	- - -	122
CF9-UL	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312	6.8 5 6.8	- - -	7.5 6 7.5	- - -	10 7 10	- - -	126
CF10-UL	-35 / -13 -13 / +90 +90 / +100	32.81	19.69	328.1	> 1,312	6.8 5 6.8	- - -	7.5 6 7.5	- - -	8.5 7 8.5	- - -	130
CF98	-35 / -13 -13 / +176 +176 / +90	32.81	19.69	328.1	≤ 328.1	5 4 5	- - -	5 4 5	- - -	5 4 5	- - -	134
CF99	-35 / -13 -13 / +176 +176 / +90	32.81	19.69	328.1	≤ 328.1	5 4 5	- - -	5 4 5	- - -	5 4 5	- - -	136

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

\* Guaranteed lifetime, higher number of cycles possible.  
Figures in brackets refer to CF880/CF881 and CF890/891.

# PVC Control cable | CF880

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Conductor construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Configurators ► [www.igus.com/CF880](http://www.igus.com/CF880)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 11008 and 2464, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01560
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	1 million	3 million	5 million
Temperature, from/to [°F]			
v max. [ft/s]			
a max. [ft/s²]			
Travel distance [ft]			
R min. [factor x d]			
+41 / +59	9.84	65.6	≤ 32.81
+59 / +140	15	16	17
+140 / +158	12.5	13.5	14.5
	15	16	17

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

### Typical application areas

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








Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF880-05-02	20	2 x 0.5	0.22	5.5	7.4	11	25.5	38
CF880-05-03	20	3 G 0.5	0.24	6.0	10.8	16	30.2	45
CF880-05-04	20	4 G 0.5	0.26	6.5	14.8	22	36.3	54
CF880-05-05	20	5 G 0.5	0.28	7.0	18.1	27	45.0	67
CF880-05-07 <sup>1)</sup>	20	7 G 0.5	0.33	8.5	24.9	37	66.5	99
CF880-05-12	20	12 G 0.5	0.37	9.5	43.0	64	97.4	145
CF880-05-18	20	18 G 0.5	0.45	11.5	64.5	96	141.8	211
New CF880-05-25	20	25 G 0.5	0.53	13.5	88.7	132	195.5	291
CF880-07-02	18	2 x 0.75	0.24	6.0	10.8	16	31.6	47
CF880-07-03	18	3 G 0.75	0.26	6.5	16.1	24	37.6	56
CF880-07-04	18	4 G 0.75	0.28	7.0	21.5	32	46.4	69
CF880-07-05	18	5 G 0.75	0.30	7.5	26.9	40	56.4	84
CF880-07-07	18	7 G 0.75	0.35	9.0	37.6	56	84.0	125
CF880-07-12	18	12 G 0.75	0.41	10.5	64.5	96	125.0	186
CF880-07-18	18	18 G 0.75	0.51	13.0	96.1	143	186.8	278
New CF880-07-25	18	25 G 0.75	0.59	15.0	133.0	198	258.0	384
CF880-10-02	17	2 x 1.0	0.26	6.5	14.8	22	36.3	54
CF880-10-03	17	3 G 1.0	0.26	6.5	21.5	32	45.7	68
CF880-10-04	17	4 G 1.0	0.28	7.0	28.9	43	55.8	83
CF880-10-05	17	5 G 1.0	0.31	8.0	35.6	53	67.9	101
CF880-10-07	17	7 G 1.0	0.37	9.5	49.7	74	102.8	153
CF880-10-12	17	12 G 1.0	0.45	11.5	85.3	127	153.9	229
CF880-10-18	17	18 G 1.0	0.53	13.5	128.3	191	224.4	334
New CF880-10-25	17	25 G 1.0	0.63	16.0	177.4	264	316.5	471
CF880-15-02	16	2 x 1.5	0.30	7.5	21.5	32	55.8	83
CF880-15-03	16	3 G 1.5	0.33	8.5	32.3	48	71.2	106
CF880-15-04	16	4 G 1.5	0.35	9.0	43.0	64	88.0	131
CF880-15-05	16	5 G 1.5	0.39	10.0	53.8	80	111.5	166
CF880-15-07	16	7 G 1.5	0.49	12.5	74.6	111	168.0	250
CF880-15-12	16	12 G 1.5	0.57	14.5	128.3	191	250.0	372
CF880-15-18	16	18 G 1.5	0.69	17.5	192.2	286	368.2	548
New CF880-15-25	16	25 G 1.5	0.83	21.0	266.1	396	516.1	768


<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF880-25-03 <sup>1)</sup>	14	3 G 2.5	0.35	9.0	53.8	80	98.8	147
CF880-25-04	14	4 G 2.5	0.39	10.0	71.2	106	127.0	189
CF880-25-05	14	5 G 2.5	0.45	11.5	88.7	132	157.9	235
CF880-25-07	14	7 G 2.5	0.55	14.0	124.3	185	237.9	354
CF880-25-12	14	12 G 2.5	0.65	16.5	213.0	317	358.2	533
New CF880-25-25	14	25 G 2.5	0.94	24.0	443.5	660	747.2	1112

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

 Order example: CF880-07-03 – in your desired length  
CF880 Chainflex® series -07 Code Nominal cross section -03 Number of conductors

 Online order: [www.chainflex.com/CF880](http://www.chainflex.com/CF880)

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



# PVC Control cable | CF881

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Conductor construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Overall shield</b>	Tinned copper braid. 60% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 11008 and 2464, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01560
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	1 million	3 million	5 million
Temperature, from/to [°F]			
v max. [ft/s]			
a max. [ft/s <sup>2</sup> ]			
Travel distance [ft]			
R min. [factor x d]			
+41 / +59	9.84	65.6	≤ 32.81
+59 / +140	15	16	17
+140 / +158	12.5	13.5	14.5
	15	16	17

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

### Typical application areas

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

Configurators ► [www.igus.com/CF881](http://www.igus.com/CF881)



HAINFLEX® CF881  
Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 5 million cycles guaranteed ...





Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF881-05-02 <sup>1)</sup>	20	2 x 0.5	0.24	6.0	18.8	28	35.6	53
CF881-05-03	20	3 G 0.5	0.26	6.5	22.8	34	40.3	60
CF881-05-04 <sup>1)</sup>	20	4 G 0.5	0.28	7.0	29.6	44	50.4	75
CF881-05-05	20	5 G 0.5	0.30	7.5	33.6	50	57.8	86
CF881-05-07 <sup>1)</sup>	20	7 G 0.5	0.35	9.0	48.4	72	82.7	123
CF881-05-12	20	12 G 0.5	0.41	10.5	69.9	104	115.6	172
CF881-05-18 <sup>1)</sup>	20	18 G 0.5	0.47	12.0	94.7	141	159.9	238
<b>New</b> CF881-05-25	20	25 G 0.5	0.57	14.5	136.4	203	227.1	338
CF881-07-02	18	2 x 0.75	0.26	6.5	22.8	34	40.3	60
CF881-07-03	18	3 G 0.75	0.28	7.0	31.6	47	51.1	76
CF881-07-04	18	4 G 0.75	0.30	7.5	37.0	55	59.1	88
CF881-07-05	18	5 G 0.75	0.31	8.0	46.4	69	74.6	111
CF881-07-07	18	7 G 0.75	0.39	10.0	60.5	90	100.8	150
CF881-07-12	18	12 G 0.75	0.45	11.5	91.4	136	144.5	215
CF881-07-18	18	18 G 0.75	0.53	13.5	130.4	194	205.6	306
<b>New</b> CF881-07-25	18	25 G 0.75	0.63	16.0	188.2	280	291.0	433
CF881-10-02	17	2 x 1.0	0.28	7.0	29.6	44	49.1	73
CF881-10-03	17	3 G 1.0	0.30	7.5	37.0	55	57.1	85
CF881-10-04	17	4 G 1.0	0.31	8.0	48.4	72	71.9	107
CF881-10-05	17	5 G 1.0	0.33	8.5	55.1	82	84.7	126
CF881-10-07	17	7 G 1.0	0.41	10.5	76.6	114	118.9	177
CF881-10-12	17	12 G 1.0	0.47	12.0	116.3	173	172.0	256
CF881-10-18	17	18 G 1.0	0.57	14.5	176.1	262	259.4	386
<b>New</b> CF881-10-25	17	25 G 1.0	0.67	17.0	239.2	356	352.1	524
CF881-15-02	16	2 x 1.5	0.33	8.5	41.0	61	69.9	104
CF881-15-03	16	3 G 1.5	0.35	9.0	51.7	77	84.0	125
CF881-15-04	16	4 G 1.5	0.39	10.0	65.9	98	106.8	159
CF881-15-05	16	5 G 1.5	0.43	11.0	80.6	120	129.0	192
CF881-15-07	16	7 G 1.5	0.51	13.0	109.5	163	181.4	270
CF881-15-12	16	12 G 1.5	0.63	16.0	182.8	272	285.6	425
CF881-15-18	16	18 G 1.5	0.73	18.5	260.1	387	408.6	608
<b>New</b> CF881-15-25	16	25 G 1.5	0.87	22.0	348.8	519	547.0	814

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF881-25-03 <sup>1)</sup>	14	3 G 2.5	0.39	10.0	76.6	114	114.9	171
CF881-25-04	14	4 G 2.5	0.43	11.0	98.1	146	148.5	221
CF881-25-05	14	5 G 2.5	0.47	12.0	119.6	178	176.1	262
CF881-25-07	14	7 G 2.5	0.59	15.0	172.0	256	258.0	384
CF881-25-12	14	12 G 2.5	0.69	17.5	274.8	409	393.1	585
<b>New</b> CF881-25-25	14	25 G 2.5	0.98	25.0	532.2	792	766.0	1140

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Order example: **CF881-40-40** – In your desired length  
**CF881** Chainflex® series -40 Code nominal cross section -40 Number of conductors

Online order: [www.chainflex.com/CF881](http://www.chainflex.com/CF881)

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



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Control cable | CF130US

- For flexing applications
- PVC outer jacket
- Oil-resistant
- Flame-retardant
- UL Tray cable for exposed run (TC-ER)

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 8 x d
		<b>flexible</b>	min. 7.5 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +176 °F (+5 °C to +80 °C)
		<b>flexible</b>	+23 °F to +176 °F (-5 °C to +80 °C)
		<b>fixed</b>	-4 °F to +194 °F (-20 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 30 ft (9 m), Class 1
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductor</b>	Finely stranded bundled bare copper wires. Designed in accordance with ASTM B174-95.
	<b>Conductor insulation</b>	Mechanically high-quality, PVC/Nylon.
	<b>Conductor construction</b>	Conductors concentrically layered with short pitch.
	<b>Color code</b>	Black with white numbers, one green-yellow. **
	<b>Outer jacket</b>	Oil-resistant UV-resistant PVC, low-adhesion blend, adapted to the requirements of the Energy Chain®. Color: Gray (RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Testing voltage</b>	3300 V

\*\* Custom color codes are available upon request.

**Configurators** ▶ [www.igus.com/CF130US](http://www.igus.com/CF130US)

## Class 3.1.4.2

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil resistant (according to DIN EN 60811-2-1, DIN EN 50363-4-1, Class 4)
	<b>Flame resistance</b>	CSA AWM: FT4
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	For installation in accordance with all applicable sections of the National Electric Code. <b>22-10 AWG:</b> UL Type MTW (Machine Tool Wire), <b>18-10 AWG:</b> UL Type TC (Tray Cable) <b>UL AWM:</b> 2587 90 °C 600V; <b>CSA AWM:</b> I/II A/B 90 °C 600V FT4 2002/95/EC; Please reference the Design Section for more information.
	<b>Lead-free</b>	In accordance with European Council Directive 73/23/EEC
	<b>CE</b>	
	<b>Info</b>	In general these cables will offer continuous-flex performance in specific “Tray Cable” and “Machine Tool Wire” NEC compliant installations. The CF130US line is designed for use in 600V control and power applications. The oil-resistant jacket also passes the stringent 70,000 BTU UL and CSA Vertical Flame Tests. Not recommended for long travel / gliding applications.

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+23 / +59				10	12	13
+59 / +140	9.84	6.56	≤ 29.52	8	10	12
+140 / +176				10	12	13

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

### Typical application areas

- For medium mechanical load requirements
- Suitable for indoor/outdoor applications
- Especially for unsupported travel distances and for low-duty gliding applications up to 30 ft (9m)
- UL Tray cable for exposed run (TC-ER)
- Wood/stone processing, packaging industry, supply system, handling, adjusting equipment, machine tools



# PVC Control cable | CF130US



Image exemplary.

Part No.	Number of Conductors	AWG	Strand/ AWG	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF130US-05-02	2	20	26/34	0.27	6.7	6.4	10	22.0	33
CF130US-05-03	3	20	26/34	0.28	7.1	10.0	15	35.0	52
CF130US-05-04	4	20	26/34	0.31	7.9	13.0	19	49.3	73
CF130US-05-05	5	20	26/34	0.33	8.4	16.0	24	56.7	84
CF130US-05-07	7	20	26/34	0.38	9.7	22.5	33	72.9	108
CF130US-05-12	12	20	26/34	0.47	11.9	38.5	57	115.8	172
CF130US-05-18	18	20	26/34	0.55	14.0	57.8	86	161.9	241
CF130US-05-25	25	20	26/34	0.66	16.6	80.3	119	215.7	321
CF130US-07-04	4	18	41/34	0.33	8.3	20.2	30	59.1	88
CF130US-07-05	5	18	41/34	0.35	8.9	25.5	38	68.5	102
CF130US-07-07	7	18	41/34	0.40	10.2	35.6	53	88.7	132
CF130US-07-12	12	18	41/34	0.50	12.7	60.5	90	143.1	213
CF130US-07-18	18	18	41/34	0.58	14.7	91.4	136	202.9	302
CF130US-07-25	25	18	41/34	0.69	17.5	126.3	188	270.8	403
CF130US-15-03	3	16	65/34	0.33	8.4	24.2	36	59.8	89
CF130US-15-04	4	16	65/34	0.35	9	32.3	48	76.6	114
CF130US-15-05	5	16	65/34	0.39	9.8	40.3	60	88.7	132
CF130US-15-07	7	16	65/34	0.44	11.3	56.4	84	129.0	192
CF130US-15-10	10	16	65/34	0.56	14.2	80.6	120	184.1	274
CF130US-15-12	12	16	65/34	0.56	14.2	96.1	143	196.2	292
CF130US-15-18	18	16	65/34	0.65	16.4	144.5	215	282.9	421
CF130US-15-22	22	16	65/34	0.71	18	176.7	263	339.3	505
CF130US-15-25	25	16	65/34	0.76	19.4	200.2	298	389.7	580
CF130US-15-33	33	16	65/34	0.85	21.6	264.8	394	556.4	828
CF130US-25-04	4	14	105/34	0.39	9.8	51.7	77	101.5	151
CF130US-25-07	7	14	105/34	0.51	13	90.7	135	170.7	254
CF130US-25-10	10	14	105/34	0.63	16	127.7	190	223.8	333
CF130US-25-12	12	14	105/34	0.61	15.6	155.9	232	269.5	401
CF130US-40-04	4	12	165/34	0.49	12.4	79.3	118	149.2	222
CF130US-60-04	4	10	259/34	0.56	14.2	129.7	193	219.7	327
CF130US-60-05	5	10	259/34	0.61	15.5	162.6	242	261.4	389

Note: The mentioned outer diameters are maximum values.

\*\* Custom color codes are available upon request. Minimum order may apply.

## Class 3.1.4.2

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Order example: **CF130US-07-04** – In your desired length  
CF130US Chainflex® series -07 Code nominal cross section -04 Number of conductors



Online order: [www.chainflex.com/CF130US](http://www.chainflex.com/CF130US)







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










# PVC Control cable | CF140US

- For flexing applications
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant
- UL Tray cable for exposed run (TC-ER)



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 7.5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +176 °F (+5 °C to +80 °C)
		<b>flexible</b>	+23 °F to +176 °F (-5 °C to +80 °C)
		<b>fixed</b>	-4 °F to +194 °F (-20 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 30 ft (9 m), Class 1

### Cable structure

	<b>Conductor</b>	Finely stranded bundled bare copper wires. Designed in accordance with ASTM B174-95.
	<b>Conductor insulation</b>	Mechanically high-quality, PVC/Nylon.
	<b>Conductor construction</b>	Conductors concentrically layered with short pitch.
	<b>Color code</b>	Black with white numbers, one green-yellow. **
	<b>Inner jacket</b>	Low-adhesion PVC.
	<b>Overall shield</b>	Tinned copper braid. 85% optical coverage
	<b>Outer jacket</b>	Oil-resistant UV-resistant PVC, low-adhesion blend, adapted to the requirements of the Energy Chain®. Color: Gray (RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Testing voltage</b>	3300 V









\*\* Custom color codes are available upon request.

 **Configurators** ▶ [www.igus.com/CF140US](http://www.igus.com/CF140US)

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil-resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

## Class 3.1.4.2

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil resistant (according to DIN EN 60811-2-1, DIN EN 50363-4-1, Class 4)
	<b>Flame resistance</b>	CSA AWM: FT4
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	For installation in accordance with all applicable sections of the National Electric Code. <b>22-10 AWG:</b> UL Type MTW (Machine Tool Wire), <b>18-10 AWG:</b> UL Type TC (Tray Cable) <b>UL AWM:</b> 2587 90 °C 600V; <b>CSA AWM:</b> I/II A/B 90 °C 600V FT4 2002/95/EC; Please reference the Design Section for more information.
	<b>Lead-free</b>	
	<b>CE</b>	In accordance with European Council Directive 73/23/EEC
	<b>Info</b>	In general these cables will offer continuous-flex performance in specific “Tray Cable” and “Machine Tool Wire” NEC compliant installations. The CF140US line is designed for use in 600V control and power applications. The oil-resistant jacket also passes the stringent 70,000 BTU UL and CSA Vertical Flame Tests. Not recommended for long travel / gliding applications.

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+23 / +59				12	13	15
+59 / +140	9.84	6.56	≤ 29.52	10	12	13
+140 / +176				12	13	15

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

### Typical application areas

- For medium mechanical load requirements
- Suitable for indoor/outdoor applications
- Especially for unsupported travel distances and for low-duty gliding applications up to 30 ft (9m)
- UL Tray cable for exposed run (TC-ER)
- Wood/stone processing, packaging industry, supply system, handling, adjusting equipment, machine tools





# PVC Control cable | CF140US

Requirements  
Travel distance  
Oil-resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

## Class 3.1.4.2

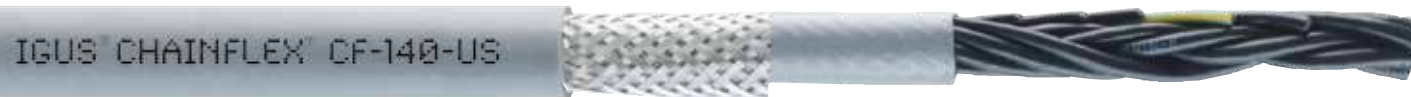


Image exemplary.

Part No.	Number of Conductors	AWG	Strand/AWG	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF140US-05-02	2	20	26/34	0.35	8.8	14.8	22	55.1	82
CF140US-05-03	3	20	26/34	0.36	9.1	20.8	31	66.5	99
CF140US-05-04	4	20	26/34	0.39	9.9	24.9	37	74.6	111
CF140US-05-05	5	20	26/34	0.41	10.4	28.2	42	87.4	130
CF140US-05-07	7	20	26/34	0.46	11.7	37.6	56	108.2	161
CF140US-05-12	12	20	26/34	0.55	14	61.1	91	165.3	246
CF140US-05-18	18	20	26/34	0.63	16.1	84.0	125	219.1	326
CF140US-05-25	25	20	26/34	0.78	19.7	115.6	172	291.0	433
CF140US-07-04	4	18	41/34	0.40	10.2	32.3	48	88.7	132
CF140US-07-05	5	18	41/34	0.43	10.8	28.9	43	101.5	151
CF140US-07-07	7	18	41/34	0.48	12.2	51.1	76	127.0	189
CF140US-07-12	12	18	41/34	0.57	14.6	86.0	128	196.9	293
CF140US-07-18	18	18	41/34	0.66	16.8	123.0	183	267.4	398
CF140US-07-25	25	18	41/34	0.78	19.7	161.3	240	283.6	422
CF140US-15-03	3	16	65/34	0.41	10.3	37.0	55	92.7	138
CF140US-15-04	4	16	65/34	0.43	10.9	46.4	69	108.9	162
CF140US-15-05	5	16	65/34	0.46	11.7	63.2	94	125.0	186
CF140US-15-07	7	16	65/34	0.52	13.3	79.3	118	154.6	230
CF140US-15-12	12	16	65/34	0.64	16.3	118.9	177	250.0	372
CF140US-15-18	18	16	65/34	0.72	18.4	169.3	252	334.6	498
CF140US-15-22	22	16	65/34	0.76	19.2	203.6	303	385.7	574
CF140US-15-25	25	16	65/34	0.85	21.6	241.2	359	454.9	677
CF140US-15-33	33	16	65/34	0.93	23.5	307.1	457	578.6	861
CF140US-25-04	4	14	105/34	0.46	11.8	67.2	100	137.1	204
CF140US-25-07	7	14	105/34	0.59	14.9	110.9	165	217.7	324
CF140US-25-12	10	14	105/34	0.69	17.5	180.1	268	326.6	486
CF140US-25-18	12	14	105/34	0.79	20	200.2	298	350.4	521.5
CF140US-40-04	4	12	165/34	0.57	14.5	99.5	148	195.5	291
CF140US-60-04	4	10	259/34	0.64	16.3	155.2	231	270.1	402
CF140US-60-05	5	10	259/34	0.69	17.5	186.8	278	318.5	474

Note: The mentioned outer diameters are maximum values.

**Order example: CF140US-15-07 – In your desired length**  
CF140US Chainflex® series -15 Code nominal cross section -07 Number of conductors

Online order: [www.chainflex.com/CF140US](http://www.chainflex.com/CF140US)

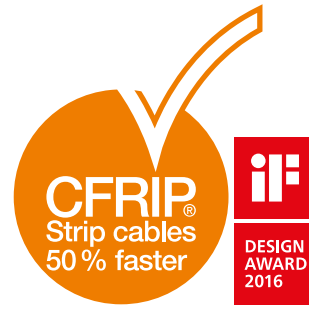
Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Control cable | CF130-UL

- For medium mechanical load requirements
- PVC outer jacket
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>	<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-4 AWG:</b> Black with white numbers, one conductor green-yellow.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 5). Color: Gray (RAL 7001)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)
	<b>Configurators</b>	▶ <a href="http://www.igus.com/CF130">www.igus.com/CF130</a>

## Class 4.4.1.2

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10493 and 20200, 300 V, 60 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF130-15-07-UL, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
	+41 / +59	≤ 164	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
	+59 / +140	≤ 164	10	12.5	11	13.5	12	14.5
	+140 / +158	≤ 164	7.5	10	8.5	11	9.5	12
	+140 / +158	≤ 164	10	12.5	11	13.5	12	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Without influence of oil
- Preferably indoor applications
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Wood/stone processing, packaging industry, supply systems, Handling, adjusting equipment



Chainflex® CF130.UL for woodworking. E-Chain®: E4/light





# PVC Control cable | CF130-UL

Strip cables 50 % faster

IGUS® CHAINFLEX® CF130.UL

Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF130-02-03-UL	24	3 x 0.25	0.20	5.0	6.0	9	16.8	25
CF130-02-04-UL	24	4 x 0.25	0.22	5.5	7.4	11	19.5	29
CF130-02-06-UL	24	6 x 0.25	0.24	6.0	11.4	17	32.9	49
CF130-02-07-UL	24	7 x 0.25	0.26	6.5	13.4	20	31.6	47
CF130-02-12-UL	24	12 x 0.25	0.33	8.5	23.5	35	65.9	98
CF130-02-20-UL	24	20 x 0.25	0.41	10.5	36.3	54	99.5	148
CF130-02-25-UL	24	25 x 0.25	0.45	11.5	47.0	70	106.2	158
CF130-02-30-UL	24	30 x 0.25	0.49	12.5	53.8	80	127.0	189
CF130-03-02-UL	22	2 x 0.34	0.20	5.0	5.4	8	17.5	26
CF130-03-05-UL	22	5 x 0.34	0.24	6.0	12.8	19	27.6	41
CF130-05-02-UL	20	2 x 0.5	0.22	5.5	7.4	11	25.5	38
CF130-05-03-UL	20	3 G 0.5	0.22	5.5	11.4	17	26.9	40
CF130-05-04-UL	20	4 G 0.5	0.24	6.0	14.8	22	32.3	48
CF130-05-05-UL	20	5 G 0.5	0.26	6.5	18.8	28	38.3	57
CF130-05-07-UL	20	7 G 0.5	0.30	7.5	26.2	39	52.4	78
CF130-05-12-UL	20	12 G 0.5	0.39	10.0	44.3	66	96.1	143
CF130-05-18-UL	20	18 G 0.5	0.47	12.0	66.5	99	126.3	188
CF130-05-25-UL	20	25 G 0.5	0.53	13.5	92.7	138	180.1	268
CF130-07-02-UL	18	2 x 0.75	0.24	6.0	10.8	16	28.2	42
CF130-07-03-UL	18	3 G 0.75	0.24	6.0	16.1	24	34.3	51
CF130-07-04-UL	18	4 G 0.75	0.26	6.5	21.5	32	39.6	59
CF130-07-05-UL	18	5 G 0.75	0.28	7.0	26.9	40	47.7	71
CF130-07-07-UL	18	7 G 0.75	0.31	8.0	37.6	56	65.9	98
CF130-07-12-UL	18	12 G 0.75	0.43	11.0	64.5	96	106.2	158
CF130-07-18-UL	18	18 G 0.75	0.53	13.5	96.1	143	157.9	235
CF130-07-25-UL	18	25 G 0.75	0.63	16.0	133.0	198	238.5	355
CF130-07-36-UL	18	36 G 0.75	0.75	19.0	210.3	313	369.6	550
CF130-07-42-UL <sup>1)</sup>	18	42 G 0.75	0.83	21.0	245.3	365	424.7	632
CF130-10-02-UL	17	2 x 1.0	0.24	6.0	14.8	22	34.9	52
CF130-10-03-UL	17	3 G 1.0	0.26	6.5	21.5	32	41.7	62
CF130-10-04-UL	17	4 G 1.0	0.28	7.0	28.9	43	51.1	76
CF130-10-05-UL	17	5 G 1.0	0.30	7.5	35.6	53	61.8	92
CF130-10-07-UL	17	7 G 1.0	0.35	9.0	49.7	74	84.0	125
CF130-10-12-UL	17	12 G 1.0	0.49	12.5	85.3	127	138.4	206
CF130-10-18-UL	17	18 G 1.0	0.59	15.0	128.3	191	194.9	290
CF130-10-25-UL	17	25 G 1.0	0.69	17.5	177.4	264	276.2	411

<sup>1)</sup> Delivery time upon request. Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

# Class 4.4.1.2

Requirements  
Travel distance  
Oil-resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF130-15-02-UL	16	2 x 1.5	0.28	7.0	21.5	32	43.0	64
CF130-15-03-UL	16	3 G 1.5	0.28	7.0	32.3	48	53.1	79
CF130-15-04-UL	16	4 G 1.5	0.31	8.0	43.0	64	67.2	100
CF130-15-05-UL	16	5 G 1.5	0.33	8.5	53.8	80	80.6	120
CF130-15-07-UL <sup>17)</sup>	16	7 G 1.5	0.37	9.5	74.6	111	107.5	160
CF130-15-12-UL	16	12 G 1.5	0.51	13.0	128.3	191	192.9	287
CF130-15-18-UL	16	18 G 1.5	0.69	17.5	192.2	286	325.2	484
CF130-15-25-UL	16	25 G 1.5	0.77	19.5	266.1	396	414.6	617
CF130-15-36-UL <sup>1)</sup>	16	36 G 1.5	0.93	23.5	419.3	624	626.3	932
CF130-15-42-UL <sup>1)</sup>	16	42 G 1.5	1.04	26.5	489.9	729	728.4	1084
CF130-25-03-UL	14	3 G 2.5	0.33	8.5	53.8	80	82.7	123
CF130-25-04-UL	14	4 G 2.5	0.37	9.5	71.2	106	102.8	153
CF130-25-07-UL <sup>17)</sup>	14	7 G 2.5	0.47	12.0	124.3	185	175.4	261
CF130-25-12-UL	14	12 G 2.5	0.69	17.5	213.0	317	356.1	530
CF130-40-03-UL	12	3 G 4.0	0.39	10.0	85.3	127	131.7	196
CF130-40-05-UL	12	5 G 4.0	0.47	12.0	142.5	212	210.3	313
CF130-60-04-UL	10	4 G 6.0	0.53	13.5	170.7	254	260.1	387
CF130-60-05-UL	10	5 G 6.0	0.57	14.5	213.0	317	313.8	467
CF130-100-05-UL <sup>1)</sup>	8	5 G 10.0	0.75	19.0	354.8	528	503.3	749
CF130-160-05-UL	6	5 G 16.0	0.89	22.5	567.8	845	762.7	1135
CF130-250-05-UL <sup>1)</sup>	4	5 G 25.0	1.10	28.0	887.0	1320	1137.0	1692

<sup>1)</sup> Delivery time upon request  
<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Order example: **CF130-05-02-UL** – In your desired length  
**CF130-UL** Chainflex® series -05 Code nominal cross section -02 Number of conductors

Online order: [www.chainflex.com/CF130](http://www.chainflex.com/CF130)

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

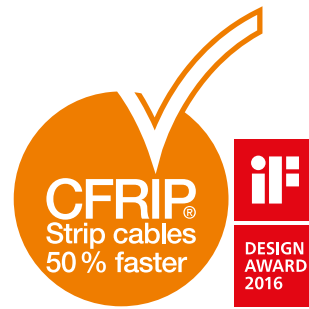
Configurators ► [www.igus.com/CF130](http://www.igus.com/CF130)



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Control cable | CF140-UL

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-14 AWG:</b> Black with white numbers, one conductor green-yellow.
	<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 5). Color: Gray (RAL 7001)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>
	<b>Configurators</b>	▶ <a href="http://www.igus.com/CF140">www.igus.com/CF140</a>

# Class 4.4.1.1

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10493 and 20200, 300 V, 60 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF130-15-07-UL, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			R min. [factor x d] < 32.81 ft	R min. [factor x d] ≥ 32.81 ft	R min. [factor x d] < 32.81 ft	R min. [factor x d] ≥ 32.81 ft	R min. [factor x d] < 32.81 ft	R min. [factor x d] ≥ 32.81 ft
	+41 / +59		10	12.5	11	13.5	12	14.5
	+59 / +140	≤ 164	7.5	10	8.5	11	9.5	12
	+140 / +158		10	12.5	11	13.5	12	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Without influence of oil
- Preferably indoor applications
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment





# PVC Control cable | CF140-UL

Strip cables 50 % faster



Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF140-02-12-UL	24	12 x 0.25	0.41	10.5	51.1	76	79.3	118
CF140-03-05-UL	22	5 x 0.34	0.30	7.5	24.9	37	49.7	74
CF140-05-03-UL	20	3 G 0.5	0.28	7.0	22.8	34	49.7	74
CF140-05-05-UL	20	5 G 0.5	0.31	8.0	32.3	48	63.2	94
CF140-05-18-UL	20	18 G 0.5	0.57	14.5	104.8	156	172.7	257
CF140-05-36-UL	20	36 G 0.5	0.73	18.5	184.1	274	325.9	485
CF140-07-03-UL	18	3 G 0.75	0.31	8.0	29.6	44	58.5	87
CF140-07-04-UL	18	4 G 0.75	0.33	8.5	36.3	54	69.9	104
CF140-07-05-UL	18	5 G 0.75	0.35	9.0	43.0	64	79.3	118
CF140-07-07-UL	18	7 G 0.75	0.39	10.0	58.5	87	104.8	156
CF140-07-12-UL	18	12 G 0.75	0.51	13.0	97.4	145	183.4	273
CF140-07-18-UL	18	18 G 0.75	0.61	15.5	139.1	207	250.0	372
CF140-07-25-UL	18	25 G 0.75	0.71	18.0	186.8	278	334.0	497
CF140-07-36-UL	18	36 G 0.75	0.87	22.0	279.5	416	513.4	764
CF140-07-42-UL <sup>1)</sup>	18	42 G 0.75	0.94	24.0	328.6	489	562.4	837
CF140-10-02-UL	17	2 x 1.0	0.31	8.0	24.9	37	59.1	88
CF140-10-03-UL	17	3 G 1.0	0.33	8.5	36.3	54	69.2	103
CF140-10-04-UL	17	4 G 1.0	0.35	9.0	43.7	65	76.6	114
CF140-10-05-UL	17	5 G 1.0	0.37	9.5	52.4	78	88.7	132
CF140-10-07-UL	17	7 G 1.0	0.41	10.5	73.9	110	122.3	182
CF140-10-12-UL	17	12 G 1.0	0.55	14.0	119.6	178	206.3	307
CF140-10-18-UL	17	18 G 1.0	0.69	17.5	172.0	256	288.9	430
CF140-10-25-UL	17	25 G 1.0	0.77	19.5	233.2	347	392.4	584
CF140-15-03-UL	16	3 G 1.5	0.35	9.0	48.4	72	83.3	124
CF140-15-04-UL	16	4 G 1.5	0.37	9.5	60.5	90	98.1	146
CF140-15-05-UL	16	5 G 1.5	0.41	10.5	77.3	115	117.6	175
CF140-15-07-UL <sup>17)</sup>	16	7 G 1.5	0.47	12.0	102.8	153	157.9	235
CF140-15-12-UL	16	12 G 1.5	0.63	16.0	167.3	249	270.8	403
CF140-15-18-UL	16	18 G 1.5	0.75	19.0	247.3	368	326.6	486
CF140-15-25-UL	16	25 G 1.5	0.89	22.5	332.6	495	516.1	768
CF140-15-36-UL <sup>1)</sup>	16	36 G 1.5	1.04	26.5	480.5	715	807.7	1202
CF140-15-42-UL <sup>1)</sup>	16	42 G 1.5	1.16	29.5	565.1	841	955.5	1422
CF140-25-03-UL	14	3 G 2.5	0.41	10.5	75.9	113	139.8	208
CF140-25-04-UL	14	4 G 2.5	0.45	11.5	99.5	148	147.2	219

<sup>1)</sup> Delivery time upon request

<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.

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

## Class 4.4.1.1

Requirements  
Travel distance  
Oil-resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Order example: **CF140-10-04-UL** – In your desired length  
CF140-UL Chainflex® series -10 Code nominal cross section -04 Number of conductors



Online order: [www.chainflex.com/CF140](http://www.chainflex.com/CF140)



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



Chainflex® CF140.UL in the feeder automation. E-Chain®: E-Z Chain®

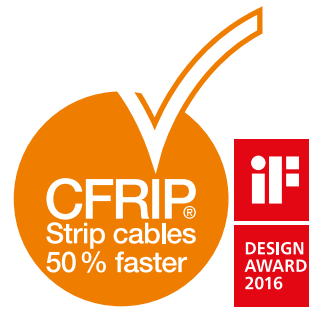


Configurators ▶ [www.igus.com/CF140](http://www.igus.com/CF140)



# PVC Control cable | CF5

- For high mechanical load requirements
- PVC outer jacket
- Oil-resistant
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>	262.5 ft/s² (80 m/s²)	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	<b>24-20 AWG:</b> Mechanically high-quality TPE mixture. <b>18-14 AWG:</b> Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-14 AWG:</b> Black with white numbers, one conductor green-yellow.
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Green (RAL 6005)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

**Configurators ▶ [www.igus.com/CF5](http://www.igus.com/CF5)**

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# Class 5.5.2.2

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	<b>24-20 AWG:</b> Style 10492 and 2570, 600 V, 80 °C <b>18-14 AWG:</b> Style 11113 and 2570, 600 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2, material/cable tested by IPA according to ISO standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
	+41 / +59		< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
	+59 / +140	≤ 164	7.5	10	8.5	11	9.5	12
	+140 / +158		6.8	7.5	7.8	8.5	8.8	9.5
			7.5	10	8.5	11	9.5	12

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes





# PVC Control cable | CF5

Strip cables 50 % faster

IGUS® CHAINFLEX® CF5

Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF5-02-36	24	36 x 0.25	0.59	15.0	70.6	105	144.5	215
CF5-03-15	22	15 x 0.34	0.43	11.0	39.0	58	94.7	141
CF5-03-18	22	18 x 0.34	0.47	12.0	47.7	71	122.3	182
CF5-03-25	22	25 x 0.34	0.55	14.0	65.2	97	164.0	244
CF5-05-02	20	2 x 0.5	0.24	6.0	7.4	11	25.5	38
CF5-05-03	20	3 G 0.5	0.24	6.0	10.8	16	28.2	42
CF5-05-05	20	5 G 0.5	0.28	7.0	18.1	27	50.4	75
CF5-05-07	20	7 G 0.5	0.31	8.0	25.5	38	53.8	80
CF5-05-12	20	12 G 0.5	0.43	11.0	43.0	64	90.0	134
CF5-05-18	20	18 G 0.5	0.51	13.0	64.5	96	131.0	195
CF5-05-25	20	25 G 0.5	0.63	16.0	88.7	132	194.2	289
CF5-05-30	20	30 G 0.5	0.71	18.0	106.8	159	280.2	417
CF5-07-03	18	3 G 0.75	0.26	6.5	16.1	24	37.6	56
CF5-07-04	18	4 G 0.75	0.28	7.0	22.2	33	45.7	68
CF5-07-05	18	5 G 0.75	0.30	7.5	27.6	41	56.4	84
CF5-07-07	18	7 G 0.75	0.35	9.0	39.0	58	79.3	118
CF5-07-12	18	12 G 0.75	0.49	12.5	64.5	96	130.4	194
CF5-07-18	18	18 G 0.75	0.59	15.0	96.1	143	186.8	278
CF5-07-25	18	25 G 0.75	0.69	17.5	136.4	203	266.8	397
CF5-07-36	18	36 G 0.75	0.87	22.0	191.5	285	406.5	605
CF5-07-42	18	42 G 0.75	0.94	24.0	223.8	333	442.2	658
CF5-10-03	17	3 G 1.0	0.26	6.5	21.5	32	38.3	57
CF5-10-04	17	4 G 1.0	0.28	7.0	28.9	43	53.8	80
CF5-10-05	17	5 G 1.0	0.31	8.0	35.6	53	65.2	97
CF5-10-07	17	7 G 1.0	0.37	9.5	52.4	78	90.7	135
CF5-10-12	17	12 G 1.0	0.51	13.0	85.3	127	157.9	235
CF5-10-18	17	18 G 1.0	0.65	16.5	128.3	191	213.7	318
CF5-10-25	17	25 G 1.0	0.77	19.5	177.4	264	338.0	503

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Configurators ► [www.igus.com/CF5](http://www.igus.com/CF5)


# Class 5.5.2.2


Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				


Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF5-15-03	16	3 G 1.5	0.30	7.5	32.3	48	51.7	77
CF5-15-04	16	4 G 1.5	0.31	8.0	43.0	64	72.6	108
CF5-15-05	16	5 G 1.5	0.35	9.0	53.1	79	88.7	132
CF5-15-07 <sup>17)</sup>	16	7 G 1.5	0.41	10.5	75.3	112	125.7	187
CF5-15-12	16	12 G 1.5	0.59	15.0	128.3	191	185.5	276
CF5-15-18	16	18 G 1.5	0.77	19.5	191.5	285	333.3	496
CF5-15-25	16	25 G 1.5	0.85	21.5	266.1	396	450.2	670
CF5-15-36	16	36 G 1.5	1.04	26.5	383.0	570	672.6	1001
CF5-25-04	14	4 G 2.5	0.39	10.0	68.5	102	118.3	176
CF5-25-05	14	5 G 2.5	0.43	11.0	86.0	128	139.8	208
CF5-25-07 <sup>17)</sup>	14	7 G 2.5	0.51	13.0	121.6	181	195.5	291
CF5-25-12	14	12 G 2.5	0.73	18.5	203.6	303	335.3	499
CF5-25-18	14	18 G 2.5	0.93	23.5	306.4	456	533.5	794
CF5-25-25	14	25 G 2.5	1.08	27.5	428.0	637	739.2	1100

<sup>17)</sup> Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

 Order example: **CF5-07-03** – In your desired length  
CF5 Chainflex® series **-07** Code nominal cross section **-03** Number of conductors

 Online order: [www.chainflex.com/CF5](http://www.chainflex.com/CF5)

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

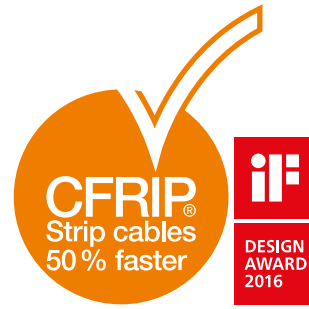


Chainflex® CF5/CF6 for storage retrieval unit: Long travel in longitudinal axis.  
E-Chain®: Series E4/00 with igus® guide trough made of steel



# PVC Control cable | CF6

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>	262.5 ft/s² (80 m/s²)	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	<b>24-20 AWG:</b> Mechanically high-quality TPE mixture. <b>18-14 AWG:</b> Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and stranded together around a high-tensile strength core, using short pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-14 AWG:</b> Black with white numbers, one conductor green-yellow.
	<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90% optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Green (RAL 6005)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

**Configurators** ► [www.igus.com/CF6](http://www.igus.com/CF6)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# Class 5.5.2.1

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	<b>24-20 AWG:</b> Style 10492 and 2570, 600 V, 80 °C <b>18-14 AWG:</b> Style 11113 and 2570, 600 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2, material/cable tested by IPA according to ISO standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
	+41 / +59		< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
	+59 / +140	≤ 164	7.5	10	8.5	11	9.5	12
	+140 / +158		6.8	7.5	7.8	8.5	8.8	9.5
			7.5	10	8.5	11	9.5	12

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes





# PVC Control cable | CF6

Strip cables 50 % faster



Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF6-02-04	24	4 x 0.25	0.28	7.0	20.2	30	41.7	62
CF6-02-25	24	25 x 0.25	0.57	14.5	79.3	118	179.4	267
CF6-03-05	22	5 x 0.34	0.30	7.5	26.2	39	61.8	92
CF6-05-02	20	2 x 0.5	0.28	7.0	20.8	31	52.4	78
CF6-05-05	20	5 G 0.5	0.33	8.5	34.9	52	73.2	109
CF6-05-07	20	7 G 0.5	0.39	10.0	45.0	67	88.0	131
CF6-05-09	20	9 G 0.5	0.47	12.0	49.7	74	105.5	157
CF6-05-12	20	12 G 0.5	0.51	13.0	69.9	104	159.9	238
CF6-05-18	20	18 G 0.5	0.59	15.0	103.5	154	198.2	295
CF6-05-25	20	25 G 0.5	0.69	17.5	137.8	205	276.9	412
CF6-07-03	18	3 G 0.75	0.31	8.0	32.9	49	67.9	101
CF6-07-04	18	4 G 0.75	0.33	8.5	39.6	59	77.9	116
CF6-07-05	18	5 G 0.75	0.35	9.0	47.7	71	88.7	132
CF6-07-07	18	7 G 0.75	0.41	10.5	61.1	91	105.5	157
CF6-07-12	18	12 G 0.75	0.55	14.0	92.1	137	184.8	275
CF6-07-18	18	18 G 0.75	0.69	17.5	140.4	209	277.5	413
CF6-07-25	18	25 G 0.75	0.77	19.5	190.2	283	372.3	554
CF6-10-03	17	3 G 1.0	0.31	8.0	38.3	57	73.9	110
CF6-10-04	17	4 G 1.0	0.35	9.0	45.7	68	80.6	120
CF6-10-05	17	5 G 1.0	0.37	9.5	54.4	81	94.7	141
CF6-10-07	17	7 G 1.0	0.47	12.0	73.2	109	141.8	211
CF6-10-12	17	12 G 1.0	0.59	15.0	115.6	172	221.7	330
CF6-10-18	17	18 G 1.0	0.75	19.0	175.4	261	334.6	498
CF6-10-25	17	25 G 1.0	0.83	21.0	231.2	344	414.6	617

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Configurators ► [www.igus.com/CF6](http://www.igus.com/CF6)

# Class 5.5.2.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF6-15-03	16	3 G 1.5	0.35	9.0	51.1	76	84.7	126
CF6-15-04	16	4 G 1.5	0.37	9.5	61.8	92	107.5	160
CF6-15-05	16	5 G 1.5	0.41	10.5	75.3	112	123.6	184
CF6-15-07 <sup>17)</sup>	16	7 G 1.5	0.51	13.0	104.8	156	180.1	268
CF6-15-12	16	12 G 1.5	0.67	17.0	161.3	240	262.1	390
CF6-15-18	16	18 G 1.5	0.83	21.0	247.3	368	405.9	604
CF6-15-25	16	25 G 1.5	0.94	24.0	331.3	493	602.1	896
CF6-15-36	16	36 G 1.5	1.18	30.0	489.2	728	904.5	1346
CF6-25-04	14	4 G 2.5	0.45	11.5	94.1	140	155.2	231

<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Order example: **CF6-15-12** – In your desired length  
**CF6 Chainflex® series -15** Code nominal cross section **-12** Number of conductors

Online order: [www.chainflex.com/CF6](http://www.chainflex.com/CF6)

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



Chainflex® CF5 and CF6 control cables (green) as well as CF211 measuring system cables (gray) in a screwing station of a motor factory. E-Chain®: System E4/00 with chainfix clip strain relief devices



# iguPUR Control cable | CF890

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Conductor construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 11008 and 20940, 600V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01560
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				15	16	17
+14 / +158	9.84	65.6	≤ 32.81	12.5	13.5	14.5
+158 / +176				15	16	17

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

### Typical application areas

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

Configurators ► [www.igus.com/CF890](http://www.igus.com/CF890)





Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF890-05-02 <sup>1)</sup>	20	2 x 0.5	0.22	5.5	7.4	11	22.8	34
CF890-05-03	20	3 G 0.5	0.24	6.0	10.8	16	28.2	42
CF890-05-04 <sup>1)</sup>	20	4 G 0.5	0.26	6.5	14.8	22	33.6	50
CF890-05-05	20	5 G 0.5	0.28	7.0	18.1	27	41.7	62
CF890-05-07	20	7 G 0.5	0.33	8.5	24.9	37	61.8	92
CF890-05-12	20	12 G 0.5	0.37	9.5	43.0	64	91.4	136
CF890-05-18	20	18 G 0.5	0.45	11.5	64.5	96	133.0	198
New CF890-05-25	20	25 G 0.5	0.53	13.5	88.7	132	185.5	276
CF890-07-02	18	2 x 0.75	0.24	6.0	10.8	16	28.2	42
CF890-07-03	18	3 G 0.75	0.26	6.5	16.1	24	34.9	52
CF890-07-04	18	4 G 0.75	0.28	7.0	21.5	32	43.7	65
CF890-07-05	18	5 G 0.75	0.30	7.5	26.9	40	53.1	79
CF890-07-07	18	7 G 0.75	0.35	9.0	37.6	56	77.9	116
CF890-07-12	18	12 G 0.75	0.41	10.5	64.5	96	118.3	176
CF890-07-18	18	18 G 0.75	0.51	13.0	96.1	143	176.1	262
New CF890-07-25	18	25 G 0.75	0.59	15.0	133.0	198	245.9	366
CF890-10-02	17	2 x 1.0	0.26	6.5	14.8	22	33.6	50
CF890-10-03	17	3 G 1.0	0.26	6.5	21.5	32	42.3	63
CF890-10-04	17	4 G 1.0	0.28	7.0	28.9	43	52.4	78
CF890-10-05	17	5 G 1.0	0.31	8.0	35.6	53	63.8	95
CF890-10-07	17	7 G 1.0	0.37	9.5	49.7	74	95.4	142
CF890-10-12	17	12 G 1.0	0.45	11.5	85.3	127	145.8	217
CF890-10-18	17	18 G 1.0	0.53	13.5	128.3	191	213.7	318
New CF890-10-25	17	25 G 1.0	0.63	16.0	177.4	264	302.4	450
CF890-15-02	16	2 x 1.5	0.30	7.5	21.5	32	51.7	77
CF890-15-03	16	3 G 1.5	0.33	8.5	32.3	48	66.5	99
CF890-15-04	16	4 G 1.5	0.35	9.0	43.0	64	82.7	123
CF890-15-05	16	5 G 1.5	0.39	10.0	53.8	80	104.8	156
CF890-15-07	16	7 G 1.5	0.49	12.5	74.6	111	156.6	233
CF890-15-12	16	12 G 1.5	0.57	14.5	128.3	191	236.5	352
CF890-15-18	16	18 G 1.5	0.69	17.5	192.2	286	349.4	520
New CF890-15-25	16	25 G 1.5	0.83	21.0	266.1	396	492.6	733

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF890-25-03 <sup>1)</sup>	14	3 G 2.5	0.35	9.0	53.8	80	93.4	139
CF890-25-04	14	4 G 2.5	0.39	10.0	71.2	106	119.6	178
CF890-25-05	14	5 G 2.5	0.45	11.5	88.7	132	149.2	222
CF890-25-07	14	7 G 2.5	0.55	14.0	124.3	185	223.8	333
CF890-25-12	14	12 G 2.5	0.65	16.5	213.0	317	341.4	508
New CF890-25-25	14	25 G 2.5	0.94	24.0	443.5	660	717.0	1067

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

- Order example: **CF890-07-18** – In your desired length  
**CF890** Chainflex® series **-07** Code nominal cross section **-18** Number of conductors
- Online order: [www.chainflex.com/CF890](http://www.chainflex.com/CF890)
- Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



# iguPUR Control cable | CF891

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Conductor construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Overall shield</b>	Tinned copper braid. 60% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 11008 and 20940, 600V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01560
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				15	16	17
+14 / +158	9.84	65.6	≤ 32.81	12.5	13.5	14.5
+158 / +176				15	16	17

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

### Typical application areas

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

Configurators ► [www.igus.com/CF891](http://www.igus.com/CF891)





# iguPUR Control cable | CF891

# Class 3.1.3.1

Requirements  
Travel distance  
Oil-resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF891-05-02 <sup>1)</sup>	20	2 x 0.5	0.24	6.0	18.8	28	33.6	50
CF891-05-03	20	3 G 0.5	0.26	6.5	22.8	34	38.3	57
CF891-05-04 <sup>1)</sup>	20	4 G 0.5	0.28	7.0	29.6	44	47.7	71
CF891-05-05	20	5 G 0.5	0.30	7.5	33.6	50	55.1	82
CF891-05-07 <sup>1)</sup>	20	7 G 0.5	0.35	9.0	48.4	72	78.6	117
CF891-05-12	20	12 G 0.5	0.41	10.5	69.9	104	110.9	165
CF891-05-18	20	18 G 0.5	0.47	12.0	94.7	141	153.2	228
New CF891-05-25	20	25 G 0.5	0.57	14.5	136.4	203	218.4	325
CF891-07-02	18	2 x 0.75	0.26	6.5	22.8	34	38.3	57
CF891-07-03	18	3 G 0.75	0.28	7.0	31.6	47	48.4	72
CF891-07-04	18	4 G 0.75	0.30	7.5	37.0	55	56.4	84
CF891-07-05	18	5 G 0.75	0.31	8.0	46.4	69	71.2	106
CF891-07-07	18	7 G 0.75	0.39	10.0	60.5	90	96.1	143
CF891-07-12	18	12 G 0.75	0.45	11.5	91.4	136	139.1	207
CF891-07-18	18	18 G 0.75	0.53	13.5	130.4	194	198.2	295
New CF891-07-25	18	25 G 0.75	0.63	16.0	188.2	280	280.9	418
CF891-10-02	17	2 x 1.0	0.28	7.0	29.6	44	46.4	69
CF891-10-03	17	3 G 1.0	0.30	7.5	37.0	55	55.1	82
CF891-10-04	17	4 G 1.0	0.31	8.0	48.4	72	69.2	103
CF891-10-05	17	5 G 1.0	0.33	8.5	55.1	82	81.3	121
CF891-10-07	17	7 G 1.0	0.41	10.5	76.6	114	114.2	170
CF891-10-12	17	12 G 1.0	0.47	12.0	116.3	173	166.0	247
CF891-10-18	17	18 G 1.0	0.57	14.5	176.1	262	250.6	373
New CF891-10-25	17	25 G 1.0	0.67	17.0	239.2	356	340.0	506
CF891-15-02	16	2 x 1.5	0.33	8.5	41.0	61	66.5	99
CF891-15-03	16	3 G 1.5	0.35	9.0	51.7	77	80.0	119
CF891-15-04	16	4 G 1.5	0.39	10.0	65.9	98	102.8	153
CF891-15-05	16	5 G 1.5	0.43	11.0	80.6	120	124.3	185
CF891-15-07	16	7 G 1.5	0.51	13.0	109.5	163	174.0	259
CF891-15-12	16	12 G 1.5	0.63	16.0	182.8	272	275.5	410
CF891-15-18	16	18 G 1.5	0.73	18.5	260.1	387	395.1	588
New CF891-15-25	16	25 G 1.5	0.87	22.0	348.8	519	528.8	787

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF891-25-03 <sup>1)</sup>	14	3 G 2.5	0.39	10.0	76.6	114	110.2	164
CF891-25-04	14	4 G 2.5	0.43	11.0	98.1	146	143.1	213
CF891-25-05	14	5 G 2.5	0.47	12.0	119.6	178	170.0	253
CF891-25-07	14	7 G 2.5	0.59	15.0	172.0	256	249.3	371
CF891-25-12	14	12 G 2.5	0.69	17.5	274.8	409	381.0	567
New CF891-25-25	14	25 G 2.5	0.98	25.0	532.2	792	743.2	1106

<sup>1)</sup> Delivery time upon request Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Order example: **CF891-05-04** – In your desired length  
**CF891** Chainflex® series **-05** Code nominal cross section **-04** Number of conductors

Online order: [www.chainflex.com/CF891](http://www.chainflex.com/CF891)

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



# PUR Control cable | CF77-UL-D

- For high mechanical load requirements
- PUR outer jacket
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	
	<b>Torsion</b>	± 180°, with 3.281ft (1m) cable length (except 5-core types ≥ 12 AWG Schedule delivery program)	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-4 AWG:</b> Black with white numbers, one conductor green-yellow. <b>CF77-UL-03-04-INI:</b> brown, blue, black, white
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Window-gray (similar to RAL 7040) <b>CF77-UL-03-04-INI:</b> Color: Yellow (similar to RAL 1021)

### Electrical Information

	<b>Nominal voltage</b>	<b>24-22 AWG:</b> 300 V <b>20-4 AWG:</b> 1000 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

**Configurators** ▶ [www.igus.com/CF77](http://www.igus.com/CF77)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 5.5.3.3

### 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	<b>24-22 AWG:</b> Style 10493 and 20233, 300 V, 80 °C <b>20-4 AWG:</b> Style 11323 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
-13 / +5			< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
+5 / +158		≤ 328	6.8	7.5	7.5	8.5	8.5	9.5
+158 / +176			7.5	10	9.5	11	10.5	12

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

### Typical application areas

- For high mechanical load requirements
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector





PUR Control cable | CF77-UL-D

Class 5.5.3.3

Requirements  
Travel distance  
Oil-resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF77-UL-02-04-D	24	4 x 0.25	0.22	5.5	7.4	11	23.5	35
CF77-UL-03-04-INI	22	4 x 0.34	0.24	6.0	11.4	17	26.9	40
CF77-UL-05-04-D	20	4 G 0.5	0.24	6.0	14.8	22	29.6	44
CF77-UL-05-05-D	20	5 G 0.5	0.26	6.5	18.8	28	34.9	52
CF77-UL-05-07-D	20	7 G 0.5	0.30	7.5	27.6	41	53.8	80
CF77-UL-05-12-D	20	12 G 0.5	0.39	10.0	44.3	66	88.7	132
CF77-UL-05-18-D	20	18 G 0.5	0.47	12.0	66.5	99	123.6	184
CF77-UL-05-25-D	20	25 G 0.5	0.55	14.0	92.7	138	166.0	247
CF77-UL-05-30-D	20	30 G 0.5	0.59	15.0	110.9	165	218.4	325
CF77-UL-07-03-D	18	3 G 0.75	0.26	6.5	16.1	24	37.0	55
CF77-UL-07-04-D	18	4 G 0.75	0.28	7.0	21.5	32	43.0	64
CF77-UL-07-05-D	18	5 G 0.75	0.30	7.5	26.9	40	50.4	75
CF77-UL-07-07-D	18	7 G 0.75	0.33	8.5	37.6	56	71.2	106
CF77-UL-07-12-D	18	12 G 0.75	0.47	12.0	64.5	96	129.0	192
CF77-UL-07-18-D	18	18 G 0.75	0.53	13.5	96.1	143	174.7	260
CF77-UL-07-20-D	18	20 G 0.75	0.57	14.5	106.8	159	196.2	292
CF77-UL-07-25-D	18	25 G 0.75	0.63	16.0	133.0	198	247.3	368
CF77-UL-07-36-D	18	36 G 0.75	0.75	19.0	199.6	297	352.1	524
CF77-UL-07-42-D <sup>1)</sup>	18	42 G 0.75	0.83	21.0	245.3	365	405.9	604
CF77-UL-10-02-D	17	2 x 1.0	0.26	6.5	14.8	22	36.3	54
CF77-UL-10-03-D	17	3 G 1.0	0.26	6.5	21.5	32	43.7	65
CF77-UL-10-04-D	17	4 G 1.0	0.28	7.0	28.9	43	53.1	79
CF77-UL-10-05-D	17	5 G 1.0	0.31	8.0	35.6	53	65.2	97
CF77-UL-10-07-D	17	7 G 1.0	0.35	9.0	49.7	74	80.0	119
CF77-UL-10-12-D	17	12 G 1.0	0.49	12.5	85.3	127	157.2	234
CF77-UL-10-18-D	17	18 G 1.0	0.59	15.0	128.3	191	227.8	339
CF77-UL-10-25-D	17	25 G 1.0	0.69	17.5	177.4	264	303.7	452
CF77-UL-10-42-D	17	42 G 1.0	0.89	22.5	310.4	462	475.8	708

<sup>1)</sup> Delivery time upon request  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF77-UL-15-03-D	16	3 G 1.5	0.30	7.5	32.3	48	57.8	86
CF77-UL-15-04-D	16	4 G 1.5	0.31	8.0	43.0	64	70.6	105
CF77-UL-15-05-D	16	5 G 1.5	0.33	8.5	53.8	80	84.0	125
CF77-UL-15-07-D <sup>17)</sup>	16	7 G 1.5	0.41	10.5	74.6	111	116.9	174
CF77-UL-15-12-D	16	12 G 1.5	0.55	14.0	128.3	191	207.0	308
CF77-UL-15-18-D	16	18 G 1.5	0.67	17.0	192.2	286	320.5	477
CF77-UL-15-25-D	16	25 G 1.5	0.77	19.5	266.1	396	423.3	630
CF77-UL-15-36-D <sup>1)</sup>	16	36 G 1.5	0.93	23.5	399.1	594	598.7	891
CF77-UL-15-42-D <sup>1)</sup>	16	42 G 1.5	1.04	26.5	489.9	729	698.8	1040
CF77-UL-25-03-D	14	3 G 2.5	0.33	8.5	53.8	80	83.3	124
CF77-UL-25-04-D	14	4 G 2.5	0.37	9.5	71.2	106	104.2	155
CF77-UL-25-05-D	14	5 G 2.5	0.41	10.5	88.7	132	129.0	192
CF77-UL-25-07-D <sup>17)</sup>	14	7 G 2.5	0.49	12.5	124.3	185	181.4	270
New CF77-UL-25-12-D	14	12 G 2.5	0.69	17.5	213.0	317	356.1	530
CF77-UL-40-04-D <sup>1)</sup>	12	4 G 4.0	0.45	11.5	118.3	176	172.0	256
CF77-UL-40-05-D	12	5 G 4.0	0.47	12.0	142.5	212	202.9	302
CF77-UL-60-05-D	10	5 G 6.0	0.55	14.0	213.0	317	287.6	428
CF77-UL-100-05-D <sup>1)</sup>	8	5 G 10.0	0.75	19.0	354.8	528	486.5	724
CF77-UL-160-05-D	6	5 G 16.0	0.89	22.5	567.8	845	737.8	1098
CF77-UL-250-05-D <sup>1)</sup>	4	5 G 25.0	1.10	28.0	887.0	1320	1098.7	1635

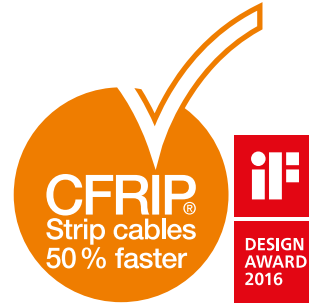
<sup>1)</sup> Delivery time upon request  
<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

- Order example: **CF77-UL-10-03-D** – In your desired length  
**CF77-UL-D** Chainflex® series -10 Code nominal cross section -03 Number of conductors
- Online order: [www.chainflex.com/CF77](http://www.chainflex.com/CF77)
- Delivery time 24hr or today.  
Delivery time means time until shipping of goods.
- Configurators ► [www.igus.com/CF77](http://www.igus.com/CF77)



# PUR Control cable | CF78-UL

- For high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-12 AWG:</b> Black with white numbers, one conductor green-yellow TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Inner jacket</b>	
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80% optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Window-gray (similar to RAL 7040)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	<b>24-22 AWG:</b> 300 V <b>20-4 AWG:</b> 1000 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	<b>24-22 AWG:</b> Style 10493 and 20233, 300 V, 80 °C <b>20-12 AWG:</b> Style 11323 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
-13 / +5			< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
+5 / +158		≤ 328	7.5	10	9.5	11	10.5	12
+158 / +176			6.8	7.5	7.5	8.5	8.5	9.5
			7.5	10	9.5	11	10.5	12

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

### Typical application areas

- For high mechanical load requirements
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector





# PUR Control cable | CF78-UL

# Class 5.5.3.1

Requirements  
Travel distance  
Oil-resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF78-UL-05-04	20	4 G 0.5	0.31	8.0	26.9	40	53.1	79
CF78-UL-05-05	20	5 G 0.5	0.31	8.0	32.3	48	63.2	94
CF78-UL-05-07	20	7 G 0.5	0.37	9.5	41.7	62	82.7	123
CF78-UL-05-09	20	9 G 0.5	0.43	11.0	54.4	81	99.5	148
CF78-UL-05-12	20	12 G 0.5	0.49	12.5	65.2	97	139.1	207
CF78-UL-05-18	20	18 G 0.5	0.57	14.5	104.8	156	172.7	257
CF78-UL-05-25	20	25 G 0.5	0.63	16.0	121.0	180	245.9	366
CF78-UL-07-03	18	3 G 0.75	0.31	8.0	29.6	44	53.1	79
CF78-UL-07-04	18	4 G 0.75	0.33	8.5	34.9	52	66.5	99
CF78-UL-07-05	18	5 G 0.75	0.37	9.5	43.0	64	72.6	108
CF78-UL-07-07	18	7 G 0.75	0.41	10.5	58.5	87	98.1	146
CF78-UL-07-12	18	12 G 0.75	0.53	13.5	97.4	145	169.3	252
CF78-UL-07-18	18	18 G 0.75	0.61	15.5	139.1	207	246.6	367
CF78-UL-07-36	18	36 G 0.75	0.87	22.0	279.5	416	489.2	728
CF78-UL-07-42 <sup>1)</sup>	18	42 G 0.75	0.96	24.5	328.6	489	537.6	800
CF78-UL-10-03	17	3 G 1.0	0.33	8.5	35.6	53	60.5	90
CF78-UL-10-04	17	4 G 1.0	0.35	9.0	43.7	65	71.9	107
CF78-UL-10-05	17	5 G 1.0	0.37	9.5	52.4	78	83.3	124
CF78-UL-10-07	17	7 G 1.0	0.43	11.0	73.9	110	114.2	170
CF78-UL-10-12	17	12 G 1.0	0.57	14.5	119.6	178	206.3	307
CF78-UL-10-18 <sup>1)</sup>	17	18 G 1.0	0.67	17.0	172.0	256	284.9	424
CF78-UL-10-25	17	25 G 1.0	0.79	20.0	233.2	347	381.0	567
CF78-UL-15-03	16	3 G 1.5	0.37	9.5	48.4	72	89.4	133
CF78-UL-15-04	16	4 G 1.5	0.39	10.0	60.5	90	93.4	139
CF78-UL-15-05	16	5 G 1.5	0.41	10.5	77.3	115	111.5	166
CF78-UL-15-07 <sup>17)</sup>	16	7 G 1.5	0.49	12.5	102.8	153	151.9	226
CF78-UL-15-12	16	12 G 1.5	0.63	16.0	167.3	249	270.8	403
CF78-UL-15-18	16	18 G 1.5	0.75	19.0	247.3	368	379.0	564
CF78-UL-15-25	16	25 G 1.5	0.89	22.5	332.6	495	507.3	755
CF78-UL-15-36 <sup>1)</sup>	16	36 G 1.5	1.04	26.5	480.5	715	770.7	1147
CF78-UL-15-42 <sup>1)</sup>	16	42 G 1.5	1.16	29.5	594.0	884	913.9	1360

<sup>1)</sup> Delivery time upon request

<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF78-UL-25-04	14	4 G 2.5	0.45	11.5	99.5	148	142.5	212
CF78-UL-25-05	14	5 G 2.5	0.49	12.5	118.9	177	166.0	247
CF78-UL-25-07 <sup>17)</sup>	14	7 G 2.5	0.57	14.5	164.6	245	235.2	350
CF78-UL-40-04 <sup>1)</sup>	12	4 G 4.0	0.55	14.0	145.8	217	229.8	342

<sup>1)</sup> Delivery time upon request

<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core



Order example: **CF78-UL-15-18** – In your desired length  
CF78-UL Chainflex® series -15 Code nominal cross section -18 Number of conductors



Online order: [www.chainflex.com/CF78](http://www.chainflex.com/CF78)



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



Configurators ► [www.igus.com/CF78](http://www.igus.com/CF78)



# PUR Control cable | CF2

- For very high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame-retardant
- Notch-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s <sup>2</sup> (80 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	<b>&lt; 20 AWG:</b> Mechanically high-quality TPE mixture. <b>≥ 20 AWG:</b> Mechanically high-quality PVC mixture (following DIN VDE 0207 Part 4).
	<b>Conductor construction</b>	<b>No. of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>No. of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	Color 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 tinned copper braid. 90% optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Dark Gray (RAL 7016)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)

**Configurators** ▶ [www.igus.com/CF2](http://www.igus.com/CF2)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10493 and 20317, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]
-4 / +14				≤ 328	6.8	7.5	8.5			
+14 / +158		32.81	16.41	262.5	5	6.8	7.5			
+158 / +176					6.8	7.5	8.5			

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

### Typical application areas

- For very high mechanical load requirements
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes, refrigerating sector





# PUR Control cable | CF2

# Class 6.5.3.1




Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

IGUS® CHAINFLEX® CF2

Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF2-01-04	26	4 x 0.14	0.26	6.5	11.4	17	26.9	40
CF2-01-08	26	8 x 0.14	0.30	7.5	19.5	29	43.7	65
CF2-01-12	26	12 x 0.14	0.37	9.5	32.9	49	67.9	101
CF2-01-18	26	18 x 0.14	0.41	10.5	35.6	53	84.0	125
CF2-01-24 <sup>3)</sup>	26	24 x 0.14	0.45	11.5	43.7	65	90.7	135
CF2-01-36	26	36 x 0.14	0.57	14.5	59.1	88	134.4	200
CF2-01-48	26	48 x 0.14	0.65	16.5	90.7	135	208.3	310
CF2-02-04	24	4 x 0.25	0.28	7.0	16.1	24	35.6	53
CF2-02-08	24	8 x 0.25	0.33	8.5	27.6	41	55.8	83
CF2-02-18	24	18 x 0.25	0.49	12.5	64.5	96	127.7	190
CF2-02-24	24	24 x 0.25	0.53	13.5	80.6	120	147.8	220
CF2-02-48	24	48 x 0.25	0.71	18.0	154.6	230	302.4	450

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 (star-quad with especially minimum crosstalk), these cables can virtually be used in all cases in which otherwise twisted-pair cables are required.  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core    **x** = without earth core

-  **Order example: CF2-01-04 – In your desired length**  
CF2 Chainflex® series -01 Code nominal cross section -04 Number of conductors
-  Online order: [www.chainflex.com/CF2](http://www.chainflex.com/CF2)
-  Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



Chainflex® CF2 cables are resistant to oil and coolants. E-chain®: System E4/00

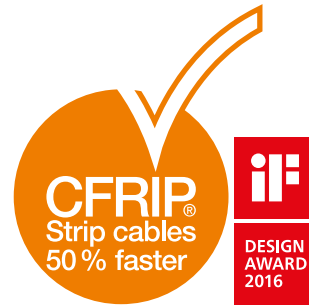
 Configurators ► [www.igus.com/CF78](http://www.igus.com/CF78)



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## TPE Control cable | CF9

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
	<b>flexible</b>		min. 4 x d
	<b>fixed</b>		min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>No. of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>No. of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-20 AWG:</b> Color code in accordance with DIN 47100. <b>18-2 AWG:</b> Black with white numbers, one conductor green-yellow. <b>CF9-02-03-INI:</b> brown, blue, black <b>CF9-03-04-INI:</b> brown, blue, black, white <b>CF9-02-05-INI:</b> brown, blue, black, white, green-yellow <b>CF9-03-16-07-03-INI:</b> <b>(22 AWG):</b> violet/red/gray/red-blue, green/gray-pink/white-green/white-yellow, white-gray/black/yellow-brown/brown-green, white/yellow/pink/gray-brown <b>(18 AWG):</b> blue/green-yellow/brown
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark Blue (RAL 5011)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

## Class 7.6.4.2

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<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>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/²] gliding	Travel distance [ft]	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]
-31 / -13				> 1312	6.8	7.5	8.5			
-13 / +194		32.81	19.69	328.1	5	6	7			
+194 / +212					6.8	7.5	8.5			

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

### Typical application areas

- For maximum mechanical load requirements
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications



Test data ► Page 58





# TPE Control cable | CF9

Strip cables 50 % faster

IGUS® CHAINFLEX® CF9

Image exemplary.

# Class 7.6.4.2

Requirements  
Travel distance  
Oil-resistance  
Torsion


low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF9-02-02	24	2 x 0.25	0.18	4.5	4.0	6	12.1	18
CF9-02-03-INI	24	3 x 0.25	0.18	4.5	5.4	8	14.8	22
CF9-02-06	24	6 x 0.25	0.22	5.5	10.8	16	24.9	37
CF9-02-07	24	7 x 0.25	0.26	6.5	12.8	19	29.6	44
CF9-02-08	24	8 x 0.25	0.26	6.5	14.8	22	33.6	50
CF9-02-12	24	12 x 0.25	0.31	8.0	21.5	32	49.1	73
CF9-02-18 <sup>1)</sup>	24	18 x 0.25	0.37	9.5	32.3	48	70.6	105
CF9-02-20	24	20 x 0.25	0.37	9.5	35.6	53	74.6	111
CF9-03-04-INI	22	4 x 0.34	0.20	5.0	10.1	15	21.5	32
CF9-03-05-INI	22	5 x 0.34	0.22	5.5	12.1	18	25.5	38
CF9-03-06	22	6 x 0.34	0.24	6.0	14.8	22	30.2	45
CF9-03-08	22	8 x 0.34	0.28	7.0	19.5	29	39.6	59
CF9-03-16-07-03-INI	22	16 x 0.34	0.43	11.0	55.1	82	106.8	159
	18	3 x 0.75						
CF9-05-02	20	2 x 0.5	0.20	5.0	7.4	11	17.5	26
CF9-05-03	20	3 x 0.5	0.20	5.0	10.8	16	21.5	32
CF9-05-04	20	4 x 0.5	0.22	5.5	14.8	22	26.9	40
CF9-05-05	20	5 x 0.5	0.24	6.0	18.1	27	32.3	48
CF9-05-07	20	7 x 0.5	0.28	7.0	24.9	37	44.3	66
CF9-05-12	20	12 x 0.5	0.39	10.0	43.0	64	80.6	120
CF9-05-18	20	18 x 0.5	0.45	11.5	64.5	96	118.9	177
CF9-05-25	20	25 x 0.5	0.51	13.0	88.7	132	158.6	236
CF9-05-36	20	36 x 0.5	0.61	15.5	128.3	191	224.4	334
CF9-07-04 <sup>1)</sup>	18	4 G 0.75	0.24	6.0	21.5	32	37.0	55
CF9-07-05	18	5 G 0.75	0.26	6.5	26.9	40	45.7	68
CF9-07-07	18	7 G 0.75	0.31	8.0	37.6	56	63.2	94
CF9-07-12	18	12 G 0.75	0.43	11.0	64.5	96	114.2	170
CF9-07-20	18	20 G 0.75	0.53	13.5	106.8	159	179.4	267
CF9-07-25	18	25 G 0.75	0.57	14.5	133.0	198	221.1	329
CF9-10-03	17	3 G 1.0	0.24	6.0	21.5	32	36.3	54
CF9-10-04	17	4 G 1.0	0.26	6.5	28.9	43	46.4	69
CF9-10-05	17	5 G 1.0	0.30	7.5	35.6	53	56.4	84
CF9-10-12	17	12 G 1.0	0.47	12.0	85.3	127	143.8	214
CF9-10-18	17	18 G 1.0	0.57	14.5	128.3	191	211.0	314
CF9-10-25	17	25 G 1.0	0.67	17.0	177.4	264	302.4	450


<sup>1)</sup> Delivery time upon request  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF9-15-02	16	2 x 1.5	0.26	6.5	21.5	32	40.3	60
CF9-15-04	16	4 G 1.5	0.30	7.5	43.0	64	60.5	90
CF9-15-05	16	5 G 1.5	0.31	8.0	54.4	81	73.9	110
CF9-15-07 <sup>17)</sup>	16	7 G 1.5	0.37	9.5	76.6	114	101.5	151
CF9-15-12	16	12 G 1.5	0.53	13.5	128.3	191	194.9	290
CF9-15-18	16	18 G 1.5	0.65	16.5	192.2	286	277.5	413
CF9-15-25	16	25 G 1.5	0.79	20.0	266.1	396	424.7	632
CF9-15-36	16	36 G 1.5	0.93	23.5	383.7	571	563.8	839
CF9-25-04	14	4 G 2.5	0.35	9.0	71.2	106	102.1	152
CF9-25-05	14	5 G 2.5	0.39	10.0	88.7	132	132.4	197
CF9-25-07 <sup>17)</sup>	14	7 G 2.5	0.47	12.0	125.7	187	164.6	245
CF9-25-12	14	12 G 2.5	0.69	17.5	213.0	317	346.1	515
CF9-25-16	14	16 G 2.5	0.77	19.5	284.2	423	461.6	687
CF9-25-18 <sup>7)</sup>	14	18 G 2.5	0.91	23.0	319.9	476	557.7	830
CF9-25-25	14	25 G 2.5	0.96	24.5	443.5	660	711.6	1059
CF9-40-04	12	4 G 4.0	0.41	10.5	114.2	170	153.9	229
CF9-60-04	10	4 G 6.0	0.49	12.5	170.7	254	223.1	332
CF9-60-05	10	5 G 6.0	0.53	13.5	213.0	317	275.5	410
CF9-100-04	8	4 G 10.0	0.65	16.5	284.2	423	389.7	580
CF9-160-04	6	4 G 16.0	0.71	18.0	354.8	528	483.1	719
CF9-350-04	2	4 G 35.0	1.10	28.0	993.8	1479	1188.7	1769

<sup>7)</sup> Nominal voltage 600/1000 V <sup>9)</sup> Nominal voltage 450/750 V  
<sup>17)</sup> Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.  
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

 Order example: **CF9-25-04** – In your desired length  
**CF9** Chainflex® series **-25** Code nominal cross section **-04** Number of conductors

 Online order: [www.chainflex.com/CF9](http://www.chainflex.com/CF9)

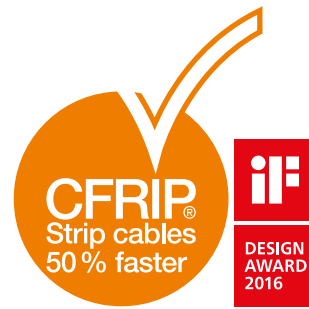
 Delivery time 24hr or today.  
Delivery time means time until shipping of goods.

 Configurators ► [www.igus.com/CF9](http://www.igus.com/CF9)



# TPE Control cable | CF10

- For maximum mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>No. of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>No. of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>26-20 AWG:</b> Color code in accordance with DIN 47100. <b>18-12 AWG:</b> Black with white numbers, one conductor green-yellow. <b>CF10-03-05-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 tinned copper braid. 90% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark Blue (RAL 5011)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]
-31 / -13				> 1312	6.8	7.5	8.5			
-13 / +194		32.81	19.69		5	6	7			
+194 / +212					6.8	7.5	8.5			

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

### Typical application areas

- For maximum mechanical load requirements
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications



Control cable Chainflex® CF10 in storage and retrieval units for high-bay warehouses. E-chain®: System E2 medium

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...





# TPE Control cable | CF10

Strip cables 50 % faster

IGUS® CHAINFLEX® CF10

Image exemplary.

# Class 7.6.4.1

Requirements  
Travel distance  
Oil-resistance  
Torsion


low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF10-01-12	26	12 x 0.14	0.31	8.0	26.9	40	55.1	82
CF10-01-18	26	18 x 0.14	0.37	9.5	45.7	68	85.3	127
CF10-02-04	24	4 x 0.25	0.26	6.5	17.5	26	34.9	52
CF10-02-08	24	8 x 0.25	0.31	8.0	28.2	42	54.4	81
CF10-02-12	24	12 x 0.25	0.37	9.5	47.0	70	85.3	127
CF10-02-25	24	25 x 0.25	0.49	12.5	80.0	119	151.2	225
CF10-03-05-INI	22	5 x 0.34	0.28	7.0	24.2	36	43.7	65
CF10-05-04	20	4 x 0.5	0.28	7.0	26.2	39	46.4	69
CF10-05-05	20	5 x 0.5	0.30	7.5	30.9	46	53.1	79
CF10-05-07	20	7 x 0.5	0.33	8.5	40.3	60	69.2	103
CF10-05-12	20	12 x 0.5	0.47	12.0	75.9	113	133.7	199
CF10-05-18	20	18 x 0.5	0.53	13.5	102.8	153	176.7	263
CF10-05-25	20	25 x 0.5	0.59	15.0	133.0	198	225.1	335
CF10-07-04	18	4 G 0.75	0.30	7.5	34.3	51	58.5	87
CF10-07-05	18	5 G 0.75	0.31	8.0	41.0	61	66.5	99
CF10-07-07	18	7 G 0.75	0.37	9.5	63.2	94	97.4	145
CF10-07-12	18	12 G 0.75	0.49	12.5	98.1	146	165.3	246
CF10-07-20	18	20 G 0.75	0.59	15.0	151.9	226	247.3	368
CF10-07-25	18	25 G 0.75	0.65	16.5	181.4	270	302.4	450
CF10-10-02	17	2 x 1.0	0.30	7.5	26.2	39	48.4	72
CF10-10-03	17	3 G 1.0	0.30	7.5	34.3	51	55.8	83
CF10-10-04	17	4 G 1.0	0.31	8.0	43.0	64	69.2	103
CF10-10-05	17	5 G 1.0	0.33	8.5	49.7	74	80.6	120
CF10-10-07	17	7 G 1.0	0.39	10.0	77.9	116	120.3	179
CF10-10-12	17	12 G 1.0	0.53	13.5	125.0	186	202.9	302
CF10-10-18	17	18 G 1.0	0.63	16.0	176.1	262	278.9	415
CF10-10-25	17	25 G 1.0	0.71	18.0	231.2	344	369.6	550


Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF10-15-04	16	4 G 1.5	0.35	9.0	66.5	99	97.4	145
CF10-15-05	16	5 G 1.5	0.39	10.0	80.0	119	118.3	176
CF10-15-07 <sup>17)</sup>	16	7 G 1.5	0.45	11.5	106.8	159	157.9	235
CF10-15-12	16	12 G 1.5	0.61	15.5	174.0	259	262.7	391
CF10-15-18	16	18 G 1.5	0.79	20.0	267.4	398	419.3	624
CF10-25-04	14	4 G 2.5	0.45	11.5	100.1	149	150.5	224
CF10-25-07 <sup>17)</sup>	14	7 G 2.5	0.53	13.5	164.0	244	244.6	364
CF10-25-12	14	12 G 2.5	0.75	19.0	276.2	411	438.8	653
CF10-40-04	12	4 G 4.0	0.49	12.5	149.2	222	213.0	317
CF10-40-05	12	5 G 4.0	0.53	13.5	182.1	271	259.4	386

<sup>17)</sup> Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m. When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

 Order example: **CF10-10-12** – In your desired length  
**CF10** Chainflex® series -10 Code nominal cross section -12 Number of conductors

 Online order: [www.chainflex.com/CF10](http://www.chainflex.com/CF10)

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

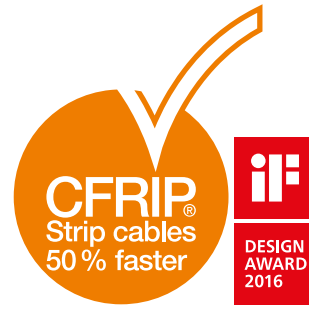
 Configurators ► [www.igus.com/CF10](http://www.igus.com/CF10)



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## TPE Control cable | CF9-UL

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- Flame-retardant
- PVC free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
	<b>flexible</b>		min. 4 x d
	<b>fixed</b>		min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
	<b>flexible</b>		-49 °F to +212 °F (-45 °C to +100 °C)
	<b>fixed</b>		-58 °F to +212 °F (-50 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>gliding</b>		19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>No. of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>No. of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.

	<b>Color code</b>	<b>24-20 AWG:</b> Color code in accordance with DIN 47100. <b>18-10 AWG:</b> Black with white numbers, one conductor green-yellow. <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> brown, blue, black, white, green-yellow
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	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Gray (RAL 7015)
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	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>
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**Configurators** ▶ [www.igus.com/CF9UL](http://www.igus.com/CF9UL)

## Class 6.6.4.2

### Electrical Information

	<b>Nominal voltage</b>	<b>24-22 AWG:</b> 300 V <b>20-10 AWG:</b> 1000 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	<b>24-22 AWG:</b> Style 10479 and 21529, 300 V, 90 °C <b>20-10 AWG:</b> Style 10258 and 21387, 1000 V, 90 °C

	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV/GL</b>	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]	
-31 / -13				> 1312	6.8	7.5	10			
-13 / +194		32.81	19.69		5	6	7			
+194 / +212					6.8	7.5	10			

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

### Typical application areas

- For very high mechanical load requirements
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications





# TPE Control cable | CF9-UL

Strip cables 50 % faster

IGUS® CHAINFLEX® CF9.UL

Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF9-UL-02-02	24	2 x 0.25	0.20	5.0	4.0	6	18.8	28
CF9-UL-02-03-INI	24	3 x 0.25	0.22	5.5	5.4	8	21.5	32
CF9-UL-02-04	24	4 x 0.25	0.22	5.5	7.4	11	25.5	38
CF9-UL-02-06	24	6 x 0.25	0.26	6.5	10.8	16	32.9	49
CF9-UL-02-07 <sup>1)</sup>	24	7 x 0.25	0.28	7.0	12.8	19	39.6	59
CF9-UL-02-08	24	8 x 0.25	0.30	7.5	14.8	22	43.0	64
CF9-UL-02-12	24	12 x 0.25	0.33	8.5	21.5	32	63.2	94
CF9-UL-03-04-INI	22	4 x 0.34	0.24	6.0	10.1	15	28.9	43
CF9-UL-03-05-INI	22	5 x 0.34	0.26	6.5	12.1	18	35.6	53
CF9-UL-03-06	22	6 x 0.34	0.26	6.5	14.8	22	38.3	57
CF9-UL-03-08	22	8 x 0.34	0.30	7.5	19.5	29	51.1	76
CF9-UL-05-02	20	2 x 0.5	0.24	6.0	7.4	11	28.9	43
CF9-UL-05-03 <sup>1)</sup>	20	3 x 0.5	0.26	6.5	10.8	16	34.9	52
CF9-UL-05-04	20	4 x 0.5	0.28	7.0	14.8	22	40.3	60
CF9-UL-05-05	20	5 x 0.5	0.30	7.5	18.1	27	47.0	70
CF9-UL-05-07	20	7 x 0.5	0.33	8.5	24.9	37	64.5	96
CF9-UL-05-12	20	12 x 0.5	0.45	11.5	43.0	64	114.2	170
CF9-UL-05-18	20	18 x 0.5	0.53	13.5	64.5	96	160.6	239
CF9-UL-05-25	20	25 x 0.5	0.57	14.5	88.7	132	198.9	296
CF9-UL-05-36	20	36 x 0.5	0.73	18.5	128.3	191	309.1	460
CF9-UL-07-05	18	5 G 0.75	0.31	8.0	26.9	40	64.5	96
CF9-UL-07-07	18	7 G 0.75	0.37	9.5	37.6	56	89.4	133
CF9-UL-07-12	18	12 G 0.75	0.51	13.0	64.5	96	157.2	234
CF9-UL-07-20 <sup>1)</sup>	18	20 G 0.75	0.61	15.5	106.8	159	234.5	349
CF9-UL-07-25	18	25 G 0.75	0.65	16.5	133.0	198	282.9	421
CF9-UL-10-03	17	3 G 1.0	0.30	7.5	21.5	32	52.4	78
CF9-UL-10-04	17	4 G 1.0	0.31	8.0	28.9	43	65.2	97
CF9-UL-10-05 <sup>1)</sup>	17	5 G 1.0	0.35	9.0	35.6	53	77.9	116
CF9-UL-10-12	17	12 G 1.0	0.55	14.0	85.3	127	190.2	283
CF9-UL-10-18	17	18 G 1.0	0.65	16.5	128.3	191	272.8	406
CF9-UL-10-25	17	25 G 1.0	0.73	18.5	177.4	264	363.5	541

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core x = without earth core


 Configurators ► [www.igus.com/CF9UL](http://www.igus.com/CF9UL)


# Class 6.6.4.2


Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

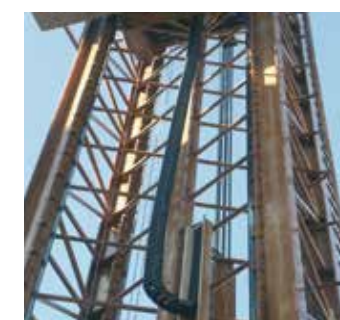
Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF9-UL-15-04	16	4 G 1.5	0.35	9.0	43.0	64	84.7	126
CF9-UL-15-05	16	5 G 1.5	0.37	9.5	53.8	80	100.8	150
CF9-UL-15-07 <sup>17)</sup>	16	7 G 1.5	0.45	11.5	74.6	111	138.4	206
CF9-UL-15-12	16	12 G 1.5	0.63	16.0	128.3	191	258.0	384
CF9-UL-15-18	16	18 G 1.5	0.75	19.0	192.2	286	371.6	553
CF9-UL-15-25	16	25 G 1.5	0.87	22.0	266.1	396	508.0	756
CF9-UL-25-04	14	4 G 2.5	0.41	10.5	71.2	106	130.4	194
CF9-UL-25-05 <sup>1)</sup>	14	5 G 2.5	0.43	11.0	88.7	132	160.6	239
CF9-UL-25-07 <sup>17)</sup>	14	7 G 2.5	0.53	13.5	124.3	185	220.4	328
CF9-UL-25-12	14	12 G 2.5	0.75	19.0	213.0	317	416.6	620
CF9-UL-25-16	14	16 G 2.5	0.85	21.5	284.2	423	545.0	811
CF9-UL-25-18	14	18 G 2.5	0.94	24.0	319.9	476	616.2	917
CF9-UL-25-25	14	25 G 2.5	1.06	27.0	443.5	660	805.7	1199
CF9-UL-40-04	12	4 G 4.0	0.47	12.0	113.6	169	182.1	271
CF9-UL-60-04	10	4 G 6.0	0.55	14.0	170.7	254	255.3	380

<sup>1)</sup> Delivery time upon request  
<sup>17)</sup> Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.  
 When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core x = without earth core

 **Order example: CF9-UL-02-12 – In your desired length**  
 CF9-UL Chainflex® series -02 Code nominal cross section -12 Number of conductors

 Online order: [www.chainflex.com/CF9UL](http://www.chainflex.com/CF9UL)

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

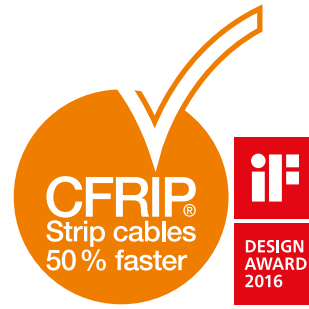


Igus® Chainflex® cables in a rafting channel application.



# TPE Control cable | CF10-UL

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- PVC free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-49 °F to +212 °F (-45 °C to +100 °C)
		<b>fixed</b>	-58 °F to +212 °F (-50 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	<b>No. of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>No. of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-20 AWG:</b> Color code in accordance with DIN 47100. <b>18-12 AWG:</b> Black with white numbers, one conductor green-yellow.
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Gray (RAL 7015)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

**Configurators** ▶ [www.igus.com/CF10UL](http://www.igus.com/CF10UL)

# Class 6.6.4.1

### Electrical Information

	<b>Nominal voltage</b>	<b>24-22 AWG:</b> 300 V <b>20-10 AWG:</b> 1000 V
	<b>Testing voltage</b>	2000 V (following DIN EN 50396)

### 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	<b>24 AWG:</b> Style 10479 and 21529, 300 V, 90 °C <b>20-12 AWG:</b> Style 10258 and 21387, 1000 V, 90 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV/GL</b>	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]	
-31 / -13					6.8	7.5	8.5			
-13 / +194		32.81	19.69	328.1	> 1312	5	6	7		
+194 / +212					6.8	7.5	8.5			

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

### Typical application areas

- For very high mechanical load requirements
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications





# TPE Control cable | CF10-UL

## Class 6.6.4.1

Strip cables 50 % faster



Image exemplary.

Part No.	AWG	Number of conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF10-UL-02-04	24	4 x 0.25	0.28	7.0	18.8	28	46.4	69
CF10-UL-02-08	24	8 x 0.25	0.35	9.0	27.6	41	69.9	104
CF10-UL-02-12	24	12 x 0.25	0.41	10.5	47.0	70	106.2	158
CF10-UL-02-24	24	24 x 0.25	0.51	13.0	80.6	120	171.4	255
CF10-UL-05-04	20	4 x 0.5	0.33	8.5	27.6	41	66.5	99
CF10-UL-05-05	20	5 x 0.5	0.35	9.0	32.3	48	75.3	112
CF10-UL-05-12	20	12 x 0.5	0.51	13.0	78.6	117	174.0	259
CF10-UL-05-18	20	18 x 0.5	0.59	15.0	108.2	161	234.5	349
CF10-UL-05-25	20	25 x 0.5	0.65	16.5	137.1	204	282.2	420
CF10-UL-07-03	18	3 G 0.75	0.33	8.5	29.6	44	71.2	106
CF10-UL-07-04	18	4 G 0.75	0.35	9.0	36.3	54	82.7	123
CF10-UL-07-05	18	5 G 0.75	0.39	10.0	50.4	75	104.8	156
CF10-UL-07-07	18	7 G 0.75	0.43	11.0	66.5	99	136.4	203
CF10-UL-07-12	18	12 G 0.75	0.57	14.5	106.2	158	229.8	342
CF10-UL-07-20 <sup>1)</sup>	18	20 G 0.75	0.67	17.0	157.9	235	323.9	482
CF10-UL-07-25	18	25 G 0.75	0.75	19.0	206.3	307	415.3	618
CF10-UL-10-02	17	2 x 1.0	0.33	8.5	28.2	42	70.6	105
CF10-UL-10-03	17	3 G 1.0	0.35	9.0	35.6	53	81.3	121
CF10-UL-10-04	17	4 G 1.0	0.39	10.0	53.1	79	106.2	158
CF10-UL-10-05	17	5 G 1.0	0.41	10.5	61.8	92	121.6	181
CF10-UL-10-07	17	7 G 1.0	0.47	12.0	80.6	120	159.9	238
CF10-UL-10-12	17	12 G 1.0	0.59	15.0	127.0	189	255.3	380
CF10-UL-10-18	17	18 G 1.0	0.75	19.0	202.9	302	393.8	586
CF10-UL-10-25	17	25 G 1.0	0.85	21.5	262.1	390	518.8	772
CF10-UL-15-04	16	4 G 1.5	0.41	10.5	69.9	104	130.4	194
CF10-UL-15-05	16	5 G 1.5	0.45	11.5	83.3	124	153.2	228
CF10-UL-15-07 <sup>17)</sup>	16	7 G 1.5	0.51	13.0	110.2	164	200.9	299
CF10-UL-15-12	16	12 G 1.5	0.71	18.0	180.1	268	351.4	523
CF10-UL-15-18	16	18 G 1.5	0.85	21.5	277.5	413	518.1	771
CF10-UL-25-04	14	4 G 2.5	0.47	12.0	103.5	154	185.5	276
CF10-UL-25-07 <sup>17)</sup>	14	7 G 2.5	0.59	15.0	168.0	250	296.3	441
CF10-UL-25-12	14	12 G 2.5	0.85	21.5	299.0	445	567.8	845
CF10-UL-40-04	12	4 G 4.0	0.53	13.5	152.5	227	252.7	376

<sup>1)</sup> Delivery time upon request

<sup>17)</sup> Using the cables with "7 G 1.5 mm<sup>2</sup>" and "7 G 2.5 mm<sup>2</sup>" it is essential: bending radius 17 x d with travel distance ≥ 5 m.

When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.

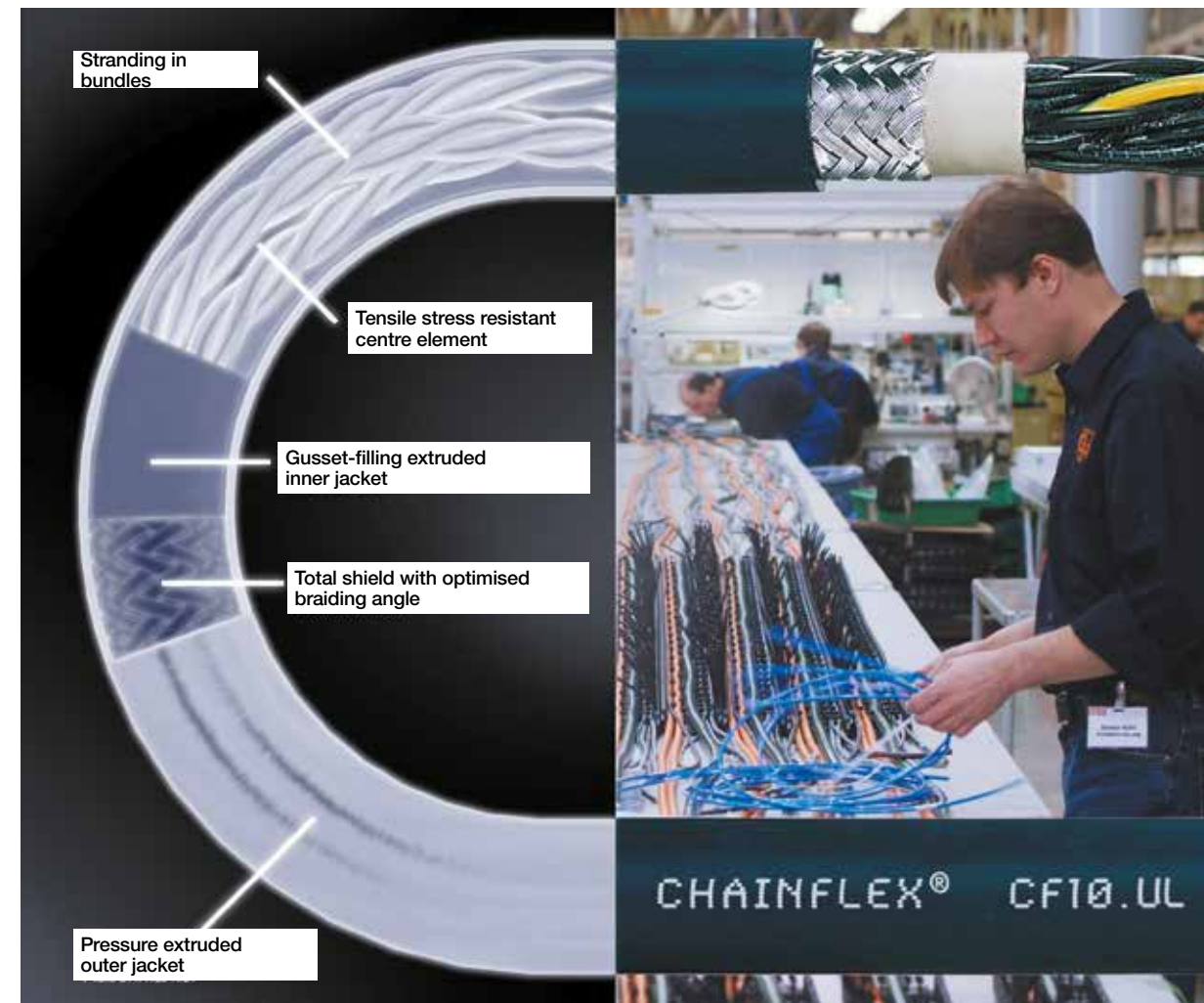
Note: The mentioned outer diameters are maximum values.

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

Order example: **CF10-UL-10-02** – In your desired length  
CF10-UL Chainflex® series -10 Code nominal cross section -02 Number of conductors

Online order: [www.chainflex.com/CF10UL](http://www.chainflex.com/CF10UL)

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



Configurators ► [www.igus.com/CF10UL](http://www.igus.com/CF10UL)



# TPE Control cable | CF98



- For maximum mechanical load requirements and especially small bend radii to 4 x d
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 4 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductor</b>	Conductor consisting of a highly flexible stranded special alloy.
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors cabled in one layer with especially short pitch length.
	<b>Color code</b>	Color 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 mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark Blue (RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	1500 V

### 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

**Configurators** ▶ [www.igus.com/CF98](http://www.igus.com/CF98)

# Class 7.5.4.2

### Properties and approvals

	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					≤ 328	5	5	5
-13 / +176	32.81	19.69	328.1			4	4	4
+176 / +194						5	5	5

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

### Typical application areas

- For maximum mechanical load requirements and especially small bend radii to 4 x d
- Indoor and outdoor applications, UV-resistant
- Especially for short, very fast applications with small radii and tight design space
- Pick and place machines, automatic doors, Clean room, very quick handling

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF98-01-02	26	2 x 0.14	0.16	4.0	2.7	4	7.4	11
CF98-01-03	26	3 x 0.14	0.18	4.5	4.0	6	9.4	14
CF98-01-04	26	4 x 0.14	0.20	5.0	6.0	9	10.8	16
CF98-01-07 <sup>1)</sup>	26	7 x 0.14	0.24	6.0	9.4	14	14.1	21
CF98-01-08	26	8 x 0.14	0.26	6.5	10.8	16	16.1	24
CF98-02-03-INI	24	3 x 0.25	0.20	5.0	8.1	12	16.8	25
CF98-02-04	24	4 x 0.25	0.22	5.5	10.8	16	20.2	30
CF98-02-07	24	7 x 0.25	0.26	6.5	17.5	26	35.6	53
CF98-02-08	24	8 x 0.25	0.28	7.0	20.2	30	40.3	60
CF98-03-03 <sup>1)</sup>	22	3 x 0.34	0.20	5.0	9.4	14	18.8	28
CF98-03-04-INI	22	4 x 0.34	0.22	5.5	12.8	19	23.5	35
CF98-03-07	22	7 x 0.34	0.28	7.0	21.5	32	37.0	55
CF98-03-08 <sup>1)</sup>	22	8 x 0.34	0.30	7.5	25.5	38	42.3	63
CF98-05-04	20	4 x 0.5	0.24	6.0	20.8	31	26.9	40

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core x = without earth core



# TPE Control cable | CF99

- For maximum mechanical load requirements and especially small bend radii to 4 x d
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Low-temperature-flexibility
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 4 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5

### Cable structure

	<b>Conductor</b>	Conductor consisting of a highly flexible stranded special alloy.
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors cabled in one layer with especially short pitch length.
	<b>Color code</b>	Color code in accordance with DIN 47100. <b>CF99-02-03-INI:</b> brown, blue, black <b>CF99-03-04-INI:</b> brown, blue, black, white
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Highly flexible, alloyed special shield. 90% optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark Blue (RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	1500 V

### 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

### Properties and approvals

	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					≤ 328	5	5	5
-13 / +176	32.81	19.69	328.1			4	4	4
+176 / +194						5	5	5

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

### Typical application areas

- For maximum mechanical load requirements and especially small bend radii up to 4 x d
- Indoor and outdoor applications, UV-resistant
- Especially for short, very fast applications with small radii and tight design space
- Pick and place machines, automatic doors, Clean room, very quick handling

Part No.	AWG	Number of conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF99-01-02	26	2 x 0.14	0.22	5.5	9.4	14	22.2	33
CF99-01-03 <sup>1)</sup>	26	3 x 0.14	0.24	6.0	11.4	17	24.9	37
CF99-01-04	26	4 x 0.14	0.24	6.0	14.1	21	28.9	43
CF99-01-07 <sup>1)</sup>	26	7 x 0.14	0.30	7.5	21.5	32	41.7	62
CF99-01-08	26	8 x 0.14	0.31	8.0	24.2	36	46.4	69
CF99-02-03-INI <sup>1)</sup>	24	3 x 0.25	0.26	6.5	16.8	25	32.3	48
CF99-02-04	24	4 x 0.25	0.26	6.5	20.2	30	37.6	56
CF99-02-07	24	7 x 0.25	0.31	8.0	32.3	48	57.1	85
CF99-02-08 <sup>1)</sup>	24	8 x 0.25	0.33	8.5	36.3	54	62.5	93
CF99-03-03 <sup>1)</sup>	22	3 x 0.34	0.26	6.5	18.1	27	34.3	51
CF99-03-04-INI <sup>1)</sup>	22	4 x 0.34	0.28	7.0	23.5	35	41.7	62
CF99-03-08	22	8 x 0.34	0.35	9.0	43.0	64	70.6	105

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core    **x** = without earth core

# Data cables

Coax cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s], unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
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### Data cables – Stranded in layers

**Exclusive!** Chainflex® guarantee – guaranteed lifetime ▶ Selection table page 140

CF240	PVC	✓	10	+41 /+158	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		9.84	6.56	65.62	142
CF240-PUR	PUR	✓	10	-13 /+176	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		9.84	6.56	65.62	146

### Data cables – Twisted Pair

CF211	PVC	✓	7.5	+41 /+158	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		16.4	9.84	164	150
CF211-PUR	PUR	✓	7.5	-13 /+176	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		16.4	9.84	164	154 <b>New</b>
CF11	TPE	✓	6.8	-31 /+212	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		32.81	19.69	328.1	158

### Data cables – Twisted Pair/Pair shield

CF112	PUR	✓	10	-13 /+176	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		32.81	16.4	262.5	162 <b>New</b>
CF12	TPE	✓	10	-31 /+212	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		32.81	19.69	328.1	166

### Data cables – Thermo (chapter “special cables“ - page 412)

CFTHERMO	PUR	✓	12.5-15		UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		6.562	3.281	65.62	414
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### Data cables – Coax










CFKOAX	TPE		10	-31 /+212	UL US, ENEC, EAC, CE, RoHS, REACH, ISO 9001, ISO 14001, CE, CE, CE	✓		32.81	16.4	328.1	168
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# Chainflex® guarantee



# Guaranteed lifetime <sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page
		unsupported	gliding			< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	
<b>Data cables – Stranded in layers</b>												
 CF240	+41 / +59 +59 / +140 +140 / +158	9.843	6.562	65.62	≤ 164	12.5	15	13.5	16	14.5	17	142
 CF240-PUR	-13 / +14 +14 / +158 +158 / +176	9.843	6.562	65.62	≤ 164	12.5	15	13.5	16	14.5	17	146
<b>Data cables – Twisted Pair</b>												
 CF211	+41 / +59 +59 / +140 +140 / +158	16.4	9.843	164	≤ 328.1	10	7.5	11	8.5	12	9.5	150
 CF211-PUR <b>New!</b>	-13 / +14 +14 / +158 +158 / +176	16.4	9.843	164	≤ 328.1	10	7.5	11	8.5	12	9.5	154
 CF11	-31 / -13 -13 / +40 +40 / +212	32.81	19.69	328.1	≤ 1,312	7.5	6.8	8.5	7.8	9.5	8.8	158
<b>Data cables – Twisted Pair/Pair shield</b>												
 CF112 <b>New!</b>	-4 / +14 +14 / +158 +158 / +176	32.81	16.4	262.5	≤ 328.1	12.5	10	13.5	11	14.5	12	162
 CF12	-31 / -13 -13 / +194 +194 / +212	32.81	19.69	328.1	≤ 1,312	12.5	10	13.5	11	14.5	12	166
<b>Data cables – Coax</b>												
 CFKoax1/3	-31 / -13 -13 / +194 +194 / +212	32.81	16.4	328.1	≤ 1,312	12.5	10	13.5	11	14.5	12	168
 CFKoax2	-31 / -13 -13 / +140 +140 / +158	32.81	16.4	328.1	≤ 1,312	12.5	10	13.5	11	14.5	12	168

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

\* Guaranteed lifetime, higher numbers of cycles possible.

# PVC Data cable | CF240

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors are cabled in layers with short pitch lengths.
	<b>Color code</b>	Color code in accordance with DIN 47100.
	<b>Intermediate layer</b>	Polyester tape over external layer.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Silver-gray (similar to RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

**Configurators** ▶ [www.igus.com/CF240](http://www.igus.com/CF240)

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil-resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

# Class 4.4.2.1

### Properties and approvals

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10493 and 2464, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, Travel distance from/to [°F] [ft]	5 million		7.5 million		10 million	
		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]
+41 / +59		< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
+59 / +140	≤ 164	12.5	15	13.5	16	14.5	17
+140 / +158		10	12.5	11	13.5	12	14.5
		12.5	15	13.5	16	14.5	17

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

### Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, Handling, indoor cranes







Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF240-01-03	26	3 x 0.14	0.20	5.0	10.1	15	18.8	28
CF240-01-04	26	4 x 0.14	0.20	5.0	10.8	16	21.5	32
CF240-01-05	26	5 x 0.14	0.22	5.5	12.1	18	23.5	35
CF240-01-07	26	7 x 0.14	0.24	6.0	16.8	25	30.2	45
CF240-01-14	26	14 x 0.14	0.30	7.5	28.9	43	49.7	74
CF240-01-18	26	18 x 0.14	0.31	8.0	36.3	54	62.5	93
CF240-01-24	26	24 x 0.14	0.35	9.0	45.0	67	86.0	128
CF240-02-03	24	3 x 0.25	0.20	5.0	12.1	18	23.5	35
CF240-02-04	24	4 x 0.25	0.22	5.5	14.1	21	30.9	46
CF240-02-05	24	5 x 0.25	0.22	5.5	17.5	26	28.9	43
CF240-02-07	24	7 x 0.25	0.26	6.5	22.2	33	37.0	55
CF240-02-08	24	8 x 0.25	0.28	7.0	24.9	37	42.3	63
CF240-02-14	24	14 x 0.25	0.31	8.0	42.3	63	62.5	93
CF240-02-18	24	18 x 0.25	0.33	8.5	50.4	75	74.6	111
CF240-02-24	24	24 x 0.25	0.37	9.5	67.2	100	111.5	166
CF240-03-02	22	2 x 0.34	0.22	5.5	13.4	20	25.5	38
CF240-03-03	22	3 x 0.34	0.22	5.5	18.1	27	26.9	40
CF240-03-04	22	4 x 0.34	0.24	6.0	20.8	31	34.9	52
CF240-03-05	22	5 x 0.34	0.24	6.0	24.2	36	38.3	57
CF240-03-07	22	7 x 0.34	0.30	7.5	32.3	48	51.7	77
CF240-03-10	22	10 x 0.34	0.33	8.5	42.3	63	65.9	98
CF240-03-14	22	14 x 0.34	0.35	9.0	53.1	79	77.9	116
CF240-03-18	22	18 x 0.34	0.39	10.0	64.5	96	95.4	142
CF240-03-24	22	24 x 0.34	0.43	11.0	85.3	127	123.6	184

Note: The mentioned outer diameters are maximum values.



Order example: CF240-02-03 – In your desired length  
CF240 Chainflex® series -02 Code nominal cross section -03 Number of conductors



Online order ► [www.chainflex.com/CF240](http://www.chainflex.com/CF240)



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



Configurators ► [www.igus.com/CF240](http://www.igus.com/CF240)



# PUR Data cable | CF240-PUR

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors are cabled in layers with short pitch lengths.
	<b>Color code</b>	Color code in accordance with DIN 47100.
	<b>Intermediate layer</b>	Polyester tape over external layer.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Silver-gray (similar to RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

**Configurators** ► [www.igus.com/CF240PUR](http://www.igus.com/CF240PUR)

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil-resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

# Class 4.4.3.1

### 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10493 and 20233, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 936-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	Travel distance [ft]	5 million		7.5 million		10 million	
			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]
-13 / +5			< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft	< 32.81 ft	≥ 32.81 ft
+5 / +158	≤ 164		10	12.5	11	13.5	12	14.5
+158 / +176			12.5	15	13.5	16	14.5	17

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector







Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF240-PUR-01-03 <sup>1)</sup>	26	3 x 0.14	0.22	5.5	9.4	14	24.9	37
CF240-PUR-01-04	26	4 x 0.14	0.24	6.0	10.8	16	26.9	40
CF240-PUR-01-05 <sup>1)</sup>	26	5 x 0.14	0.24	6.0	12.1	18	30.2	45
CF240-PUR-01-07 <sup>1)</sup>	26	7 x 0.14	0.26	6.5	16.1	24	37.0	55
CF240-PUR-01-14	26	14 x 0.14	0.31	8.0	28.2	42	54.4	81
CF240-PUR-01-18	26	18 x 0.14	0.33	8.5	36.3	54	65.2	97
CF240-PUR-02-03	24	3 x 0.25	0.24	6.0	12.1	18	28.2	42
CF240-PUR-02-04	24	4 x 0.25	0.24	6.0	14.8	22	30.9	46
CF240-PUR-02-05	24	5 x 0.25	0.24	6.0	17.5	26	34.9	52
CF240-PUR-02-07	24	7 x 0.25	0.28	7.0	22.2	33	44.3	66
CF240-PUR-02-08	24	8 x 0.25	0.30	7.5	24.9	37	49.1	73
CF240-PUR-02-14	24	14 x 0.25	0.33	8.5	42.3	63	71.2	106
CF240-PUR-02-18	24	18 x 0.25	0.35	9.0	50.4	75	84.7	126
CF240-PUR-03-03 <sup>1)</sup>	22	3 x 0.34	0.24	6.0	18.1	27	32.9	49
CF240-PUR-03-04	22	4 x 0.34	0.26	6.5	20.8	31	37.0	55
CF240-PUR-03-05 <sup>1)</sup>	22	5 x 0.34	0.28	7.0	24.2	36	41.7	62
CF240-PUR-03-07	22	7 x 0.34	0.31	8.0	32.3	48	58.5	87
CF240-PUR-03-14	22	14 x 0.34	0.37	9.5	53.1	79	88.0	131
CF240-PUR-03-18	22	18 x 0.34	0.41	10.5	65.2	97	108.2	161

<sup>1)</sup> Delivery time upon request

**Note:** The mentioned outer diameters are maximum values.



**Order example: CF240-PUR-02-03 – In your desired length**  
CF240-PUR Chainflex® series -02 Code nominal cross section -03 Number of conductors



Online order ► [www.chainflex.com/CF240PUR](http://www.chainflex.com/CF240PUR)



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



Configurators ► [www.igus.com/CF240PUR](http://www.igus.com/CF240PUR)



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Data cable | CF211

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Twisted pair
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	16.41 ft/s (5 m/s)
		<b>gliding</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	Color code in accordance with DIN 47100.
	<b>Intermediate layer</b>	Polyester tape over external layer.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Silver-gray (similar to RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

**Configurators** ▶ [www.igus.com/CF211](http://www.igus.com/CF211)

# Class 5.5.2.1

### Properties and approvals

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10493 and 2464, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million		7.5 million		10 million		
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				≤ 328.1	10	11	12
+59 / +140	16.4	9.843	164		7.5	8.5	9.5
+140 / +158					10	11	12

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, Handling, indoor cranes

AINFLEX® CF211  
Image exemplary.







Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF211-02-01-02	24	1 PR x 0.25	0.20	5.0	11.4	17	21.5	32
CF211-02-02-02	24	2 PR x 0.25	0.24	6.0	16.1	24	28.9	43
CF211-02-03-02	24	3 PR x 0.25	0.28	7.0	22.8	34	46.4	69
CF211-02-04-02	24	4 PR x 0.25	0.31	8.0	28.2	42	49.7	74
CF211-02-05-02	24	5 PR x 0.25	0.33	8.5	33.6	50	60.5	90
CF211-02-06-02	24	6 PR x 0.25	0.35	9.0	39.6	59	71.2	106
CF211-02-08-02	24	8 PR x 0.25	0.41	10.5	50.4	75	95.4	142
CF211-02-10-02	24	10 PR x 0.25	0.47	12.0	63.8	95	116.9	174
CF211-02-14-02	24	14 PR x 0.25	0.47	12.0	77.3	115	131.7	196
CF211-03-03-02	22	3 PR x 0.34	0.31	8.0	31.6	47	56.4	84
CF211-03-08-02	22	8 PR x 0.34	0.45	11.5	65.2	97	116.9	174
CF211-03-10-02 <sup>1)</sup>	22	10 PR x 0.34	0.51	13.0	80.0	119	132.4	197
CF211-05-01-02	20	1 PR x 0.5	0.22	5.5	16.8	25	28.9	43
CF211-05-02-02 <sup>2)</sup>	20	2 PR x 0.5	0.28	7.0	26.2	39	43.0	64
CF211-05-03-02	20	3 PR x 0.5	0.35	9.0	39.0	58	71.2	106
CF211-05-04-02	20	4 PR x 0.5	0.37	9.5	47.7	71	88.7	132
CF211-05-05-02	20	5 PR x 0.5	0.41	10.5	58.5	87	103.5	154
CF211-05-06-02	20	6 PR x 0.5	0.45	11.5	64.5	96	120.3	179
CF211-05-08-02	20	8 PR x 0.5	0.51	13.0	89.4	133	156.6	233
CF211-05-10-02	20	10 PR x 0.5	0.61	15.5	121.6	181	198.2	295
CF211-05-14-02	20	14 PR x 0.5	0.61	15.5	134.4	200	202.3	301

<sup>1)</sup> Delivery time upon request  
The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.



**Order example: CF211-02-04-02 – In your desired length**  
CF211 Chainflex® series -02 Code nominal cross section -04 Number of pairs -02 Identification pairs



Online order ► [www.chainflex.com/CF211](http://www.chainflex.com/CF211)



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



Configurators ► [www.igus.com/CF211](http://www.igus.com/CF211)



# PUR Data cable | CF211-PUR

- For high mechanical load requirements
- PUR outer jacket
- Shielded
- Twisted pair
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	16.41 ft/s (5 m/s)
		<b>gliding</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	Color code in accordance with DIN 47100.
	<b>Intermediate layer</b>	Polyester tape over external layer.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Silver-gray (similar to RAL 7001)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

Configurators ► [www.igus.com/CF211PUR](http://www.igus.com/CF211PUR)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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/CSA</b>	Style 10493 and 20233, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 13 656-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 mio. 7.5 mio. 10 mio.					
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]
-13 / +5					10	11
+5 / +158	16.4	9.843	164	≤ 328.1	7.5	8.5
+158 / +176					10	11

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

### Typical application areas

- For high mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector







Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF211-PUR-02-01-02 <sup>1)</sup>	24	1 PR x 0.25	0.20	5.0	11.4	17	20.2	30
CF211-PUR-02-02-02 <sup>2)</sup>	24	2 PR x 0.25	0.24	6.0	16.1	24	26.9	40
CF211-PUR-02-03-02	24	3 PR x 0.25	0.28	7.0	22.8	34	43.0	64
CF211-PUR-02-04-02	24	4 PR x 0.25	0.30	7.5	28.2	42	45.0	67
CF211-PUR-02-05-02	24	5 PR x 0.25	0.33	8.5	33.6	50	56.4	84
CF211-PUR-02-06-02	24	6 PR x 0.25	0.35	9.0	39.6	59	67.2	100
CF211-PUR-02-08-02	24	8 PR x 0.25	0.41	10.5	50.4	75	86.0	128
CF211-PUR-02-10-02 <sup>1)</sup>	24	10 PR x 0.25	0.47	12.0	63.8	95	107.5	160
CF211-PUR-02-14-02	24	14 PR x 0.25	0.47	12.0	77.3	115	122.3	182
CF211-PUR-03-03-02 <sup>1)</sup>	22	3 PR x 0.34	0.31	8.0	31.6	47	56.4	84
CF211-PUR-03-08-02	22	8 PR x 0.34	0.47	12.0	65.2	97	102.1	152
CF211-PUR-03-10-02 <sup>1)</sup>	22	10 PR x 0.34	0.51	13.0	80.0	119	132.4	197
CF211-PUR-05-01-02 <sup>1)</sup>	20	1 PR x 0.5	0.22	5.5	16.8	25	28.2	42
CF211-PUR-05-02-02 <sup>2)</sup>	20	2 PR x 0.5	0.28	7.0	26.2	39	41.0	61
CF211-PUR-05-03-02	20	3 PR x 0.5	0.35	9.0	39.0	58	67.9	101
CF211-PUR-05-04-02	20	4 PR x 0.5	0.37	9.5	47.7	71	82.0	122
CF211-PUR-05-05-02	20	5 PR x 0.5	0.41	10.5	58.5	87	103.5	154
CF211-PUR-05-06-02	20	6 PR x 0.5	0.45	11.5	64.5	96	120.3	179
CF211-PUR-05-08-02 <sup>1)</sup>	20	8 PR x 0.5	0.51	13.0	89.4	133	147.8	220
CF211-PUR-05-10-02 <sup>1)</sup>	20	10 PR x 0.5	0.59	15.0	121.6	181	186.1	277
CF211-PUR-05-14-02 <sup>1)</sup>	20	14 PR x 0.5	0.59	15.0	134.4	200	202.3	301

<sup>1)</sup> Delivery time upon request  
The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.



**Order example: CF211-PUR-02-04-02 – In your desired length**  
CF211-PUR Chainflex® series -02 Code nominal cross section -04 Number of pairs -02 Identification pairs



Online order ► [www.chainflex.com/CF211PUR](http://www.chainflex.com/CF211PUR)



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



Configurators ► [www.igus.com/CF211PUR](http://www.igus.com/CF211PUR)



# TPE Data cable | CF11



- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Twisted pair
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	<b>26-18 AWG:</b> Color code according to DIN 47100. <b>17-14 AWG:</b> Black with white numbers.
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

Configurators ► [www.igus.com/CF11](http://www.igus.com/CF11)

# Class 6.6.4.1

### 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>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EC

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

Cycles*					5 mio.	7.5 mio.	10 mio.
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					7,5	8,5	9,5
-13 / +194	32.81	19.69	328.1	≤ 1,312	6,8	7,8	8,8
+194 / +212					7,5	8,5	9,5

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

### Delivery program Measuring system cables

- Page 244, CF211 (PVC)
- Page 254, CF111-D (PUR)
- Page 268, CF11-D (TPE)







Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF11-01-04-02	26	4 PR x 0.14	0.30	7.5	20.8	31	43.7	65
CF11-01-18-02	26	18 PR x 0.14	0.47	12.0	71.9	107	133.0	198
CF11-02-01-02	24	1 PR x 0.25	0.24	6.0	12.1	18	26.2	39
CF11-02-02-02	24	2 PR x 0.25	0.26	6.5	18.8	28	34.3	51
CF11-02-03-02	24	3 PR x 0.25	0.31	8.0	24.9	37	53.8	80
CF11-02-04-02	24	4 PR x 0.25	0.33	8.5	29.6	44	61.1	91
CF11-02-05-02	24	5 PR x 0.25	0.35	9.0	34.9	52	71.9	107
CF11-02-06-02	24	6 PR x 0.25	0.39	10.0	49.1	73	90.0	134
CF11-02-09-02	24	9 PR x 0.25	0.49	12.5	68.5	102	139.8	208
CF11-02-10-02	24	10 PR x 0.25	0.51	13.0	73.2	109	149.8	223
CF11-02-14-02	24	14 PR x 0.25	0.53	13.5	88.7	132	155.9	232
CF11-03-08-02	22	8 PR x 0.34	0.51	13.0	75.9	113	152.5	227
CF11-05-04-02	20	4 PR x 0.5	0.37	9.5	55.1	82	92.7	138
CF11-05-06-02	20	6 PR x 0.5	0.47	12.0	73.9	110	137.8	205
CF11-05-08-02	20	8 PR x 0.5	0.55	14.0	97.4	145	182.1	271
CF11-07-03-02	18	3 PR x 0.75	0.39	10.0	58.5	87	106.8	159
CF11-10-04-02	17	4 PR x 1.0	0.47	12.0	90.0	134	159.3	237
CF11-15-06-02	16	6 PR x 1.5	0.67	17.0	176.7	263	286.9	427
CF11-25-03-02	14	3 PR x 2.5	0.61	15.5	151.9	226	264.1	393

Note: The mentioned outer diameters are maximum values.



**Order example: CF11-02-03-02 – In your desired length**  
CF11 Chainflex® series -02 Code nominal cross section -03 Number of pairs -02 Identification pairs



Online order ► [www.chainflex.com/CF11](http://www.chainflex.com/CF11)



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



Configurators ► [www.igus.com/CF11](http://www.igus.com/CF11)



# PUR Data cable | CF112

- For very high mechanical load requirements
- PUR outer jacket
- Shielded twisted Pairs with an overall shield
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	Color code in accordance with DIN 47100
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90 % optical
	<b>Inner jacket</b>	PUR mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Anthracite-gray (similar to RAL 7016)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10493 and 20233, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 13 656-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 mio.	7.5 mio.	10 mio.
	unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13 / +5					12.5	13.5	14.5
+5 / +158	32.81	16.4	262.5	≤ 328.1	10	11	12
+158 / +176					12.5	13.5	14.5

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector



Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...







Image exemplary.

Part No.	AWG	Number of Pairs and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF112-02-02-02	24	2 PR x 0.25	0.37	9.5	39.6	59	88.0	131
CF112-02-03-02	24	3 PR x 0.25	0.39	10.0	50.4	75	101.5	151
CF112-02-04-02	24	4 PR x 0.25	0.43	11.0	57.8	86	112.2	167
CF112-02-05-02	24	5 PR x 0.25	0.45	11.5	70.6	105	130.4	194
CF112-02-06-02	24	6 PR x 0.25	0.49	12.5	79.3	118	148.5	221
CF112-05-02-02	20	2 PR x 0.5	0.45	11.5	53.8	80	118.3	176
CF112-05-03-02 <sup>1)</sup>	20	3 PR x 0.5	0.47	12.0	70.6	105	135.7	202
CF112-05-04-02	20	4 PR x 0.5	0.51	13.0	83.3	124	156.6	233
CF112-05-05-02 <sup>1)</sup>	20	5 PR x 0.5	0.53	13.5	101.5	151	186.1	277
CF112-05-06-02	20	6 PR x 0.5	0.57	14.5	114.9	171	216.4	322

<sup>1)</sup> Delivery time upon request

**Note:** The mentioned outer diameters are maximum values.



**Order example: CF112-05-04-02 – In your desired length**  
CF112 Chainflex® series -05 Code nominal cross section -04 Number of pairs -02 Identification pairs



Online order ► [www.chainflex.com/CF112](http://www.chainflex.com/CF112)



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



# TPE Data cable | CF12

- For very high mechanical load requirements
- TPE outer jacket
- Shielded twisted Pairs with an overall shield
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	<b>24 AWG:</b> Color code in accordance with DIN 47100. <b>20-17 AWG:</b> Black with white numbers.
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90% optical.
	<b>Element jacket</b>	TPE mixture on pair shielding adapted to suit the requirements in E-Chains®.
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Highly flexible shield consisting of galvanized steel wire braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

### Properties and approvals

	<b>UV resistance</b>	High
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Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<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 EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 mio.	7.5 mio.	10 mio.
	unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
Temperature, from/to [°F]							
-31 / -13				≤ 1,312	12.5	13.5	14.5
-13 / +194	32.81	19.69	328.1		10	11	12
+194 / +212					12.5	13.5	14.5

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications
- For especially high EMC safety

Part No.	AWG	Number of Pairs and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF12-02-03-02	24	3 PR x 0.25	0.43	11.0	29.6	44	109.5	163
CF12-02-04-02 <sup>1)</sup>	24	4 PR x 0.25	0.43	11.0	36.3	54	118.9	177
CF12-02-05-02	24	5 PR x 0.25	0.51	13.0	47.0	70	153.2	228
CF12-05-03-02	20	3 PR x 0.5	0.53	13.5	46.4	69	155.9	232
CF12-05-04-02	20	4 PR x 0.5	0.57	14.5	58.5	87	181.4	270
CF12-05-05-02	20	5 PR x 0.5	0.61	15.5	73.2	109	229.1	341
CF12-05-06-02	20	6 PR x 0.5	0.67	17.0	92.1	137	266.8	397
CF12-05-08-02	20	8 PR x 0.5	0.81	20.5	116.9	174	354.1	527
CF12-05-10-02	20	10 PR x 0.5	0.91	23.0	145.8	217	412.6	614
CF12-05-14-02	20	14 PR x 0.5	0.91	23.0	213.0	317	487.2	725
CF12-10-06-02	17	6 PR x 1.0	0.79	20.0	142.5	212	370.3	551

<sup>1)</sup> Delivery time upon request

**Note:** The mentioned outer diameters are maximum values.





# TPE Coax cable | CFKCoax

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C) (CFKCoax1/3)
			-31 °F to +158 °F (-35 °C to +70 °C) (CFKCoax2)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C) (CFKCoax1/3)
			-58 °F to +158 °F (-50 °C to +70 °C) (CFKCoax2)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C) (CFKCoax1/3)
			-67 °F to +158 °F (-55 °C to +70 °C) (CFKCoax2)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	<b>CFKCoax1:</b> Silvered copper wires. <b>CFKCoax2:</b> Tinned copper wires. <b>CFKCoax3:</b> Silvered copper wires.
	<b>Conductor insulation</b>	Special FEP-isolating mixture.
	<b>Conductor construction</b>	Conductors cabled in one layer with especially short pitch length.
	<b>Color code</b>	Coaxial elements - See Table
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90 % optical
	<b>Element jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: See chart

### Electrical Information

	<b>Nominal voltage</b>	500 V
	<b>Test voltage</b>	1500 V

Configurators ► [www.igus.com/CFKOAX](http://www.igus.com/CFKOAX)

# Class 6.6.4.1

### 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>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1.
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 mio.	7.5 mio.	10 mio.
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
	-31 / -13					12.5	13.5	14.5
<b>CFKCoax1/3</b>	-13 / +194					10	11	12
<b>CFKCoax2</b>	-13 / +140	32.81	16.4	328.1	≤ 1,312			
<b>CFKCoax1/3</b>	+194 / +212					12.5	13.5	14.5
<b>CFKCoax2</b>	+140 / +158							

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.


Part No.	AWG	Compatible with plug type	Coaxial elements	Outer diameter max.		Copper index		Weight	
				in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFKCoax1-01	30	RG 179	1	0.18	4.5	4.7	7	15.5	23
CFKCoax1-05	30	RG 179	5	0.39	10.0	23.5	35	75.3	112
CFKCoax2-01	20	RG 58	1	0.22	5.5	13.4	20	24.9	37
CFKCoax3-01	30	RG 178	1	0.14	3.5	3.4	5	8.1	12

Note: The mentioned outer diameters are maximum values.

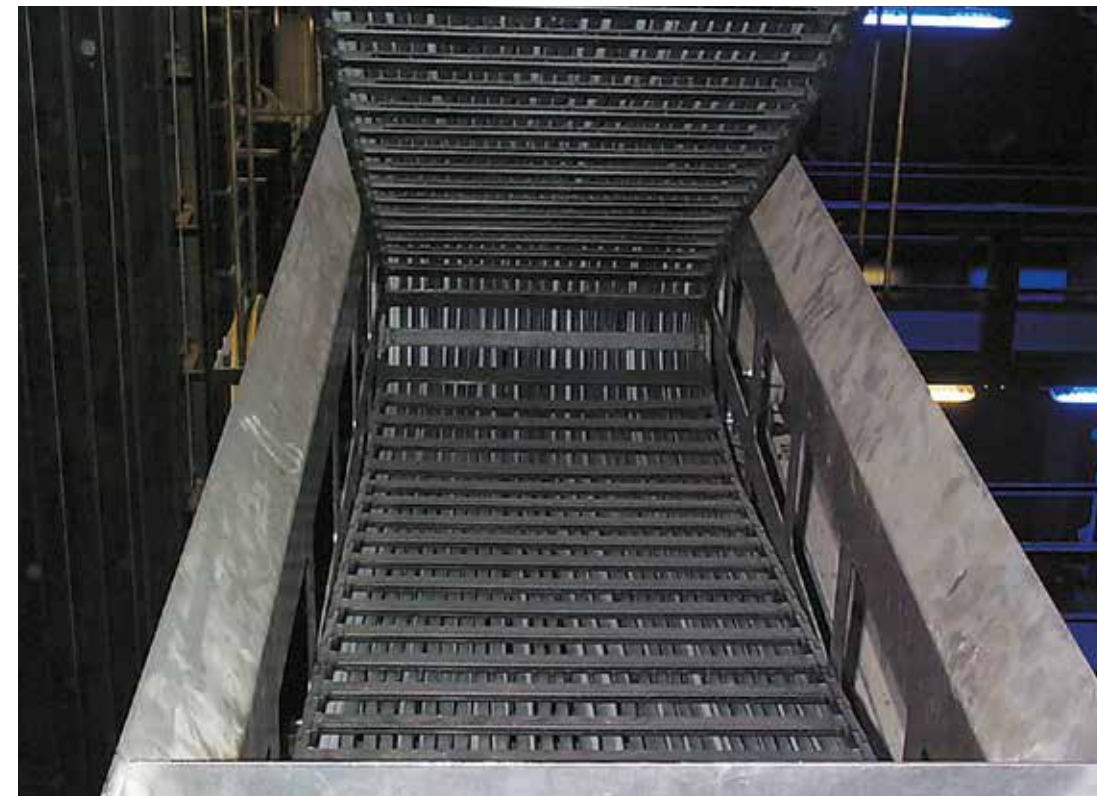
Part No.	Characteristic wave impedance [Ω]	Conductor Diameter nom.		Conductor Diameter over insulation nom.		Color code	Colour outer jacket (similar to RAL)
		in.	mm	in.	mm		
CFKCoax1-01	75	0.012	0.3	0.062	1.6	red	Steel-blue (comparable RAL 5011)
CFKCoax1-05	75	0.012	0.3	0.062	1.6	red, green, blue, white, black	Steel-blue (comparable RAL 5011)
CFKCoax2-01	50	0.035	0.9	0.116	2.95	-	Jet black (similar to RAL 9005)
CFKCoax3-01	50	0.012	0.3	0.033	0.84	-	Window-gray (comparable RAL 7040)

 **Order example: CFKCoax-1-01 – In your desired length**  
CFKCoax1 Chainflex® series -01 Number of coaxial elements

 Online order ► [www.chainflex.com/CFKCOAX](http://www.chainflex.com/CFKCOAX)

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

 Configurators ► [www.igus.com/CFKCOAX](http://www.igus.com/CFKCOAX)



Coax cable and other Chainflex® cables in platform technology. E-Chain®: System E4/4





# Bus cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [ °F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s] unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
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### Bus cables

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











► Selection table page 174

Selection chart for Chainflex® Bus cables 176

Information Chainflex® Ethernet cables 178

CF888	PVC	✓	15	+41/ +158	UL US	ERL	CE	9.84	65.62	180		
CFBUS-PVC	PVC	✓	12.5	+41/ +158	UL US	ERL	CE	9.84	6.56	98.43	182	
CF898	iguPUR	✓	15	-4/ +176	UL US	ERL	CE	9.84	65.62	186	New	
CFBUS-PUR	PUR	✓	12.5	-4/ +158	UL US	ERL	CE	9.84	6.56	98.43	190	New
CFBUS	TPE	✓	10-12.5	-31/ +158	UL US	ERL	CE	32.81	19.69	328.10	194	New
CF11-LC	TPE	✓	10	-31/ +158	UL US	ERL	CE	32.81	19.69	328.10	200	New
CF11-LC-D	TPE	✓	10	-31/ +158	UL US	ERL	CE	32.81	19.69	328.10	204	
CF14US	PUR	✓	12.5	-4/ +176	UL US	ERL	CE	32.81	19.69	328.10	208	
CF14-CAT5	TPE	✓	10	-31/ +158	UL US	ERL	CE	32.81	19.69	328.10	210	



Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page
		unsupported	gliding			5 million (1 million) cycles *	7.5 million (3 million) cycles *	10 million (5 million) cycles *				
 CF888	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5	180	
 CFBUS-PVC	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	98.43	≤ 65.62	15 12.5 15		16 13.5 16		17 14.5 17	182	
 CF898	-4 / +14 +14 / +158 +158 / +176	9.84	-	65.62	≤ 32.81	17.5 15 17.5		18.5 16 18.5		19.5 17 19.5	186	
 CFBUS-PUR	-4 / +14 +14 / +140 +140 / +158	9.84	6.56	98.43	≤ 65.62	15 12.5 15		16 13.5 16		17 14.5 17	190	
 CFBUS-001 to -045	-31 / -13	32.81	19.69	328.10	≤ 1,312	12.5		13.5		14.5	194	
	-13 / +140					10		11		12		
	+140 / +158					12.5		13.5		14.5		
 CFBUS-050 to -070	-31 / -13	32.81	19.69	328.10	≤ 1,312	15		16		17	194	
	-13 / +140					12.5		13.5		14.5		
	+140 / +158					15		16		17		
 CF11-LC	-31 / -13	32.81	19.69	328.10	≤ 1,312	12.5		13.5		14.5	200	
	-13 / +140					10		11		12		
	+140 / +158					12.5		13.5		14.5		
 CF11-LC-D	-31 / -13	32.81	19.69	328.10	≤ 1,312	12.5		13.5		14.5	204	
	-13 / +140					10		11		12		
	+140 / +158					12.5		13.5		14.5		
 CF14US	-4 / +13	32.81	19.69	328.10	≤ 1,312	12.5		13.5		14.5	208	
	+14 / +140					10		11		12		
	+140 / +158					12.5		13.5		14.5		
 CF14-CAT5	-31 / -13	32.81	19.69	328.10	≤ 1,312	12.5		13.5		14.5	210	
	-13 / +140					10		11		12		
	+140 / +158					12.5		13.5		14.5		

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

\* Guaranteed lifetime, higher numbers of cycles possible. Figures in brackets refer to CF888 and CF898.



Always find the bus cable that works for less ...  
The whole product range of Chainflex® Bus cables at a glance

Bus types	Mechanical Performance							
	PVC 15 x d	PVC oil-res. 12.5 x d	iguPUR 15 x d	PUR 12.5 x d	TPE UL 10 x d	TPE Hal 10 x d	Torsion 10 x d	High tensile 50 m freely hanging
DVI					Chainflex® CFBUS Page 194			
CC Link		Chainflex® CFBUS-PVC Page 182		Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194			
Ethercat*	Chainflex® CF888 Page 180	Chainflex® CFBUS-PVC Page 182	Chainflex® CF898 Page 186	Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194	Chainflex® CF14-CAT5 Page 210		
Ethernet*	Chainflex® CF888 Page 180	Chainflex® CFBUS-PVC Page 182	Chainflex® CF898 Page 186	Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194	Chainflex® CFROBOT8 Page 404	Chainflex® CFSPECIAL-182 Page 422	
Profinet*	Chainflex® CF888 Page 180	Chainflex® CFBUS-PVC Page 182	Chainflex® CF898 Page 186	Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194	Chainflex® CFROBOT8 Page 404		
USB		Chainflex® CFBUS-PVC Page 182		Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194			
FireWire		Chainflex® CFBUS-PVC Page 182		Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194			
CAN-Bus	Chainflex® CF888 Page 180	Chainflex® CFBUS-PVC Page 182	Chainflex® CF898 Page 186	Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194	CF11-LC Page 200 CF11-LC-D Page 204	Chainflex® CFROBOT8 Page 404	
ASI			Chainflex® CF898 Page 186					
Device Net					Chainflex® CFBUS Page 194			
Interbus					Chainflex® CFBUS Page 194	Chainflex® CF11-LC Page 200		
Profibus	Chainflex® CF888 Page 180	Chainflex® CFBUS-PVC Page 182	Chainflex® CF898 Page 186	Chainflex® CFBUS-PUR Page 190	Chainflex® CFBUS Page 194	CF11-LC Page 200 CF11-LC-D Page 196204	Chainflex® CFROBOT8 Page 404	Chainflex® CFSPECIAL-182 Page 422

\* Detailed selection for Ethernet types on Page 178

Bus system/ Chainflex® type	Jacket	Number of cores and conductor nominal cross section [mm²]	Page
Profibus (1x2x0.64 mm)		150 Ohm	
CF888-001	PVC	(2x0.25)C	180
CFBUS-PVC-001	PVC	(2x0.25)C	182
CF898-001	iguPUR	(2x0.25)C	186
CFBUS-PUR-001	PUR	(2x0.25)C	190
CFBUS-001	TPE	(2x0.25)C	194
CFBUS-002	TPE	(2x0.25)C+4x1.5	194
CFBUS-003	TPE	(2x0.25)C+3G0.75	194
CF11-02-02-02-PBA-LC	TPE	(4x0.25)C	200
CF11-02-01-02-PBA-LC-D	TPE	(2x0.25)C	204
CF11-02-02-07-03-PBA-LC-D	TPE	(2x0.25)C+3x0.75	204
CF11-02-02-15-04-PBA-LC-D	TPE	(2x0.25)C+4x1.5	204
CFROBOT8-001	PUR	(2x0.35)	404
CFSPECIAL-182-001	PUR	(2x0.25)C	422
Interbus		100 Ohm	
CFBUS-010	TPE	(3x(2x0.25))C	194
CFBUS-011	TPE	(3x(2x0.25)+(3G1.0))C	194
CF11-02-03-02-10-03-IB-S	TPE	(3x(2x0.25)+(3G1.0))C	200
CF11-02-03-02-IB-S	TPE	(3x(2x0.25))C	200
CAN-Bus		120 Ohm	
CF888-021	PVC	(2x0.5)C	180
CFBUS-PVC-021	PVC	(2x0.5)C	182
CFBUS-PVC-022	PVC	(4x0.5)C	182
CF898-021	iguPUR	(2x0.5)C	186
CFBUS-PUR-021	PUR	(2x0.5)C	190
CFBUS-PUR-022	PUR	(4x0.5)C	190
CFBUS-020	TPE	(4x0.25)C	194
CFBUS-021	TPE	(2x0.5)C	194
CFBUS-022	TPE	(4x0.5)C	194
CF11-05-01-02-LC	TPE	(2x0.5)C	200
CF11-05-02-02-LC	TPE	(4x0.5)C	200
CF11-02-02-02-LC-D	TPE	(4x0.25)C	204
CF11-05-01-02-LC-D	TPE	(2x0.5)C	204
CFROBOT8-022	PUR	(4x0.5)	404
Device-Net		120 Ohm	
CFBUS-030	TPE	((2xAWG24)C+2xAWG22)C	194
CFBUS-031	TPE	((2xAWG18)C+2xAWG15)C	194
CC-Link		110 Ohm	
CFBUS-PVC-035	PVC	(3x0.5)C	174
CFBUS-PUR-035	PUR	(3x0.5)C	182
CFBUS-035	TPE	(3xAWG20)C	186
Ethernet/CAT5		100 Ohm	
CFBUS-PVC-040	PVC	(4x0.25)C	182
CFBUS-PUR-040	PUR	(4x0.25)C	190
CFBUS-040	TPE	(4x0.25)C	194
CFBUS-044	TPE	(4x(2x0.15))C	194
CF14-01-04-02-CAT5	TPE	(4x(2x0.15))C	208
CF14-02-02-02-CAT5	TPE	(4x0.25)C	208

Bus-system/ Chainflex® type	Jacket	Number of cores and conductor nominal cross section [mm²]	Page
Ethernet/CAT5e		100 Ohm	
CF888-045	PVC	(4x(2x0.14))C	180
CFBUS-PVC-045	PVC	(4x(2x0.15))C	182
CF898-045	iguPUR	(4x(2x0.14))C	186
CFBUS-PUR-045	PUR	(4x(2x0.15))C	190
CF14US	PUR	(4x(2x0.15))C	208
CFBUS-045	TPE	(4x(2x0.15))C	194
CFROBOT8-045	PUR	4x(2x0.14)C	404
CFSPECIAL-182-045	PUR	(4x(2x0.15))C	422
Ethernet/CAT6		100 Ohm	
CFBUS-PVC-049	PVC	(4x(2x0.15))C	174
CFBUS-PUR-049	PUR	(4x(2x0.15))C	182
CFBUS-049	TPE	(4x(2x0.15))C	186
CFROBOT8-049	PUR	4x(2x0.14)C	396
Ethernet/CAT6a		100 Ohm	
CFBUS-PVC-050	PVC	4x(2x0.20)C	174
CFBUS-PUR-050	PUR	4x(2x0.20)C	190
CFBUS-050	TPE	(4x(2x0.15)C)C	194
CFROBOT8-050	PUR	4x(2x0.15)C	404
Ethernet/CAT7		100 Ohm	
CFBUS-PVC-052	PVC	(4x(2x0.15)C)C	182
CFBUS-PUR-052	PUR	(4x(2x0.15)C)C	190
CFBUS-052	TPE	(4x(2x0.15)C)C	194
CFROBOT8-052	PUR	4x(2x0.15)C	404
FireWire IEEE 1394a/b		100 Ohm	
CFBUS-PVC-056	PVC	(2x(2x0.15)C+2x0.38)C	185
CFBUS-PUR-056	PUR	(2x(2x0.15)C+2x0.38)C	190
CFBUS-055	TPE	2x(2x0.15)C+2x(0.34)C	194
Profinet		100 Ohm	
CF888-060	PVC	(4x0.38)C	180
CFBUS-PVC-060	PVC	(4x0.38)C	182
CF898-060	iguPUR	(4x0.38)C	186
CFBUS-PUR-060	PUR	(4x0.38)C	190
CFBUS-060	TPE	(4x0.38)C	194
CFROBOT8-060	PUR	(2x(2x0.34))C	404
USB		90 Ohm	
CFBUS-065	TPE	((2xAWG28)+2xAWG20)C	194
CFBUS-066	TPE	((2xAWG24)+2xAWG20)C	194
USB 3-0		90 Ohm	
CFBUS-PVC-068	PVC	(2x(2xAWG28)+2x(2xAWG28)C)C	182
CFBUS-PUR-068	PUR	(2x(2xAWG28)+2x(2xAWG28)C)C	190
DVI		100 Ohm	
CFBUS-070	TPE	(4x(2xAWG28)C+2xAWG28)+3xAWG28)C	194
ASI BUS			
CF898-080 (yellow)	iguPUR	2x1.5	186
CF898-081 (black)	iguPUR	2x1.5	186
CF898-082 (yellow)	iguPUR	2x2.5	186
CF898-083 (black)	iguPUR	2x2.5	186

\* Details for Chainflex® Ethernet Cable to be found on page 178!

**For all data volumes and types of movement ...  
Networking your machine with Chainflex® Ethernet cables.**

In our catalog range you will find the right Ethernet solution for every type of motion. We have prepared for you a wide range of products sold by the foot and a wide variety of cables with connectors. That you obtain all cables with a guarantee of 36 months and up to 10 million cycles is natural for chainflex and for you, a matter of great safety.

We support you in three aspects in the cross-linking of the machine with Ethernet cables that have been developed, manufactured and tested for high quality:

1. 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. Due to the individual gradation of classes, very large savings options or opportunities arise due to a trend-setting cabling of the system.

2. By taking into account your individual, mechanical stress in your application, we enable more customised solutions. Thus there are cable series for large and small bending radii for linear movements in energy chains or torsional movements on the robot. We can offer you a reasonably priced

PVC solution, an oil-resistant PUR cable or a solution with highly abrasion-resistant TPE. Also, special requests for long travels or high tensile strength versions for hanging applications or rolling solutions are a standard business for us.

3. The third major advantage we can offer you is the various ways in which you can use the cables. We deliver on drums or in coils of your desired length, of course, without any cutting costs. If it helps, we attach connectors and mark the cable as it is important for you. We do this from a quantity of 1 and would be happy to use your individual measurements and designs. Of course you can also have your Ethernet cable in the complete system with chain and attachment part. Tell us how you would like it and we shall deliver what you want.

Our online tools also enable you to reduce process costs. igus® delivers from stock in 24-48 hours!

Also, see our website.

 [www.chainflex.com/ethernet](http://www.chainflex.com/ethernet)

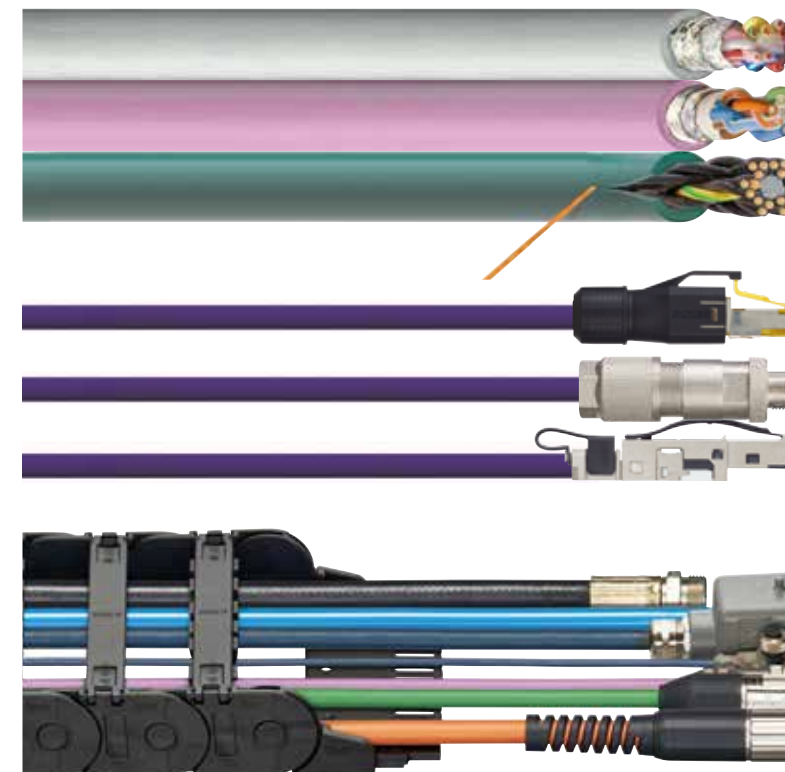
**World premiere  
CAT7 for Torsion**



**CFROBOT8-052 CAT7**  
PUR Bus cable, torsional  
Page 404

**Always find the Ethernet cable that works for less  
The selection table for the largest range of flexible Ethernet cables**

Electrical performance	Mechanical performance							
	PVC 15 x d	PVC oil-res. 12.5 x d	iguPUR 15 x d	PUR 12.5 x d	TPE UL 10 x d	TPE Hal 10 x d	Torsion ± 180°/m	High tensile 50 m freely hanging
<b>CAT7</b> 10 GBit 600 MHz		<b>NEW</b> Page 182 Chainflex® CFBUS-PVC-052		<b>NEW</b> Page 190 Chainflex® CFBUS-PUR-052	Chainflex® CFBUS-052 Page 194		<b>NEW</b> Page 404 Chainflex® CFROBOT8-052	
<b>CAT6A</b> 10 GBit 500 MHz		Chainflex® CFBUS-PVC-050 Page 182		Chainflex® CFBUS-PUR-050 Page 190	Chainflex® CFBUS-050 Page 194		<b>NEW</b> Page 404 Chainflex® CFROBOT8-050	
<b>CAT6</b> 1 GBit 250 MHz		<b>NEW</b> Page 182 Chainflex® CFBUS-PVC-049		<b>NEW</b> Page 190 Chainflex® CFBUS-PUR-049	<b>NEW</b> Page 194 Chainflex® CFBUS-049		<b>NEW</b> Page 404 Chainflex® CFROBOT8-049	
<b>CAT5e</b> 1 GBit 100 MHz	Chainflex® CF888-045 Page 180	Chainflex® CFBUS-PVC-045 Page 182	Chainflex® CF898-045 Page 186	Chainflex® CFBUS-PUR-045 Page 190	Chainflex® CFBUS-045 Page 194	Chainflex® CF14-01-04-02- CAT5 Page 208	Chainflex® CFROBOT8-045 Page 404	Chainflex® CFSPECIAL- 182-045 Page 422
<b>Profinet</b> 100 MBit 100 MHz	Chainflex® CF888-060 Page 180	Chainflex® CFBUS-PVC-060 Page 182	Chainflex® CF898-060 Page 186	Chainflex® CFBUS-PUR-060 Page 190	Chainflex® CFBUS-060 Page 194		Chainflex® CFROBOT8-060 Page 404	
<b>CAT5</b> 100 MBit 100 MHz		Chainflex® CFBUS-PVC-040 Page 182		Chainflex® CFBUS-PUR-040 Page 190	Chainflex® CFBUS-040 Page 194	Chainflex® CF14-02-02-02- CAT5 Page 208		



**Highly flexible Chainflex® cables**

- ▶ 1,244 cables from stock
- ▶ Tested in seven jacket materials
- ▶ No cutting costs
- ▶ 36 months or 10 million cycles guarantee\*
- ▶ Approvals and certificates

**Harnessed cables ReadyCable®**

- ▶ New: More than 400 harnessed Ethernet cables
- ▶ In seven jacket materials
- ▶ 36 months or 10 million cycles guarantee\*
- ▶ Shipped in 24h\*\*
- ▶ In desired length, with centimetre accuracy

**Assembled E-Chains® ReadyChain®**

- ▶ Customised and ready to connect according to your specifications
- ▶ From the base solution to complex systems
- ▶ Optional with assembly rack
- ▶ From batch size 1 to series production
- ▶ Assembly service by experts

\* Depending on what happens first. Up to 5 million cycles for the highly affordable CF88X types. The number of cycles depends on installation and cable quality. This is described in the current catalog, in the data sheets and in the service life calculator at [www.igus.com/chainflexlife](http://www.igus.com/chainflexlife).

\*\* Delivery time means time until shipping of goods.



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Bus cable | CF888

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

### Properties and approvals

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

Configurators ► [www.igus.com/CF888](http://www.igus.com/CF888)

# Class 3.1.1.1

- Lead-free** Following 2011/65/EC (RoHS-II)
- CE** Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [ °F]	v max. [ft/s]	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				17.5	18.5	19.5
+59 / +140	9.84	65.62	≤ 32.81	15	16	17
+158 / +158				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>Profibus</b>								
CF888-001	24	1 PR x 0.25	0.31	8.0	12.8	19	41.7	62
<b>CAN-Bus</b>								
CF888-021	20	1 PR x 0.5	0.33	8.5	17.5	26	55.1	82
<b>Ethernet/CAT5e</b>								
CF888-045	26	4 PR x 0.14	0.30	7.5	18.1	27	45.7	68
<b>Profinet</b>								
EtherCAT → CF888-060 <sup>16)</sup>	22	4 PR x 0.34	0.28	7.0	18.1	27	39.0	58

<sup>16)</sup> Colour outer jacket: Yellow-green (RAL 6018) **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.

Part No.	Characteristic Impedance [Ω]	Core group	Color code
<b>Profibus</b>			
CF888-001	150	(2 x 0.25)C	red, green
<b>CAN-Bus</b>			
CF888-021	120	(2 x 0.5)C	white, brown
<b>Ethernet/CAT5e</b>			
CF888-045	100	(4 x (2 x 0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
CF888-060	100	(4 x 0.34)C	white, orange, blue, yellow (star-quad stranding)

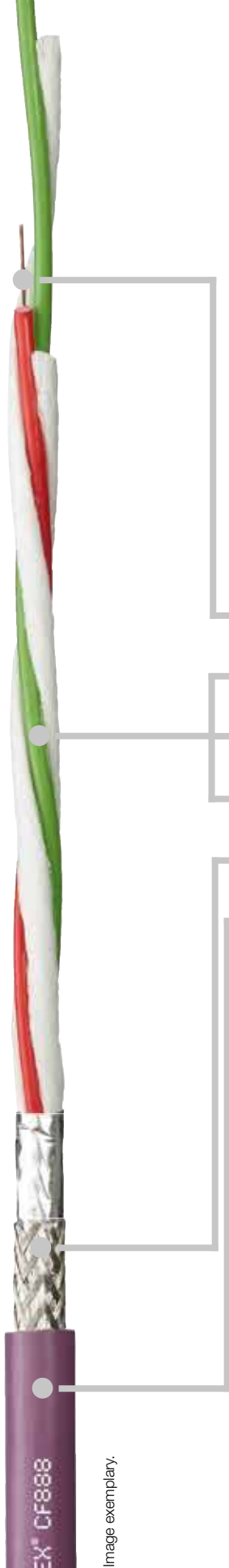


Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 5 million cycles guaranteed ...



# PVC Bus cable | CFBUS-PVC

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

CAT7 Ethernet  
for E-Chains®

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		98.4 ft/s² (30 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 66 ft (20 m), Class 3	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Violet (similar to RAL 4001)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

Configurators ► [www.igus.com/CFBUSPVC](http://www.igus.com/CFBUSPVC)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 4.3.2.1

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1598 and 2571, 30 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [ °F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]
+41 / +59				≤ 65.62	15	16	17			
+59 / +140		9.84	6.56		12.5	13.5	14.5			
+140 / +158					15	16	17			

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

### Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 41 °F
- Unsupported travel distances and for gliding applications up to 66 ft (20 m)
- Bus connection cable for machining units/package machines, Handling, indoor cranes





# PVC Bus cable | CFBUS-PVC

## Class 4.3.2.1



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Charac-teristic Impedan-ce [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CFBUS-PVC-001	24	1 PR x 0.25	0.33	8.5	18.1	27	51.7	77	CFBUS-PVC-001	150	(2 x 0.25)C	red, green
<b>CAN-Bus</b>												
CFBUS-PVC-021	20	1 PR x 0.5	0.33	8.5	22.2	33	58.5	87	CFBUS-PVC-021	120	(2 x 0.5)C	white, brown
CFBUS-PVC-022 <sup>2)</sup>	20	2 PR x 0.5	0.33	8.5	30.9	46	65.2	97	CFBUS-PVC-022 <sup>2)</sup>	120	(4 x 0.5)C	white, green, brown, yellow (star-quad stranding)
<b>CC-Link</b>												
New CFBUS-PVC-035	20	3 x 0.5	0.31	8.0	28.2	42	56.4	84	CFBUS-PVC-035	110	(3 x 0.5)C	white, blue, yellow
<b>Ethernet/CAT5</b>												
EtherCAT CFBUS-PVC-040 <sup>2)</sup>	24	2 PR x 0.25	0.26	6.5	20.2	30	46.4	69	CFBUS-PVC-040 <sup>2)</sup>	100	(4 x 0.25)C	white, green, brown, yellow (star-quad stranding)
<b>Ethernet/CAT5e</b>												
CFBUS-PVC-045	26	4 PR x 0.15	0.30	7.5	23.5	35	46.4	69	CFBUS-PVC-045	100	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>												
New CFBUS-PVC-049	26	4 PR x 0.15	0.30	7.5	23.5	35	46.4	69	CFBUS-PVC-049	100	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A</b>												
CFBUS-PVC-050	24	4 STP x 0.2	0.37	9.5	46.4	69	83.3	124	CFBUS-PVC-050	100	4 x (2 x 0.20)C	white/blue, white/orange, white/green, white/brown
<b>Ethernet/CAT7</b>												
New CFBUS-PVC-052	26	4 STP x 0.15	0.37	9.5	59.8	89	91.4	136	CFBUS-PVC-052	100	(4x(2x0.15))C	white/blue, white/orange, white/green, white/brown
<b>FireWire IEEE 1394b</b>												
CFBUS-PVC-056	26	2 STP x 0.15	0.35	9.0	41.7	62	66.5	99	CFBUS-PVC-056	100	(2 x (2 x 0.15)C 2 x 0.38	orange/blue, blue/red black, white
<b>Profinet</b>												
CFBUS-PVC-060 <sup>2) 16)</sup>	22	4 x 0.38	0.28	7.0	23.5	35	46.4	69	CFBUS-PVC-060 <sup>2) 16)</sup>	100	(4 x 0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB 3.0</b>												
CFBUS-PVC-068	28	2 PR x AWG28	0.28	7.0	27.6	41	46.4	69	CFBUS-PVC-068	90	2 x (2 x AWG28) 2x(2xAWG28)C	red/black, green/white-green blue/yellow, orange/violet

<sup>16)</sup> Color outer jacket: Yellow-green (RAL 6018)  
The Chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
PR = Twisted Pair  
SC = Individually shielded Conductor  
SHLD = Shielded Precable

Configurators ► [www.igus.com/CFBUSPVC](http://www.igus.com/CFBUSPVC)

Order example: **CFBUS-PVC-001** – In your desired length  
**CFBUS-PVC Chainflex® series -001 Code Bus Type**

Online order ► [www.chainflex.com/CFBUSPVC](http://www.chainflex.com/CFBUSPVC)






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









# iguPUR Bus cable | CF898

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



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +158 °F (-20 °C to +70 °C)
		<b>flexible</b>	-40 °F to +158 °F (-40 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

 Configurators ► [www.igus.com/CF898](http://www.igus.com/CF898)

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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)
	<b>Flame resistance</b>	<b>CF898-001 to CF898-020:</b> According to IEC 60332-1-2, CEI 20-35, FT-1 <b>CF898-021 to CF898-060:</b> According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1 <b>CF898-080 to CF898-081:</b> According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	<b>CF898-001 to CF898-020:</b> Style 1589 and 20236, 30 V, 80 °C <b>CF898-021 to CF898-060:</b> Style 1598 and 20236, 30 V, 80 °C <b>CF898-080 to CF898-081:</b> Style 10493 and 20549, 300 V, 80 °C <b>CF898-082 to CF898-083:</b> Style 21866, 90 V, 80 °C Certified according to no. TC RU C-DE.ME77.B.01559
	<b>EAC</b>	
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [ °F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				17.5	18.5	19.5
+14 / +158	9.84	65.62	≤ 32.81	15	16	17
+158 / +176				17.5	18.5	19.5

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

### Typical application areas

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







Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Characteristic Impedance [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CF898-001	24	1 PR x 0.25	0.31	8.0	12.8	19	39.0	58	CF898-001	150	(2 x 0.25)C	red, green
<b>CAN-Bus</b>												
CF898-021	20	1 PR x 0.5	0.33	8.5	17.5	26	55.1	82	CF898-021	120	(2 x 0.5)C	white, brown
<b>Ethernet/CAT5e</b>												
CF898-045	26	4 PR x 0.14	0.30	7.5	18.1	27	43.0	64	CF898-045	100	(4 x (2 x 0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>												
CF898-060 <sup>16)</sup>	22	4 PR x 0.34	0.28	7.0	18.1	27	40.3	60	CF898-060 <sup>16)</sup>	100	(4 x 0.34)C	white, orange, blue, yellow (star-quad stranding)
<b>ASI BUS</b>												
CF898-080	16	1 PR x 1.5	Accord. to ASI		21.5	32	43.0	64	CF898-080		2 x 1.5	blue, brown
CF898-081	16	1 PR x 1.5	Accord. to ASI		21.5	32	43.0	64	CF898-081		2 x 1.5	blue, brown
New CF898-082	14	1 PR x 2.5	Accord. to ASI		33.6	50	52.4	78	CF898-082		2 x 2.5	blue, brown
New CF898-083	14	1 PR x 2.5	Accord. to ASI		33.6	50	52.4	78	CF898-083		2 x 2.5	blue, brown

<sup>16)</sup> Color outer jacket: Yellow-green (RAL 6018) **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
 PR = Twisted Pair  
 SC = Individually shielded Conductor  
 SHLD = Shielded Precable

# PUR Bus cable | CFBUS-PUR

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

CAT7 Ethernet  
for E-Chains®

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +158 °F (-20 °C to +70 °C)
		<b>flexible</b>	-40 °F to +158 °F (-40 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		98.4 ft/s² (30 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 66 ft (20 m), Class 3	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Violet (similar to RAL 4001)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

### Properties and approvals

	<b>UV resistance</b>	Medium
--	----------------------	--------

Configurators ► [www.igus.com/CFBUSPUR](http://www.igus.com/CFBUSPUR)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 1598 and 20236, 30 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 937-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				5 million			7.5 million			10 million		
Temperature, from/to [ °F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]			R min. [factor x d]			R min. [factor x d]		
				unsupported	gliding		unsupported	gliding		unsupported	gliding	
-4 / +14						15	16	17				
+14 / +140	9.84	6.56	98.43	≤ 65.62		12.5	13.5	14.5				
+140 / +158						15	16	17				

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 66 ft (20 m)
- Bus connection cable for machining units/machine tools, low temperature applications





# PUR Bus cable | CFBUS-PUR

## Class 4.3.3.1

IGUS® CHAINFLEX® CFBUS.PUR

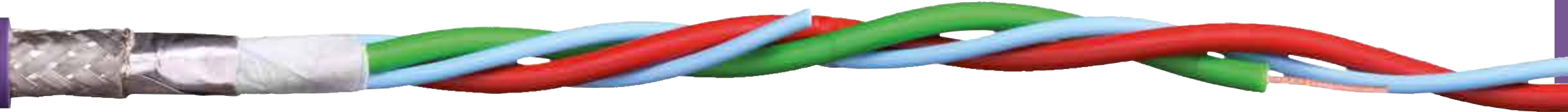


Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Charac-teristic Impedan- ce [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CFBUS-PUR-001	24	1 PR x 0.25	0.33	8.5	18.1	27	49.7	74	CFBUS-PUR-001	150	(2 x 0.25)C	red, green
<b>CAN-Bus</b>												
CFBUS-PUR-021	20	1 PR x 0.5	0.33	8.5	22.2	33	55.8	83	CFBUS-PUR-021	120	(2 x 0.5)C	white, brown
CFBUS-PUR-022 <sup>2)</sup>	20	2 PR x 0.5	0.33	8.5	30.9	46	62.5	93	CFBUS-PUR-022 <sup>2)</sup>	120	(4 x 0.5)C	white, green, brown, yellow (star-quad stranding)
<b>CC-Link</b>												
<b>New</b> CFBUS-PUR-035	20	3 x 0.5	0.31	8.0	28.2	42	53.1	79	CFBUS-PUR-035	110	(3 x 0.5)C	white, blue, yellow
<b>Ethernet/CAT5</b>												
<b>EtherCAT</b> CFBUS-PUR-040 <sup>2)</sup>	24	2 PR x 0.25	0.26	6.5	20.2	30	45.7	68	CFBUS-PUR-040 <sup>2)</sup>	100	(4 x 0.25)C	white, green, brown, yellow (star-quad stranding)
<b>Ethernet/CAT5e</b>												
CFBUS-PUR-045	26	4 PR x 0.15	0.30	7.5	23.5	35	45.7	68	CFBUS-PUR-045	100	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>												
<b>New</b> CFBUS-PUR-049	26	4 PR x 0.15	0.30	7.5	23.5	35	45.7	68	CFBUS-PUR-049	100	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A</b>												
CFBUS-PUR-050	26	4 STP x 0.20	0.37	9.5	46.4	69	82.0	122	CFBUS-PUR-050	100	4 x (2 x 0.20)C	white/blue, white/orange, white/green, white/brown
<b>Ethernet/CAT7</b>												
<b>New</b> CFBUS-PUR-052	26	4 STP x 0.15	0.37	9.5	59.8	89	86.7	129	CFBUS-PUR-052	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
<b>FireWire IEEE 1394b</b>												
CFBUS-PUR-056	26 22	2 STP x 0.15 2 x 0.38	0.35	9.0	41.7	62	63.2	94	CFBUS-PUR-056	100	(2 x (2 x 0.15)C 2x0.38	orange/blue, blue/red black, white
<b>Profinet</b>												
<b>EtherCAT</b> CFBUS-PUR-060 <sup>2) 16)</sup>	22	4 PR x 0.38	0.28	7.0	23.5	35	44.3	66	CFBUS-PUR-060 <sup>2) 16)</sup>	100	(4 x 0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB 3.0</b>												
CFBUS-PUR-068	28 28	2 PR x AWG28 2 STP x AWG28	0.28	7.0	27.6	41	44.3	66	CFBUS-PUR-068	90	2 x (2 x AWG28) 2x(2xAWG28)C	red/black, green/white-green blue/yellow, orange/violet

<sup>16)</sup> Color outer jacket: Yellow-green (RAL 6018)  
The Chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
PR = Twisted Pair  
SC = Individually shielded Conductor  
SHLD = Shielded Precable

Configurators ► [www.igus.com/CFBUSPUR](http://www.igus.com/CFBUSPUR)

**Order example: CFBUS-PUR-001 – In your desired length**  
CFBUS-PUR Chainflex® series -001 Code Bus Type

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

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



# TPE Bus cable | CFBUS

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant

CAT7 Ethernet  
for E-Chains®

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	► See P/N Tables
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-49 °F to +158 °F (-45 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical Information

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

### 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

Configurators ► [www.igus.com/CFBUS](http://www.igus.com/CFBUS)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	See P/N Tables
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 937-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1.
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [ °F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
<b>Part No. CFBUS-001 to -045</b>										
-31 / -13				≤ 1,312	12.5	13.5	14.5			
-13 / +140	32.81	19.69	328.10		10	11	12			
+140 / +158					12.5	13.5	14.5			
<b>Part No. CFBUS-049 to -070</b>										
-31 / -13				≤ 1,312	15	16	17			
-13 / +140	32.81	19.69	328.10		12.5	13.5	14.5			
+140 / +158					15	16	17			

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Bus connection cable for storage and retrieval units for high-bay warehouses, Machining units/ machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications

Test data ► page 36





# TPE Bus cable | CFBUS

## Class 6.6.4.1

IGUS® CHAINFLEX® CFBUS

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Characteristic Impedance [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus (Bend radius min. 10 x d) Style 1589/21371, 30 V, 80 °C</b>									<b>Profibus</b>			
CFBUS-001	24	1 PR x 0.25	0.35	9.0	22.8	34	57.8	86	CFBUS-001	150	(2 x 0.25)C	red, green
CFBUS-002	24	1 PR x 0.25	0.49	12.5	66.5	99	136.4	203	CFBUS-002	150	(2 x 0.25)C	red/green
	16	4 x 1.5									4x1.5	black with white numbers 1-4
CFBUS-003	24	1 PR x 0.25	0.45	11.5	39.0	58	94.7	141	CFBUS-003	150	(2 x 0.25)C	red/green
	18	3 x 0.75									3G0.75	black, blue, green-yellow
<b>Interbus (Bend radius min. 10 x d) Style 1589/21371, 30 V, 80 °C</b>									<b>Interbus</b>			
CFBUS-010	24	3 PR x 0.25	0.35	9.0	33.6	50	60.5	90	CFBUS-010	100	3 x (2 x 0.25)	white/brown, green/yellow, gray/pink
CFBUS-011	24	3 PR x 0.25	0.41	10.5	59.1	88	95.4	142	CFBUS-011	100	3 x (2 x 0.25)	white/brown, green/yellow, gray/pink
	17	3 x 1.0									3G1.0	red, blue, green-yellow
<b>CAN-BUS/Feldbus (Bend radius min. 10 x d) Style 1589/21371, 30 V, 80 °C</b>									<b>CAN-Bus/Feldbus</b>			
CFBUS-020 <sup>2)</sup>	24	2 PR x 0.25	0.26	6.5	19.5	29	39.0	58	CFBUS-020 <sup>2)</sup>	120	(4 x 0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS-021	20	1 PR x 0.5	0.31	8.0	27.6	41	57.1	85	CFBUS-021	120	(2 x 0.5)C	white, brown
CFBUS-022 <sup>2)</sup>	20	2 PR x 0.5	0.31	8.0	30.9	46	60.5	90	CFBUS-022 <sup>2)</sup>	120	(4 x 0.5)C	white, green, brown, yellow (star-quad stranding)
<b>DeviceNet (Bend radius min. 10 x d) Style 1589/21371, 30 V, 80 °C</b>									<b>DeviceNet</b>			
CFBUS-030 <sup>4)</sup>	24	1 PR 24 AWG	0.30	7.5	24.9	37	43.7	65	CFBUS-030 <sup>4)</sup>	120	(2 x AWG24)C	white/blue
	22	1 PR 22 AWG									2xAWG22	red, black
CFBUS-031	18	1 PR 18 AWG	0.45	11.5	73.9	110	134.4	200	CFBUS-031	120	(2 x AWG18)C	white/blue
	15	1 PR 15 AWG									2xAWG15	red, black
<b>CC-Link (Bend radius min. 10 x d) Style 1589/21371, 30 V, 80 °C</b>									<b>CC-Link</b>			
CFBUS-035	20	3 x 20 AWG	0.35	9.0	30.9	46	63.2	94	CFBUS-035	110	(3 x AWG20)C	white, blue, yellow

<sup>4)</sup> manufactured without inner jacket  
The Chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>16)</sup> Color outer jacket: Yellow-green (RAL 6018) **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
PR = Twisted Pair  
SC = Individually shielded Conductor  
SHLD = Shielded Precable

Other types ► page 198

 Configurators ► [www.igus.com/CFBUS](http://www.igus.com/CFBUS)

### Technical note

The USB, Firewire and GigE cables were developed to function in many types of industrial environments. This includes temperature extremes, high oil and chemical resistance, electromagnetic protection, flame resistance. Equally as important these cables are made for continuous movement and to perform electrically to the data rate and loss characteristics of the respective standards. In single cases our customers have experienced communication errors when very different hardware and software are combined. We recommend testing with all components and these cables before starting serial production. Of course we can support you with the details of these electrical tests. Just give us a call.





Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index	Weight		Part No.	Charac-teristic Impedan- ce [Ω]	Core group	Color code
			in.	mm		lbs/mft	kg/km				
<b>Ethernet/CAT5 (Bend radius min. 10 x d) Style 10138/21235, 300 V, 80 °C</b>											
EtherCAT <sup>®</sup> CFBUS-040	24	2 PR x 0.25	0.28	7.0	23.5	35	44.3	66	Ethernet/CAT5	(4 x 0.25)C	white, green, brown, yellow (star-quad stranding)
CFBUS-044 <sup>11)</sup>	26	4 PR x 0.15	0.33	8.5	29.6	44	59.1	88	CFBUS-044 <sup>11)</sup>	(4 x (2 x 0.15))C	white/brown, green/yellow, gray/pink, blue/red
<b>Ethernet/CAT5e (Bend radius min. 10 x d) Style 10138/21235, 300 V, 80 °C</b>											
CFBUS-045	26	4 PR x 0.15	0.33	8.5	29.6	44	59.1	88	CFBUS-045	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6 (Bend radius min. 10 x d) Style 10138/21235, 300 V, 80 °C</b>											
New CFBUS-049	26	4 PR x 0.15	0.33	8.5	29.6	44	59.1	88	CFBUS-049	(4 x (2 x 0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6A (Bend radius min. 12.5 x d) Style 10138/21235, 300 V, 80 °C</b>											
CFBUS-050	26	4 STP x 0.14	0.41	10.5	58.5	87	93.4	139	CFBUS-050	(4 x (2 x 0.15))C	white/blue, white/orange, white/green, white/brown
<b>Ethernet/CAT7 (Bend radius min. 12.5 x d) Style 10138/21235, 300 V, 80 °C</b>											
CFBUS-052	26	4 STP x 0.15	0.41	10.5	63.2	94	95.4	142	CFBUS-052	(4 x (2 x 0.15))C	white/blue, white/orange, white/green, white/brown
<b>FireWire 1394a (Bend radius min. 12.5 x d) Style 1589/21371, 30 V, 80 °C</b>											
CFBUS-055	26	2 STP x 0.15	0.31	8.0	27.6	41	56.4	84	CFBUS-055	2 x (2 x 0.15)C	orange/blue, green/red
	22	2 x 0.34								2x(0.34)C	white, black
<b>Profinet (Bend radius min. 10 x d) Style 10138/21235, 300 V, 80 °C</b>											
EtherCAT <sup>®</sup> CFBUS-060 <sup>2) 16)</sup>	22	4 C x 0.38	0.30	7.5	27.6	41	50.4	75	CFBUS-060 <sup>2) 16)</sup>	(4 x 0.38)C	white, orange, blue, yellow (star-quad stranding)
<b>USB (Bend radius min. 12.5 x d) Style 1589/21371, 30 V, 80 °C</b>											
CFBUS-065	28	1 PR x 0.08	0.22	5.5	19.5	29	30.9	46	CFBUS-065	(2 x AWG28)	white/green
	20	2 x 0.5								2xAWG20	red, black
CFBUS-066	24	1 PR x 0.24	0.26	6.5	22.2	33	37.6	56	CFBUS-066	(2 x AWG24)	white/green
	20	2 x 0.5								2xAWG20	red, black
<b>DVI (Bend radius min. 12.5 x d) without cULus</b>											
CFBUS-070	28	4 PR x 0.08	0.35	9.0	24.9	37	63.2	94	CFBUS-070	4 x (2 x AWG28)C	4 x white/yellow with element-shield in blue, black, white, red
	28	2 x 0.08								(2xAWG28)	white, brown
	28	3 x 0.08								3xAWG28	green, yellow, gray

The Chainflex<sup>®</sup> types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>11)</sup> Phase-out model (alternative: CFBUS-045)  
 Color outer jacket: Yellow-green (RAL 6018) **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
 PR = Twisted Pair  
 SC = Individually shielded Conductor  
 SHLD = Shielded Precable

Other types ► page 196

 Configurators ► [www.igus.com/CFBUS](http://www.igus.com/CFBUS)

### Technical note

The USB, Firewire and GigE cables were developed to function in many types of industrial environments. This includes temperature extremes, high oil and chemical resistance, electromagnetic protection, flame resistance. Equally as important these cables are made for continuous movement and to perform electrically to the data rate and loss characteristics of the respective standards. In single cases our customers have experienced communication errors when very different hardware and software are combined. We recommend testing with all components and these cables before starting serial production. Of course we can support you with the details of these electrical tests. Just give us a call.





Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# TPE Bus cable | CF11-LC

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-58 °F to +158 °F (-50 °C to +70 °C)
		<b>fixed</b>	-67 °F to +158 °F (-55 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011).

### Electrical Information

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

Configurators ► [www.igus.com/CF11LC](http://www.igus.com/CF11LC)

# Class 6.6.4.1

### 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 EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [ °F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					≤ 1,312	12.5	13.5	14.5
-13 / +140		32.81	19.69	328.10		10	11	12
+140 / +158						12.5	13.5	14.5

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications





Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Characteristic Impedance [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CF11-02-02-02-PBA-LC <sup>2)</sup>	24	1 PR x 0.25	0.35	9.0	24.9	37	55.1	82	CF11-02-02-02-PBA-LC <sup>2)</sup>	150	1 x 2 x 0.25	green, yellow, red, brown (star-quad stranding)
<b>Interbus</b>												
CF11-02-03-02-10-03-IB-S	24	3 PR x 0.25	0.41	10.5	59.1	88	90.0	134	CF11-02-03-02-10-03-IB-S	100	3 x 2 x 0.25	white/brown, green/yellow, gray/pink
	17	3 x 1.0									3 x 1.0	red, blue, green-yellow
CF11-02-03-02-IB-S	24	3 PR x 0.25	0.35	9.0	34.3	51	56.4	84	CF11-02-03-02-IB-S	100	3 x 2 x 0.25	white/brown, green/yellow, gray/pink
<b>CAN-Bus</b>												
CF11-05-01-02-LC	20	1 PR x 0.5	0.31	8.0	27.6	41	53.8	80	CF11-05-01-02-LC	120	1 x 2 x 0.5	white, brown
CF11-05-02-02-LC <sup>2)</sup>	20	2 PR x 0.5	0.33	8.5	30.9	46	58.5	87	CF11-05-02-02-LC <sup>2)</sup>	120	2 x 2 x 0.5	white, green, brown, yellow (star-quad stranding)

The Chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
 PR = Twisted Pair  
 SC = Individually shielded Conductor  
 SHLD = Shielded Precable



Order example: **CF11-02-03-02-IB-S** – In your desired length  
 CF11-LC Chainflex® series

- 02 Code nominal cross section
- 03 Number of pairs
- 02 Identification pairs
- IB-S Special identification



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



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



Configurators ► [www.igus.com/CF11LC](http://www.igus.com/CF11LC)





Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# TPE Bus cable | CF11-LC-D

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- PVC-free/halogen-free
- Oil-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-58 °F to +158 °F (-50 °C to +70 °C)
		<b>fixed</b>	-67 °F to +158 °F (-55 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>	328.1 ft/s² (100 m/s²)	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See P/N Tables
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical Information

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

Configurators ► [www.igus.com/CF11LCD](http://www.igus.com/CF11LCD)

# 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>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [ °F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					≤ 1,312	12.5	13.5	14.5
-13 / +140		32.81	19.69	328.10		10	11	12
+140 / +158						12.5	13.5	14.5

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Charac-teristic Impedance [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CF11-02-01-02-PBA-LC-D	24	2 PR x 0.25	0.35	9.0	22.8	34	53.8	80	CF11-02-01-02-PBA-LC-D	150	1 x 2 x 0.25	red, green
CF11-02-02-07-03-PBA-LC-D	24	1 STP x 0.25	0.43	11.0	39.0	58	87.4	130	CF11-02-02-07-03-PBA-LC-D	150	(2 x 0.25)C	red/green
	18	3 x 0.75									3G0.75	black, blue, green-yellow
CF11-02-02-15-04-PBA-LC-D	24	1 STP x 0.25	0.51	13.0	63.2	94	120.3	179	CF11-02-02-15-04-PBA-LC-D	150	(2 x 0.25)C	red/green
	16	4 x 1.5									4x1.5	black with white numbers 1-4
<b>CAN-Bus</b>												
CF11-02-02-02-LC-D <sup>2)</sup>	24	2 PR x 0.25	0.26	6.5	19.5	29	35.6	53	CF11-02-02-02-LC-D <sup>2)</sup>	120	2 x 2 x 0.25	white, green, brown, yellow (star-quad stranding)
CF11-05-01-02-LC-D	20	1 PR x 0.5	0.31	8.0	27.6	41	53.8	80	CF11-05-01-02-LC-D	120	1 x 2 x 0.5	white, brown

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

Other types available on request.

Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair

PR = Twisted Pair

SC = Individually shielded Conductor

SHLD = Shielded Precable



Order example: CF11-02-01-02-PBA-LC-D – In your desired length

CF11-LC-D Chainflex® series

-02 Code nominal cross section

-01 Number of pairs

-02 Identification pairs

-PBA-LC-D Special identification



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



Delivery time 24hr or today.

Delivery time means time until shipping of goods.



Configurators ► [www.igus.com/CF11LCD](http://www.igus.com/CF11LCD)





# PUR Ethernet Bus cable | CF14US

- For high mechanical load applications
- PUR outer jacket
- Shielded
- Oil-resistant
- UV-resistant
- Flame-retardant
- Abrasion and tear resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
	<b>flexible</b>		min. 10 x d
	<b>fixed</b>		min. 7.5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +158 °F (-20 °C to +70 °C)
	<b>flexible</b>		-40 °F to +158 °F (-40 °C to +70 °C)
	<b>fixed</b>		-50 °F to +158 °F (-45 °C to +70 °C)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Especially for unsupported and gliding travel up to 164 ft (50m)

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Foam polyethylene
	<b>Conductor construction</b>	4 pairs twisted together
	<b>Color code</b>	See Table
	<b>Inner jacket</b>	TPE
	<b>Overall shield</b>	Tinned copper braid 90 % optical coverage
	<b>Outer jacket</b>	Low adhesion PUR blend adapted to the requirements of the Energy Chain® Color: See P/N Tables

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2500 V

### Properties and approvals

	<b>UV resistance</b>	CF14US-02-04-02: Medium CF14US-02-04-02-UV: High
	<b>Oil resistance</b>	High
	<b>UL/CSA</b>	<b>UL AWM:</b> Style 20233, 80 °C, 300V <b>CSA AWM:</b> I/II A/B 80 °C, 300V, FT1

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil-resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

## Class 6.3.4.1

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1
	<b>NFPA 79</b>	Complies to NFPA 79 2012 chapter 12.9
	<b>Lead-free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>CE</b>	2006/95/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]
-4 / -13					12.5	13.5	14.5			
-14 / +140	32.81	19.69	328.10	≤ 1,312	10	11	12			
+140 / +158					12.5	13.5	14.5			

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

### Typical application areas

- CF14US-02-04-02-UV is good for direct sunlight
- For extremely heavy duty applications
- Suitable for indoor/outdoor applications without direct sunlight
- Especially for unsupported and gliding travel up to 164 ft (50m)
- For application lengths > 164 ft (50m) use igus® P/N CFBUS-045
- Storage and retrieval units for high-bay warehouses, machine tools, quick handling, cleanroom, semiconductor insertion, indoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Jacket color
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km	
CF14US-02-04-02	26	4 PR x 0.14	0.30	7.6	7.4	11	59.8	89	Violet
CF14US-02-04-02-UV	26	4 PR x 0.14	0.30	7.6	7.4	11	59.8	89	Black

Note: The mentioned outer diameters are maximum values.

Part No.	Characteristic Impedance [Ω]	Core group	Color code
CF14US-02-04-02	100	4 PR x 0.14	Blue & White/Blue, Orange & White/Orange,
CF14US-02-04-02-UV	100	4 PR x 0.14	Green & White/Green, Brown & White/Brown

**Order example: CF14US-02-04-02 – In your desired length**  
**CF14US Chainflex® series**  
 -02 Code nominal cross section  
 -04 Number of pairs  
 -02 Identification pairs

Online order ► [www.igus.com/CF14US](http://www.igus.com/CF14US)

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

**36 months guarantee on every chainflex® cable ...**  
**... up to 10 million cycles guaranteed ...**

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# TPE Bus cable | CF14-CAT5

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-58 °F to +158 °F (-50 °C to +70 °C)
		<b>fixed</b>	-67 °F to +158 °F (-55 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Special PP-isolation mixture.
	<b>Conductor construction</b>	Twisted Pairs cabled together with short pitch lengths.
	<b>Color code</b>	Color 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 tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical Information

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

### 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)

## Class 6.6.4.1

	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				5 million	7.5 million	10 million
Temperature, from/to [ °F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				12.5	13.5	14.5
-13 / +140	32.81	19.69	328.10	≤ 1,312	10	11
+140 / +158				12.5	13.5	14.5

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>Ethernet/CAT5</b>								
<b>CF14-01-04-02-CAT5</b>	26	4 PR x 0.15	0.33	8.5	29.6	44	55.1	82
<b>CF14-02-02-02-CAT5<sup>2)</sup></b>	24	2 PR x 0.25	0.30	7.5	23.5	35	40.3	60

The Chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
**Note:** The mentioned outer diameters are maximum values.

Part No.	Character-istic Impe-dance [Ω]	Core group	Color code
<b>Ethernet/CAT5</b>			
<b>CF14-01-04-02-CAT5</b>	100	(4 x (2 x 0,15))C	white/brown, green/yellow, gray/pink, blue/red
<b>CF14-02-02-02-CAT5</b>	100	(4 x 0,25)C	white, green, brown, yellow (star-quad stranding)

More CAT5/CAT6 cables ► page 194 (CFBUS)

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...



# Fiber optic cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s] unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
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### Fiber optic cables

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

▶ Selection table page 216

CFLK	PUR	12.5	-4/ +140		CE	✓	32.81	16.41	65.62	218
CFLG88	PVC		+41/ +158		CE	✓	9.84	6.56	65.62	220 <b>New</b>
CFLG-LB-PUR	PUR	5-7.5	-31/ +176		CE	✓	32.81	19.69	65.62	222
CFLG-LB	TPE	5	-31/ +176		CE	✓	32.81	19.69	65.62	226 <b>New</b>
CFLG-G	TPE	10	-40/ +176		CE	✓	32.81	19.69	65.62	230 <b>New</b>

### Torsional Fiber Optic Cables (Chapter Torsional cables) ▶ Page 376

CFROBOT5	TPE	10	-4/ +176		CE	✓	✓	180°/s	60°/s	384
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### Overview to find the right Fiber optic cable

	POF Plastic FOC 980/1000 µm	PCF Glass fiber FOC 200/230 µm	GOF Multimode Glass fiber FOC 50/125 µm 62,5/125 µm	GOF Singlemode Glass fiber FOC 9/125 µm
CFLK	✓			
CFLG88			✓	
CFLG-LB-PUR			✓	
CFLG-LB		✓	✓	
CFLG			✓	✓

## The safest and often cheapest way to transfer data to machines and plant.

Fault-free communication between all systems in machines and plant that is becoming more and more complex all the time should be a matter of course these days.

However, many plant manufacturers or operators have major EMC problems that occur sporadically or even only years later.

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® glass fiber optic cables provide further advantages for even greater data safety.

Fiber 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, fiber optic cables can be used independently of the system, since a special bus cable is not required for every bus system, 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 fiber 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 fiber types can be used for industrial data communication, completely independently of the type of field bus used. The fiber type and number depends only on which converters are used and which fiber type the respective manufacturer prescribes. The fibers are defined on the basis of diameter and result in a clear and limited choice.

### Important fiber types:

- **Multimode Fibers**

50/125 µm

62.5/125 µm

The ideal fiber for large data volumes and longer transmission lengths in the field of automation. On account of the very low output attenuation (0.8-3 dB/km per fiber and light wave length) of these fiber types, transmission lengths of several hundred metres are possible.

- **POF (Plastic Fibers)**

980/1000 µm

The ideal and low-cost fiber for short transmission paths. On account of the high output attenuation of the fiber type of 160-230 dB/km, lengths over 15 mm must be avoided in permanent-motion energy chains®.

- **PCF (Polymer Cladded Fiber)**

200/230 µm

The ideal compromise for POF fiber. This plasticcoated quartz glass fiber is a viable alternative for many terminal devices that have been designed for POF. This means greater transmission lengths (100 m 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 thanks to

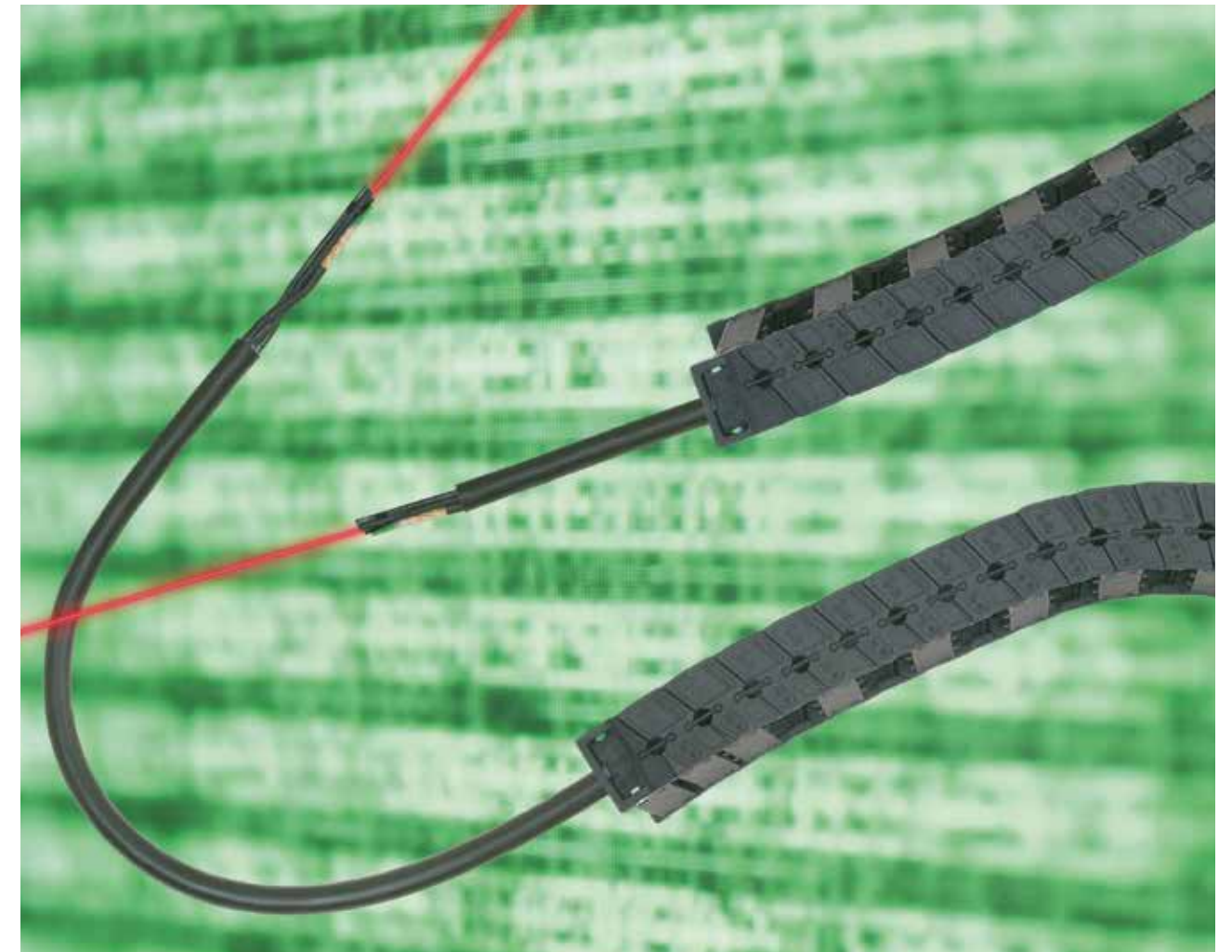
- FOC-typical better transmission characteristics
- Greater possible transmission lengths of several 100 meters
- Greater possible data volumes thanks to lower attenuation values
- Maximum EMC protection for the data transmitted
- Future-proof installation (no cable replacement with new bus systems)

#### 2. Greater mechanical protection through

- The FOC designed for permanent mechanical movement
- The igus®-typical highly abrasion-proof and chemical resistant sheathing materials
- The special Chainflex® design concept (tested at 30 million cycles without a significant increase in attenuation)

#### 3. Future-oriented cost reduction through

- Bus-independent bus cable wiring
- Longer service life in E-Chains®
- Extendable without transmission limits











# Chainflex® guarantee



# Guaranteed lifetime<sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page	
		unsupported	gliding			5 million cycles *	7.5 million cycles *	10 million cycles *			
Fiber Optic Cables											
 CFLK	-4 / +14 +14 / +122 +122 / +140	32.81	16.41	65.62	≤ 65.62	15 12.5 15		16 13.5 16		17 14.5 17	218
 CFLG88 <b>New!</b>	+41 / +59 +59 / +140 +140 / +158	9.84	6.56	65.62	≤ 32.81	10 7.5 10		11 8.5 11		12 9.5 12	220
 CFLG-LB-PUR	-31 / -13 -13 / +158 +158 / +176	32.81	19.69	65.62	≤ 328.1	7.5 5 7.5		8.5 6 8.5		9.5 7 9.5	222
 CFLG-LB <b>New!</b>	-31 / -13 -13 / +158 +158 / +176	32.81	19.69	65.62	≤ 328.1	7.5 5 7.5		8.5 6 8.5		9.5 7 9.5	226
 CFLG-LB-CU <b>New!</b>	-31 / -13 -13 / +158 +158 / +176	32.81	19.69	65.62	≤ 328.1	10 7.5 10		11 8.5 11		12 9.5 12	226
 CFLG <b>New!</b>	-40 / -22 -22 / +158 +158 / +176	32.81	19.69	65.62	> 1,312	12.5 10 12.5		13.5 11 13.5		14.5 12 14.5	230






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

\* Guaranteed lifetime, higher numbers of cycles possible.





# PUR Fiber optic cable | CFLK

- Plastic Optical Fibers (POF) for high mechanical load requirements and interference-free transmission
- PUR outer jacket
- Oil-resistant and coolant-resistant







### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +140 °F (-20 °C to +60 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +140 °F (-50 °C to +60 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 66 ft (20 m), Class 3

### Cable structure

	<b>Fibers</b>		980/1000 µm fiber with PE Insulation.
	<b>Conductor construction</b>		Polymer Optical Fiber cabled with high-tensile plastic reinforcement.
	<b>Color code</b>		Core black.
	<b>Outer jacket</b>		Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Red lilac (comparable RAL 4001)

### Properties and approvals

	<b>UV resistance</b>		Medium
	<b>Oil resistance</b>		Oil-resistant (following DIN EN 50363-10-2), Class 3
	<b>Silicone-free</b>		Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>		Following EN 50267-2-1
	<b>Lead-free</b>		Following 2011/65/EC (RoHS-II)
	<b>CE</b>		Following 2014/35/EG

 Configurators ► [www.igus.com/CFLK](http://www.igus.com/CFLK)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# Class 5.3.3.1

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

Cycles*		5 million			7.5 million		10 million
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	
	unsupported	gliding					
-4 / +14				15	16	17	
+14/ +122	32.81	16.41	≤ 65.62	12.5	13.5	14.5	
+122/ +140				15	16	17	

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

### Typical application areas

- For high mechanical load requirements
- Maximum EMC safety
- Almost unlimited resistance to oil
- Preferably indoor applications
- Unsupported travel distances and for gliding applications up to 66 ft (20 m)
- Wood/stone processing, packaging industry, supply systems, handling, adjusting equipment

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Weight	
			in.	mm	lbs/mft	kg/km
<b>CFLK-L1-01</b>	1	980/1000	0.24	6.0	16.8	25
<b>CFLK-L1-02</b>	2	980/1000	0.28	7.0	20.8	31

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 650 nm	Attenuation [dB/km] @ 650 nm	Fiber identification
<b>CFLK-L1-01</b>	40	200	black
<b>CFLK-L1-02</b>	40	200	black



Woodworking machines with E-Chains® and Chainflex® cables














# PVC Fiber optic cable | CFLG88

- Gradient glass-fiber cable for flexible mechanical load requirements
- PVC outer jacket
- Flame-retardant






### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange or blue with black numbers.
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Signal black (similar to RAL 9004)

### Properties and approvals

	<b>Flame resistance</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>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

 Configurators ► [www.igus.com/CFLG88](http://www.igus.com/CFLG88)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	gliding	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	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]
+41 / +59					≤ 32.81	10	11	12		
+59 / +140		9.84	6.56	65.62	≤ 32.81	7.5	8.5	9.5		
+140 / +158						10	11	12		

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

### Typical application areas

- For low duty flexing applications
- Maximum EMC safety
- Preferably indoor applications
- Especially for unsupported travel distances
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment


Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Weight	
			in.	mm	lbs/mft	kg/km
<b>New CFLG88-2-62.5/125</b>	2	62.5/125	0.28	7.0	29.6	44
<b>New CFLG88-2-50/125</b>	2	50/125	0.28	7.0	29.6	44

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 850 nm	Bandwidth [MHz x km] @ 1300 nm	Attenuation [dB/km] @ 850 nm	Attenuation [dB/km] @ 1300 nm	Fiber identification
	<b>CFLG88-2-62.5/125</b>	≥ 200	≥ 500	≤ 3.0	≤ 0.7
<b>CFLG88-2-50/125</b>	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals

 Order example: **CFLG88-50/125** – In your desired length  
**CFLG88 Chainflex® series -50/125 Type of fibers**

 Online order ► [www.chainflex.com/CFLG88](http://www.chainflex.com/CFLG88)

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



# PUR Fiber optic cable | CFLG-LB-PUR

- Gradient glass-fiber cable for maximum mechanical load requirements
- PUR outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible to -40 °F
- PVC-free/halogen-free
- UV-resistant

FOC with offshore approval!

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d (CFLG.LB.PUR) min. 7.5 x d (CFLG.LB.PUR.CU)
		<b>flexible</b>	min. 4 x d (CFLG.LB.PUR) min. 6 x d (CFLG.LB.PUR.CU)
		<b>fixed</b>	min. 3 x d (CFLG.LB.PUR) min. 4 x d (CFLG.LB.PUR.CU)
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm, 9/125 µm special fixed wire elements with aramid strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange, blue or yellow with black numbers. Copper cores: Black with white numbers.
	<b>Overall shield</b>	Extremely bending-resistant aramide braid for torsion-protection.
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Jet black (similar to to RAL 9005)

### Electrical Information\*

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	CFLG-2LB-PUR-CU: 2000 V (following DIN VDE 0281-2)

\* If the part number contains "CU", then these FOC cables have copper conductors included

Configurators ► [www.igus.com/CFLGLBPUR](http://www.igus.com/CFLGLBPUR)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>DNV-GL</b>	Certified according to DNVGL type testing – Certificate no.: 13 655-14 HH
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
<b>CFLG-LB-PUR</b>	-31 / -13			65.62	≤ 328.1	7.5	8.5	9.5
	-13 / +158	32.81	19.69			5	6	7
	+158 / +176					7.5	8.5	9.5
<b>CFLG-LB-CU-PUR</b>	-31 / -13			65.62	≤ 328.1	10	11	12
	-13 / +158	32.81	19.69			7.5	8.5	9.5
	+158 / +176					10	11	12

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

### Typical application areas

- For heaviest duty applications at 5-7.5 x d
- Maximum EMC safety, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications (horizontal + vertical) up to 328 ft (100 m)
- Offshore, ship, Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, semiconductor insertion, refrigerating sector





IGUS® CHAINFLEX® CFLG.LB.PUR

Image exemplary.

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFLG-2LB-PUR-62.5/125	2	62.5/125	0.33	8.5	-	-	41.7	62
CFLG-4LB-PUR-62.5/125	4	62.5/125	0.35	9.0	-	-	45.7	68
CFLG-6LB-PUR-62.5/125	6	62.5/125	0.43	11.0	-	-	64.5	96
CFLG-12LB-PUR-62.5/125	12	62.5/125	0.59	15.0	-	-	120.3	179
CFLG-2LB-PUR-50/125 <sup>1.6)</sup>	2	50/125	0.33	8.5	-	-	41.7	62
CFLG-4LB-PUR-50/125 <sup>1.6)</sup>	4	50/125	0.35	9.0	-	-	45.7	68
CFLG-6LB-PUR-50/125	6	50/125	0.43	11.0	-	-	64.5	96
CFLG-12LB-PUR-50/125 <sup>1.6)</sup>	12	50/125	0.59	15.0	-	-	120.3	179
<b>New</b> CFLG-6LB-PUR-9/125	6	9/125	0.43	11.0	-	-	64.5	96
CFLG-2LB-CU2-PUR-62.5/125	2	62.5/125 + 2x0.75 (18AWG)	0.37	9.5	11.4	17	58.5	87
CFLG-2LB-CU2-PUR-50/125	2	50/125 + 2x0.75 (18AWG)	0.37	9.5	11.4	17	58.5	87
CFLG-2LB-CU4-PUR-62.5/125	2	62.5/125 + 2x1.5 (16AWG)	0.39	10.0	21.5	32	71.9	107

<sup>1)</sup> Delivery time upon request

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth	Bandwidth	Attenuation	Attenuation	Fiber identification
	[MHz x km] @ 850 nm	[MHz x km] @ 1300 nm	[dB/km] @ 850 nm	[dB/km] @ 1300 nm	
CFLG-2LB-PUR-62.5/125	≥ 200	≥ 500	≤ 3.0	≤ 0.7	orange with black numerals
CFLG-4LB-PUR-62.5/125	≥ 200	≥ 500	≤ 3.0	≤ 0.7	orange with black numerals
CFLG-6LB-PUR-62.5/125	≥ 200	≥ 500	≤ 3.0	≤ 0.7	orange with black numerals
CFLG-12LB-PUR-62.5/125	≥ 200	≥ 500	≤ 3.0	≤ 0.7	orange with black numerals
CFLG-2LB-PUR-50/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals
CFLG-4LB-PUR-50/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals
CFLG-6LB-PUR-50/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals
CFLG-12LB-PUR-50/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals
CFLG-6LB-PUR-9/125					
CFLG-2LB-CU2-PUR-62.5/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	orange with black numerals
CFLG-2LB-CU2-PUR-50/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with black numerals
CFLG-2LB-CU4-PUR-62.5/125	≥ 500	≥ 500	≤ 2.5	≤ 0.7	orange with black numerals



Order example: CFLG-4LB-PUR-62.5/125 – In your desired length  
CFLG-LB-PUR Chainflex® series -4 Number of fibers -62.5/125 Diameter of fiber



Online order ► [www.chainflex.com/CFLGLBPUR](http://www.chainflex.com/CFLGLBPUR)



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



# TPE Fiber optic cable | CFLG-LB

- Gradient glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible to -40 °F
- PVC-free/halogen-free
- UV-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange or blue with black numbers. Copper Fibers: Black with white numbers.
	<b>Overall shield</b>	Extremely bending-resistant aramide braid for torsion-protection.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

### Electrical Information\*

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	CFLG-2LB-2CU: 2000 V (in Anlehnung an DIN EN 50395)

\* If the part number contains "CU", then these FOC cables have copper conductors included

Configurators ► [www.igus.com/CFLGLB](http://www.igus.com/CFLGLB)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 7.5.4.1

### Properties and approvals

	<b>UV resistance</b>	Highest
	<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 EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]	
<b>CFLG-LB</b>										
-31 / -13					7.5	8.5	9.5			
-13/ +158	32.81	19.69	65.62	≤ 328.1	5	6	7			
+158 / +176					7.5	8.5	9.5			
<b>CFLG-LB-CU</b>										
-31 / -13					10	11	12			
-13/ +158	32.81	19.69	65.62	≤ 328.1	7.5	8.5	9.5			
+158 / +176					10	11	12			

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

### Typical application areas

- For heaviest duty applications at 5-7.5 x d
- Maximum EMC safety, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications (horizontal + vertical) up to 328 ft (100 m)
- crane applications, conveyer technology, low temperature applications







Image exemplary.

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>Bend radius 5 x d</b>								
<b>New</b> CFLG-2LB-200/230	2	200/230	0.33	8.5	-	-	38.3	57
CFLG-2LB-62.5/125	2	62.5/125	0.33	8.5	-	-	38.3	57
CFLG-4LB-62.5/125	4	62.5/125	0.35	9.0	-	-	45.7	68
CFLG-6LB-62.5/125	6	62.5/125	0.43	11.0	-	-	61.1	91
<b>New</b> CFLG-12LB-62.5/125	12	62,5/125	0.55	14.0	-	-	100.8	150
CFLG-2LB-50/125	2	50/125	0.33	8.5	-	-	38.3	57
CFLG-4LB-50/125	4	50/125	0.35	9.0	-	-	45.7	68
CFLG-6LB-50/125	6	50/125	0.43	11.0	-	-	61.1	91
<b>New</b> CFLG-12LB-50/125	12	50/125	0.55	14.0	-	-	100.8	150
<b>Bend radius 7.5 x d</b>								
CFLG-2LB-CU2-50/125	2	50/125 + 2x0.75 (18AWG)	0.37	9.5	10.8	16	58.5	87

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 850 nm	Attenuation [dB/km] @ 850 nm	Bandwidth [MHz x km] @ 1300 nm	Attenuation [dB/km] @ 1300 nm	Fiber identification
	CFLG-2LB-200/230	≥ 20	≤ 6,0	-	-
CFLG-2LB-62.5/125	≥ 200	≤ 3,0	≥ 500	≤ 0,7	orange with black numerals
CFLG-4LB-62.5/125	≥ 200	≤ 3,0	≥ 500	≤ 0,7	orange with black numerals
CFLG-6LB-62.5/125	≥ 200	≤ 3,0	≥ 500	≤ 0,7	orange with black numerals
CFLG-12LB-62.5/125	≥ 200	≤ 3,0	≥ 500	≤ 0,7	orange with black numerals
CFLG-2LB-50/125	≥ 500	≤ 2,5	≥ 500	≤ 0,7	blue with black numerals
CFLG-4LB-50/125	≥ 500	≤ 2,5	≥ 500	≤ 0,7	blue with black numerals
CFLG-6LB-50/125	≥ 500	≤ 2,5	≥ 500	≤ 0,7	blue with black numerals
CFLG-12LB-50/125	≥ 500	≤ 2,5	≥ 500	≤ 0,7	blue with black numerals
CFLG-2LB-CU2-50/125	≥ 500	≤ 2,5	≥ 500	≤ 0,7	blue with black numerals



Order example: CFLG-4LB-62.5/125 – In your desired length  
CFLG-LB Chainflex® series -4LB Number of fibers -62.5/125 Diameter of fiber



Online order ► [www.chainflex.com/CFLGLB](http://www.chainflex.com/CFLGLB)



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



# TPE Fiber optic cable | CFLG-G

- Glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- PVC-free/halogen-free
- Low-temperature-flexible to -40 °F
- Hydrolysis/microbe-resistant

**Bend radius reduced by 33%!**

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Fibers</b>	9/125 µm, 50/125 µm, 62.5/125 µm fibers in gel-filled hollow cores.
	<b>Conductor construction</b>	Strengthening rods with integrated torsion-protection braid in the outer jacket over a central gel-filled fiber tube.
	<b>Color code</b>	Fibers See Table
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

Configurators ► [www.igus.com/CFLG](http://www.igus.com/CFLG)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG
	<b>Info</b>	For hanging applications, please use cables of the series CFLG-LB - see page 226!

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

Cycles*				5 million	7.5 million	10 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-40 / -22				12,5	13,5	14,5
-22 / +158	32.81	19.69	65.62 > 1,312	10	11	12
+158 / +176				12,5	13,5	14,5

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

### Typical application areas

- For maximum mechanical load requirements
- Maximum EMC safety, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications (horizontal) up to 1312 ft (400 m) and more
- Ship to shore, crane applications, conveyer technology, low temperature applications

Test data ► page 52





Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil-resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Weight	
			in.	mm	lbs/mft	kg/km
CFLG-6G-62.5/125-TC	6	62.5/125	0.39	10.0	53.8	80
CFLG-12G-62.5/125-TC	12	62.5/125	0.39	10.0	53.8	80
CFLG-6G-50/125-TC	6	50/125	0.39	10.0	53.8	80
CFLG-12G-50/125-TC	12	50/125	0.39	10.0	53.8	80
CFLG-12E-9/125-TC	12	9/125	0.39	10.0	53.8	80

Other numbers of fibres on request.  
Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 1300 nm	Bandwidth [MHz x km] @ 850 nm	Attenuation [dB/km] @ 1300 nm	Attenuation [dB/km] @ 850 nm
	CFLG-6G-62.5/125-TC	≥ 500	≥ 200	≤ 0.7
CFLG-12G-62.5/125-TC	≥ 500	≥ 200	≤ 0.7	≤ 3.0
CFLG-6G-50/125-TC	≥ 500	≥ 500	≤ 0.7	≤ 3.0
CFLG-12G-50/125-TC	≥ 500	≥ 500	≤ 0.7	≤ 3.0

Part No.	Chromatic dispersion [ps/nm x km] @ 1310 nm	Chromatic dispersion [ps/nm x km] @ 1550 nm	Attenuation [dB/km] @ 1310 nm	Attenuation [dB/km] @ 1550 nm
	CFLG-12E-9/125-TC	3	18	≤ 0.35

Part No.	Fiber identification	Hollow core identification
	CFLG-6G-62.5/125-TC	natural, yellow, green, red, violet, blue
CFLG-12G-62.5/125-TC	natural, yellow, green, red, violet, blue, lightblue, gray, brown, black, orange, pink	orange
CFLG-6G-50/125-TC	natural, yellow, green, red, violet, blue	blue
CFLG-12G-50/125-TC	natural, yellow, green, red, violet, blue, lightblue, gray, brown, black, orange, pink	blue
CFLG-12E-9/125-TC	natural, yellow, green, red, violet, blue, lightblue, gray, brown, black, orange, pink	yellow

Order example: CFLG-6G-62.5/125-TC – In your desired length  
CFLG-G Chainflex® series -6G Number of fibers -62.5/125 Diameter of fiber -TC Special Identification

Online order ► [www.chainflex.com/CFLG](http://www.chainflex.com/CFLG)

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

Configurators ► [www.igus.com/CFLGGT](http://www.igus.com/CFLGGT)



# Measuring system cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s] unsupported	v max. [ft/s] gliding	a max. [ft/s²]	page
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### Measuring system cables

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

▶ Selection table page 236

### Selection chart for Chainflex® measuring system cables 238

CF884	PVC	✓	15	+41/ +158	UL US	ERC	CE	9.84		65.62	240
CF211	PVC	✓	10	+41/ +158	UL US	ERC	CE	16.41	9.84	98.43	244
CF894	iguPUR	✓	15	-4/ +176	UL US	ERC	CE	9.84		65.62	250
CF111-D	PUR	✓	10	-13/ +176	UL US	ERC	CE	16.41	9.84	98.43	254
CF113-D	PUR	✓	7.5	-13/ +176	UL US	ERC	CE	32.81	16.41	164.05	260
CF11- D	TPE	✓	7.5	-31/ +194	UL US	ERC	CE	32.81	19.69	328.10	268


**Measuring System Cable:** A cable that provides signal, feedback, and low voltage power between a drive or controller and a motor. This cable will combine multiple numbers of conductor sizes and components to control encoder, resolver or other means of position feedback loop. The respective motor manufacturers will each have their own cable configuration for this cable function. See Selection chart for Chainflex measuring system cables on page 238-239.



# Chainflex® guarantee



# Guaranteed lifetime <sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		page
		unsupported	gliding			5 million (1 million) cycles *	7.5 million (3 million) cycles *	10 million (5 million) cycles *		
<b>Measuring system cables</b>										
 CF884	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	240	
 CF211	+41 / +59 +59 / +140 +140 / +158	16.41	9.84	98.43	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	244	
 CF894	-4 / +14 +14 / +158 +158 / +176	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	250	
 CF111-D	-13 / +5 +5 / +158 +158 / +176	16.41	9.84	98.43	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	254	
 CF113-D	-13 / +5 +5 / +158 +158 / +176	32.81	16.41	164.05	≤ 328.1	10 7.5 10	11 8.5 11	12 9.5 12	260	
 CF11-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12	268	

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

\* Guaranteed lifetime, higher numbers of cycles possible. Figures in brackets refer to 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	CF113-yyy	CF11-yyy-D
		3.1.1 PVC 240	4.2.2 PVC 244	3.1.3 PUR 250	4.2.3 PUR 254	6.4.3 PUR 260	6.5.4 TPE 268
Number of conductors 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-027-D	(5x(2x0.14)+2x0.5)C		✓		✓	✓	✓
<b>Baumüller</b>							
CFxxx-027-D	(5x(2x0.14)+2x0.5)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	✓	✓	✓	✓	✓	✓
<b>ELAU</b>							
CFxxx-009-D	(4x(2x0.25)+2x0.5)C		✓			✓	✓
<b>Fagor</b>							
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	(3x(2x0.5+2x0.25)+(4x0.25))C				✓	✓	✓
CFxxx-022-D	(5x0.5+(2x0.25))C	✓		✓	✓	✓	✓
<b>Heidenhain</b>							
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-025-D	(3x(2x0.14)C+(2x0.5)C)C					✓	✓
<b>Jetter</b>							
CFxxx-002-D	(3x(2x0.14)C+2x(0.5)C)C		✓			✓	✓
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					✓	✓
<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		✓			✓	✓

Drive Technology System	Chainflex® series Class Jacket Page	CF884-yyy	CF211-yyy	CF894-yyy	CF111-yyy	CF113-yyy	CF11-yyy-D
		3.1.1 PVC 240	4.2.2 PVC 244	3.1.3 PUR 250	4.2.3 PUR 254	6.4.3 PUR 260	6.5.4 TPE 268
Number of conductors and conductor nominal cross section [mm²]							
<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		✓			✓	✓
<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>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				✓	✓	✓
<b>More Chainflex® cables</b>							
CFxxx-003-D	(3x(2x0.14)+2x1.0)C					✓	✓
CFxxx-007-D	(2x2x0.34)C					✓	✓
CFxxx-012-D	(3x(2x0.14)C+(3x0.14)C+6x0.14+2x0.5)C					✓	✓
CFxxx-013-D	(3x(2x0.14)C+2x0.5)C					✓	✓
CFxxx-014-D	(4x(2x0.25)C+2x0.5)C		✓			✓	✓
CFxxx-035-D	(4x(2x0.25)C+2x(2x0.5))C				✓		



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Measuring system cable | CF884

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	According to measuring system specification.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Foil taping of optimized, bending-resistant foil shield. 100% optical coverage
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Green (similar to RAL 6018)

### Electrical Information

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

Configurators ► [www.igus.com/CF884](http://www.igus.com/CF884)

# Class 3.1.1.1

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, VW-1, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 1589 und 2560, 30V, 60 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				17.5	18.5	19.5
+59 / +140	9.84	65.62	≤ 32.81	15	16	17
+158 / +158				17.5	18.5	19.5

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

### Typical application areas

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



# PVC Measuring system cable | CF884

# Class 3.1.1.1

Requirements  
Travel distance  
Oli resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF884-001	26	3 STP x 0.14	0.33	8.5	28.9	43	63.2	94	CF884-001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								4x0.14	gray, blue, white-yellow, white-black
	20	2 x 0.5								2x0.5	brown-red, brown-blue
CF884-006	26	3 STP x 0.14	0.35	9.0	35.6	53	81.3	121	CF884-006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								4x0.14	gray, blue, white-yellow, white-black
	24	4 x 0.22								4x0.22	brown-yellow, brown-gray, green-black, green-red
	20	2 x 0.5								2x0.5	brown-red, brown-blue
CF884-009	24	4 PR x 0.25	0.31	8.0	30.9	46	59.1	88	CF884-009	(4x(2x0.25))	brown/green, blue/violet, gray/pink, red/black
	20	2 x 0.5								2x0.5	white, brown
CF884-011	22	4 PR x 0.34	0.37	9.5	45.7	68	83.3	124	CF884-011	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
	20	4 x 0.5								4x0.5	blue-white, black-white, red-white, yellow-white
CF884-015	26	4 PR x 0.14	0.33	8.5	31.6	47	64.5	96	CF884-015	4x(2x0.14)	brown/green, violet/yellow, gray/pink, red/black
	20	4 x 0.5								4x0.5	blue, white, brown-green, white-green
CF884-022	24	1 PR x 0.25	0.31	8.0	29.6	44	59.8	89	CF884-022	2x0.25	white, brown
	20	5 x 0.5								5x0.5	blue, green, yellow, gray, pink
CF884-028	26	2 PR x 0.15	0.30	7.5	28.9	43	47.7	71	CF884-028	2x(2x0.15)	green/yellow, pink/blue
	22	2 x 0.38								2x0.38	red, black

Other types available on request.  
Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
PR = Twisted Pair  
SC = Individually shielded Conductor  
SHLD = Shielded Precable

-  **Order example: CF884.015 – In your desired length**  
CF884 Chainflex® series .015 Code measuring system type
-  Online order ► [www.chainflex.com/CF884](http://www.chainflex.com/CF884)
-  Delivery time 24hr or today.  
Delivery time means time until shipping of goods.





Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Measuring system cable | CF211

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	16.41 ft/s (5 m/s)
		<b>gliding</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		98.4 ft/s² (30 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).	
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.	
	<b>Conductor construction</b>	According to measuring system specification.	
	<b>Color code</b>	According to measuring system specification. See Table	
	<b>Element shield</b>	Extremely bending-resistant, tinned copper cover. 90% optical coverage	
	<b>Element jacket</b>	TPE mixture on pair shielding adapted to suit the requirements in E-Chains®.	
	<b>Intermediate layer</b>	Foil taping over the external layer.	
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 80 % optical coverage	
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Green (similar to RAL 6018)	

### Electrical Information

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

Configurators ► [www.igus.com/CF211M](http://www.igus.com/CF211M)

# Class 4.2.2.1

### Properties and approvals

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1589 and 2502, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
+41 / +59				≤ 32.81	12.5	13.5	14.5			
+59 / +140		16.41	9.84	98.43	10	11	12			
+140 / +158					12.5	13.5	14.5			

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

### Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, Handling, indoor cranes, Wood/stone processing



# PVC Measuring system cable | CF211

# Class 4.2.2.1

Requirements  
Travel distance  
Oli resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF211-001	26	3 STP x 0.14	0.35	9.0	42.3	63	68.5	102	CF211-001	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange gray/blue/white-yellow/white-black brown-red/brown-blue
	26	4 x 0.14									
	20	2 x 0.5									
CF211-002	26	3 STP x 0.14	0.37	9.5	43.7	65	72.6	108	CF211-002	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
	20	2 SC x 0.5									
CF211-004	26	4 PR x 0.14	0.39	10.0	49.7	74	82.0	122	CF211-004	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (gray/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
	26	4 C x 0.14 SHLD									
	20	4 x 0.5									
CF211-006	26	3 STP x 0.14	0.39	10.0	53.8	80	84.7	126	CF211-006	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange gray/blue/white-yellow/white-black brown-yellow/brown-gray/green-black/green-red brown-red/brown-blue
	26	4 x 0.14									
	24	4 x 0.25									
	20	2 x 0.5									
CF211-009	24	4 PR x 0.25	0.31	8.0	34.3	51	54.4	81	CF211-009	4x(2x0.25) 2x0.5	brown/green, blue/violet, gray/pink, red/black white, brown
	20	2 x 0.5									
CF211-010	24	4 PR x 0.25	0.33	8.5	42.3	63	63.8	95	CF211-010	4x(2x0.25) 2x1.0	brown/green, blue/violet, gray/pink, red/black white, brown
	17	2 x 1.0									
CF211-011	22	4 PR x 0.34	0.35	9.0	48.4	72	71.9	107	CF211-011	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
	20	4 x 0.5									
CF211-014	24	4 STP x 0.25	0.39	10.0	52.4	78	84.0	125	CF211-014	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, gray/pink, blue/red black no.1/black no.2
	20	2 x 0.5									
CF211-015	26	4 PR x 0.14	0.31	8.0	36.3	54	59.1	88	CF211-015	4x(2x0.14) 4x0.5	brown/green, yellow/violet, gray/pink, red/black blue, white, brown-green, white-green
	20	4 x 0.5									
CF211-016	24	3 STP x 0.25	0.35	9.0	34.9	52	59.8	89	CF211-016	3x(2x0.25)C	white/brown, green/yellow, gray/pink
CF211-017	26	4 PR x 0.14	0.39	10.0	63.2	94	94.7	141	CF211-017	4x(2x0.14) (4x0.14)C 4x1.0	red/black, brown/green, yellow/violet, gray/pink blue-black/yellow-black/red-black/green-black white-green, brown-green, blue, white
	26	4 x 0.14 SHLD									
	17	4 x 1.0									
CF211-018	24	2 PR x 0.25	0.26	6.5	23.5	35	39.0	58	CF211-018	2x(2x0.25) 2x0.5	red/black, gray/pink white, brown
	20	2 x 0.5									
CF211-019	24	3 STP x 0.25	0.39	10.0	57.1	85	86.7	129	CF211-019	3x(2x0.25)C (3x0.25) 2x1.0	brown/green, gray/pink, red/black blue/violet/yellow white, brown
	24	3 x 0.25									
	17	2 x 1.0									
CF211-020	26	3 PR x 0.14	0.33	8.5	36.3	54	61.8	92	CF211-020	3x(2x0.14) 2x(4x0.14) (2x0.5)	blue/red, black/violet, gray-pink/red-blue green/gray/yellow/pink, white-green/white-yellow/brown-green/brown-yellow white/brown
	26	8 x 0.14									
	20	2 x 0.5									
CF211-022	24	1 PR x 0.25	0.28	7.0	31.6	47	49.7	74	CF211-022	(2x0.25) 5x0.5	white/brown green, yellow, gray, pink, blue
	20	5 x 0.5									
CF211-024	26	4 x 0.14	0.28	7.0	24.9	37	42.3	63	CF211-024	(4x0.14) 2x(2x0.34)	yellow/gray/violet/pink white-green/white, brown-green/blue
	22	2 PR x 0.34									
CF211-027	26	5 PR x 0.14	0.31	8.0	30.9	46	52.4	78	CF211-027	5x(2x0.14) 2x0.5	brown/green, yellow/gray, white/violet, red/black, pink/blue white-green, white-red
	20	1 PR x 0.5									

Other types available on request.  
 Note: The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core      x = without earth core  
 STP = Individually shielded Twisted Pair      PR = Twisted Pair  
 SC = Individually shielded Conductor      SHLD = Shielded Precable





# PVC Measuring system cable | CF211

## Class 4.2.2.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF211-028	26	2 PR x 0.15	0.30	7.5	24.9	37	53.1	79	CF211-028	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
	22	2 x 0.38									
CF211-032	26	3 STP x 0.14	0.31	8.0	22.2	33	47.7	71	CF211-032	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black gray/pink/black
	26	3 x 0.14 SHLD									
CF211-033	26	4 STP x 0.14	0.37	9.5	41.0	61	75.9	113	CF211-033	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
	17	2 SC x 1.0									
CF211-036	24	5 PR x 0.25	0.31	8.0	29.6	44	49.7	74	CF211-036	5x(2x0.25)	white/brown, green/yellow, gray/pink, blue/red, black/violet
CF211-037	24	6 PR x 0.25	0.33	8.5	34.9	52	57.8	86	CF211-037	6x(2x0.25)	white/brown, green/yellow, gray/pink, blue/red, black/violet, gray-pink/red-blue
CF211-038	26	3 PR x 0.14	0.28	7.0	22.2	33	39.0	58	CF211-038	3x(2x0.14) (2x0.34)	white/brown, green/yellow, gray/pink blue/red
	22	1 PR x 0.34									
CF211-039	26	4 STP x 0.14	0.39	10.0	50.4	75	84.0	125	CF211-039	(4x(2x0.14)C 2x(0.5)C	green/yellow, gray/pink, blue/red, black/violet white, brown
	20	2 SC x 0.5									

Other types available on request.

Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable



Order example: **CF211.038** – In your desired length  
CF211 Chainflex® series .038 Code measuring system type



Online order ► [www.chainflex.com/CF211M](http://www.chainflex.com/CF211M)



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



# iguPUR Measuring system cable | CF894

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	According to measuring system specification.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Foil taping of optimized, bending-resistant foil shield. 100% optical coverage
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Green (similar to RAL 6018)

### Electrical Information

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

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, VW-1, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 1589 and 20236, 30V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00449
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				17.5	18.5	19.5
+14 / +158	9.84	65.62	≤ 32.81	15	16	17
+158 / +176				17.5	18.5	19.5

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

### Typical application areas

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

Configurators ► [www.igus.com/CF894](http://www.igus.com/CF894)



Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 5 million cycles guaranteed ...





# iguPUR Measuring system cable | CF894

# Class 3.1.3.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF894-001	26	3 STP x 0.14	0.33	8.5	28.9	43	60.5	90	CF894-001	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								4x0.14	gray, blue, white-yellow, white-black
	20	2 x 0.5								2x0.5	brown-red, brown-blue
CF894-006	26	3 STP x 0.14	0.35	9.0	35.6	53	75.9	113	CF894-006	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								4x0.14	gray, blue, white-yellow, white-black
	24	4 x 0.22								4 x 0.22	brown-yellow, brown-gray, green-black, green-red
	20	2 x 0.5								2x0.5	brown-red, brown-blue
CF894-011	22	4 PR x 0.34	0.37	9.5	45.7	68	77.9	116	CF894-011	4x(2x0.34)	black/brown, red/orange, yellow/green, blue/violet
	20	4 x 0.5								4x0.5	blue-white, black-white, red-white, yellow-white
CF894-015	26	4 PR x 0.14	0.33	8.5	31.6	47	60.5	90	CF894-015	4x(2x0.14)	brown/green, violet/yellow, gray/pink, red/black
	20	4 x 0.5								4x0.5	blue, white, brown-green, white-green
CF894-022	20	5 x 0.5	0.31	8.0	29.6	44	55.8	83	CF894-022	5x0.5	blue, green, yellow, gray, pink
	24	1 PR x 0.25								2x0.25	white, brown
CF894-028	26	2 PR x 0.15	0.30	7.5	28.9	43	44.3	66	CF894-028	2x(2x0.15)	green/yellow, pink/blue
	22	2 x 0.38								2x0.38	red, black

Other types available on request.  
Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable

-  **Order example: CF894.011 – In your desired length**  
CF894 Chainflex® series .011 Code measuring system type
-  Online order ► [www.chainflex.com/CF894](http://www.chainflex.com/CF894)
-  Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



# PUR Measuring system cable | CF111-D

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	16.41 ft/s (5 m/s)
		<b>gliding</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		98.4 ft/s² (30 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	According to measuring system specification.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Extremely bending-resistant, tinned copper cover. 90% optical coverage
	<b>Intermediate layer</b>	Foil taping over the external layer.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Green (similar to RAL 6018)

### Electrical Information

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

**Configurators** ► [www.igus.com/CF111D](http://www.igus.com/CF111D)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 1589 and 20236, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 936-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
-13 / +5				≤ 32.81	12.5	13.5	14.5			
+5 / +158		16.41	9.84	98.43	10	11	12			
+158 / +176					12.5	13.5	14.5			

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Machining units/machine tools, low temperature applications





# PUR Measuring system cable | CF111-D

# Class 4.2.3.1

Requirements  
Travel distance  
Oli resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

IGUS® CHAINFLEX® CF111.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF111-001-D	26	3 STP x 0.14	0.35	9.0	42.3	63	69.9	104	CF111-001-D	3x(2x0.14)C (4x0.14) (2x0.5)	green/yellow, black/brown, red/orange gray/blue/white-yellow/white-black brown-red/brown-blue
	26	4 x 0.14									
	20	2 x 0.5									
CF111-002-D	26	3 STP x 0.14	0.37	9.5	43.7	65	72.6	108	CF111-002-D	3x(2x0.14)C 2x(0.5)C	green/yellow, black/brown, red/orange black, red
	20	2 SC x 0.5									
CF111-004-D	26	4 PR x 0.14	0.41	10.5	49.7	74	82.0	122	CF111-004-D	2x(2x(2x0.14)) (4x0.14)C (4x0.5)	(brown/green)/(yellow/violet), (gray/pink)/(red/black) yellow-black/red-black/green-black/blue-black brown-green/white-green/blue/white
	26	4 x 0.14 SHLD									
	20	4 x 0.5									
CF111-006-D	26	3 STP x 0.14	0.39	10.0	53.8	80	84.7	126	CF111-006-D	3x(2x0.14)C (4x0.14) (4x0.25) (2x0.5)	green/yellow, black/brown, red/orange gray/blue/white-yellow/white-black brown-yellow/brown-gray/green-black/green-red brown-red/brown-blue
	26	4 x 0.14									
	24	4 x 0.25									
	20	2 x 0.5									
CF111-009-D	24	4 PR x 0.25	0.31	8.0	34.3	51	55.1	82	CF111-009-D	4x(2x0.25) 2x0.5	brown/green, blue/violet, gray/pink, red/black white, brown
	20	2 x 0.5									
CF111-010-D	24	4 PR x 0.25	0.33	8.5	42.3	63	64.5	96	CF111-010-D	4x(2x0.25) 2x1.0	brown/green, blue/violet, gray/pink, red/black white, brown
	17	2 x 1.0									
CF111-011-D	22	4 PR x 0.34	0.35	9.0	48.4	72	72.6	108	CF111-011-D	4x(2x0.34) 4x0.5	black/brown, red/orange, green/yellow, blue/violet black-white, red-white, yellow-white, blue-white
	20	4 x 0.5									
CF111-014-D	24	4 STP x 0.25	0.39	10.0	52.4	78	84.0	125	CF111-014-D	4x(2x0.25)C (2x0.5)	white/brown, green/yellow, gray/pink, blue/red black no. 1/black no. 2
	20	2 x 0.5									
CF111-015-D	26	4 PR x 0.14	0.33	8.5	36.3	54	59.1	88	CF111-015-D	4x(2x0.14) 4x0.5	brown/green, yellow/violet, gray/pink, red/black blue, white, brown-green, white-green
	20	4 x 0.5									
CF111-020-D	26	3 PR x 0.14	0.33	8.5	36.3	54	61.8	92	CF111-020-D	3x(2x0.14) 2x(4x0.14) (2x0.5)	blue/red, black/violet, gray-pink/red-blue green/gray/yellow/pink, white-green/white-yellow/brown-green/brown-yellow white/brown
	26	8 x 0.14									
	20	2 x 0.5									
CF111-021-D	24	6 x 0.50	0.37	9.5	54.4	81	80.6	120	CF111-021-D	(4x0.25) 3x(2x0.25+2x0.5)	white/brown/gray/black black no.1/white/black no. 2/yellow, black no.3/white/black no.4/gray, black no.5/black/black no.6/orange
	24	5 PR x 0.25									
CF111-022-D	24	1 PR x 0.25	0.28	7.0	31.6	47	49.7	74	CF111-022-D	(2x0.25) 5x0.5	white/brown green, yellow, gray, pink, blue
	20	5 x 0.5									
CF111-024-D	26	4 x 0.14	0.28	7.0	24.9	37	42.3	63	CF111-024-D	(4x0.14) 2x(2x0.34)	yellow/gray/violet/pink white-green/white, brown-green/blue
	22	2 PR x 0.34									
CF111-027-D	26	5 PR x 0.14	0.31	8.0	30.9	46	52.4	78	CF111-027-D	5x(2x0.14) 2x0.5	brown/green, yellow/gray, white/violet, red/black, pink/blue
	20	1 PR x 0.5									
CF111-028-D	26	2 PR x 0.15	0.30	7.5	24.9	37	50.4	75	CF111-028-D	2x(2x0.15) (2x0.38)	green/yellow, pink/blue red/black
	22	2 x 0.38									
CF111-032-D	26	3 STP x 0.14	0.33	8.5	22.2	33	47.7	71	CF111-032-D	3x(2x0.14)C (3x0.14)C	green/black, yellow/black, red/black gray/pink/black
	26	3 x 0.14 SHLD									
CF111-033-D	26	4 STP x 0.14	0.37	9.5	41.0	61	75.9	113	CF111-033-D	4x(2x0.14)C 2x(1.0)C	yellow/black, red/black, blue/black, green/black white, brown
	17	2 SC x 1.0									

Other types available on request.  
Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable





Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF111-035-D	24	4 STP x 0.25	0.43	11.0	60.5	90	96.8	144	CF111-035-D	4x(2x0.25)C	white/brown, green/yellow, gray/pink, blue/red
	20	2 PR x 0.5								2x(2x0.5)	black no.1/black no.2, black no.3/black no.4
CF111-040-D	26	14 x 0.14	0.35	9.0	56.4	84	83.3	124	CF111-040-D	(3x(4x0.14)	black/red/white-black/white-red, green/blue/white-green/white-blue
	22	2 x 0.34								(2x0.14+2x0.34)	yellow/brown/white-yellow/white-brown
	16	2 x 1.5								2x1.5	violet/orange/white-violet/white-orange white-gray, gray

Other types available on request.

Note: The mentioned outer diameters are maximum values.

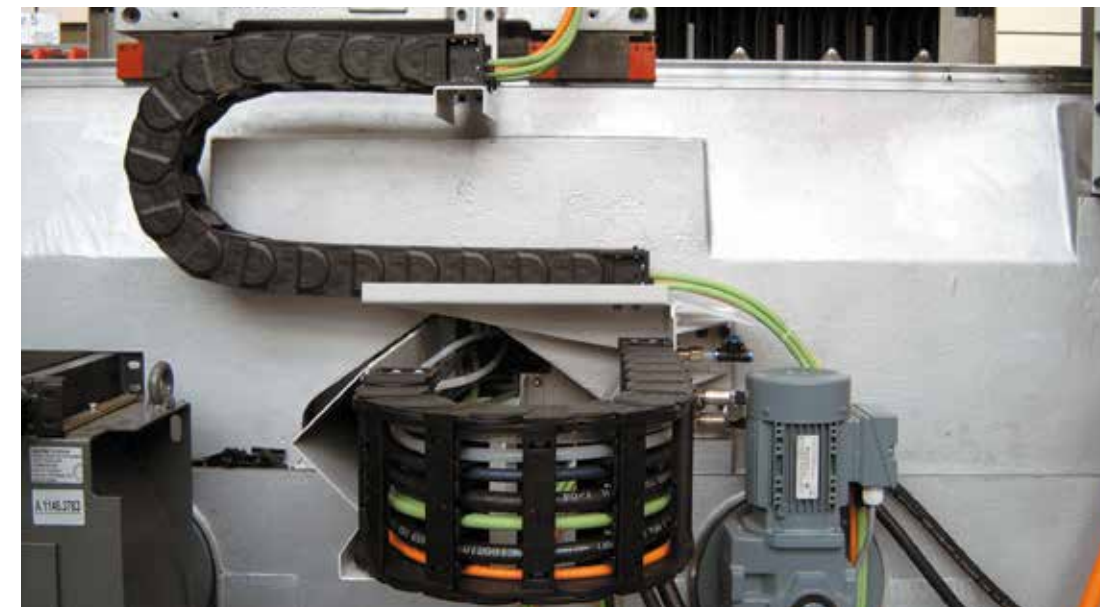
STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable

Order example: **CF111.021.D** – In your desired length  
**CF111.D** Chainflex® series .021 Code measuring system type

Online order ► [www.chainflex.com/CF111D](http://www.chainflex.com/CF111D)

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



The ReadyChain® systems from igus® are completely pre-harnessed with Chainflex® cables, hoses, screw attachments, metal parts etc.

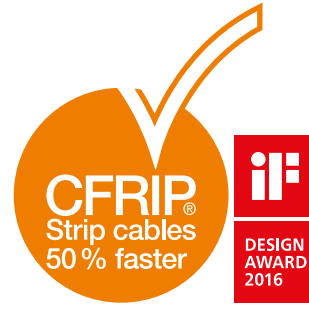
Configurators ► [www.igus.com/CF111D](http://www.igus.com/CF111D)





# PUR Measuring system cable | CF113-D

- For very high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	According to measuring system specification.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. 90 % optical coverage
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Green (similar to RAL 6018)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

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

**Configurators** ► [www.igus.com/CF113D](http://www.igus.com/CF113D)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 1589 and 20236, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 936-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
-13 / +5				≤ 328.1	10	11	12			
+5 / +158		32.81	16.41	164.05	7.5	8.5	9.5			
+158 / +176					10	11	12			

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications



# PUR Measuring system cable | CF113-D

# Class 6.5.3.1

Requirements  
Travel distance  
Oli resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Strip cables 50 % faster!

IGUS® CHAINFLEX® CF113.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF113-001-D	26	3 STP x 0.14	0.41	10.5	53.8	80	121.0	180	CF113-001-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								(4x0.14)	gray/blue/white-yellow/white-black
	20	2 x 0.5								(2x0.5)	brown-red/brown-blue
CF113-002-D	26	3 STP x 0.14	0.41	10.5	55.1	82	129.7	193	CF113-002-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	20	2 SC x 0.5								2x(0.5)C	black, red
CF113-003-D	26	3 PR x 0.14	0.33	8.5	41.0	61	87.4	130	CF113-003-D	3x(2x0.14)	white/brown, green/yellow, gray/pink
	17	2 x 1.0								2x1.0	blue, red
CF113-004-D	26	4 PR x 0.14	0.45	11.5	61.1	91	137.1	204	CF113-004-D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (gray/pink)/(red/black)
	26	4 x 0.14 SHLD								(4x0.14)C	yellow-black/red-black/green-black/blue-black
	20	4 x 0.5								(4x0.5)	brown-green/white-green/blue/white
CF113-005-D	26	4 PR x 0.14	0.37	9.5	45.7	68	101.5	151	CF113-005-D	4x(2x0.14)	white/brown, green/yellow, gray/pink, blue/red
	20	4 x 0.5								4x0.5	black, violet, gray-pink, red-blue
CF113-006-D	26	3 STP x 0.14	0.43	11.0	62.5	93	138.4	206	CF113-006-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								(4x0.14)	gray/blue/white-yellow/white-black
	24	4 x 0.25								(4x0.25)	brown-yellow/brown-gray/green-black/green-red
	20	2 x 0.5								(2x0.5)	brown-red/brown-blue
CF113-007-D <sup>2)</sup>	22	2 PR x 0.34	0.24	6.0	21.5	32	45.0	67	CF113-007-D <sup>2)</sup>	4x0.34	white, green, brown, yellow (star-quad stranding)
CF113-008-D	24	3 PR x 0.25	0.30	7.5	24.9	37	57.1	85	CF113-008-D	3x(2x0.25)	white/brown, green/yellow, gray/pink
CF113-009-D	24	4 PR x 0.25	0.37	9.5	44.3	66	96.1	143	CF113-009-D	4x(2x0.25)	brown/green, blue/violet, gray/pink, red/black
	20	2 x 0.5								2x0.5	white, brown
CF113-010-D	24	4 PR x 0.25	0.37	9.5	53.8	80	112.2	167	CF113-010-D	4x(2x0.25)	brown/green, blue/violet, gray/pink, red/black
	17	2 x 1.0								2x1.0	white, brown
CF113-011-D	22	4 PR x 0.34	0.41	10.5	64.5	96	139.8	208	CF113-011-D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	20	4 x 0.5								4x0.5	black-white, red-white, yellow-white, blue-white
CF113-012-D	26	3 STP x 0.14	0.45	11.5	66.5	99	153.9	229	CF113-012-D	3x(2x0.14)C	green/yellow, white/gray, blue/red
	26	3 x 0.14 SHLD								(3x0.14)C	red/green/brown
	26	6 x 0.14								(4x0.14)	gray/yellow/pink/violet
	20	2 x 0.5								(2x0.14+2x0.5)	blue/brown-blue/gray/brown-red
CF113-013-D	26	3 STP x 0.14	0.37	9.5	47.0	70	107.5	160	CF113-013-D	3x(2x0.14)C	white/brown, green/yellow, gray/pink
	20	2 x 0.5								2x0.5	blue, red
CF113-014-D	24	4 STP x 0.25	0.45	11.5	63.8	95	147.2	219	CF113-014-D	4x(2x0.25)C	white/brown, green/yellow, gray/pink, blue/red
	20	2 x 0.5								(2x0.5)	black no.1/black no.2
CF113-015-D	26	4 PR x 0.14	0.37	9.5	45.7	68	98.8	147	CF113-015-D	4x(2x0.14)	brown/green, yellow/violet, gray/pink, red/black
	20	4 x 0.5								4x0.5	blue, white, brown-green, white-green
CF113-016-D	24	3 STP x 0.25	0.37	9.5	43.7	65	98.8	147	CF113-016-D	3x(2x0.25)C	white/brown, green/yellow, gray/pink

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad. Other types available on request.  
Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable

Other types ► page 264+266





# PUR Measuring system cable | CF113-D

# Class 6.5.3.1

Requirements  
Travel distance  
Oli resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Strip cables 50 % faster!

IGUS® CHAINFLEX® CF113.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF113-017-D <sup>4)</sup>	26	4 PR x 0.14	0.43	11.0	77.9	116	169.3	252	CF113-017-D <sup>4)</sup>	4x(2x0.14)	red/black, brown/green, yellow/violet, gray/pink
	26	4 x 0.14 SHLD								(4x0.14)C	blue-black/yellow-black/red-black/green-black
	17	4 x 1.0								4x1.0	white-green, brown-green, blue, white
CF113-018-D <sup>4)</sup>	24	2 PR 0.25	0.28	7.0	26.9	40	54.4	81	CF113-018-D <sup>4)</sup>	2x(2x0.25)	red/black, gray/pink
	20	2 x 0.5								2x0.5	white, brown
CF113-019-D <sup>4)</sup>	24	3 STP x 0.25	0.41	10.5	71.2	106	157.9	235	CF113-019-D <sup>4)</sup>	3x(2x0.25)C	brown/green, gray/pink, red/black
	24	3 x 0.25								(3x0.25)	blue/violet/yellow
	17	2 x 1.0								2x1.0	white, brown
CF113-021-D <sup>1)</sup>	20	6 x 0.50	0.43	11.0	68.5	102	147.8	220	CF113-021-D <sup>1)</sup>	(4x0.25)	white/brown/gray/black
	24	5 PR x 0.25								3x(2x0.25+2x0.5)	yellow/black no.1/white/black no.2, gray/black no.3/white/black no.4, orange/black no.5, black/black no.6
CF113-022-D	24	1 PR x 0.25	0.33	8.5	37.0	55	84.7	126	CF113-022-D	(2x0.25)	white/brown
	20	5 x 0.5								5x0.5	green, yellow, gray, pink, blue
CF113-025-D	26	3 STP x 0.14	0.43	11.0	54.4	81	126.3	188	CF113-025-D	3x(2x0.14)C	green/yellow, blue/red, gray/pink
	20	1 STP x 0.5								(2x0.5)C	white/brown
CF113-027-D	26	5 PR x 0.14	0.35	9.0	39.0	58	85.3	127	CF113-027-D	5x(2x0.14)	brown/green, yellow/gray, white/violet, red-black, pink/blue
	20	1 PR x 0.5								2x0.5	white-green, white-red
CF113-028-D <sup>4)</sup>	24	2 PR x 0.15	0.30	7.5	31.6	47	49.7	74	CF113-028-D <sup>4)</sup>	2x(2x0.20)	green/yellow, pink/blue
	22	2 x 0.38								(2x0.38)	red/black
CF113-029-D	24	5 STP x 0.25	0.51	13.0	80.0	119	186.8	278	CF113-029-D	5x(2x0.25)C	white/brown, green/yellow, gray/pink, blue/red, black/violet
	24	2 x 0.25								(2x0.25+2x0.5)	gray-pink/brown-green/white-green/red-blue
	20	2 x 0.5									
CF113-031-D	24	2 STP x 0.25	0.35	9.0	51.1	76	108.2	161	CF113-031-D	2x(2x0.25)C	white/brown, green/yellow
	17	2 x 1.0								2x1.0	black no.1, black no.2
CF113-032-D <sup>15)</sup>	26	3 STP x 0.14	0.31	8.0	45.7	68	104.2	155	CF113-032-D <sup>15)</sup>	3x(2x0.14)C	green/black, yellow/black, red/black
	26	3 x 0.14 SHLD								(3x0.14)C	gray/pink/black
CF113-033-D <sup>15)</sup>	26	4 STP x 0.14	0.39	10.0	71.9	107	166.0	247	CF113-033-D <sup>15)</sup>	4x(2x0.14)C	yellow/black, red/black, blue/black, green/black
	17	2 SC x 1.0								2x(1.0)C	white, brown

<sup>1)</sup> Delivery time upon request

<sup>4)</sup> manufactured without inner jacket

<sup>15)</sup> manufactured without overall shield

Other types available on request.

Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable

Other types ► page 262+266



# PUR Measuring system cable | CF113-D

## Class 6.5.3.1

Requirements  
Travel distance  
Oli resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Strip cables 50 % faster!



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF113-034-D <sup>15)</sup>	26	3 STP x 0.14	0.45	11.5	77.9	116	135.1	201	CF113-034-D <sup>15)</sup>	3x(2x0.14)C	green/black, violet/black, blue/black
	26	4 x 0.14 SHLD								(4x0.14)C	red/yellow/black-red/black-yellow
	20	2 STP x 0.5								2x(2x0.5)C	black/white, black/brown
CF113-035-D	24	4 STP x 0.25	0.49	12.5	76.6	114	175.4	261	CF113-035-D	4x(2x0.25)C	white/brown, green/yellow, gray/pink, blue/red
	20	2 PR x 0.5								2x(2x0.5)	black no.1/black no.2, black no.3/black no.4
CF113-036-D	24	5 PR x 0.25	0.37	9.5	39.0	58	72.6	108	CF113-036-D	5x(2x0.25)	white/brown, green/yellow, gray/pink, blue/red, black/violet
CF113-037-D	24	6 PR x 0.25	0.39	10.0	46.4	69	80.6	120	CF113-037-D	6x(2x0.25)	white/brown, green/yellow, gray/pink, blue/red, black/violet, gray-pink/red-blue
CF113-038-D	26	3 PR x 0.14	0.30	7.5	24.2	36	47.7	71	CF113-038-D	3x(2x0.14)	white/brown, green/yellow, gray/pink
	22	1 PR x 0.34								(2x0.34)	blue/red
CF113-040-D	26	14 x 0.14	0.41	10.5	67.9	101	110.9	165	CF113-040-D	3x(4x0.14)	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown
	22	2 x 0.34								(2x0.14+2x0.34)	violet/orange/white-violet/white-orange
	16	2 x 1.5								2x1.5	white-gray, gray

<sup>15)</sup> manufactured without overall shield **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable


 **Configurators** ► [www.igus.com/CF113D](http://www.igus.com/CF113D)




Chainflex® measuring system cable in a double-spindle horizontal machining centre.

**Other types** ► [page 262+264](#)

 **Order example: CF113.035.D – In your desired length**  
**CF113.D Chainflex® series .035 Code measuring system type**

 **Online order** ► [www.chainflex.com/CF113D](http://www.chainflex.com/CF113D)

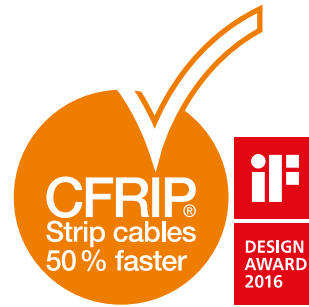
 **Delivery time 24hr or today.**  
Delivery time means time until shipping of goods.





## TPE Measuring system cable | CF11-D

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
	<b>flexible</b>		-58 °F to +194 °F (-50 °C to +90 °C)
	<b>fixed</b>		-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	According to measuring system specification.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. 90 % optical coverage
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Green (similar to RAL 6018)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the outer jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

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

**Configurators** ▶ [www.igus.com/CF11D](http://www.igus.com/CF11D)

## 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>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01559
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EG

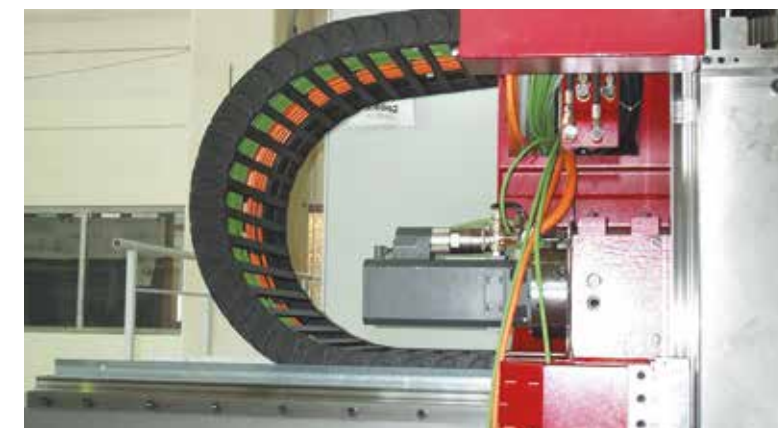
### Guaranteed lifetime according to guarantee conditions (page 22-25)

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13					≤ 1,312	10	11	12
-13 / +176		32.81	19.69	328.10		7.5	8.5	9.5
+176 / +194						10	11	12

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications



Pre-harnessed igus® energy supply systems for machine tool manufacture. E-Chain®: System E4/4

# TPE Measuring system cable | CF11-D

## Class 6.6.4.1

Strip cables 50 % faster!



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF11-001-D	26	3 STP x 0.14	0.41	10.5	53.8	80	118.3	176	CF11-001-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								(4x0.14)	gray/blue/white-yellow/white-black
	20	2 x 0.5								(2x0.5)	brown-red/brown-blue
CF11-002-D	26	3 STP x 0.14	0.39	10.0	55.1	82	126.3	188	CF11-002-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	20	2 SC x 0.5								2x(0.5)C	black, red
CF11-003-D	26	3 PR x 0.14	0.33	8.5	41.0	61	83.3	124	CF11-003-D	3x(2x0.14)	white/brown, green/yellow, gray/pink
	17	2 x 1.0								2x1.0	blue, red
CF11-004-D	26	4 PR x 0.14	0.45	11.5	61.1	91	132.4	197	CF11-004-D	2x(2x(2x0.14))	(brown/green)/(yellow/violet), (gray/pink)/(red/black)
	26	4 x 0.14 SHLD								(4x0.14)C	yellow-black/red-black/green-black/blue-black
	20	4 x 0.5								(4x0.5)	brown-green/white-green/blue/white
CF11-005-D	26	4 PR x 0.14	0.35	9.0	45.7	68	96.8	144	CF11-005-D	4x(2x0.14)	white/brown, green/yellow, gray/pink, blue/red
	20	4 x 0.5								4x0.5	black, violet, gray-pink, red-blue
CF11-006-D	26	3 STP x 0.14	0.43	11.0	62.5	93	135.7	202	CF11-006-D	3x(2x0.14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								(4x0.14)	gray/blue/white-yellow/white-black
	24	4 x 0.25								(4x0.25)	brown-yellow/brown-gray/green-black/green-red
	20	2 x 0.5								(2x0.5)	brown-red/brown-blue
CF11-007-D <sup>2)</sup>	22	2 PR x 0.34	0.24	6.0	21.5	32	43.7	65	CF11-007-D <sup>2)</sup>	4x0.34	white, green, brown, yellow (star-quad stranding)
CF11-008-D	24	3 PR x 0.25	0.30	7.5	24.9	37	54.4	81	CF11-008-D	3x(2x0.25)	white/brown, green/yellow, gray/pink
CF11-009-D	24	4 PR x 0.25	0.37	9.5	44.3	66	92.1	137	CF11-009-D	4x(2x0.25)	brown/green, blue/violet, gray/pink, red/black
	20	2 x 0.5								2x0.5	white, brown
CF11-010-D	24	4 PR x 0.25	0.37	9.5	53.8	80	108.2	161	CF11-010-D	4x(2x0.25)	brown/green, blue/violet, gray/pink, red/black
	17	2 x 1.0								2x1.0	white, brown
CF11-011-D	22	4 PR x 0.34	0.41	10.5	64.5	96	135.1	201	CF11-011-D	4x(2x0.34)	black/brown, red/orange, green/yellow, blue/violet
	20	4 x 0.5								4x0.5	black-white, red-white, yellow-white, blue-white
CF11-012-D	26	3 STP x 0.14	0.45	11.5	66.5	99	149.2	222	CF11-012-D	3x(2x0.14)C	green/yellow, white/gray, blue/red
	26	3 x 0.14 SHLD								(3x0.14)C	red/green/brown
	26	6 x 0.14								(4x0.14)	gray/yellow/pink/violet
	20	2 x 0.5								(2x0.14+2x0.5)	blue/brown-blue/gray/brown-red
CF11-013-D	26	3 STP x 0.14	0.37	9.5	47.0	70	102.1	152	CF11-013-D	3x(2x0.14)C	white/brown, green/yellow, gray/pink
	20	2 x 0.5								2x0.5	blue, red
CF11-014-D	24	4 STP x 0.25	0.45	11.5	63.8	95	142.5	212	CF11-014-D	4x(2x0.25)C	white/brown, green/yellow, gray/pink, blue/red
	20	2 x 0.5								(2x0.5)	black no.1/black no.2
CF11-015-D	26	4 PR x 0.14	0.35	9.0	45.7	68	94.1	140	CF11-015-D	4x(2x0.14)	brown/green, yellow/violet, gray/pink, red/black
	20	4 x 0.5								4x0.5	blue, white, brown-green, white-green
CF11-016-D	24	3 STP x 0.25	0.37	9.5	43.7	65	96.8	144	CF11-016-D	3x(2x0.25)C	white/brown, green/yellow, gray/pink
CF11-017-D <sup>4)</sup>	26	4 PR x 0.14	0.43	11.0	77.9	116	164.6	245	CF11-017-D <sup>4)</sup>	4x(2x0.14)	red/black, brown/green, yellow/violet, gray/pink
	26	4 x 0.14 SHLD								(4x0.14)C	blue-black/yellow-black/red-black/green-black
	17	4 x 1.0								4x1.0	white-green, brown-green, blue, white
CF11-018-D <sup>4)</sup>	24	2 PR x 0.25	0.26	6.5	26.9	40	51.1	76	CF11-018-D <sup>4)</sup>	2x(2x0.25)	red/black, gray/pink
	20	2 x 0.5								2x0.5	white, brown

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

Other types ► page 272





# TPE Measuring system cable | CF11-D

## Class 6.6.4.1

Strip cables 50 % faster!



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF11-019-D <sup>4)</sup>	24	3 STP x 0.25	0.41	10.5	71.2	106	153.2	228	CF11-019-D <sup>4)</sup>	3x(2x0,25)C	brown/green, gray/pink, red/black
	24	3 x 0.25								(3x0,25)	blue/violet/yellow
	17	2 x 1.0								2x1.0	white, brown
CF11-021-D	24	6 x 0.5	0.43	11.0	68.5	102	143.1	213	CF11-021-D	(4x0,25)	white/brown/gray/black, black no.1/white/black no.2/yellow, black no.3/white/black
	24	5 PR x 0.25								3x(2x0,25+2x0,5)	no. 4/gray, black no. 5/black/black no. 6/orange
CF11-022-D	24	1 PR x 0.25	0.33	8.5	37.0	55	80.6	120	CF11-022-D	(2x0,25)	white/brown
	20	5 x 0.5								5x0,5	green, yellow, gray, pink, blue
CF11-025-D	26	3 STP x 0.14	0.41	10.5	54.4	81	122.3	182	CF11-025-D	3x(2x0,14)C	green/yellow, blue/red, gray/pink
	20	1 STP x 0.5								(2x0,5)	white/brown
CF11-027-D	26	5 PR x 0.14	0.35	9.0	39.0	58	81.3	121	CF11-027-D	5x(2x0,14)	brown/green, yellow/gray, white/violet, red-black, pink/blue
	20	1 PR x 0.5								2x0,5	white-green, white-red
CF11-029-D	24	5 STP x 0.25	0.49	12.5	80.0	119	181.4	270	CF11-029-D	5x(2x0,25)C	white/brown, green/yellow, gray/pink, blue/red, black/violet
	24	2 x 0.25								(2x0,25+2x0,5)	gray-pink/brown-green/white-green/red-blue
	20	2 x 0.5									
CF11-031-D	24	2 STP x 0.25	0.35	9.0	51.1	76	104.2	155	CF11-031-D	2x(2x0,25)C	white/brown, green/yellow
	17	2 x 1.0								2x1,0	black no.1, black no.2
CF11-032-D <sup>15)</sup>	26	3 STP x 0.14	0.31	8.0	45.7	68	101.5	151	CF11-032-D <sup>15)</sup>	3x(2x0,14)C	green/black, yellow/black, red/black
	26	3 x 0.14 SHLD								(3x0,14)C	gray/pink/black
CF11-033-D <sup>15)</sup>	26	4 STP x 0.14	0.39	10.0	71.9	107	161.3	240	CF11-033-D <sup>15)</sup>	4x(2x0,14)C	yellow/black, red/black, blue/black, green/black
	17	2 SC x 1.0								2x(1,0)C	white, brown
CF11-034-D <sup>15)</sup>	26	3 STP x 0.14	0.45	11.5	77.9	116	126.3	188	CF11-034-D <sup>15)</sup>	3x(2x0,14)C	green/black, violet/black, blue/black
	26	4 x 0.14 SHLD								(4x0,14)C	red/yellow/black-red/black-yellow
	20	2 STP x 0.5								2x(2x0,5)C	black/white, black/brown
CF11-035-D	24	4 STP x 0.25	0.49	12.5	76.6	114	170.7	254	CF11-035-D	4x(2x0,25)C	white/brown, green/yellow, gray/pink, blue/red
	20	2 PR x 0.5								2x(2x0,5)	black no.1/black no.2, black no.3/black no.4
CF11-038-D	26	3 PR x 0.14	0.30	7.5	24.2	36	45.7	68	CF11-038-D	3x(2x0,14)	white/brown, green/yellow, gray/pink
	22	1 PR x 0.34								(2x0,34)	blue/red
CF11-040-D	26	14 x 0.14	0.41	10.5	67.9	101	104.2	155	CF11-040-D	(3x(4x0,14)	black/red/white-black/white-red, green/blue/white-green/white-blue, yellow/brown/white-yellow/white-brown
	22	2 x 0.34								(2x0,14+ 2x0,34)	violet/orange/white-violet/white-orange
	16	2 x 1.5								2x1.5	white-gray, gray

<sup>4)</sup> manufactured without inner jacket

<sup>15)</sup> manufactured without overall shield

Other types available on request.

Note: The mentioned outer diameters are maximum values.

STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable

Other types ► page 270

Configurators ► [www.igus.com/CF11D](http://www.igus.com/CF11D)



# Servo cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s] unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
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### Servo cables

Exclusive! Chainflex® guarantee – guaranteed lifetime

► Selection table page 276









CF887	PVC	✓	15	+41/ +158	UL US	ERC	CE	9.84	65.62	280	New	
CF210-UL	PVC	✓	10	+41/ +158	UL US	ERC	CE	32.81	6.56	164.05	282	
CF220-UL-H	PVC	✓	10	+41/ +158	UL US	ERC	CE	32.81	6.56	164.05	286	New
CF21-UL	PVC	✓	7.5	+41/ +158	UL US	ERC	CE	32.81	16.41	262.48	290	
CF897	iguPUR	✓	15	-4/ +176	UL US	ERC	CE	9.84	65.62	294	New	
CF270-UL-D	PUR	✓	10	-13/ +176	UL US	ERC	CE	32.81	6.56	164.05	296	New
CF280-UL-H	PUR	✓	10	-13/ +176	UL US	ERC	CE	32.81	6.56	164.05	300	New
CF27-D	PUR	✓	7.5	-13/ +176	UL US	ERC	CE	32.81	16.41	262.48	304	



# Chainflex® guarantee



# Guaranteed lifetime <sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page
		unsupported	gliding			5 million (1 million) cycles *	7.5 million (3 million) cycles *	10 million (5 million) cycles *		
<b>Servo cables</b>										
 <b>CF887</b> <span>New!</span>	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.52	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	280	
 <b>CF210-UL</b>	+41 / +59 +59 / +140 +140 / +158	32.81	6.56	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	282	
 <b>CF220-UL-H</b> <span>New!</span>	+41 / +59 +59 / +140 +140 / +158	32.81	6.56	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	286	
 <b>CF21-UL</b>	+41 / +59 +59 / +140 +140 / +158	32.81	16.41	262.48	≤ 328.1	10 7.5 10	11 8.5 11	12 9.5 12	290	
 <b>CF897</b> <span>New!</span>	-4 / +14 +14 / +158 +158 / +176	9.84	-	65.52	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	294	
 <b>CF270-UL-D</b> <span>New!</span>	-13 / +5 +5 / +158 +158 / +176	32.81	6.56	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	296	
 <b>CF280-UL-H</b> <span>New!</span>	-13 / +5 +5 / +158 +158 / +176	32.81	6.56	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	300	
 <b>CF27-D</b>	-13 / +5 +5 / +158 +158 / +176	32.81	16.41	262.48	≤ 328.1	10 7.5 10	11 8.5 11	12 9.5 12	304	

**Exclusive!** Guaranteed lifetime for this series according to the guarantee conditions ► page 22-25

\* Guaranteed lifetime, higher numbers of cycles possible.  
Figures in brackets refer to CF887 and CF897.

In the Chainflex® series **CF220-UL-H** and **CF280-UL-H**, you will see system cables for intelligent drive concepts of renowned system manufacturers.

To save installation space in the Energy Chain® some manufacturers combine the servo cable for power transmission with the measuring system cable for position data transmission 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 connecting these two cables into a hybrid cable, it is necessary to guarantee the necessary data transmission properties and the EMC behavior of the cable for many million cycles.

Due to the proximity to the power conductors often operated with interference-intensive square-wave signals, in the igus® Chainflex® servo hybrid cables, mechanically optimised shield concepts with very high optical coverage are used.

A secure transmission of bus signals at maximum cable length at maximum speed makes special demands on the used insulating materials of the bus or data conductors.

In the 2,750m² large igus® laboratory, the electrical parameters such as capacitance, impedance, attenuation and crosstalk are measured over the entire test period of several million cycles and monitored for compliance with 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 cycles for the servo hybrid cables and 5 million for Chainflex® M.

In the table to the right you will find an overview of all currently available hybrid cables grouped by manufacturers. The listed companies are drive systems manufacturers or technology providers whose rotation sensors are used in the most varied systems.



Two become one: Hybrid Servo cables combine Servo and Measuring System cables

Selection table Hybrid Servo cables

Manufacturer	Hybrid technology	CF220-UL-H	CF280-UL-H
		PVC 10 x d UL Page 286	PUR 10 x d oil-resistant Page 300
ABB	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
AMK	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
B&R	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
B&R	Heidenhain	CF220-UL-H50x	CF280-UL-H50x
Baumüller	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Beckhoff	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
BMP	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
BCB	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
CEDS	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
ELAU/Schneider Electric	isH Servo	CF220-UL-H60x	CF280-UL-H60x
Fertig	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Fine	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Han's	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Harmonic Drive AG	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Heidrive	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Infranor	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
IRT	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Jetter	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
KEBA	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Kinavo	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Kollmorgen	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Lafert	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
LTI DRIVES	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Mavilor	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Maxsine	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
metronix	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
PowerMotor	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
NUM	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Parker	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
ROBOX	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Selema	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
SEW	SEW Kabeltyp A, B, C, D, E	CF220-UL-H20x	CF280-UL-H20x
Siboni	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Sigmathek	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
STEP	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
TG-Drives	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
WEG	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x
Witthur Drive	Sick "Hiperface DSL"	CF220-UL-H10x	CF280-UL-H10x



# PVC Servo cable | CF887

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
		<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>v max.</b>		
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances up to 32.81 ft (10 m), Class 1	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and signal pairs cabled together with an optimized pitch length.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- <b>1 Control pair:</b> Black with white numbers. Control Pair Printed 5 and 6 <b>2 Control pairs:</b> Black with white numbers. Control Pair 1: Printed 5 and 6, Control Pair 2: Printed 7 and 8 <b>Signal Pair shield</b> Aluminium/Polyester tape. 100% coverage <b>Overall shield</b> Tinned copper braid. 60 % optical coverage <b>Outer jacket</b> Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, VW-1, FT-1
--	-------------------------	---------------------------------------------------

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 2570, 1000V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41/ +59				17.5	18.5	19.5
+59/ +140	9.84	65.62	≤ 32.81	15	16	17
+158/ +158				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max. in.	mm	Copper index lbs/mft kg/km	Weight lbs/mft kg/km
<b>1 Control pair shielded</b>						
<b>CF887-15-15-02-01</b>	16	4 G 1.5	0.49	12.5	88.7 132	142.5 212
	16	1 STP x 1.5				
<b>CF887-25-15-02-01</b>	14	4 G 2.5	0.53	13.5	130.4 194	188.8 281
	16	1 STP x 1.5				
<b>CF887-40-15-02-01</b>	12	4 G 4.0	0.57	14.5	169.3 252	247.3 368
	16	1 STP x 1.5				
<b>2 Control pairs shielded</b>						
<b>CF887-10-07-02-02</b>	17	4 G 1.0	0.45	11.5	78.6 117	129.0 192
	18	2 STP x 0.75				
<b>CF887-15-15-02-02</b>	16	4 G 1.5	0.53	13.5	117.6 175	180.8 269
	16	2 STP x 1.5				
<b>CF887-25-15-02-02</b>	14	4 G 2.5	0.57	14.5	155.2 231	227.8 339
	16	2 STP x 1.5				

**Note:** The mentioned outer diameters are maximum values. **Other types available on request.**  
 G = with green-yellow earth conductor      x = without earth conductor  
 STP = Individually shielded Twisted Pair      PR = Twisted Pair  
 SC = Individually shielded Conductor      SHLD = Shielded Precable

HAINFLEX® CF887

Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 5 million cycles guaranteed ...



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Servo cable | CF210-UL

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
		<b>unsupported</b>	
	<b>v max.</b>	<b>gliding</b>	32.81 ft/s (10 m/s)
		<b>unsupported</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow.
		1. U / L1 / C / L+
		2. V / L2
		3. W / L3 / D / L-
	<b>1 Control pair:</b> Black with white numbers.	Control Pair Printed 4 and 5
	<b>2 Control pairs:</b> Black with white numbers.	Control Pair 1: Printed 5 and 6
		Control Pair 2: Printed 7 and 8
	<b>Signal Pair shield</b>	Aluminium/Polyester tape & Tinned Copper Braided shield. 100% optical coverage
	<b>Overall cable</b>	Plastic barrier tape, 100% coverage
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Orange (similar to RAL 2003)

Configurators ► [www.igus.com/CF210UL](http://www.igus.com/CF210UL)

## Class 4.2.2.1

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10989 and 2570, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59					≤ 32.81	12.5	13.5	14.5
+59 / +140		32.81	6.56	164.05		10	11	12
+140 / +158						12.5	13.5	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment







Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Control pair shielded</b>								
CF210-UL-15-15-02-01	16	4 G 1.5	0.47	12.0	110.2	164	176.7	263
	16	1 STP x 1.5						
CF210-UL-25-15-02-01	14	4 G 2.5	0.53	13.5	149.8	223	228.5	340
	16	1 STP x 1.5						
CF210-UL-40-15-02-01	12	4 G 4.0	0.59	15.0	201.6	300	301.0	448
	16	1 STP x 1.5						
CF210-UL-60-15-02-01	10	4 G 6.0	0.65	16.5	269.5	401	374.3	557
	16	1 STP x 1.5						
<b>2 Control pairs shielded</b>								
CF210-UL-15-07-02-02	16	4 G 1.5	0.53	13.5	124.3	185	207.6	309
	18	2 STP x 0.75						
CF210-UL-25-15-02-02	14	4 G 2.5	0.63	16.0	192.2	286	295.0	439
	16	2 STP x 1.5						
CF210-UL-40-15-02-02	12	4 G 4.0	0.67	17.0	243.9	363	364.9	543
	16	2 STP x 1.5						
CF210-UL-60-15-02-02	10	4 G 6.0	0.73	18.5	314.5	468	452.9	674
	16	2 STP x 1.5						

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth conductor    x = without earth conductor

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable



Order example: **CF210-UL-25-15-02-01** – In your desired length  
CF210-UL Chainflex® series -25 Code nominal cross section -15 Code nominal cross section signal pairs  
.02 Identification pairs -01 Number of pairs



Online order ► [www.chainflex.com/CF210UL](http://www.chainflex.com/CF210UL)



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



Configurators ► [www.igus.com/CF210UL](http://www.igus.com/CF210UL)



# PVC Hybrid Servo cable | CF220-UL-H

- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	<p><b>Power conductors:</b> Black with white numbers, one conductor green-yellow.</p> <ol style="list-style-type: none"> <li>U / L1 / C / L+</li> <li>V / L2</li> <li>W / L3 / D / L-</li> </ol> <p><b>Control pair:</b> Black with white numbers.</p> <ol style="list-style-type: none"> <li>Control Pair Printed 5 and 6</li> </ol> <p><b>Bus element:</b> white, blue</p> <p><b>Signal Pair shield</b> Aluminium/Polyester tape &amp; Tinned Copper Braided shield. 80% optical coverage</p> <p><b>Overall cable</b> Aluminium/Polyester tape</p> <p><b>Overall shield</b> Bending-resistant tinned copper braid. 80 % optical coverage</p> <p><b>Outer jacket</b> Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Orange (similar to RAL 2003) Color: Orange (similar to RAL 2003)</p>

Configurators ► [www.igus.com/CF220ULH](http://www.igus.com/CF220ULH)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 4.2.2.1

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10989 and 2570, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
	+41 / +59				≤ 32.81	12.5	13.5	14.5
	+59 / +140	32.81	6.56	164.05		10	11	12
	+140 / +158					12.5	13.5	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

Image exemplary.





IGUS® CHAINFLEX® CF220.UL.H



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Hybrid technology	Manufacturer
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF220-UL-H100-07-04	18	4 G 0.75							CF220-UL-H100-07-04	Sick "Hiperface DSL"	see selection table on page 279
	22	1 STP x 0.34	0.47	12.0	78.6	117	148.5	221			
	22	1 STP x 22AWG									
CF220-UL-H101-10-04	17	4 G 1.0							CF220-UL-H101-10-04	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75	0.49	12.5	93.4	139	172.7	257			
	22	1 STP x 22AWG									
CF220-UL-H101-15-04	16	4 G 1.5							CF220-UL-H101-15-04	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75	0.53	13.5	106.8	159	197.6	294			
	22	1 STP x 22AWG									
CF220-UL-H102-25-04	14	4 G 2.5							CF220-UL-H102-25-04	Sick "Hiperface DSL"	see selection table on page 279
	17	1 STP x 1.0	0.59	15.0	145.8	217	243.3	362			
	22	1 STP x 22AWG									
New CF220-UL-H200-25-07 <sup>1)</sup>	14	7 G 2.5	0.79	20.0	207.0	308	360.8	537	CF220-UL-H200-25-07	SEW Cable type A/2.5	SEW
New CF220-UL-H501-15-04 <sup>1)</sup>	16	4 G 1.5							CF220-UL-H501-15-04	Heidenhain	B&R
	18	1 STP x 0.75	0.59	15.0	129.7	193	195.5	291			
	26	(2 PR x 0.14 +									
	24	1 PR x 0.25) SHLD									
New CF220-UL-H502-40-04 <sup>1)</sup>	12	4 G 4.0							CF220-UL-H502-40-04	Heidenhain	B&R
	17	1 STP x 1.0	0.67	17.0	211.7	315	285.6	425			
	26	(2 PR x 0.14 +									
	24	1 PR x 0.25) SHLD									
New CF220-UL-H601-25-05 <sup>1) 16)</sup>	14	5 G 2.5							CF220-UL-H601-25-05	isH Servo	ELAU/Schneider Electric
	24	24 AWG QUAD SHLD	0.57	14.5	113.6	169	205.6	306			
	24	1 STP x 0.25 SHLD									

<sup>1)</sup> Delivery time upon request

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

Note: The mentioned outer diameters are maximum values.

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

STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable

Configurators ► [www.igus.com/CF220ULH](http://www.igus.com/CF220ULH)

Order example: **CF220-UL-H101-10-04** – In your desired length  
CF220-UL Chainflex® series -H1 Code hybrid bus element  
-01 Code nominal cross section braking pair  
-10 Nominal cross section main conductors  
-04 Number of main conductors

Online order ► [www.chainflex.com/CF220ULH](http://www.chainflex.com/CF220ULH)

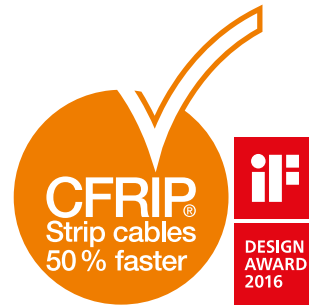
Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Servo cable | CF21-UL

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).	
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.	
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.	
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow.	
		1. U / L1 / C / L+	
		2. V / L2	
		3. W / L3 / D / L-	
	<b>1 Control pair:</b>	Black with white numbers.	
		Control Pair Printed 4 and 5	
	<b>2 Control pairs:</b>	Black with white numbers.	
		Control Pair 1: Printed 5 and 6	
		Control Pair 2: Printed 7 and 8	
	<b>Signal Pair 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 tinned copper braid. 90 % optical coverage	
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Green (similar to RAL 6005)	
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>	

# Class 5.5.2.1

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 2570, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
	unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				≤ 328.1	10	11	12
+59 / +140	32.81	16.41	262.48		7.5	8.5	9.5
+140 / +158					10	11	12

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes

Test data ► page 56





# PVC Servo cable | CF21-UL

Strip cables 50 % faster!

IGUS® CHAINFLEX® CF21.UL


Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Control pair shielded</b>								
CF21-07-05-02-01-UL	18	4 G 0.75	0.45	11.5	58.5	87	127.0	189
	20	1 STP x 0.5						
CF21-15-15-02-01-UL	16	4 G 1.5	0.51	13.0	106.8	159	188.8	281
	16	1 STP x 1.5						
CF21-25-15-02-01-UL	14	4 G 2.5	0.57	14.5	145.8	217	233.8	348
	16	1 STP x 1.5						
CF21-40-15-02-01-UL	12	4 G 4.0	0.63	16.0	189.5	282	295.7	440
	16	1 STP x 1.5						
CF21-60-15-02-01-UL	10	4 G 6.0	0.71	18.0	247.3	368	390.4	581
	16	1 STP x 1.5						
CF21-100-15-02-01-UL	8	4 G 10.0	0.89	22.5	393.8	586	611.5	910
	16	1 STP x 1.5						
CF21-160-15-02-01-UL <sup>1)</sup>	6	4 G 16.0	0.98	25.0	565.8	842	811.7	1208
	16	1 STP x 1.5						
CF21-250-15-02-01-UL <sup>1)</sup>	4	4 G 25.0	1.18	30.0	861.5	1282	1210.9	1802
	16	1 STP x 1.5						
CF21-350-15-02-01-UL <sup>1)</sup>	2	4 G 35.0	1.32	33.5	1175.3	1749	1598.6	2379
	16	1 STP x 1.5						
<b>2 Control pairs shielded</b>								
CF21-07-03-02-02-UL	18	4 G 0.75	0.49	12.5	77.9	116	154.6	230
	22	2 STP x 0.34						
CF21-10-07-02-02-UL	17	4 G 1.0	0.53	13.5	112.9	168	196.9	293
	18	2 STP x 0.75						
CF21-15-07-02-02-UL	16	4 G 1.5	0.57	14.5	129.0	192	228.5	340
	18	2 STP x 0.75						
CF21-25-15-02-02-UL	14	4 G 2.5	0.67	17.0	191.5	285	319.9	476
	16	2 STP x 1.5						
CF21-40-15-02-02-UL	12	4 G 4.0	0.73	18.5	232.5	346	376.3	560
	16	2 STP x 1.5						
CF21-60-15-02-02-UL	10	4 G 6.0	0.85	21.5	302.4	450	506.7	754
	16	2 STP x 1.5						
CF21-100-15-02-02-UL	8	4 G 10.0	0.94	24.0	439.5	654	682.7	1016
	16	2 STP x 1.5						
CF21-160-15-02-02-UL	6	4 G 16.0	1.08	27.5	644.4	959	936.1	1393
	16	2 STP x 1.5						
CF21-250-15-02-02-UL	4	4 G 25.0	1.22	31.0	913.2	1359	1289.5	1919
	16	2 STP x 1.5						
CF21-350-15-02-02-UL	2	4 G 35.0	1.34	34.0	1216.3	1810	1640.9	2442
	16	2 STP x 1.5						


<sup>1)</sup> Delivery time upon request  
 Note: The mentioned outer diameters are maximum values.  
 G = with green-yellow earth conductor    x = without earth conductor

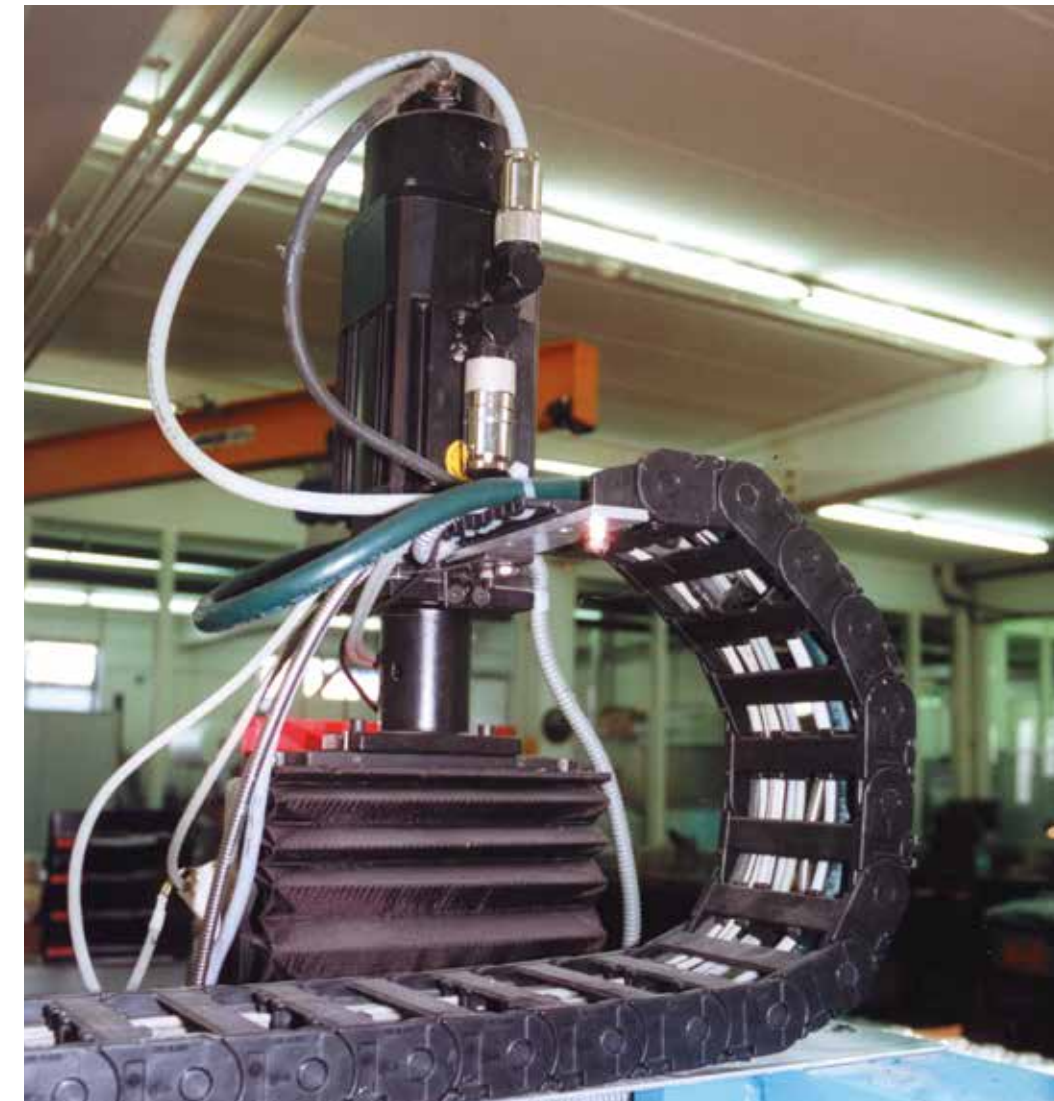
Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 5.5.2.1

 **Order example: CF21-15-15-02-01-UL – In your desired length**  
 CF21-UL Chainflex® series -15 Code nominal cross section -15 Code nominal cross section signal pairs  
 -02 Identification pairs -01 Number of pairs

 Online order ► [www.chainflex.com/CF21UL](http://www.chainflex.com/CF21UL)

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



Chainflex® CF21.UL: cables for energy supply systems in spinneret production. E-Chain®: E2/000



# iguPUR Servo cable | CF897

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and signal pairs cabled together with an optimized pitch length.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L-

**1 Control pair:** Black with white numbers.  
Control Pair Printed 5 and 6

**2 Control pairs:** Black with white numbers.  
Control Pair 1: Printed 5 and 6, Control Pair 2: Printed 7 and 8

	<b>Signal Pair shield</b>	Foil taping of optimized, bending-resistant foil shield. Coverage approx. 100% optical.
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
--	----------------------	--------

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.3.1

	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, VW-1, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21223, 1000V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		1 million	3 million	5 million		
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				17.5	18.5	19.5
+14 / +158	9.84	65.62	≤ 32.81	15	16	17
+158 / +176				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.	Copper index	Weight
			in.	mm	lbs/mft kg/km lbs/mft kg/km
<b>1 Control pair shielded</b>					
<b>CF897-15-15-02-01</b>	16	4 G 1.5	0.49	12.5	88.7 132 135.7 202
	16	1 STP x 1.5			
<b>CF897-25-15-02-01</b>	14	4 G 2.5	0.53	13.5	130.4 194 182.1 271
	16	1 STP x 1.5			
<b>CF897-40-15-02-01</b>	12	4 G 4.0	0.57	14.5	169.3 252 237.2 353
	16	1 STP x 1.5			
<b>2 Control pairs shielded</b>					
<b>CF897-15-15-02-02</b>	16	4 G 1.5	0.53	13.5	117.6 175 176.1 262
	16	2 STP x 1.5			

**Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth conductor x = without earth conductor



HAINFLEX® CF897

Image exemplary.

1,244 types from stock ... no cutting costs\*  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
 ... up to 5 million cycles guaranteed ...



# PUR Servo cable | CF270-UL-D

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>	164.1 ft/s² (50 m/s²)	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Stranded conductor in bending-resistant version consisting of bare copper wires (following EN 60228). Single conductor: Conductor cable consisting of pre-leads (following EN 60228)
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+    2. V / L2    3. W / L3 / D / L- <b>1 Control pair:</b> Black with white numbers. Control Pair Printed 4 and 5 <b>2 Control pairs:</b> Black with white numbers. Control Pair 1: Printed 5 and 6 Control Pair 2: Printed 7 and 8 <b>1 Control triad:</b> Black with white numbers. Triad Printed: 1, 2 and 3 <b>Star-Quad:</b> yellow, black, red, white
	<b>Signal Pair shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Intermediate layer</b>	Foil taping over the external layer.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003)

Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 4.2.3.1

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10989 and 21223, 1000 V, 80 °C <b>Spindle cable/Single conductor:</b> Style 10492 and 10973, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]
-13 / +5				≤ 32.81	12.5	13.5	14.5			
+5 / +158		32.81	6.56	164.05	10	11	12			
+158 / +176					12.5	13.5	14.5			

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Machining units/machine tools, low temperature applications

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...





PUR Servo cable | CF270-UL-D

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				

Class 4.2.3.1

IGUS® CHAINFLEX® CF270.UL.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Control pair shielded</b>								
CF270-UL-15-15-02-01-D	16	4 G 1.5	0.47	12.0	110.2	164	176.7	263
	16	1 STP 1.5						
CF270-UL-25-15-02-01-D	14	4 G 2.5	0.53	14.0	149.8	223	205.6	306
	16	1 STP 1.5						
CF270-UL-40-15-02-01-D	12	4 G 4.0	0.59	15.0	201.6	300	301.0	448
	16	1 STP 1.5						
CF270-UL-60-15-02-01-D	10	4 G 6.0	0.65	16.5	269.5	401	374.3	557
	16	1 STP 1.5						
CF270-UL-100-15-02-01-D	8	4 G 10.0	0.81	20.5	430.1	640	604.1	899
	16	1 STP 1.5						
CF270-UL-160-15-02-01-D	6	4 G 16.0	0.94	24.0	632.3	941	881.0	1311
	16	1 STP 1.5						
CF270-UL-250-15-02-01-D	4	4 G 25.0	1.12	28.5	971.0	1445	1145.0	1704
	16	1 STP 1.5						
<b>2 Control pairs shielded</b>								
CF270-UL-07-03-02-02-D	18	4 G 0.75	0.45	11.5	78.6	117	139.8	208
	22	2 STP 0.34						
CF270-UL-10-07-02-02-D	17	4 G 1.0	0.51	13.0	105.5	157	178.7	266
	18	2 STP 0.75						
CF270-UL-15-07-02-02-D	16	4 G 1.5	0.53	13.5	124.3	185	207.6	309
	18	2 STP 0.75						
CF270-UL-25-15-02-02-D	14	4 G 2.5	0.63	16.0	192.2	286	295.0	439
	16	2 STP 1.5						
CF270-UL-40-15-02-02-D	12	4 G 4.0	0.67	17.0	243.9	363	364.9	543
	16	2 STP 1.5						
CF270-UL-60-15-02-02-D	10	4 G 6.0	0.73	18.5	314.5	468	452.9	674
	16	2 STP 1.5						
CF270-UL-100-15-02-02-D	8	4 G 10.0	0.89	22.5	467.7	696	679.4	1011
	16	2 STP 1.5						
CF270-UL-160-15-02-02-D	6	4 G 16.0	1.02	26.0	666.6	992	944.1	1405
	16	2 STP 1.5						
CF270-UL-250-15-02-02-D	4	4 G 25.0	1.12	28.5	1009.3	1502	1332.5	1983
	16	2 STP 1.5						
CF270-UL-350-15-02-02-D <sup>1)</sup>	2	4 G 35.0	1.38	35.0	1333.2	1984	1811.6	2696
	16	2 STP 1.5						

<sup>1)</sup> Delivery time upon request

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth conductor    x = without earth conductor

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Control triple shielded</b>								
CF270-UL-15-10-03-01-D <sup>9)</sup>	16	4 G 1.5	0.55	14.0	118.3	176	203.6	303
	17	3 x 1.0 SHLD						
CF270-UL-25-10-03-01-D <sup>10)</sup>	14	4 G 2.5	0.55	14.0	150.5	224	233.8	348
	17	3 x 1.0 SHLD						
<b>1 Star-quad shielded</b>								
CF270-UL-25-05-04-D	14	4 G 2.5	0.53	13.5	140.4	209	199.6	297
	20	4 x 0.5 SHLD						
CF270-UL-60-05-04-D	10	4 G 6.0	0.65	16.5	258.0	384	366.9	546
	20	4 x 0.5 SHLD						
<b>without Control pair</b>								
CF270-UL-15-04-D	16	4 G 1.5	0.37	9.5	60.5	90	104.8	156
CF270-UL-25-04-D	14	4 G 2.5	0.45	11.5	103.5	154	161.3	240
CF270-UL-40-04-D	12	4 G 4.0	0.49	12.5	155.2	231	226.5	337
CF270-UL-60-04-D	10	4 G 6.0	0.57	14.5	226.5	337	312.5	465
CF270-UL-100-04-D	8	4 G 10.0	0.71	18.0	366.2	545	502.0	747
CF270-UL-160-04-D	6	4 G 16.0	0.87	22.0	578.6	861	759.3	1130
CF270-UL-250-04-D	4	4 G 25.0	1.00	25.5	884.3	1316	1136.3	1691
CF270-UL-350-04-D	2	4 G 35.0	1.30	33.0	1252.6	1864	1668.5	2483
<b>Spindle cable/Single conductor</b>								
CF270-UL-100-01-D	8	1 x 10.0	0.33	8.5	81.3	121	102.1	152
CF270-UL-160-01-D	6	1 x 16.0	0.37	9.5	125.7	187	146.5	218
CF270-UL-250-01-D	4	1 x 25.0	0.43	11.0	193.5	288	217.0	323
CF270-UL-350-01-D	2	1 x 35.0	0.51	13.0	268.8	400	297.0	442
CF270-UL-500-01-D	1	1 x 50.0	0.59	15.0	380.3	566	415.9	619
CF270-UL-700-01-D	2/0	1 x 70.0	0.69	17.5	544.3	810	579.2	862

<sup>9)</sup> Conductor/Conductor: 50 pF/m, Corer/Shield: 95 pF/m

<sup>10)</sup> Conductor/Conductor: 70 pF/m, Corer/Shield: 115 pF/m

Note: The mentioned outer diameters are maximum values.

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

STP = Individually shielded Twisted Pair    PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable



Configurators ► [www.igus.com/CF270ULD](http://www.igus.com/CF270ULD)



# PUR Hybrid Servo cable | CF280-UL-H

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+    2. V / L2    3. W / L3 / D / L- <b>Control pair:</b> Black with white numbers. 1. Control Pair Printed 5 and 6 <b>Bus element:</b> white, blue
	<b>Signal Pair shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Intermediate layer</b>	Foil taping over the external layer.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003) Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10989 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13 / +5					≤ 32.81	12.5	13.5	14.5
+5 / +158		32.81	6.56	164.05		10	11	12
+158 / +176						12.5	13.5	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Machining units/machine tools, low temperature applications



Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...



IGUS® CHAINFLEX® CF280.UL.H

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Hybrid technology	Manufacturer
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CF280-UL-H100-07-04-D <sup>1)</sup>	18	4 G 0.75	0.47	12.0	78.6	117	139.1	207	CF280-UL-H100-07-04-D	Sick "Hiperface DSL"	see selection table on page 279
	22	1 STP x 0.34									
	22	1 STP x 22AWG									
CF280-UL-H101-10-04-D	17	4 G 1.0	0.49	12.5	93.4	139	156.6	233	CF280-UL-H101-10-04-D	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75									
	22	1 STP x 22AWG									
CF280-UL-H101-15-04-D	16	4 G 1.5	0.53	13.5	106.8	159	186.8	278	CF280-UL-H101-15-04-D	Sick "Hiperface DSL"	see selection table on page 279
	18	1 STP x 0.75									
	22	1 STP x 22AWG									
CF280-UL-H102-25-04-D	14	4 G 2.5	0.59	15.0	145.8	217	227.1	338	CF280-UL-H102-25-04-D	Sick "Hiperface DSL"	see selection table on page 279
	17	1 STP x 1.0									
	22	1 STP x 22AWG									
New CF280-UL-H102-60-04-D	10	4 G 6.0	0.71	18.0	264.8	394	395.8	589	CF280-UL-H102-60-04-D	Sick "Hiperface DSL"	see selection table on page 279
	17	1 STP x 1.0									
	22	1 STP x 22AWG									
CF280-UL-H200-15-07-D	16	7 G 1.5	0.65	16.5	145.1	216	247.3	368	CF280-UL-H200-15-07-D	SEW	SEW
	18	1 STP x 0.75									
New CF280-UL-H200-25-07-D <sup>1)</sup>	14	7 G 2.5	0.79	20.0	207.0	308	362.9	540	CF280-UL-H200-25-07-D	SEW	SEW
	18	1 STP x 0.75									
CF280-UL-H201-15-04-D	16	4 G 1.5	0.55	14.0	99.5	148	188.8	281	CF280-UL-H201-15-04-D	SEW	SEW
	18	1 STP x 0.75									
	18	3 x 0.75 SHLD									
CF280-UL-H201-25-04-D <sup>1)</sup>	14	4 G 2.5	0.59	15.0	131.0	195	221.7	330	CF280-UL-H201-25-04-D	SEW	SEW
	18	1 STP x 0.75									
	18	3 x 0.75 SHLD									
CF280-UL-H203-15-04-D	16	4 G 1.5	0.47	12.0	113.6	169	177.4	264	CF280-UL-H203-15-04-D	SEW	SEW
	17	3 x 1.0 SHLD									
CF280-UL-H203-25-04-D	14	4 G 2.5	0.55	14.0	138.4	206	217.0	323	CF280-UL-H203-25-04-D	SEW	SEW
	17	3 x 1.0 SHLD									
CF280-UL-H204-15-04-D	16	4 G 1.5	0.59	15.0	143.8	214	237.9	354	CF280-UL-H204-15-04-D	SEW	SEW
	18	1 STP x 0.75									
	17	3 x 1.0 SHLD									
CF280-UL-H206-60-04-D	10	4 G 6.0	0.77	19.5	309.1	460	454.9	677	CF280-UL-H206-60-04-D	SEW	SEW
	18	1 STP x 0.75									
	16	3 x 1.5 SHLD									
New CF280-UL-H501-15-04-D	16	4 G 1.5	0.59	15.0	129.7	193	196.9	293	CF280-UL-H501-15-04-D	SEW	B&R
	18	1 STP x 0.75									
	26	(2 PR x 0.14 +									
	24	1 PR x 0.25) SHLD									
New CF280-UL-H502-40-04-D	12	4 G 4.0	0.67	17.0	211.7	315	286.9	427	CF280-UL-H502-40-04-D	SEW	B&R
	17	1 STP x 1.0									
	26	(2 PR x 0.14 +									
	24	1 PR x 0.25) SHLD									
New CF280-UL-H601-25-05 <sup>16)</sup>	14	5 G 2.5	0.57	14.5	113.6	169	201.6	300	CF280-UL-H601-25-05	SEW	ELAU/Schneider Electric
	24	24AWG QUAD SHLD									
	24	1 STP x 0.25 SHLD									

<sup>1)</sup> Delivery time upon request

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

Note: The mentioned outer diameters are maximum values.

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

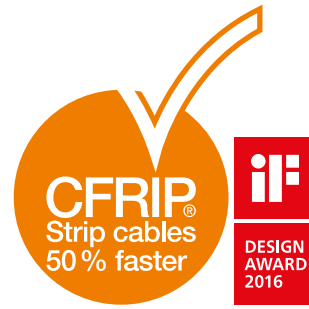
STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable



# PUR Servo cable | CF27-D

- For very high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>	262.5 ft/s² (80 m/s²)	
		<b>Travel distance</b> Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Conductor construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+    2. V / L2    3. W / L3 / D / L- <b>1 Control pair:</b> Black with white numbers. Control Pair Printed 4 and 5 <b>2 Control pairs:</b> Black with white numbers. Control Pair 1: Printed 5 and 6    Control Pair 2: Printed 7 and 8 <b>Star-Quad:</b> yellow, black, red, white
	<b>Signal Pair 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 tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10492 and 20234, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million    7.5 million    10 million						
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13 / +5				≤ 328.1	10	11	12
+5 / +158		32.81	16.41	262.48	7.5	8.5	8.5
+158 / +176					10	11	12

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications



1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

# PUR Servo cable | CF27-D

Strip cables 50 % faster!

IGUS® CHAINFLEX® CF27.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Control pair shielded</b>								
CF27-07-05-02-01-D	18	4 G 0.75	0.45	11.5	63.2	94	123.0	183
	20	1 STP x 0.5						
CF27-15-15-02-01-D	16	4 G 1.5	0.51	13.0	106.8	159	177.4	264
	16	1 STP x 1.5						
CF27-25-15-02-01-D	14	4 G 2.5	0.57	14.5	147.2	219	227.8	339
	16	1 STP x 1.5						
CF27-40-15-02-01-D	12	4 G 4.0	0.63	16.0	190.2	283	291.0	433
	16	1 STP x 1.5						
CF27-60-15-02-01-D	10	4 G 6.0	0.71	18.0	246.6	367	372.3	554
	16	1 STP x 1.5						
CF27-100-15-02-01-D	8	4 G 10.0	0.83	21.0	393.1	585	540.9	805
	16	1 STP x 1.5						
CF27-160-15-02-01-D	6	4 G 16.0	0.96	24.5	577.9	860	764.0	1137
	16	1 STP x 1.5						
CF27-250-15-02-01-D	4	4 G 25.0	1.12	28.5	842.6	1254	1095.3	1630
	16	1 STP x 1.5						
CF27-350-15-02-01-D	2	4 G 35.0	1.28	32.5	1153.1	1716	1497.1	2228
	16	1 STP x 1.5						
<b>2 Control pairs shielded</b>								
CF27-07-03-02-02-D	18	4 G 0.75	0.49	12.5	77.9	116	142.5	212
	22	2 STP x 0.34						
CF27-10-07-02-02-D	17	4 G 1.0	0.53	13.5	112.9	168	184.1	274
	18	2 STP x 0.75						
CF27-15-07-02-02-D	16	4 G 1.5	0.55	14.0	127.7	190	207.6	309
	18	2 STP x 0.75						
CF27-25-15-02-02-D	14	4 G 2.5	0.67	17.0	190.8	284	295.0	439
	16	2 STP x 1.5						
CF27-40-15-02-02-D	12	4 G 4.0	0.71	18.0	232.5	346	344.0	512
	16	2 STP x 1.5						
CF27-60-15-02-02-D	10	4 G 6.0	0.79	20.0	301.0	448	444.8	662
	16	2 STP x 1.5						
CF27-100-15-02-02-D	8	4 G 10.0	0.93	23.5	439.5	654	624.9	930
	16	2 STP x 1.5						
CF27-160-15-02-02-D	6	4 G 16.0	1.04	26.5	644.4	959	854.7	1272
	16	2 STP x 1.5						
CF27-250-15-02-02-D	4	4 G 25.0	1.22	31.0	887.0	1320	1207.5	1797
	16	2 STP x 1.5						
CF27-350-15-02-02-D <sup>1)</sup>	2	4 G 35.0	1.34	34.0	1219.6	1815	1553.6	2312
	16	2 STP x 1.5						

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth conductor    **x** = without earth conductor

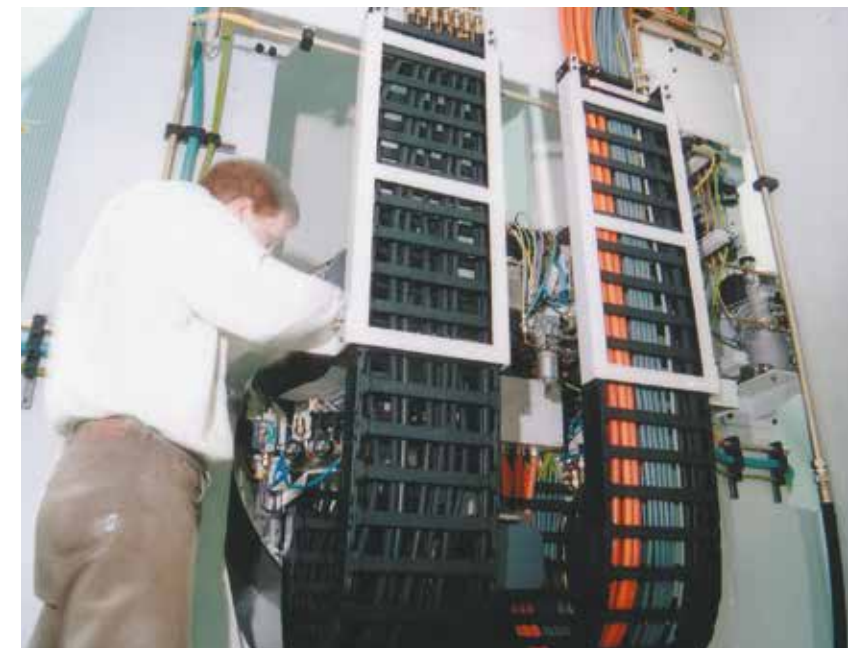
# Class 6.5.3.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>1 Star-quad shielded</b>								
CF27-15-05-04-D <sup>1)</sup>	16	4 G 1.5	0.51	13.0	98.1	146	168.0	250
	20	4 x 0.5 SHLD						
CF27-25-05-04-D <sup>1)</sup>	14	4 G 2.5	0.57	14.5	132.4	197	211.0	314
	20	4 x 0.5 SHLD						
CF27-40-05-04-D	12	4 G 4.0	0.63	16.0	181.4	270	276.9	412
	20	4 x 0.5 SHLD						
CF27-60-05-04-D	10	4 G 6.0	0.69	17.5	237.9	354	356.1	530
	12	4 x 0.5 SHLD						
<b>without control pair</b>								
CF27-07-04-D	18	4 G 0.75	0.35	9.0	39.0	58	76.6	114
CF27-10-04-D	17	4 G 1.0	0.37	9.5	46.4	69	89.4	133
CF27-15-04-D	16	4 G 1.5	0.41	10.5	63.2	94	112.9	168
CF27-25-04-D	14	4 G 2.5	0.49	12.5	95.4	142	158.6	236
CF27-500-04-D	1	4 G 50.0	1.46	37.0	1626.2	2420	2021.3	3008

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth conductor    **x** = without earth conductor

**STP** = Individually shielded Twisted Pair    **PR** = Twisted Pair  
**SC** = Individually shielded Conductor    **SHLD** = Shielded Precable



Modular design, easy to retrofit: igus® E4 E-Chain® and Chainflex® cables.





# Motor cables



## Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius min., E-Chain® [factor x d]	Temperature, E-Chain® from/to [°F]	Approvals and standards	oil-resistant	torsion resistant	v max. [ft/s] unsupported	v max. [ft/s] gliding	a max. [ft/s²]	Page
<b>Motor cables</b>											
<b>Exclusive! Chainflex® guarantee – guaranteed lifetime</b>										<b>► Selection table page 310</b>	
CF885	PVC		15	+41/ +158	UL US, ENEC, EAC, CE, CE, CE			9.84		65.62	314
CF886	PVC	✓	15	+41/ +158	UL US, ENEC, EAC, CE, CE, CE			9.84		65.62	316
CF30	PVC		7.5	+41/ +158	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	16.41	262.48	318
CF31	PVC	✓	7.5	+41/ +158	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	16.41	262.48	322
CF895	iguPUR		15	-4/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		9.84		65.62	326
CF896	iguPUR	✓	15	-4/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		9.84		65.62	328
CF270-UL-D	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	6.56	164.05	330
CF27-D	PUR	✓		-13/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	16.41	262.48	334
CF34-UL-D	TPE		7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	262.48	338
CF35-UL	TPE	✓	7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	262.48	342
CF37-D	TPE		7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	262.48	346
CF38	TPE	✓	7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	262.48	348
<b>Motor cables - Spindle cables/Single conductor</b>											
CF885	PVC		15	+41/ +158	UL US, ENEC, EAC, CE, CE, CE			9.84		65.62	352
CF885-PE	PVC		15	+41/ +158	UL US, ENEC, EAC, CE, CE, CE			9.84		65.62	354
CF886	PVC	✓	15	+41/ +158	UL US, ENEC, EAC, CE, CE, CE			9.84		65.62	356
CF270-UL-D	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	164.05	358
CF300-UL-D	TPE		7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	328.1	360 <b>New</b>
CFPE	TPE		7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	328.1	362
CF310-UL	TPE	✓	7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	328.1	364
CF330-D	TPE		7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	328.1	366
CF340	TPE	✓	7.5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	328.1	368
CF430-D	TPE		10	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	328.1	370 <b>New</b>
CF440	TPE	✓	10	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	328.1	372 <b>New</b>
CFCRANE	igupren	✓	10	-4/ +176	UL US, ENEC, EAC, CE, CE, CE	✓		32.81	19.69	164.05	374
<b>Motor cables (Chapter “Special cables“ page 412)</b>											
CFFLAT	TPE		5	-31/ +194	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	328.1	418
CFBRAID	TPE		7.5	-31/ +158	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	262.5	420
CFBRAID-C	TPE	✓	7.5	-31/ +158	UL US, ENEC, EAC, CE, CE, CE	✓	✓	32.81	19.69	262.5	420

# Chainflex® guarantee



# Guaranteed lifetime <sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]	Bend radius min. [factor x d]		Bend radius min. [factor x d]	Page
		unsupported	gliding				5 million (1 million) cycles *	7.5 million (3 million) cycles *		
 CF885	+41 / +59 +59 / +140 +140 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	314	
 CF886	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	316	
 CF30	+41 / +59 +59 / +140 +140 / +158	32.81	16.41	262.48	≤ 328.1	10 7.5 10	11 8.5 11	12 9.5 12	318	
 CF31	+41 / +59 +59 / +140 +140 / +158	32.81	16.41	262.48	≤ 328.1	10 7.5 10	11 8.5 11	12 9.5 12	322	
 CF895	-4 / +14 +14 / +158 +158 / +176	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	326	
 CF896	-4 / +14 +14 / +158 +158 / +176	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5	328	
 CF270-UL-D	-13 / +5 +5 / +158 +158 / +176	32.81	6.56	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5	330	
 CF27-D	-13 / +5 +5 / +158 +158 / +176	32.81	16.41	262.48	≤ 328.1	10 7.5 10	11 8.5 11	12 8.5 12	334	
 CF34-UL-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	262.48	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12	338	
 CF35-UL	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	262.48	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12	342	
 CF37-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	262.48	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12	346	
 CF38	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	262.48	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12	348	


Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ► page 22-25

\* Guaranteed lifetime, higher numbers of cycles possible.  
Figures in brackets refer to CF885/CF886 and CF895/CF896

# Chainflex® guarantee



# Guaranteed lifetime <sup>(1)</sup>

Chainflex® cable	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	Bend radius min. [factor x d]		Bend radius min. [factor x d]		Bend radius min. [factor x d]		Page
		unsupported	gliding			5 million (1 million) cycles *	7,5 million (3 million) cycles *	10 million (5 million) cycles *				
 CF885	+41 / +59 +59 / +140 +140 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5				352
 CF886	+41 / +59 +59 / +140 +158 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5				356
 CF270-UL-D	-13 / +5 +5 / +158 +158 / +176	32.81	19.69	164.05	≤ 32.81	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5				358
 CF300-UL-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				360
 CF885-PE	+41 / +59 +59 / +140 +140 / +158	9.84	-	65.62	≤ 32.81	17.5 15 17.5	18.5 16 18.5	19.5 17 19.5				354
 CFPE	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				362
 CF310-UL	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				364
 CF330-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				366
 CF340	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				368
 CF430-D	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				370
 CF440	-31 / -13 -13 / +176 +176 / +194	32.81	19.69	328.10	≤ 1,312	10 7.5 10	11 8.5 11	12 9.5 12				372
 CFCRANE	-4 / +14 +14 / +158 +158 / +176	32.81	19.69	164.05	> 1,312	12.5 10 12.5	13.5 11 13.5	14.5 12 14.5				374

Exclusive! Guaranteed lifetime for this series according to the guarantee conditions ► page 22-25

\* Guaranteed lifetime, higher numbers of cycles possible.  
Figures in brackets refer to CF885 and CF886.



# PVC Motor cable | CF885

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

**Configurators** ► [www.igus.com/CF885](http://www.igus.com/CF885)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

	<b>UL/CSA</b>	Style 10492 and 21179, 1000 V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	1 million	3 million	5 million			
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59			≤ 32.81	17.5	18.5	19.5
+59 / +140	9.84	65.62		15	16	17
+140 / +158				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF885-15-04</b>	16	4 G 1.5	0.35	9.0	43.0	64	81.3	121
<b>CF885-25-04</b>	14	4 G 2.5	0.41	10.5	71.2	106	122.3	182
<b>CF885-40-04</b>	12	4 G 4.0	0.47	12.0	113.6	169	179.4	267
<b>CF885-60-04</b>	10	4 G 6.0	0.55	14.0	170.7	254	251.3	374
<b>CF885-100-04</b>	8	4 G 10.0	0.65	16.5	284.2	423	385.0	573
<b>CF885-160-04</b>	6	4 G 16.0	0.79	20.0	454.3	676	599.4	892

Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

- Order example: CF885-25-04 – In your desired length**  
CF885 Chainflex® series -025 Code nominal cross section -04 Number of conductors
- Online order ► [www.igus.com/CF885](http://www.igus.com/CF885)
- Delivery time 24hr or today.  
Delivery time means time until shipping of goods.

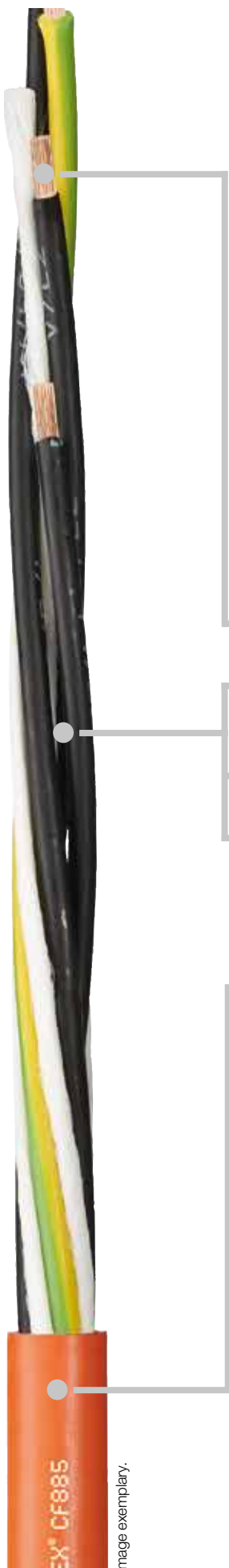


Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 5 million cycles guaranteed ...



# PVC Motor cable | CF886

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

**Configurators** ▶ [www.igus.com/CF886](http://www.igus.com/CF886)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

	<b>UL/CSA</b>	Style 10492 and 21179, 1000 V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	1 million	3 million	5 million
Temperature, from/to [°F]	<i>R</i> min. [factor x d]	<i>R</i> min. [factor x d]	<i>R</i> min. [factor x d]
v max. [ft/s] unsupported			
a max. [ft/s <sup>2</sup> ]			
Travel distance [ft]			
+41 / +59	17.5	18.5	19.5
+59 / +140	15	16	17
+158 / +158	17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF886-15-04</b>	16	4 G 1.5	0.37	9.5	55.8	83	92.7	138
<b>CF886-25-04</b>	14	4 G 2.5	0.43	11.0	87.4	130	134.4	200
<b>CF886-40-04</b>	12	4 G 4.0	0.51	13.0	133.0	198	189.5	282
<b>CF886-60-04</b>	10	4 G 6.0	0.57	14.5	199.6	297	268.8	400
<b>CF886-100-04</b>	8	4 G 10.0	0.69	17.5	318.5	474	403.9	601
<b>CF886-160-04</b>	6	4 G 16.0	0.81	20.5	500.6	745	610.1	908

Other types available on request.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

**Order example: CF886-100-04 – In your desired length**  
**CF886 Chainflex® series -100 Code nominal cross section -04 Number of conductors**

Online order ▶ [www.igus.com/CF886](http://www.igus.com/CF886)

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

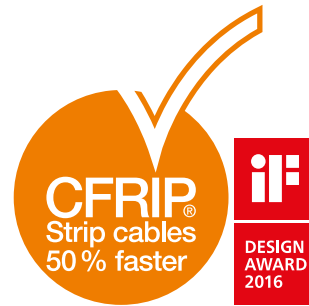
**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 5 million cycles guaranteed ...



# PVC Motor cable | CF30

- For high mechanical load requirements
- PVC outer jacket
- Oil-resistant
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>a max.</b>	<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductors</b>	<b>16-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-1 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. 4 / N 5. green/yellow

**Outer jacket** Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13).  
Color: Jet black (similar to to RAL 9005)

**CFRIP®** Strip cables 50% faster: The tear strip is in the outer jacket  
Video ► [www.igus.com/CFRIP](http://www.igus.com/CFRIP)

**Configurators** ► [www.igus.com/CF30](http://www.igus.com/CF30)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# Class 5.5.2.2

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 2570, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
	unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
Temperature, from/to [°F]							
+41 / +59				≤ 328.1	10	11	12
+59 / +140	32.81	16.41	262.48		7.5	8.5	9.5
+140 / +158					10	11	12

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes





# PVC Motor cable | CF30

# Class 5.5.2.2

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Strip cables 50 % faster!



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF30-15-04	16	4 G 1.5	0.33	8.5	43.0	64	71.2	106
CF30-25-04	14	4 G 2.5	0.41	10.5	71.2	106	107.5	160
CF30-25-05	14	5 G 2.5	0.45	11.5	88.7	132	141.1	210
CF30-40-04	12	4 G 4.0	0.47	12.0	116.9	174	173.4	258
CF30-40-05	12	5 G 4.0	0.51	13.0	146.5	218	211.7	315
CF30-60-04	10	4 G 6.0	0.55	14.0	170.0	253	243.3	362
CF30-60-05	10	5 G 6.0	0.61	15.5	213.0	317	298.4	444
CF30-100-04	8	4 G 10.0	0.69	17.5	292.3	435	412.6	614
CF30-100-05	8	5 G 10.0	0.79	20.0	367.6	547	509.4	758
CF30-160-04	6	4 G 16.0	0.83	21.0	468.4	697	616.9	918
CF30-160-05	6	5 G 16.0	0.94	24.0	590.7	879	782.2	1164
CF30-250-04	4	4 G 25.0	1.00	25.5	735.1	1094	952.2	1417
CF30-350-04	2	4 G 35.0	1.14	29.0	1042.2	1551	1300.9	1936
CF30-500-04	1	4 G 50.0	1.38	35.0	1493.1	2222	1857.3	2764

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core



Order example: **CF30-15-04** – In your desired length  
CF30 Chainflex® series -15 Code nominal cross section -04 Number of conductors



Online order ► [www.chainflex.com/CF30](http://www.chainflex.com/CF30)



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



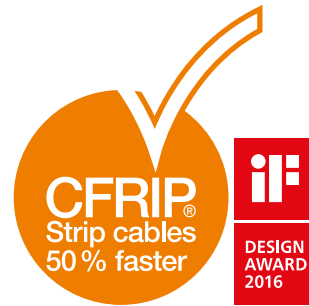
Configurators ► [www.igus.com/CF30](http://www.igus.com/CF30)



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Motor cable | CF31

- For high mechanical load requirements
- PVC outer jacket
- Shielded
- Oil-resistant
- Flame-retardant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
		<b>flexible</b>	+23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	<b>16-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-2/0 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. 4 / N 5. green/yellow
	<b>Inner jacket</b>	PVC mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Jet black (similar to RAL 9005)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ▶ <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

**Configurators** ▶ [www.igus.com/CF31](http://www.igus.com/CF31)

# Class 5.5.2.1

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)
<b>Properties and approvals</b>		
	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 2570, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 2. Outer jacket material complies with CF5-10-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		5 million			7.5 million		10 million	
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s²]	Travel distance [ft]	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]
+41 / +59				10	11	12		
+59 / +140	32.81	16.41	262.48	≤ 328.1	7.5	8.5	9.5	
+140 / +158					10	11	12	

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

### Typical application areas

- For high mechanical load requirements
- Light oil influence
- Preferably indoor applications, can be used in outdoor applications with temperatures > 23 °F
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, machining units/packages machines, quick handling, indoor cranes



# PVC Motor cable | CF31

# Class 5.5.2.1

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Strip cables 50% faster!



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF31-15-04	16	4 G 1.5	0.41	10.5	63.2	94	112.9	168
CF31-25-04	14	4 G 2.5	0.47	12.0	95.4	142	156.6	233
CF31-25-05	14	5 G 2.5	0.51	13.0	116.9	174	198.2	295
CF31-40-04	12	4 G 4.0	0.53	13.5	145.8	217	231.8	345
CF31-40-05	12	5 G 4.0	0.59	15.0	188.8	281	284.9	424
CF31-60-04	10	4 G 6.0	0.63	16.0	213.7	318	327.9	488
CF31-60-05	10	5 G 6.0	0.71	18.0	258.7	385	401.8	598
CF31-100-04	8	4 G 10.0	0.81	20.5	362.2	539	559.8	833
CF31-100-05	8	5 G 10.0	0.89	22.5	461.6	687	641.1	954
CF31-160-04	6	4 G 16.0	0.93	23.5	553.0	823	757.3	1127
CF31-250-04	4	4 G 25.0	1.12	28.5	842.6	1254	1154.4	1718
CF31-350-04	2	4 G 35.0	1.28	32.5	1153.1	1716	1544.2	2298
CF31-500-04	1	4 G 50.0	1.48	37.5	1626.2	2420	2132.2	3173
CF31-700-04	2/0	4 G 70.0	1.69	43.0	2321.0	3454	2745.0	4085

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core



Order example: **CF31-25-04** – In your desired length  
CF31 Chainflex® series -25 Code nominal cross section -04 Number of conductors



Online order ► [www.chainflex.com/CF31](http://www.chainflex.com/CF31)



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



Configurators ► [www.igus.com/CF31](http://www.igus.com/CF31)





# iguPUR Motor cable | CF895

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
	<b>flexible</b>		-40 °F to +176 °F (-40 °C to +80 °C)
	<b>fixed</b>		-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow

**Outer jacket** Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Pastel orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).
	<b>UL/CSA</b>	Style 10492 and 20940, 1000 V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561

## Class 3.1.3.1

- CTP** Certified according to no. C-DE.PB49.B.00450
- Lead-free** Following 2011/65/EC (RoHS-II)
- DESINA** According to VDW, DESINA standardisation
- CE** Following 2014/35/EC

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

Cycles*		1 million	3 million	5 million		
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				17.5	18.5	19.5
+14 / +158	9.84	65.62	32.81	15	16	17
+158 / +176				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF895-15-04</b>	16	4 G 1.5	0.35	9.0	43.0	64	75.9	113
<b>CF895-25-04</b>	14	4 G 2.5	0.39	10.0	71.2	106	114.9	171
<b>CF895-40-04</b>	12	4 G 4.0	0.47	12.0	113.6	169	169.3	252
<b>CF895-60-04</b>	10	4 G 6.0	0.55	14.0	170.7	254	239.2	356
<b>CF895-100-04</b>	8	4 G 10.0	0.65	16.5	284.2	423	368.9	549
<b>CF895-160-04</b> <sup>1)</sup>	6	4 G 16.0	0.79	20.0	454.3	676	576.5	858

<sup>1)</sup> Delivery time upon request. **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core **x** = without earth core

**Order example: CF895-25-04 – In your desired length**  
**CF895 Chainflex® series -025 Code nominal cross section -04 Number of conductors**

Online order ► [www.chainflex.com/CF895](http://www.chainflex.com/CF895)

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

**Configurators** ► [www.igus.com/CF895](http://www.igus.com/CF895)

# iguPUR Motor cable | CF896

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
		<b>flexible</b>	min. 12 x d
		<b>fixed</b>	min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguPUR, adapted to suit the requirements in E-Chains®. Color: Pastel orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2)
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-2
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992).

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.3.1

	<b>UL/CSA</b>	Style 10492 and 20940, 1000 V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-4 / +14				17.5	18.5	19.5
+14 / +158	9.84	65.62	32.81	15	16	17
+158 / +176				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF896-15-04</b>	16	4 G 1.5	0.35	9.0	55.8	83	87.4	130
<b>CF896-25-04</b>	14	4 G 2.5	0.41	10.5	87.4	130	127.7	190
<b>CF896-40-04</b>	12	4 G 4.0	0.49	12.5	133.0	198	182.1	271
<b>CF896-60-04</b>	10	4 G 6.0	0.57	14.5	199.6	297	259.4	386
<b>CF896-100-04</b>	8	4 G 10.0	0.69	17.5	318.5	474	391.8	583
<b>CF896-160-04</b> <sup>1)</sup>	6	4 G 16.0	0.81	20.5	500.6	745	594.7	885

<sup>1)</sup> Delivery time upon request. Other types available on request.

Note: The mentioned outer diameters are maximum values.

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

**Order example: CF896.25.04 – In your desired length**  
CF896 Chainflex® series .025 Code nominal cross section .04 Number of conductors

Online order ► [www.chainflex.com/CF896](http://www.chainflex.com/CF896)

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



**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 5 million cycles guaranteed ...

# PUR Motor cable | CF270-UL-D

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 32.81 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Power conductors cabled with short pitch.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow

	<b>Intermediate layer</b>	Foil taping over the external layer.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

**Configurators** ► [www.igus.com/CF270ULD](http://www.igus.com/CF270ULD)

Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10989 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13 / +5					32.81	12.5	13.5	14.5
+5 / +158		32.81	6.56	164.05		10	11	12
+158 / +176						12.5	13.5	14.5

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Machining units/machine tools, low temperature applications



**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...



# PUR Motor cable | CF270-UL-D

## Class 4.2.3.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF270-UL-15-04-D	16	4 G 1.5	0.37	9.5	60.5	90	104.8	156
CF270-UL-25-04-D	14	4 G 2.5	0.45	11.5	103.5	154	161.3	240
CF270-UL-40-04-D	12	4 G 4.0	0.49	12.5	155.2	231	226.5	337
CF270-UL-60-04-D	10	4 G 6.0	0.57	14.5	226.5	337	312.5	465
CF270-UL-100-04-D	8	4 G 10.0	0.71	18.0	366.2	545	502.0	747
CF270-UL-160-04-D	6	4 G 16.0	0.87	22.0	578.6	861	759.3	1130
CF270-UL-250-04-D	4	4 G 25.0	1.00	25.5	884.3	1316	1136.3	1691
CF270-UL-350-04-D	2	4 G 35.0	1.30	33.0	1252.6	1864	1668.5	2483

**Note:** The mentioned outer diameters are maximum values.  
G = with green-yellow earth core    x = without earth core

**Order example: CF270-UL-60-04-D – In your desired length**  
CF270-UL.D Chainflex® series -60 Code nominal cross section -04 Number of conductors

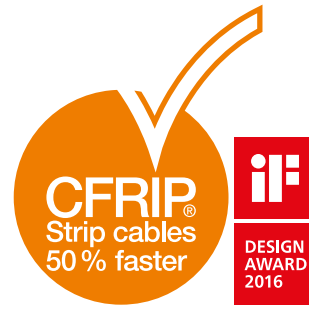
Online order ► [www.chainflex.com/CF270ULD](http://www.chainflex.com/CF270ULD)

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



# PUR Motor cable | CF27-D

- For very high mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>	262.5 ft/s <sup>2</sup> (80 m/s <sup>2</sup> )	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Power conductors and Signal Pairs cabled with short pitch.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow

	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

**Configurators** ► [www.igus.com/CF27D](http://www.igus.com/CF27D)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>UL/CSA</b>	Style 10492 and 20234, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million 7.5 million 10 million						
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-13 / +5				≤ 328.1	10	11	12
+5 / +158		32.81	16.41		7.5	8.5	8.5
+158 / +176					10	11	12

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

**36 months guarantee on every chainflex® cable ...**  
**... up to 10 million cycles guaranteed ...**



# PUR Motor cable | CF27-D

# Class 6.5.3.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Strip cables 50% faster!

IGUS® CHAINFLEX® CF27.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF27-07-04-D	18	4 G 0.75	0.35	9.0	39.0	58	76.6	114
CF27-10-04-D	17	4 G 1.0	0.37	9.5	46.4	69	89.4	133
CF27-15-04-D	16	4 G 1.5	0.41	10.5	63.2	94	112.9	168
CF27-25-04-D	14	4 G 2.5	0.49	12.5	95.4	142	158.6	236
CF27-500-04-D	1	4 G 50.0	1.46	37.0	1626.2	2420	2021.3	3008

**Note:** The mentioned outer diameters are maximum values.  
G = with green-yellow earth core    x = without earth core



Order example: **CF27-15-04-D** – In your desired length  
CF27 Chainflex® series -15 Code nominal cross section -04 Number of conductors



Online order ► [www.chainflex.com/CF270ULD](http://www.chainflex.com/CF270ULD)



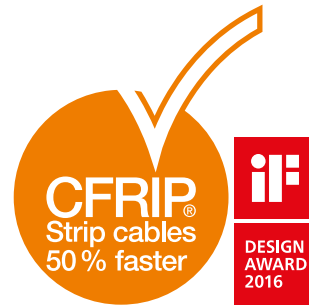
Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	5	6	7	highest
Torsion	none	1	2	3	4	5	6	7	±180°

# TPE Motor cable | CF34-UL-D

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
	<b>flexible</b>		min. 6 x d
	<b>fixed</b>		min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +194 °F (-45 °C to +90 °C)
		<b>fixed</b>	-58 °F to +194 °F (-50 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	<b>16-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-1 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. 4 / N 5. green/yellow

**Outer jacket** Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Signal black (similar to RAL 9004)

**CFRIP®** Strip cables 50% faster: The tear strip is in the outer jacket  
Video ▶ [www.igus.com/CFRIP](http://www.igus.com/CFRIP)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

**Configurators** ▶ [www.igus.com/CF34](http://www.igus.com/CF34)

## 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21184, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s]		a max. [ft/s²]	Travel distance [ft]	5 million	7.5 million	10 million
		unsupported	gliding			R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
	-31 / -13				≤ 1,312	10	11	12
	-13 / +176	32.81	19.69	262.48		7.5	8.5	9.5
	+176 / +194					10	11	12

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications



# TPE Motor cable | CF34-UL-D

## Class 6.6.4.2

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				




Strip cables 50% faster!

IGUS® CHAINFLEX® CF34.UL.D

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF34-UL-15-04-D	16	4 G 1.5	0.33	8.5	43.0	64	75.3	112
CF34-UL-25-04-D	14	4 G 2.5	0.41	10.5	71.2	106	115.6	172
CF34-UL-40-04-D	12	4 G 4.0	0.47	12.0	116.9	174	171.4	255
CF34-UL-60-04-D	10	4 G 6.0	0.55	14.0	170.0	253	241.9	360
CF34-UL-60-05-D	10	5 G 6.0	0.61	15.5	213.0	317	295.7	440
CF34-UL-100-04-D	8	4 G 10.0	0.67	17.0	292.3	435	381.7	568
CF34-UL-100-05-D	8	5 G 10.0	0.75	19.0	369.6	550	489.9	729
CF34-UL-160-04-D	6	4 G 16.0	0.81	20.5	468.4	697	585.3	871
CF34-UL-160-05-D	6	5 G 16.0	0.91	23.0	589.3	877	741.2	1103
CF34-UL-250-04-D	4	4 G 25.0	0.96	24.5	735.1	1094	905.8	1348
CF34-UL-60-04-O-PE-D <sup>1)</sup>	10	4 x 6.0	0.55	14.0	170.0	253	241.9	360
CF34-UL-100-04-O-PE-D	8	4 x 10.0	0.67	17.0	292.3	435	381.7	568
CF34-UL-160-04-O-PE-D	6	4 x 16.0	0.81	20.5	468.4	697	585.3	871
CF34-UL-500-03-O-PE-D	1	3 x 50.0	1.20	30.5	1108.7	1650	1400.4	2084

<sup>1)</sup> Delivery time upon request. Other types available on request.  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core    **x** = without earth core

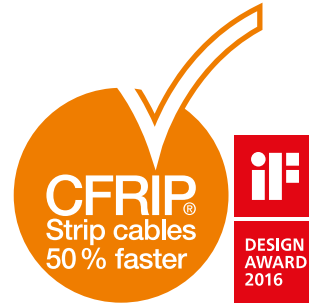
-  **Order example: CF34-UL-160-04-D – In your desired length**  
**CF34-UL-D Chainflex® series -160 Code nominal cross section -04 Number of conductors**
-  **Online order** ▶ [www.chainflex.com/CF34](http://www.chainflex.com/CF34)
-  **Delivery time 24hr or today.**  
 Delivery time means time until shipping of goods.

 **Configurators** ▶ [www.igus.com/CF34](http://www.igus.com/CF34)



# TPE Motor cable | CF35-UL

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +194 °F (-45 °C to +90 °C)
		<b>fixed</b>	-58 °F to +194 °F (-50 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	<b>20-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-1 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Signal black (similar to RAL 9004)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

**Configurators** ► [www.igus.com/CF35](http://www.igus.com/CF35)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<b>Electrical Information</b>	
	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)
	<b>Properties and approvals</b>	
	<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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21184, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million 7.5 million 10 million					
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]
-31 / -13				≤ 1,312	10	11
-13 / +176		32.81	19.69	262.48	7.5	8.5
+176 / +194					10	11

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications

**36 months guarantee on every chainflex® cable ...**  
**... up to 10 million cycles guaranteed ...**





# TPE Motor cable | CF35-UL

## Class 6.6.4.1

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Strip cables 50% faster!

IGUS® CHAINFLEX® CF35.UL

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF35-UL-05-04	20	4 G 0.5	0.31	8.0	29.6	44	59.1	88
CF35-UL-07-04	18	4 G 0.75	0.33	8.5	39.0	58	73.9	110
CF35-UL-15-04	16	4 G 1.5	0.39	10.0	63.2	94	106.2	158
CF35-UL-25-04	14	4 G 2.5	0.45	11.5	95.4	142	149.8	223
CF35-UL-40-04	12	4 G 4.0	0.53	13.5	149.8	223	229.1	341
CF35-UL-60-04	10	4 G 6.0	0.63	16.0	219.1	326	323.9	482
CF35-UL-100-04	8	4 G 10.0	0.77	19.5	336.0	500	484.5	721
CF35-UL-160-04	6	4 G 16.0	0.91	23.0	536.2	798	727.7	1083
CF35-UL-250-04	4	4 G 25.0	1.08	27.5	855.4	1273	1099.3	1636
CF35-UL-60-03-O-PE	10	3 x 6.0	0.59	15.0	172.0	256	260.1	387
CF35-UL-100-03-O-PE <sup>1)</sup>	8	3 x 10.0	0.69	17.5	262.7	391	407.2	606
CF35-UL-160-03-O-PE	6	3 x 16.0	0.83	21.0	409.9	610	569.8	848
CF35-UL-250-03-O-PE	4	3 x 25.0	0.98	25.0	653.8	973	872.9	1299
CF35-UL-350-03-O-PE	2	3 x 35.0	1.12	28.5	885.7	1318	1207.5	1797
CF35-UL-500-03-O-PE	1	3 x 50.0	1.32	33.5	1228.4	1828	1647.7	2452

<sup>1)</sup> Delivery time upon request

**Note:** The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core



Order example: **CF35-UL-15-04** – In your desired length  
CF35-UL Chainflex® series -15 Code nominal cross section -04 Number of conductors



Online order ► [www.chainflex.com/CF35](http://www.chainflex.com/CF35)



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

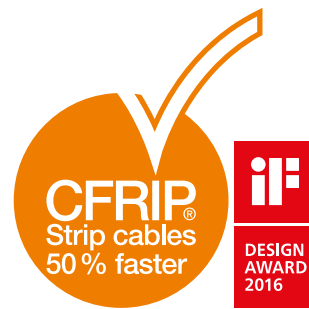


Configurators ► [www.igus.com/CF35](http://www.igus.com/CF35)



# TPE Motor cable | CF37-D

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	<b>16-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-1 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. 4 / N 5. green/yellow

**Outer jacket** Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)

**CFRIP®** Strip cables 50% faster: The tear strip is in the outer jacket  
Video ► [www.igus.com/CFRIP](http://www.igus.com/CFRIP)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 7.6.4.2

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million 7.5 million 10 million						
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				≤ 1,312	10	11	12
-13 / +176	32.81	19.69	262.48		7.5	8.5	9.5
+176 / +194					10	11	12

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF37-15-04-D	16	4 G 1.5	0.33	8.5	43.0	64	66.5	99
CF37-25-04-D	14	4 G 2.5	0.41	10.5	71.9	107	113.6	169
CF37-40-04-D	12	4 G 4.0	0.47	12.0	116.9	174	161.3	240
CF37-60-04-D	10	4 G 6.0	0.55	14.0	174.0	259	248.6	370
CF37-60-05-D	10	5 G 6.0	0.61	15.5	213.0	317	264.8	394
CF37-100-04-D	8	4 G 10.0	0.69	17.5	304.4	453	365.6	544
CF37-100-05-D	8	5 G 10.0	0.77	19.5	381.0	567	497.9	741
CF37-160-04-D	6	4 G 16.0	0.81	20.5	468.4	697	559.8	833
CF37-160-05-D	6	5 G 16.0	0.93	23.5	590.0	878	771.4	1148
CF37-250-04-D	4	4 G 25.0	1.00	25.5	735.1	1094	866.8	1290
CF37-60-04-O-PE-D <sup>1)</sup>	10	4 x 6.0	0.55	14.0	177.4	264	255.3	380
CF37-100-04-O-PE-D <sup>1)</sup>	8	4 x 10.0	0.69	17.5	303.1	451	394.4	587
CF37-160-04-O-PE-D <sup>1)</sup>	6	4 x 16.0	0.83	21.0	465.7	693	590.0	878
CF37-500-03-O-PE-D	1	3 x 50.0	1.22	31.0	1108.7	1650	1343.3	1999

<sup>1)</sup> Delivery time upon request Other types available on request.

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

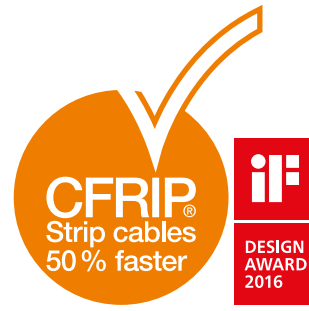
**36 months guarantee on every chainflex® cable ...**  
**... up to 10 million cycles guaranteed ...**

**1,244 types from stock ... no cutting costs\***  
**... no minimum order quantity ...** \*(up to 10 cuts of the same part number)



# TPE Motor cable | CF38

- For maximum mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	<b>20-10 AWG:</b> Conductor consisting of bare copper wires (according to EN 60228). <b>8-1 AWG:</b> Conductor cable consisting of pre-leads (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Core construction</b>	Conductors cabled with short pitch length around a high-tensile strength core.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow. 1. U / L1 / C / L+ 2. V / L2 3. W / L3 / D / L- 4. green/yellow

	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to to RAL 9005)
	<b>CFRIP®</b>	Strip cables 50% faster: The tear strip is in the inner jacket Video ► <a href="http://www.igus.com/CFRIP">www.igus.com/CFRIP</a>

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

**Configurators** ► [www.igus.com/CF38](http://www.igus.com/CF38)

# 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 EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
-31 / -13					10	11	12			
-13 / +176	32.81	19.69	262.48	≤ 1,312	7.5	8.5	9.5			
+176 / +194					10	11	12			

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, Ship to shore, outdoor cranes, low temperature applications





# TPE Motor cable | CF38

## Class 7.6.4.1

Requirements  
Travel distance  
Oil resistance  
Torsion




low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Strip cables 50% faster!

IGUS® CHAINFLEX® CF38

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF38-05-04 <sup>1)</sup>	20	4 G 0.5	0.31	8.0	29.6	44	57.1	85
CF38-07-04 <sup>1)</sup>	18	4 G 0.75	0.33	8.5	39.0	58	73.9	110
CF38-15-04	16	4 G 1.5	0.37	9.5	63.2	94	92.7	138
CF38-25-04	14	4 G 2.5	0.45	11.5	97.4	145	144.5	215
CF38-40-04	12	4 G 4.0	0.53	13.5	147.8	220	233.8	348
CF38-60-04	10	4 G 6.0	0.63	16.0	219.7	327	324.6	483
CF38-100-04	8	4 G 10.0	0.77	19.5	345.4	514	453.6	675
CF38-160-04	6	4 G 16.0	0.91	23.0	533.5	794	673.3	1002
CF38-250-04	4	4 G 25.0	1.08	27.5	859.4	1279	1100.7	1638
CF38-60-03-O-PE <sup>1)</sup>	10	3 x 6.0	0.57	14.5	174.0	259	260.7	388
CF38-100-03-O-PE	8	3 x 10.0	0.69	17.5	262.1	390	401.8	598
CF38-160-03-O-PE	6	3 x 16.0	0.83	21.0	407.9	607	565.1	841
CF38-250-03-O-PE <sup>1)</sup>	4	3 x 25.0	0.96	24.5	651.8	970	869.5	1294
CF38-350-03-O-PE <sup>1)</sup>	2	3 x 35.0	1.12	28.5	891.0	1326	1204.8	1793
CF38-500-03-O-PE	1	3 x 50.0	1.32	33.5	1241.8	1848	1520.7	2263

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core    **x** = without earth core

-  **Order example: CF38-250-04 – In your desired length**  
**CF38 Chainflex® series -250 Code nominal cross section -04 Number of conductors**
-  Online order ► [www.chainflex.com/CF38](http://www.chainflex.com/CF38)
-  Delivery time 24hr or today.  
 Delivery time means time until shipping of goods.



# PVC Spindle cable/Single core | CF885

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10107, 600V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

**Configurators** ▶ [www.igus.com/CF885](http://www.igus.com/CF885)

## Class 3.1.1.1

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

Cycles*				1 million	3 million	5 million
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				17.5	18.5	19.5
+59 / +140	9.84	65.62	≤ 32.81	15	16	17
+140 / +158				17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF885-40-01</b>	12	1 x 4.0	0.28	7.0	26.2	39	50.4	75
<b>CF885-60-01</b>	10	1 x 6.0	0.31	8.0	39.0	58	65.2	97
<b>CF885-100-01</b>	8	1 x 10.0	0.37	9.5	64.5	96	98.8	147
<b>CF885-160-01</b>	6	1 x 16.0	0.41	10.5	103.5	154	153.2	228
<b>CF885-250-01</b>	4	1 x 25.0	0.47	12.0	161.3	240	220.4	328
<b>CF885-350-01</b>	2	1 x 35.0	0.57	14.5	225.8	336	289.6	431
<b>CF885-500-01</b> <sup>1)</sup>	1	1 x 50.0	0.65	16.5	322.5	480	431.4	642
<b>CF885-700-01</b> <sup>1)</sup>	2/0	1 x 70.0	0.73	18.5	451.6	672	577.2	859
<b>CF885-950-01</b>	3/0	1 x 95.0	0.79	20.0	612.8	912	739.8	1101

<sup>1)</sup> Delivery time upon request. **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core **x** = without earth core

- Order example: CF885-100-01 – In your desired length**  
**CF885 Chainflex® series -100 Code nominal cross section -01 Number of conductors**
- Online order** ▶ [www.igus.com/CF885](http://www.igus.com/CF885)
- Delivery time 24hr or today.**  
 Delivery time means time until shipping of goods.

**1,244 types from stock ... no cutting costs\***  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)






**36 months guarantee on every Chainflex® cable ...**  
 ... up to 5 million cycles guaranteed ...







# PVC Spindle cable/Single core | CF885-PE

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



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1








### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10107, 600V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

 **Configurators** ▶ [www.igus.com/CF885PE](http://www.igus.com/CF885PE)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

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

Cycles*		1 million	3 million	5 million		
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				17.5	18.5	19.5
+59 / +140	9.84	65.62	≤ 32.81	15	16	17
+140 / +158				17.5	18.5	19.5


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

### Typical application areas


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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF885-PE-25-01</b> <sup>1)</sup>	14	1 G 2.5	0.26	6.5	16.1	24	37.0	55
<b>CF885-PE-40-01</b> <sup>1)</sup>	12	1 G 4.0	0.28	7.0	26.2	39	50.4	75
<b>CF885-PE-60-01</b> <sup>1)</sup>	10	1 G 6.0	0.31	8.0	39.0	58	65.2	97
<b>CF885-PE-100-01</b> <sup>1)</sup>	8	1 G 10.0	0.37	9.5	64.5	96	98.8	147
<b>CF885-PE-160-01</b> <sup>1)</sup>	6	1 G 16.0	0.41	10.5	103.5	154	153.2	228
<b>CF885-PE-250-01</b>	4	1 G 25.0	0.47	12.0	161.3	240	220.4	328
<b>CF885-PE-350-01</b> <sup>1)</sup>	2	1 G 35.0	0.57	14.5	225.8	336	289.6	431
<b>CF885-PE-500-01</b> <sup>1)</sup>	1	1 G 50.0	0.65	16.5	322.5	480	431.4	642
<b>CF885-PE-700-01</b> <sup>1)</sup>	2/0	1 G 70.0	0.73	18.5	451.6	672	577.2	859

<sup>1)</sup> Delivery time upon request **Other types available on request.**  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core **x** = without earth core

 **Order example: CF885-PE-40-01 – In your desired length**  
**CF885-PE Chainflex® series -40 Code nominal cross section .01 Number of conductors**

 **Online order** ▶ [www.igus.com/CF885PE](http://www.igus.com/CF885PE)

 **Delivery time 24hr or today.**  
 Delivery time means time until shipping of goods.



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# PVC Spindle cable/Single core | CF886

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 15 x d
	<b>flexible</b>		min. 12 x d
	<b>fixed</b>		min. 8 x d
	<b>Temperature</b>	<b>E-Chain®</b>	+41 °F to +158 °F (+5 °C to +70 °C)
	<b>flexible</b>		+23 °F to +158 °F (-5 °C to +70 °C)
	<b>fixed</b>		+5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances up to 32.81 ft (10 m), Class 1

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture.
	<b>Core construction</b>	Conductors cabled with an optimized pitch length.
	<b>Overall shield</b>	Tinned copper braid. 60 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PVC, adapted to suit the requirements in E-Chains®. Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10107, 600V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01561
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00450

**Configurators** ▶ [www.igus.com/CF886](http://www.igus.com/CF886)

## Class 3.1.1.1

	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	1 million	3 million	5 million
					R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+41 / +59				≤ 32.81	17.5	18.5	19.5
+59 / +140		9.84	65.62		15	16	17
+158 / +158					17.5	18.5	19.5

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

### Typical application areas

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

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF886-40-01 <sup>1)</sup>	12	1 x 4.0	0.31	8.0	37.0	55	65.9	98
CF886-60-01 <sup>1)</sup>	10	1 x 6.0	0.33	8.5	49.1	73	81.3	121
CF886-100-01	8	1 x 10.0	0.39	10.0	78.6	117	125.7	187
CF886-160-01	6	1 x 16.0	0.45	11.5	121.0	180	172.0	256
CF886-250-01 <sup>1)</sup>	4	1 x 25.0	0.51	13.0	182.1	271	242.6	361
CF886-350-01 <sup>1)</sup>	2	1 x 35.0	0.61	15.5	256.7	382	350.1	521
CF886-500-01 <sup>1)</sup>	1	1 x 50.0	0.69	17.5	359.5	535	465.0	692
CF886-700-01 <sup>1)</sup>	2/0	1 x 70.0	0.77	19.5	495.2	737	616.2	917
CF886-950-01 <sup>1)</sup>	3/0	1 x 95.0	0.83	21.0	656.5	977	778.8	1159

<sup>1)</sup> Delivery time upon request. **Other types available on request.**

**Note:** The mentioned outer diameters are maximum values.

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

**Order example: CF886-350-01 – In your desired length**  
CF886 Chainflex® series -350 Code nominal cross section .01 Number of conductors

Online order ▶ [www.igus.com/CF886](http://www.igus.com/CF886)

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

# PUR Spindle cable/Single core | CF270-UL-D

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	6.56 ft/s (2 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 33 ft (10 m), Class 2	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality, especially low-capacitance TPE mixture.
	<b>Overall shield</b>	Bending-resistant tinned copper braid. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Orange (similar to RAL 2003)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1

Configurators ► [www.igus.com/CF270ULD](http://www.igus.com/CF270ULD)

Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

## Class 4.2.3.1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>UL/CSA</b>	Style 10492 and 10973, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million 7.5 million 10 million					
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]
-13 / +5				≤ 32.81	12.5	13.5
+5 / +158	32.81	19.69	164.05		10	11
+158 / +176					12.5	13.5

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

### Typical application areas

- For medium mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications without direct sun radiation
- Unsupported travel distances and for gliding applications up to 32.81 ft (10 m)
- Machining units/machine tools, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF270-UL-100-01-D	8	1 x 10.0	0.33	8.5	73.9	110	94.7	141
CF270-UL-160-01-D	6	1 x 16.0	0.37	9.5	114.2	170	135.1	201
CF270-UL-250-01-D	4	1 x 25.0	0.43	11.0	175.4	261	198.9	296
CF270-UL-350-01-D	2	1 x 35.0	0.51	13.0	243.9	363	272.1	405
CF270-UL-500-01-D	1	1 x 50.0	0.59	15.0	345.4	514	381.0	567
CF270-UL-700-01-D	2/0	1 x 70.0	0.69	17.5	494.6	736	529.5	788

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth cor

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...



# TPE Motor cable | CF300-UL-D

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +194 °F (-45 °C to +90 °C)
		<b>fixed</b>	-58 °F to +194 °F (-50 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Signal black (similar to RAL 9004)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21218, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9

**Configurators** ▶ [www.igus.com/CF300](http://www.igus.com/CF300)

## Class 6.6.4.2

	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]	
-31 / -13				≤ 1,312	10	11	12			
-13 / +176		32.81	19.69		7.5	8.5	9.5			
+176 / +194					10	11	12			

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF300-UL-40-01-D	12	1 x 4.0	0.26	6.5	26.2	39	41.0	61
CF300-UL-60-01-D	10	1 x 6.0	0.28	7.0	39.0	58	55.1	82
CF300-UL-100-01-D	8	1 x 10.0	0.31	8.0	64.5	96	82.7	123
CF300-UL-160-01-D	6	1 x 16.0	0.37	9.5	103.5	154	127.0	189
CF300-UL-250-01-D	4	1 x 25.0	0.43	11.0	161.3	240	192.2	286
CF300-UL-350-01-D	2	1 x 35.0	0.49	12.5	225.8	336	258.0	384
CF300-UL-500-01-D	1	1 x 50.0	0.57	14.5	322.5	480	356.8	531
CF300-UL-700-01-D	2/0	1 x 70.0	0.65	16.5	467.7	696	508.7	757
CF300-UL-950-01-D	3/0	1 x 95.0	0.79	20.0	616.2	917	687.4	1023
CF300-UL-1200-01-D	4/0	1 x 120.0	0.85	21.5	779.5	1160	854.1	1271
CF300-UL-1500-01-D	300	1 x 150.0	0.93	23.5	964.3	1435	1041.6	1550
CF300-UL-1850-01-D	350	1 x 185.0	1.04	26.5	1193.4	1776	1353.3	2014

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...





# TPE Motor cable | CFPE

- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +194 °F (-45 °C to +90 °C)
		<b>fixed</b>	-58 °F to +194 °F (-50 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>	328.1 ft/s² (100 m/s²)	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	Green-yellow
	<b>Outer jacket</b>	Mechanically high-quality TPE mixture. Color: Signal black (similar to RAL 9004)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21218, 1000 V, 80 °C

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.2

	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]
-31 / -13				≤ 1,312	10	11	12			
-13 / +176		32.81	19.69		7.5	8.5	9.5			
+176 / +194					10	11	12			

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFPE-15-01	16	1 G 1.5	0.18	4.5	10.1	15	19.5	29
CFPE-25-01	14	1 G 2.5	0.24	6.0	16.1	24	30.9	46
CFPE-40-01	12	1 G 4.0	0.26	6.5	26.2	39	42.3	63
CFPE-60-01	10	1 G 6.0	0.28	7.0	39.0	58	54.4	81
CFPE-100-01	8	1 G 10.0	0.31	8.0	64.5	96	82.7	123
CFPE-160-01	6	1 G 16.0	0.37	9.5	103.5	154	127.0	189
CFPE-250-01	4	1 G 25.0	0.45	11.5	161.3	240	190.8	284
CFPE-350-01	2	1 G 35.0	0.49	12.5	225.8	336	258.0	384
CFPE-500-01 <sup>1)</sup>	1	1 G 50.0	0.57	14.5	322.5	480	359.5	535
CFPE-700-01	2/0	1 G 70.0	0.65	16.5	467.7	696	505.3	752
CFPE-950-01	3/0	1 G 95.0	0.79	20.0	616.2	917	680.7	1013

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core **x** = without earth core



1,244 types from stock ... no cutting costs\*  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
 ... up to 10 million cycles guaranteed ...

# TPE Motor cable | CF310-UL

- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +194 °F (-45 °C to +90 °C)
		<b>fixed</b>	-58 °F to +194 °F (-50 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Mechanically high-quality TPE mixture. Color: Signal black (similar to RAL 9004)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10492 and 21218, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 938-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million 7.5 million 10 million						
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				≤ 1,312	10	11	12
-13 / +176		32.81	19.69		7.5	8.5	9.5
+176 / +194					10	11	12

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

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF310-UL-25-01	14	1 x 2.5	0.26	6.5	26.2	39	41.0	61
CF310-UL-40-01	12	1 x 4.0	0.28	7.0	36.3	54	53.1	79
CF310-UL-60-01	10	1 x 6.0	0.30	7.5	51.1	76	68.5	102
CF310-UL-100-01	8	1 x 10.0	0.33	8.5	78.6	117	100.8	150
CF310-UL-160-01	6	1 x 16.0	0.39	10.0	119.6	178	145.8	217
CF310-UL-250-01	4	1 x 25.0	0.47	12.0	182.1	271	214.4	319
CF310-UL-350-01	2	1 x 35.0	0.51	13.0	257.4	383	289.6	431
CF310-UL-500-01	1	1 x 50.0	0.59	15.0	352.8	525	386.4	575
CF310-UL-700-01	2/0	1 x 70.0	0.69	17.5	512.7	763	557.1	829
CF310-UL-950-01	3/0	1 x 95.0	0.83	21.0	668.6	995	739.2	1100
CF310-UL-1200-01	4/0	1 x 120.0	0.87	22.0	836.6	1245	905.1	1347
CF310-UL-1500-01	300	1 x 150.0	0.96	24.5	1048.3	1560	1120.8	1668
CF310-UL-1850-01	350	1 x 185.0	1.08	27.5	1270.0	1890	1442.7	2147

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...



# TPE Motor cable | CF330-D

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6
	<b>Torsion</b>		± 90°, with 3.281 ft (1 m) cable length

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255

**Configurators** ▶ [www.igus.com/CF330](http://www.igus.com/CF330)

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

## Class 7.6.4.2

	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		5 million	7.5 million	10 million		
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-31 / -13				10	11	12
-13 / +176	32.81	19.69	328.10	≤ 1,312	7.5	8.5
+176 / +194					10	11

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF330-60-01-D	10	1 x 6.0	0.28	7.0	39.0	58	51.7	77
CF330-100-01-D	8	1 x 10.0	0.31	8.0	64.5	96	79.3	118
CF330-160-01-D	6	1 x 16.0	0.37	9.5	103.5	154	121.6	181
CF330-250-01-D	4	1 x 25.0	0.43	11.0	161.3	240	185.5	276
CF330-350-01-D	2	1 x 35.0	0.49	12.5	225.8	336	253.3	377
CF330-500-01-D	1	1 x 50.0	0.57	14.5	322.5	480	350.8	522
CF330-700-01-D	2/0	1 x 70.0	0.65	16.5	467.7	696	497.3	740
CF330-950-01-D	3/0	1 x 95.0	0.79	20.0	616.2	917	669.3	996
CF330-1200-01-D	4/0	1 x 120.0	0.85	21.5	779.5	1160	833.9	1241
CF330-1500-01-D	300	1 x 150.0	0.93	23.5	964.3	1435	1020.0	1518
CF330-1850-01-D	350	1 x 185.0	1.04	26.5	1193.4	1776	1329.2	1978

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

**Order example: CF330-160-01-D – In your desired length**  
CF330-D Chainflex® series -160 Code nominal cross section -01 Number of conductors

Online order ▶ [www.chainflex.com/CF330](http://www.chainflex.com/CF330)

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

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...





# TPE Motor cable | CF340

- For maximum mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255

**Configurators** ▶ [www.igus.com/CF340](http://www.igus.com/CF340)

<b>Requirements</b>	low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

## Class 7.6.4.1

- Lead-free** Following 2011/65/EC (RoHS-II)
- Cleanroom** According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
- CE** Following 2014/35/EC

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

Cycles*		5 million			7.5 million		10 million	
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	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]
-31 / -13				10	11	12		
-13 / +176	32.81	19.69	328.10	≤ 1,312	7.5	8.5	9.5	
+176 / +194					10	11	12	

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF340-40-01	12	1 x 4.0	0.28	7.0	36.3	54	49.7	74
CF340-60-01	10	1 x 6.0	0.30	7.5	51.1	76	65.2	97
CF340-100-01	8	1 x 10.0	0.33	8.5	78.6	117	96.1	143
CF340-160-01	6	1 x 16.0	0.39	10.0	119.6	178	140.4	209
CF340-250-01	4	1 x 25.0	0.47	12.0	182.1	271	207.6	309
CF340-350-01	2	1 x 35.0	0.53	13.5	257.4	383	282.2	420
CF340-500-01	1	1 x 50.0	0.59	15.0	352.8	525	381.0	567
CF340-700-01	2/0	1 x 70.0	0.69	17.5	512.7	763	548.3	816
CF340-950-01	3/0	1 x 95.0	0.83	21.0	668.6	995	720.4	1072
CF340-1200-01	4/0	1 x 120.0	0.87	22.0	836.6	1245	883.6	1315
CF340-1500-01	300	1 x 150.0	0.96	24.5	1048.3	1560	1080.5	1608
CF340-1850-01	350	1 x 185.0	1.08	27.5	1270.0	1890	1417.9	2110
CF340-2400-01	450	1 x 240.0	1.20	30.5	1700.1	2530	1772.0	2637

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

**Order example: CF340-100-01 – In your desired length**  
CF340 Chainflex® series -100 Code nominal cross section -01 Number of conductors

Online order ▶ [www.chainflex.com/CF340](http://www.chainflex.com/CF340)

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

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...



# TPE Motor cable | CF430-D

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant
- Gewichtsreduziert

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>	328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )	
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	
	<b>Torsion</b>	± 90°, with 3.281 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Rope construction conductor made of special material CCA (Copper Clad Aluminum)
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 EN 50267-2-1

**Configurators** ► [www.igus.com/CF430](http://www.igus.com/CF430)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 7.6.4.2

- Lead-free** Following 2011/65/EC (RoHS-II)
- Cleanroom** According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
- DESINA** According to VDW, DESINA standardisation
- CE** Following 2014/35/EC

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

Cycles*	5 million						7.5 million		10 million	
	Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s <sup>2</sup> ] gliding	Travel distance [ft]	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]
-31 / -13					12.5	13.5	14.5			
-13 / +176		32.81	19.69	328.10	≤ 1,312	10	11	12		
+176 / +194					12.5	13.5	14.5			

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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Unshielded single cores for the weight-reduced use in very long travels in E-Chains®
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF430-500-01-D</b> <sup>1)</sup>	1	1 x 50.0	0.69	17.5	-	-	262.1	390
<b>CF430-700-01-D</b>	2/0	1 x 70.0	0.81	20.5	-	-	383.0	570
<b>CF430-950-01-D</b>	3/0	1 x 95.0	0.93	23.5	-	-	504.0	750
<b>CF430-1200-01-D</b> <sup>1)</sup>	4/0	1 x 120.0	1.02	26.0	-	-	598.1	890
<b>CF430-1500-01-D</b> <sup>1)</sup>	300	1 x 150.0	1.14	29.0	-	-	745.9	1110
<b>CF430-1850-01-D</b> <sup>1)</sup>	350	1 x 185.0	1.20	30.5	-	-	846.7	1260

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core x = without earth core

**Order example: CF430-700-01-D – In your desired length**  
**CF430 Chainflex® series -700 Code nominal cross section -01 Number of conductors**

**Online order** ► [www.chainflex.com/CF430](http://www.chainflex.com/CF430)






**Delivery time 24hr or today.**  
 Delivery time means time until shipping of goods.







# TPE Motor cable | CF440

- For maximum mechanical load requirements
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant
- Gewichtsreduziert



### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6





### Cable structure

	<b>Conductors</b>	Rope construction conductor made of special material CCA (Copper Clad Aluminum)
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)




### 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 EN 50267-2-1

 Configurators ► [www.igus.com/CF440](http://www.igus.com/CF440)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 7.6.4.1

-  **Lead-free** Following 2011/65/EC (RoHS-II)
-  **Cleanroom** According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
-  **CE** Following 2014/35/EC

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

Cycles*		5 million	7.5 million	10 million
Temperature, from/to [°F]	v max. [ft/s]	a max. [ft/s <sup>2</sup> ]	Travel distance [ft]	R min. [factor x d]
-31 / -13				R min. [factor x d]
-13 / +176	32.81	19.69	≤ 1,312	12.5
+176 / +194				13.5
				14.5
				10
				11
				12
				12.5
				13.5
				14.5




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

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Unshielded single cores for the weight-reduced use in very long travels in E-Chains®
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, outdoor cranes, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CF440-500-01</b> <sup>1)</sup>	1	1 x 50.0	0.73	18.5	63.2	94	325.2	484
<b>CF440-700-01</b> <sup>1)</sup>	2/0	1 x 70.0	0.85	21.5	70.6	105	454.9	677
<b>CF440-950-01</b> <sup>1)</sup>	3/0	1 x 95.0	0.94	24.0	77.9	116	587.3	874
<b>CF440-1200-01</b> <sup>1)</sup>	4/0	1 x 120.0	1.06	27.0	107.5	160	711.6	1059
<b>CF440-1500-01</b> <sup>1)</sup>	300	1 x 150.0	1.16	29.5	118.3	176	869.5	1294
<b>CF440-1850-01</b> <sup>1)</sup>	350	1 x 185.0	1.24	31.5	129.7	193	983.1	1463

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core **x** = without earth core

-  **Order example: CF440-1200-01 – In your desired length**  
**CF440 Chainflex® series -1200 Code nominal cross section -01 Number of conductors**
-  Online order ► [www.chainflex.com/CF440](http://www.chainflex.com/CF440)
-  Delivery time 24hr or today.  
 Delivery time means time until shipping of goods.

1,244 types from stock ... no cutting costs\*  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
 ... up to 10 million cycles guaranteed ...





# igupren Motor cable | CFCRANE

- For maximum voltages and outputs
- igupren outer jacket
- Oil-resistant
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
	<b>flexible</b>		min. 8 x d
	<b>fixed</b>		min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
	<b>flexible</b>		-13 °F to +176 °F (-25 °C to +80 °C)
	<b>fixed</b>		-22 °F to +176 °F (-30 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>gliding</b>		19.69 ft/s (6 m/s)
	<b>a max.</b>		164.1 ft/s² (50 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Highly-flexible cable consisting of tinned copper wires (according to DIN EN 60228).
	<b>Conductor insulation</b>	Inner and outer semiconducting layer made of conductive rubber. Insulating sheath made of high-quality, heat-resistant and ozone-proof ethylene propylene rubber (EPR).
	<b>Overall shield</b>	Extremely bending-resistant, tinned copper shield. 95 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of iguprene, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains® (following VDE 0207 Part 21). Color: Red

### Electrical Information

	<b>Nominal voltage</b>	6/10 kV (following DIN VDE 0250), other voltages on request
	<b>Test voltage</b>	17 kv (in Anlehnung an DIN VDE 0250, Teil 813)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-404), Class 3
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

**Configurators** ▶ [www.igus.com/CFCRANE](http://www.igus.com/CFCRANE)

## Class 6.6.3.1

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

Cycles*	5 million			7.5 million			10 million		
Temperature, from/to [°F]	v max. [ft/s] unsupported	a max. [ft/s²] gliding	Travel distance [ft]	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]
-4 / +14				12.5	13.5	14.5			
+14 / +158	32.81	19.69	≤ 1,312	10	11	12			
+158 / +176				12.5	13.5	14.5			

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

### Typical application areas

- For maximum voltages and outputs
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- crane applications, conveyer technology

Part No.	AWG conductor/shield	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CFCRANE1x25/16-6/10kV</b> <sup>1)</sup>	4 / 6	1 x 25/16	0.96	24.5	391.1	582	626.9	933
<b>CFCRANE1x35/16-6/10kV</b> <sup>1)</sup>	2 / 6	1 x 35/16	1.04	26.5	419.3	624	710.3	1057
<b>CFCRANE1x50/16-6/10kV</b> <sup>1)</sup>	1 / 6	1 x 50/16	1.16	29.5	526.8	784	868.2	1292
<b>CFCRANE1x70/16-6/10kV</b> <sup>1)</sup>	2/0 / 6	1 x 70/16	1.20	30.5	638.4	950	1053.0	1567
<b>CFCRANE1x95/16-6/10kV</b> <sup>1)</sup>	3/0 / 6	1 x 95/16	1.28	32.5	788.2	1173	1180.6	1757
<b>CFCRANE1x120/16-6/10kV</b> <sup>1)</sup>	4/0 / 6	1 x 120/16	1.36	34.5	965.6	1437	1432.0	2131

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G** = with green-yellow earth core    **x** = without earth core

**Order example: CFCRANE1x25/16-6/10kV – In your desired length**  
**CFCRANE Chainflex® series -1 x 25/16 Code nominal cross section -6/10 Nominal voltage**

Online order ▶ [www.chainflex.com/CFCRANE](http://www.chainflex.com/CFCRANE)

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



Chainflex® CFCRANE for 500 m and more of travel. E-Chain®: igus® rol E-Chain®

**1,244 types from stock ... no cutting costs\***  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
 ... up to 10 million cycles guaranteed ...



# Robot

## Torsion cables



# Chainflex® types



Chainflex® cable	Jacket	Shield	Bend radius twisted, min. [factor x d]	Temperature twisted from/to [°F]	Approvals and standards	Oil resistant	Torsion resistant	v max. twisted [°/s]	a max. twisted [°/s²]	Page
<b>Torsion cables</b>										
Information on Robot cables for twisting applications										378
Exclusive! Chainflex® guarantee – guaranteed lifetime								▶ Selection table page 380		
<b>Hybrid cables/Control cables</b>										
CF77-UL-D	PUR		6.8	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	382 <b>New</b>
CFROBOT2	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	386
<b>Data cables</b>										
CFROBOT3	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	388
<b>Measuring system cables</b>										
CFROBOT4	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	390
<b>Fibre optic cables</b>										
CFROBOT5	TPE		10	-31/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	394
<b>Power cables</b>										
CFROBOT6	PUR		10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	396
CFROBOT7	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	398
CFROBOT	TPE	✓	10	-31/ +194	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	402
<b>Bus cables</b>										
CFROBOT8	PUR	✓	10	-13/ +158	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	404
<b>Hybrid cable</b>										
CFROBOT9	PUR	✓	10	-13/ +176	UL US, ENEC, EAC, CE, RoHS, REACH, CE, CE	✓	✓	180	60	408



In the industrial applications of today, robots have introduced ever more complex sequences of movements that demand torsional and/or three-dimensional flexible cables with a long service life similar to the Chainflex® cables for use in linear Energy Chain Systems®.

Wires, stranded, shields and sheathing materials must compensate both major changes in bending load and changes in diameter due to torsional movements. For this purpose, 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. Optimized shield structures with PTFE gliding films are used to absorb the forces caused by torsion movements.

To use an example of torsional Bus cables, the transmission characteristics such as attenuation, cable capacity and signal quality must remain within very tight tolerance ranges over the whole service life. This is achieved through the use of special insulating materials and mechanical elements with matching capacity values.

The highly abrasion-resistant, halogen-free and flame-resistant PUR sheathing mixture in motor, hybrid/control cables and bus cables protects the core elements from possible damage.

The CFROBOT cable line utilizes two jacket materials PUR and TPE. These materials were carefully chosen to protect the core elements like power conductors, high-speed data pairs and fiber optic components from possible damage. PUR jacket is highly abrasion resistant, halogen free and flame resistant. TPE jacket is highly abrasion resistant and halogen-free.

The special design logic behind CFROBOT cables was developed in theory and needed to be validated through testing. igus® set out to develop a test that would simulate the torsion stress cables will endure in the field. We do this by utilizing the Triflex® R Energy Chain® which can be twisted to various degrees at very high frequencies. This test is referred to as the igus® Torsion Test Standard.

According to this standard, all Chainflex® ROBOT cables in a Triflex® R Energy Chain® are twisted with a fixed-point distance of one meter and a torsion of +/- 180° at least 3 million times. In addition, a test is carried out on a test bench with a Triflex® R length of approx. 2500 mm with 270° torsion. This test duplicated the forces and impacts that cables are exposed to in industrial robotic applications.



We have also found that all the non-shielded, gusset-filled extruded standard Chainflex® control cables of the series CF130, CF5, CF77-UL-D, CF9 and CF9-UL correspond to the above mentioned igus® standard and have been approved for use in torsion applications

The following CFROBOT torsion cable types are currently available:

- Hybrid/Control Cables
- Motor/Servo Cables
- Bus/Data Cables
- Fiber Optic Cables











We can also offer you Chainflex® ROBOT cables terminated with the connectors of your choice as ReadyCable®, or as a ready-to-install ReadyChain® cable assembly.



Test data ► Page 61





Chainflex® cable	Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s²] twisted	Bend radius min. [factor x d]	Bend radius min. [factor x d]	Bend radius min. [factor x d]	Page
<b>Torsion cables</b>				5 million cycles *	7.5 million cycles *	10 million cycles *	
<b>Control cables</b>							
 CF77-UL-D <b>New!</b>	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	382
 CFROBOT2	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	386
<b>Data cable</b>							
 CFROBOT3	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	388
<b>Measuring system cable</b>							
 CFROBOT4	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	390
<b>Fiber optic cable</b>							
 CFROBOT5	-31 / -13 -13 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	394
<b>Power cables</b>							
 CFROBOT6	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	396
 CFROBOT7	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	398
 CFROBOT	-31 / -13 -13 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	402
<b>Bus cable</b>							
 CFROBOT8 <b>New!</b>	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	404
<b>Hybrid cable</b>							
 CFROBOT9	-13 / -5 -5 / +158 +158 / +176	180	60	±150 ±180 ±150	±90 ±120 ±90	±30 ±60 ±30	408

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

\* Guaranteed lifetime, higher numbers of cycles possible.

# PUR Control cable, torsional | CF77-UL-D

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

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 6.8 x d
		<b>flexible</b>	min. 5 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>		180 °/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core construction</b>	<b>Number of conductors &lt; 12:</b> Conductors cabled in a layer with short pitch length. <b>Number of conductors ≥ 12:</b> Conductors combined in bundles and cabled together around a high-tensile strength core, using short pitch lengths and specific pitch directions for a low-torsion cable structure.
	<b>Color code</b>	<b>24-22 AWG:</b> Color code in accordance with DIN 47100. <b>20-6 AWG:</b> Black with white numbers, one conductor green-yellow. <b>CF77-UL-03-04-INI:</b> brown, blue, black, white
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282 Part 10). Color: Window-gray (similar to RAL 7040) <b>CF77-UL-03-04-INI:</b> Color: Colza yellow (similar to RAL 1021)

### Electrical Information

	<b>Nominal voltage</b>	<b>24-22 AWG:</b> 300 V <b>20-6 AWG:</b> 1000 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 5.1.3.3

### 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 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	<b>24-22 AWG:</b> Style 10493 and 20233, 300 V, 80 °C <b>20-6 AWG:</b> Style 11323 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 935-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF77-UL-05-12-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EC

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

Cycles*			5 million	7,5 million	10 million
	Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30
-5 / +158	180	60	±180	±120	±60
+158 / +176			±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives



# PUR Control cable, torsional | CF77-UL-D

# Class 5.1.3.3

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF77-UL-02-04-D	24	4 x 0.25	0.22	5.5	7.4	11	23.5	35
CF77-UL-03-04-INI	22	4 x 0.34	0.24	6.0	11.4	17	26.9	40
CF77-UL-05-04-D	20	4 x 0.5	0.24	6.0	14.8	22	29.6	44
CF77-UL-05-05-D	20	5 x 0.5	0.26	6.5	18.8	28	34.9	52
CF77-UL-05-07-D	20	7 x 0.5	0.30	7.5	27.6	41	53.8	80
CF77-UL-05-12-D	20	12 x 0.5	0.39	10.0	44.3	66	88.7	132
CF77-UL-05-18-D	20	18 x 0.5	0.47	12.0	66.5	99	123.6	184
CF77-UL-05-25-D	20	25 x 0.5	0.55	14.0	92.7	138	166.0	247
CF77-UL-05-30-D	20	30 x 0.5	0.59	15.0	110.9	165	218.4	325
CF77-UL-07-03-D	18	3 x 0.75	0.26	6.5	16.1	24	37.0	55
CF77-UL-07-04-D	18	4 x 0.75	0.28	7.0	21.5	32	43.0	64
CF77-UL-07-05-D	18	5 x 0.75	0.30	7.5	26.9	40	50.4	75
CF77-UL-07-07-D	18	7 x 0.75	0.33	8.5	37.6	56	71.2	106
CF77-UL-07-12-D	18	12 x 0.75	0.47	12.0	64.5	96	129.0	192
CF77-UL-07-18-D	18	18 x 0.75	0.53	13.5	96.1	143	174.7	260
CF77-UL-07-20-D	18	20 x 0.75	0.57	14.5	106.8	159	196.2	292
CF77-UL-07-25-D	18	25 x 0.75	0.63	16.0	133.0	198	247.3	368
CF77-UL-07-36-D	18	36 x 0.75	0.75	19.0	199.6	297	352.1	524
CF77-UL-07-42-D <sup>1)</sup>	18	42 x 0.75	0.83	21.0	245.3	365	405.9	604
CF77-UL-10-02-D	17	2 x 1.0	0.26	6.5	14.8	22	36.3	54
CF77-UL-10-03-D	17	3 x 1.0	0.26	6.5	21.5	32	43.7	65
CF77-UL-10-04-D	17	4 x 1.0	0.28	7.0	28.9	43	53.1	79
CF77-UL-10-05-D	17	5 x 1.0	0.31	8.0	35.6	53	65.2	97
CF77-UL-10-07-D	17	7 x 1.0	0.35	9.0	49.7	74	80.0	119
CF77-UL-10-12-D	17	12 x 1.0	0.49	12.5	85.3	127	157.2	234
CF77-UL-10-18-D	17	18 x 1.0	0.59	15.0	128.3	191	227.8	339
CF77-UL-10-25-D	17	25 x 1.0	0.69	17.5	177.4	264	303.7	452
CF77-UL-10-42-D	17	42 x 1.0	0.89	22.5	310.4	462	475.8	708

<sup>1)</sup> Delivery time upon request  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CF77-UL-15-03-D	16	3 x 1.5	0.30	7.5	32.3	48	57.8	86
CF77-UL-15-04-D	16	4 x 1.5	0.31	8.0	43.0	64	70.6	105
CF77-UL-15-05-D	16	5 x 1.5	0.33	8.5	53.8	80	84.0	125
CF77-UL-15-07-D <sup>17)</sup>	16	7 x 1.5	0.41	10.5	74.6	111	116.9	174
CF77-UL-15-12-D	16	12 x 1.5	0.55	14.0	128.3	191	207.0	308
CF77-UL-15-18-D	16	18 x 1.5	0.67	17.0	192.2	286	320.5	477
CF77-UL-15-25-D	16	25 x 1.5	0.77	19.5	266.1	396	423.3	630
CF77-UL-15-36-D <sup>1)</sup>	16	36 x 1.5	0.93	23.5	399.1	594	598.7	891
CF77-UL-15-42-D <sup>1)</sup>	16	42 x 1.5	1.04	26.5	489.9	729	698.8	1040
CF77-UL-25-03-D	14	3 x 2.5	0.33	8.5	53.8	80	83.3	124
CF77-UL-25-04-D	14	4 x 2.5	0.37	9.5	71.2	106	104.2	155
CF77-UL-25-05-D	14	5 x 2.5	0.41	10.5	88.7	132	129.0	192
CF77-UL-25-07-D <sup>17)</sup>	14	7 x 2.5	0.49	12.5	124.3	185	181.4	270
New CF77-UL-25-12-D	14	12 x 2.5	0.69	17.5	213.0	317	356.1	530
CF77-UL-40-04-D	12	4 x 4.0	0.45	11.5	118.3	176	172.0	256

<sup>1)</sup> Delivery time upon request  
<sup>17)</sup> Using the cables with "7 G 1.5 mm²" and "7 G 2.5 mm²" it is essential: bending radius 17 x d with travel distance ≥ 5 m.  
When the travel distance is not less than 5 m, a bending radius not less than 17 x d has to be used.  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

Order example: **CF77-UL-10-03-D** – In your desired length  
**CF77-UL.D** Chainflex® series -10 Code nominal cross section -03 Number of conductors

Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)

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

Configurators ► [www.igus.com/CF77R](http://www.igus.com/CF77R)





# PUR Control cable, torsional | CFROBOT2

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

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>	180 °/s	
	<b>a max. twisted</b>	60 °/s <sup>2</sup>	
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Element shield</b>	Extremely torsion-resistant tinned braided copper shield. Coverage approx. 85% optical.
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

### Properties and approvals

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

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.1.3.3

	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10493 and 20317, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*			5 million	7,5 million	10 million
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30
-5 / +158	180	60	±180	±120	±60
+158 / +176			±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFROBOT2-07-04-C	18	4 x 0.75	0.33	8.5	30.2	45	56.4	84
CFROBOT2-07-05-C	18	5 x 0.75	0.33	8.5	36.3	54	63.2	94
CFROBOT2-07-07-C	18	7 x 0.75	0.39	10.0	50.4	75	87.4	130
CFROBOT2-07-12-C <sup>1)</sup>	18	12 x 0.75	0.55	14.0	88.0	131	147.2	219
CFROBOT2-07-18-C	18	18 x 0.75	0.65	16.5	132.4	197	215.7	321

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
 G = with green-yellow earth core x = without earth core



# PUR Data cable, torsional | CFROBOT3

- For torsion applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>	180 °/s	
	<b>a max. twisted</b>	60 °/s <sup>2</sup>	
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	Color code in accordance with DIN 47100.
	<b>Inner jacket</b>	PUR mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Extremely torsion-resistant tinned braided copper shield. 85 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	High
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Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.1.3.3

	<b>Oil resistance</b>	Oil resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 10497 and 20911, 300 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30		
-5 / +158	180	60	±180	±120	±60		
+158 / +176			±150	±90	±30		

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFROBOT3-02-04-02	24	4 PR x 0.25	0.35	9.0	26.9	40	68.5	102
CFROBOT3-02-06-02	24	6 PR x 0.25	0.41	10.5	37.0	55	93.4	139
CFROBOT3-02-08-02	24	8 PR x 0.25	0.49	12.5	47.0	70	105.5	157
CFROBOT3-05-05-02	20	5 PR x 0.5	0.51	13.0	60.5	90	149.8	223

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core    x = without earth core



Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

# PUR Measuring system cable, torsional | CFROBOT4

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

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>	180 °/s	
	<b>a max. twisted</b>	60 °/s <sup>2</sup>	
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	According to measuring system specification. See Table
	<b>Element shield</b>	Extremely torsion-resistant tinned braided copper shield. Coverage approx. 85% optical.
	<b>Overall shield</b>	Torsion resistant tinned braided copper shield. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 1589 and 20236, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30	±30
-5 / +158	180	60	±180	±120	±60	±60
+158 / +176			±150	±90	±30	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives





# PUR Measuring system cable, torsional | CFROBOT4

## Class 6.1.3.3

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CFROBOT4-001	26	3 STP x 0.14	0.41	10.5	43.7	65	80.0	119	CFROBOT4-001	3x(2x0,14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								4x0,14	gray/blue/white-yellow/white-black
	20	2 x 0.5								2x0,5	brown-red/brown-blue
CFROBOT4-002 <sup>1)</sup>	26	3 STP x 0.14	0.41	10.5	47.0	70	82.0	122	CFROBOT4-002 <sup>1)</sup>	3x(2x0,14)C	green/yellow, black/brown, red/orange
	20	2 SC x 0.5								2x(0,5)C	black, red
CFROBOT4-006	26	3 STP x 0.14	0.45	11.5	52.4	78	96.1	143	CFROBOT4-006	3x(2x0,14)C	green/yellow, black/brown, red/orange
	26	4 x 0.14								(4x0,14)	gray/blue/white-yellow/white-black
	24	4 x 0.22								(4x0,22)	brown-yellow/brown-gray/green-black/green-red
	20	2 x 0.5								(2x0,5)	brown-red/brown-blue
CFROBOT4-009	24	4 PR x 0.25	0.37	9.5	34.3	51	62.5	93	CFROBOT4-009	4x(2x0,25)	brown/green, blue/violet, gray/pink, red/black
	20	2 x 0.5								2x0,5	white, brown
CFROBOT4-015	26	4 PR x 0.14	0.35	9.0	34.9	52	64.5	96	CFROBOT4-015	4x(2x0,14)	brown/green, blue/violet, gray/pink, red/black
	20	4 x 0.5								4x0,5	blue, white, brown-green, white-green
CFROBOT4-028 <sup>16)</sup>		4 PR x 0.20	0.30	7.5	31.6	47	50.4	75	CFROBOT4-028 <sup>16)</sup>	2x(2x0,20)	green/yellow, pink/blue
	22	2 x 0.38								(2x0,38)	red/black

<sup>1)</sup> Delivery time upon request

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

Note: The mentioned outer diameters are maximum values.

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

STP = Individually shielded Twisted Pair  
SC = Individually shielded Conductor

PR = Twisted Pair  
SHLD = Shielded Precable



Order example: **CFROBOT4-009** – In your desired length  
CFROBOT4 Chainflex® series -009 Code Measuring System type



Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)



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



Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)



# TPE Fiber optic cable, torsional | CFROBOT5

- For torsion applications
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- UV-resistant
- Low-temperature-flexible
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max. twisted</b>		180 %/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>		Especially for robots and movements in the 3D range, Class 7
	<b>Torsion</b>		± 180°, with 3.28 ft (1 m) cable length

### Cable structure

	<b>Conductors</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Core construction</b>	Optical Fibers cabled with high-tensile aramid dampers around a central reinforced filler element.
	<b>Color code</b>	See Table
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to 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)

Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)

## Class 6.1.4.3

	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	
-31 / -13			±150	±90	±30	
-13 / +158	180	60	±180	±120	±60	
+158 / +176			±150	±90	±30	

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling

Part No.	Fiber Count	Fiber Diameter approx. [µm]	Outer diameter max.		Weight	
			in.	mm	lbs/mft	kg/km
<b>CFROBOT5-500</b>	2	62,5/125	0.33	8.5	58.5	87
<b>CFROBOT5-501</b>	2	50/125	0.33	8.5	58.5	87

Note: The mentioned outer diameters are maximum values.

Part No.	Bandwidth [MHz x km] @ 850 nm	Bandwidth [MHz x km] @ 1300 nm	Attenuation [dB/km] @ 850 nm	Attenuation [dB/km] @ 1300 nm	Fiber identification
	<b>CFROBOT5-500</b>	≥ 200	≥ 500	≤ 3.0	≤ 0.7
<b>CFROBOT5-501</b>	≥ 500	≥ 500	≤ 2.5	≤ 0.7	blue with white numbers

**Order example: CFROBOT5-501 – In your desired length**  
CFROBOT5 Chainflex® series -501 Code Fiber type

Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)

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

# PUR Motor cable, torsional | CFROBOT6

- For torsion applications
- PUR outer jacket
- Unshielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>		180 °/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	Power conductors: Black with white numbers, one conductor green-yellow. See Table
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.1.3.3

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>UL/CSA</b>	Style 10492 and 21223, 1000 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*			5 million	7,5 million	10 million
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30
-5 / +158	180	60	±180	±120	±60
+158 / +176			±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CFROBOT6-100-03</b>	8	3 x 10.0	0.63	16.0	213.0	317	278.2	414
<b>CFROBOT6-160-03</b>	6	3 x 16.0	0.73	18.5	341.4	508	415.3	618
<b>CFROBOT6-250-03</b>	4	3 x 25.0	0.91	23.0	534.2	795	646.4	962
<b>CFROBOT6-350-03</b>	2	3 x 35.0	1.00	25.5	753.9	1122	872.2	1298

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core





# PUR Motor cable, torsional | CFROBOT7

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

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>	180 °/s	
	<b>a max. twisted</b>	60 °/s <sup>2</sup>	
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	<b>Power conductors:</b> Black with white numbers, one conductor green-yellow. See Table <b>2 Control pairs:</b> Black with white numbers. Control Pair 1: Printed 5 and 6 Control Pair 2: Printed 7 and 8 <b>4 Control pairs:</b> Color code in accordance with DIN 47100

	<b>Overall shield</b>	Extremely torsion-resistant tinned braided copper shield. 85 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)

Image exemplary.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

# Class 6.1.3.3

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-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 EN 50267-2-1
	<b>UL/CSA</b>	Style 10492 and 21223, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30		
-5 / +158	180	60	±180	±120	±60		
+158 / +176			±150	±90	±30		

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives



36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

# PUR Motor cable, torsional | CFROBOT7

## Class 6.1.3.3

Requirements  
Travel distance  
Oil resistance  
Torsion

	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>without control pair</b>								
CFROBOT7-15-03-C	16	3 x 1.5	0.33	8.5	43.0	64	69.2	103
CFROBOT7-15-04-C	16	4 x 1.5	0.37	9.5	55.1	82	85.3	127
CFROBOT7-25-03-C	14	3 x 2.5	0.39	10.0	65.9	98	98.8	147
CFROBOT7-25-04-C	14	4 x 2.5	0.41	10.5	85.3	127	122.3	182
CFROBOT7-60-04-C	10	4 x 6.0	0.59	15.0	198.9	296	270.8	403
<b>2 control pairs</b>								
CFROBOT7-15-15-02-02-C	16	4 x 1.5	0.65	16.5	141.8	211	218.4	325
	16	2 PR x 1.5						
CFROBOT7-25-15-02-02-C	14	4 x 2.5	0.67	17.0	174.0	259	256.0	381
	16	2 PR x 1.5						
<b>4 control pairs</b>								
CFROBOT7-40-02-02-04-C	12	4 x 4.0	0.67	17.0	181.4	270	258.0	384
	24	4 PR x 0.25						

**Note:** The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

STP = Individually shielded Twisted Pair      PR = Twisted Pair  
SC = Individually shielded Conductor        SHLD = Shielded Precable

**Order example: CFROBOT4-009 – In your desired length**  
CFROBOT4 Chainflex® series -009 Code Measuring System type

Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)

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



Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

# TPE Motor cable, torsional | CFROBOT

- For torsion applications
- TPE outer jacket
- Shielded
- Oil-resistant, bio-oil-resistant
- PVC free
- UV-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-49 °F to +212 °F (-45 °C to +100 °C)
		<b>fixed</b>	-58 °F to +212 °F (-50 °C to +100 °C)
	<b>v max. twisted</b>		180 °/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Overall shield</b>	Extremely torsion-resistant tinned braided copper shield. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)

## Class 6.1.4.3

	<b>UL/CSA</b>	Style 10258 and 21387, 1000 V, 90 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*	5 million		7,5 million		10 million	
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-31 / -13			±150	±90		±30
-13 / +158	180	60	±180	±120		±60
+158 / +176			±150	±90		±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>CFROBOT-035</b>	8	1 x 10.0	0.41	10.5	90.0	134	140.4	209
<b>CFROBOT-036</b>	6	1 x 16.0	0.47	12.0	135.7	202	196.9	293
<b>CFROBOT-037</b>	4	1 x 25.0	0.57	14.5	213.7	318	305.1	454
<b>CFROBOT-038</b>	2	1 x 35.0	0.61	15.5	289.6	431	385.7	574
<b>CFROBOT-039</b>	1	1 x 50.0	0.71	18.0	403.9	601	524.8	781

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core    x = without earth core

**Order example: CFROBOT-035 – In your desired length**  
**CFROBOT Chainflex® series -035 Code nominal cross section**

Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)

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

**36 months guarantee on every chainflex® cable ...**  
**... up to 10 million cycles guaranteed ...**



**1,244 types from stock ... no cutting costs\***  
**... no minimum order quantity ...** \*(up to 10 cuts of the same part number)



# PUR Bus cable, torsional | CFROBOT8

World's first!  
CAT5e to CAT7  
for Torsion

- For torsion applications
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +158 °F (-25 °C to +70 °C)
		<b>flexible</b>	-40 °F to +158 °F (-40 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max. twisted</b>	180 °/s	
	<b>a max. twisted</b>	60 °/s <sup>2</sup>	
	<b>Travel distance</b>	Robots and motions in 3D area, Class 1	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Core construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification. See Table
	<b>Intermediate layer</b>	Foil taping over the external layer.
	<b>Overall shield</b>	Torsion resistant tinned braided copper shield. 80 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	30 V
	<b>Test voltage</b>	500 V

Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## 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 resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1589 and 20236, 30 V, 80 °C
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*		5 million		7,5 million	10 million
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30
-5 / +158	180	60	±180	±120	±60
+158 / +176			±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives



# PUR Bus cable, torsional | CFROBOT8

## Class 6.1.3.3

Requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				



Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight		Part No.	Characteristic Impedance [Ω]	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km				
<b>Profibus</b>												
CFROBOT8-001	22	1 PR x 0.35	0.31	8.0	19.5	29	41.7	62	CFROBOT8-001	150	(2 x 0,35)C	red, green
<b>CAN-Bus</b>												
CFROBOT8-022	20	2 PR x 0.5	0.28	7.0	28.9	43	48.4	72	CFROBOT8-022	120	(4 x 0,5)C	white, green, brown, yellow (Star-quad stranding)
<b>Ethernet/CAT5e</b>												
CFROBOT8-045	26	4 PR x 0.14	0.33	8.5	26.2	39	46.4	69	CFROBOT8-045	100	4 x (2 x 0,14)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT6</b>												
New CFROBOT8-049	26	4 PR x 0.14	0.35	9.0	25.5	38	45.7	68	CFROBOT8-049	100	4 x (2 x 0,14)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT6A</b>												
New CFROBOT8-050	26	4 PR x 0.15	0.41	10.5	36.3	54	85.3	127	CFROBOT8-050	100	4 x (2 x 0,15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Ethernet/CAT7</b>												
New CFROBOT8-052	26	4 PR x 0.15	0.41	10.5	37.0	55	86.7	129	CFROBOT8-052	100	4 x (2 x 0,15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>Profinet</b>												
EtherCAT CFROBOT8-060	22	2 PR x 0.34	0.33	8.5	24.2	36	47.0	70	CFROBOT8-060	100	(2 x (2 x 0,34))C	white/blue, yellow/orange

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

STP = Individually shielded Twisted Pair PR = Twisted Pair  
SC = Individually shielded Conductor SHLD = Shielded Precable

- Order example: **CFROBOT8-052** – In your desired length  
**CFROBOT8** Chainflex® series -052 Code Bus type
- Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)
- Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



# PUR Hybrid cable, torsional | CFROBOT9

- For torsion applications
- PUR outer jacket
- Unshielded/shielded
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max. twisted</b>		180 °/s
	<b>a max. twisted</b>		60 °/s <sup>2</sup>
	<b>Travel distance</b>	Especially for robots and movements in the 3D range, Class 7	
	<b>Torsion</b>	± 180°, with 3.28 ft (1 m) cable length	

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Color code</b>	See Table
	<b>Element shield</b>	Extremely torsion-resistant tinned braided copper shield. 85% optical coverage.
	<b>Outer jacket</b>	Low-adhesion, halogen free, highly abrasion resistant mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN VDE 0282, Part 10). Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	2000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil resistant (following DIN EN 50363-10-2), Class 3
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.1.3.3

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>UL/CSA</b>	<b>24-20 AWG:</b> Style 10467 and 20317, 300 V, 80 °C <b>18-17 AWG:</b> Style 10493 and 20317, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

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

Cycles*			5 million	7,5 million	10 million
Temperature, from/to [°F]	v max. [°/s] twisted	a max. [°/s] twisted	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-13 / -5			±150	±90	±30
-5 / +158	180	60	±180	±120	±60
+158 / +176			±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Especially for robots and movements in the 3D area
- Robots, Handling, spindle drives



igus® Chainflex® cables in application of a multi-dimensional moving energy chain triflex® R for 6-axis robots.

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...





IGUS® CHAINFLEX® CF ROBOT 9

Image exemplary.

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight		Part No.	Core group	Color code
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km			
CFROBOT9-001	17	5 x 1.0	0.41	10.5	57.8	86	95.4	142	CFROBOT9-001	5G1.0 (2x1.0)C	Conductors black with white numbers 1-4, one conductor green-yellow Conductors black with white numbers 5-6
	17	2 x 1.0 SHLD									
CFROBOT9-002	18	6 x 0,75	0.45	11.5	55.1	82	97.4	145	CFROBOT9-002	2x3x0.75 (3x0.75)C	Conductors black with white numbers 4-9 Conductors black with white numbers 1-3
	18	3 x 0.75 SHLD									
CFROBOT9-003	20	2 x 0.5	0.39	10.0	19.5	29	53.8	80	CFROBOT9-003	2x0.5 (2x0.5)C	blue/black white/brown
	20	2 x 0.5 SHLD									
CFROBOT9-004	17	16 x 1.0	0.63	16.0	139.1	207	217.7	324	CFROBOT9-004	16G1.0 (2x1.0)C	Conductors black with white numbers 1-4, 7-17, one conductor green-yellow Conductors black with white numbers 5-6
	17	2 x 1.0 SHLD									
CFROBOT9-005	17	23 x 1.0	0.77	19.5	192.2	286	310.4	462	CFROBOT9-005	23G1.0 (2x1.0)C	Conductors black with white numbers 1-4, 7-24, one conductor green-yellow Conductors black with white numbers 5-6
	17	2 x 1.0 SHLD									
CFROBOT9-006	17	24 x 1.0	0.79	20.0	200.9	299	319.9	476	CFROBOT9-006	24G1.0 (2x1.0)C	Conductors black with white numbers 1-4, 7-25, one conductor green-yellow Conductors black with white numbers 5-6
	17	2 x 1.0 SHLD									
CFROBOT9-007	24	15 STP x 0.25	0.73	18.5	164.6	245	258.0	384	CFROBOT9-007	15x(2x0.25)C (4x0.25)C)C	Color code according to DIN 47100 white/green/brown/yellow (CAN Bus)
	24	2 x 0.25 SHLD									
CFROBOT9-010	24	4 STP x 0.25	0.41	10.5	44.3	66	80.6	120	CFROBOT9-010	4x(2x0.25)C)C	white/brown, green/yellow, gray/pink, blue/red

Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core

STP = Individually shielded Twisted Pair PR = Twisted Pair  
SC = Individually shielded Conductor SHLD = Shielded Precable



Order example: **CFROBOT9-001** – In your desired length  
CFROBOT9 Chainflex® series -001 Code nominal cross section



Online order ► [www.chainflex.com/CFROBOT](http://www.chainflex.com/CFROBOT)



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



Configurators ► [www.igus.com/CFROBOT](http://www.igus.com/CFROBOT)



# Special cables



## Chainflex® types



Chainflex® cable		Approvals and standards	Page
<b>Special cables</b>			
<b>Data cables</b>			
CFTHERMO	Thermocouple cable		414
CFTHERMO	Thermocouple cable - harnessed		416
<b>Motor cables</b>			
CFFLAT	Single core flat cable		418
CFBRAID	Braided conductors		420
<b>Bus cables</b>			
CFSPECIAL-182	Cables for hanging applications		422
<b>Control cables</b>			
CFSPECIAL-414	Cables for rail vehicles		424
CFSPECIAL-792	Cables for axis 7 on robots		426 <b>New</b>

The following chapter of special cables offers solutions for moved applications going beyond standard energy supply applications.

The constantly growing program of the special cables follows your special demands and we would like to offer solutions for that.

It is at the same time an inspiration for users. igus® can make cables for special applications and can fall back on most different materials and production processes. Depending to the construction this is already possible from a length of 1,640 ft. (500 m).

Use our comprehensive knowledge about cable plus the experience of 2 billion test cycles that are annually realized in the company-owned Chainflex® laboratory.

The technical and material details of the CFSP families are documented data sheets of the respective cables and are at any time available up-to-date in the internet. The respective web links can be recalled on the summary pages of the CFSP cables.

We look forward to hear about your job definition!

# PUR Thermocouple cable | CFTHERMO

- For high mechanical load requirements
- PUR outer jacket
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	6.56 ft/s (2 m/s)
		<b>gliding</b>	3.28 ft/s (1 m/s)
	<b>a max.</b>		65.6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 164 ft (50 m), Class 4

### Cable structure

	<b>Conductors</b>	Conductor consisting of a flexible special alloy. See table
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors are cabled in layers with short pitch lengths.
	<b>Color code</b>	According to thermo specification. See Table
	<b>Intermediate layer</b>	Fleece taping over the external layer.
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion, highly abrasion-resistant mixture on the basis of PUR. Color: According to thermo specification Schedule delivery program. Color: According to thermo specification See Table

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Test voltage</b>	1500 V

### Properties and approvals

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

**Configurators** ▶ [www.igus.com/CFTHERMO](http://www.igus.com/CFTHERMO)

Image exemplary.

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	7	1,312 ft +
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 5.4.3.1

	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01254
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>Lead free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF27-07-05-02-01-D, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

### Typical application areas

- For high mechanical load requirements
- Almost unlimited resistance to oil
- Indoor and outdoor applications with average sun radiation
- Unsupported travel distances and for gliding applications up to 164 ft (50 m)
- Machining units/machine tools, Storage and retrieval units for high-bay warehouses, Packaging industry, quick handling, refrigerating sector

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFTHERMO-J-001	24	1 PR x 0.23	0.22	5.5	6.0	9	24.2	36
CFTHERMO-K-001	24	1 PR x 0.23	0.22	5.5	6.0	9	24.2	36
CFTHERMO-K-002	24	1 STP x 0.23	0.30	7.5	17.5	26	45.0	67
	20	3 x 0.5						
CFTHERMO-T-002	24	1 STP x 0.23	0.30	7.5	17.5	26	44.3	66
	20	3 x 0.5						

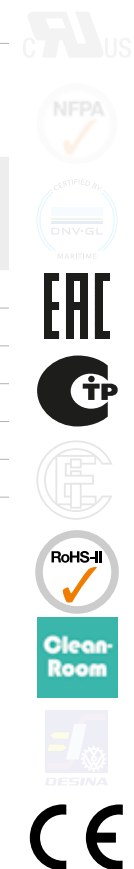
Part No.	Thermo materials	Core group	Color code
CFTHERMO-J-001	Fe-CuNi	(2x0,23)C	+ black, - white
CFTHERMO-K-001	NiCr-Ni	(2x0,23)C	+ green, - white
CFTHERMO-K-002	NiCr-Ni	(2x0,23)C	+ green, - white
	Cu	3G0,5	brown, blue, yellow-green
CFTHERMO-T-002	Cu-CuNi	(2x0,23)C	+ brown, - white
	Cu	3G0,5	brown, blue, yellow-green

**Order example: CFTHERMO-K-001 – In your desired length**  
CFTHERMO Chainflex® series K-001 Code Thermocouple Type

Online order ▶ [www.chainflex.com/CFTHERMO](http://www.chainflex.com/CFTHERMO)

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

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...





# PUR Thermocouple cable | CFTHERMO

- For high mechanical load requirements
- PUR outer jacket
- Oil-resistant and coolant-resistant
- Notch-resistant
- PVC-free/halogen-free
- Hydrolysis/microbe-resistant

## Delivery program thermocouple cable, harnessed (PUR) – Standard connector

Jacket	igus® Part No.	Number of conductors and rated cross section [mm²]	Outer diameter max.		Bend radius
			in.	mm	
Standard connector Type J Pre-assembled at one end PUR	MAT9850021	(2x0,23)C	0.22	5.5	12.5
Standard connector Type J Pre-assembled at one end PUR	MAT9850022	(2x0,23)C	0.22	5.5	12.5
Standard connector Type J Pre-assembled on both sides PUR	MAT9850023	(2x0,23)C	0.22	5.5	12.5
Standard connector Type K Pre-assembled at one end PUR	MAT9850031	(2x0,23)C	0.22	5.5	12.5
Standard connector Type K Pre-assembled at one end PUR	MAT9850032	(2x0,23)C	0.22	5.5	12.5
Standard connector Type K Pre-assembled on both sides PUR	MAT9850033	(2x0,23)C	0.22	5,5	12,5

 [www.igus.com/CFTHERMO](http://www.igus.com/CFTHERMO)

Technical information and cable prices ► page 414  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core  
Images exemplary.

Requirements  
Travel distance  
Oli resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

# Class 5.4.3.1

## Delivery program thermocouple cable, harnessed (PUR) – Miniature connector

Jacket	igus® Part No.	Number of conductors and rated cross section [mm²]	Outer diameter max.		Bend radius
			in.	mm	
Miniature connector Type J Pre-assembled at one end PUR	MAT9850001	(2x0,23)C	0.22	5.5	12.5
Miniature connector Type J Pre-assembled at one end PUR	MAT9850002	(2x0,23)C	0.22	5.5	12.5
Miniature connector Type J Pre-assembled on both sides PUR	MAT9850003	(2x0,23)C	0.22	5.5	12.5
Miniature connector Type K Pre-assembled at one end PUR	MAT9850011	(2x0,23)C	0.22	5.5	12.5
Miniature connector Type K Pre-assembled at one end PUR	MAT9850012	(2x0,23)C	0.22	5.5	12.5
Miniature connector Type K Pre-assembled on both side PUR	MAT9850013	(2x0,23)C	0.22	5.5	12.5

Technical information and cable prices ► page 414  
Note: The mentioned outer diameters are maximum values.  
G = with green-yellow earth core x = without earth core  
Images exemplary.



# TPE Motor cable | CFFLAT

- For maximum mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil-resistant
- PVC-free/halogen-free
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +194 °F (-35 °C to +90 °C)
		<b>flexible</b>	-58 °F to +194 °F (-50 °C to +90 °C)
		<b>fixed</b>	-67 °F to +194 °F (-55 °C to +90 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5

### Cable structure

	<b>Conductors</b>	Highly flexible braided special conductor
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Dark blue (similar to RAL 5011)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

Configurators ► [www.igus.com/CFFLAT](http://www.igus.com/CFFLAT)

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 7.5.4.1

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil resistant (following DIN EN 60811-2-1), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>Lead free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EC

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, small installation spaces, small radii, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, low temperature applications

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFFLAT-25-01	14	1 x 2.5	.47x.22	12x5,5	21.5	32	50.4	75
CFFLAT-40-01	12	1 x 4.0	.55x.22	14x5,5	34.3	51	80.0	119

**Order example: CFFLAT-25-01 – In your desired length**  
CFFLAT Chainflex® series -25 Code nominal cross section -01 Number of conductors

Online order ► [www.chainflex.com/CFFLAT](http://www.chainflex.com/CFFLAT)

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



# TPE Motor cable | CFBRAID

- For maximum mechanical load requirements
- TPE outer jacket
- Unshielded/shielded
- Oil-resistant, bio-oil-resistant
- Flame-retardant
- UV-resistant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	-
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-49 °F to +158 °F (-45 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		262.5 ft/s² (80 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality PVC mixture (according to DIN VDE 0207 Part 4).
	<b>Conductor construction</b>	Conductors braided together using a special cabling technique.
	<b>Color code</b>	Black with white numbers, one conductor green-yellow.
	<b>Inner jacket</b>	Inner Jacket: TPE blend, adapted to the requirements of the Energy Chain
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Outer Jacket: Low-adhesion TPE blend, especially abrasion resistant, high-flex blend, adapted to the requirements of the Energy Chain. Color: Jet black (similar to to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	600 V
	<b>Test voltage</b>	4000 V (following DIN EN 50396)

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil resistant (following DIN EN 60811-2-1), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
	<b>Flame resistance</b>	Flame-retardant (according to IEC 60332-1-2, CEI 20-35, FT-1, VW-1)

Requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	1,312 ft +	
Oli resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01255
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00420
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardization
	<b>CE</b>	Following 2014/35/EC
	<b>Info</b>	Due to their unique type of design and especially in the case of cross-sections ≥ 14 AWG and long distances of travel with large numbers of cycles, cables with 7 conductors have an increased tendency toward the formation of corkscrews. Due to the special design of the CFBRAID with 8 braided conductors, corkscrews can be completely ruled out.

### Typical application areas

- For maximum mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 328 ft (100 m)
- Storage and retrieval units for high-bay warehouses, quick handling, indoor/outdoor cranes, low temperature applications
- Especially for applications with corkscrew-risk

Part No.	AWG	Number of Conductors and rated cross section [mm²]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFBRAID-25-08	14	8 G 2.5	0.79	20.0	142.5	212	303.1	451
CFBRAID-25-08-C	14	8 G 2.5 SHLD	0.93	23.5	236.5	352	481.1	716

**Order example: CFBRAID-25-08 – In your desired length**  
CFBRAID Chainflex® series -25 Code nominal cross section -08 Number of conductors

Online order ► [www.chainflex.com/CFBRAID](http://www.chainflex.com/CFBRAID)

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



# PUR Bus cable | CFSPECIAL-182

- For increased tensile load
- PUR outer jacket
- Shielded
- PVC-free/halogen free
- Oil-resistant and coolant-resistant
- Notch-resistant
- Flame-retardant
- Hydrolysis/microbe-resistant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32,81 ft/s (10 m/s)
		<b>gliding</b>	19,69 ft/s (6 m/s)
	<b>a max.</b>		328,1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		For hanging applications up to 164 ft (50 m)

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	According to bus specification.
	<b>Conductor construction</b>	According to bus specification.
	<b>Color code</b>	According to bus specification.
	<b>1st 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. 90 % optical coverage
	<b>2nd Inner jacket</b>	PUR mixture adapted to suit the requirements in E-Chains®.
	<b>Armour</b>	High tensile-strength aramide braid embedded in the outer jacket.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, highly abrasion- and bending-resistant, adapted to suit the requirements in hanging applications (following DIN EN 50363-10-2). Color: Jet black (similar to RAL 9005)

### Electrical information

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

**Configurators** ► [www.igus.com/CFSP1](http://www.igus.com/CFSP1)

### 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 2009
	<b>Flame resistance</b>	Flame-retardant (according to IEC 60332-1-2, CEI 20-35, FT-1, VW-1)
	<b>Silicon-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>Halogen-free</b>	Following DIN EN 50267-2-1
	<b>UL/CSA</b>	<b>CFSPPECIAL-182-001:</b> Style 1589 and 20236, 30 V, 80 °C <b>CFSPPECIAL-182-045:</b> Style 10138 and 20233, 300 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79 2012 chapter 12.9
	<b>Lead-free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

### Typical application areas

- For increased tensile load
- Almost unlimited resistance to oil
- For hanging applications up to 50 m
- Storage and retrieval units for high-bay warehouses, hanging control units, elevators

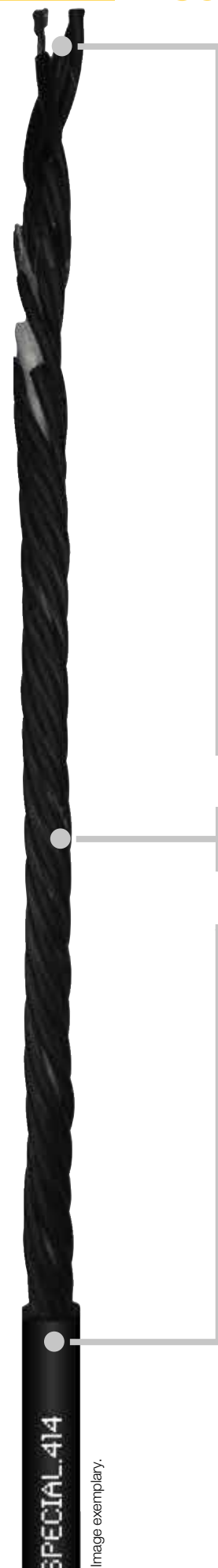
Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
<b>Profibus</b>								
<b>CFSPPECIAL-182-001</b>	24	1 PR x 0.25	0.39	10.0	22.8	34	94,7	141
<b>Ethernet/CAT5</b>								
<b>CFSPPECIAL-182-045</b>	26	4 PR x 0.15	0.37	9.5	29.6	44	94.1	140

**Note:** The mentioned outer diameters are maximum values.  
G= with green-yellow earth core x= without earth core

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Color code
<b>Profibus</b>			
<b>CFSPPECIAL.182.001</b>	150	(2x0.25)C	red, green
<b>Ethernet/CAT5</b>			
<b>CFSPECIAL.182.045</b>	100	(4x2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown



# Control cable | CFSPECIAL-414



- For maximum mechanical load requirements in rail vehicles
- Special outer jacket
- PVC-free/halogen free
- Oil-resistant
- Flame-retardant
- Self-extinguishing
- Low toxicity
- Low smoke gas density

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-4 °F to +176 °F (-20 °C to +80 °C)
		<b>flexible</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>fixed</b>	-22 °F to +176 °F (-30 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32,81 ft/s (10 m/s)
	<b>a max.</b>		65,6 ft/s <sup>2</sup> (20 m/s <sup>2</sup> )
	<b>Travel distance</b>		For unsupported travels up to 16 ft (5 m)

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality special mixture.
	<b>Color code</b>	Black with white numbers.
	<b>Outer jacket</b>	Special mixture adapted to suit the requirements in E-Chains® (following DIN EN 50264-1 EM 104). Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	300 V
	<b>Testing voltage</b>	2000 V

### Properties and approvals

	<b>UV resistance</b>	High
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 60811-2-1), Class 3
	<b>Flame resistance</b>	Flame-retardant (following DIN EN 60332-1-2, DIN EN 45545-2) Fire safety class: 3 (in accordance to EN 45545-2) or 4 (in accordance to DIN 5510-2)

**Configurators** ▶ [www.igus.com/CFSP4](http://www.igus.com/CFSP4)

	<b>Halogen-free</b>	Following DIN EN 50267-2-1
	<b>Lead-free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>CE</b>	Following 2014/35/EC
	<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
- Storage and retrieval units for high-bay warehouses
- Hanging control units
- Elevators

Part No.	AWG	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter max.		Copper index		Weight	
			in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFSPPECIAL-414-02-04 <sup>1)</sup>	24	4 x 0.25	0.20	5.0	8.1	12	19.5	29
CFSPPECIAL-414-02-06 <sup>1)</sup>	24	6 x 0.25	0.22	5.5	12.1	18	26.9	40
CFSPPECIAL-414-02-08 <sup>1)</sup>	24	8 x 0.25	0.26	6.5	16.1	24	35.6	53
CFSPPECIAL-414-03-04	22	4 x 0.34	0.20	5.0	10.8	16	24.2	36
CFSPPECIAL-414-03-06	22	6 x 0.34	0.24	6.0	16.1	24	34.9	52
CFSPPECIAL-414-03-08 <sup>1)</sup>	22	8 x 0.34	0.28	7.0	22.2	33	41.7	62

<sup>1)</sup> Delivery time upon request  
**Note:** The mentioned outer diameters are maximum values.  
**G=** with green-yellow earth core **x=** without earth core

Part No.	Core group	Color code
CFSPPECIAL.414.02.04	4 x 0.25	Black with white numbers 1-4
CFSPPECIAL.414.02.06	6 x 0.25	Black with white numbers 1-6
CFSPPECIAL.414.02.08	8 x 0.25	Black with white numbers 1-8
CFSPPECIAL.414.03.04	4 x 0.34	Black with white numbers 1-4
CFSPPECIAL.414.03.06	6 x 0.34	Black with white numbers 1-6
CFSPPECIAL.414.03.08	8 x 0.34	Black with white numbers 1-8

**Order example: CFSPECIAL.414.03.04 – In your desired length**  
**CFSPECIAL** chainflex® series **.414** igus® key **.03** Code nominal cross section **.04** Number of cores

Online order ▶ [www.chainflex.com/CFSP4](http://www.chainflex.com/CFSP4)

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

**1,244 types from stock ... no cutting costs\***  
 ... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
 ... up to 10 million cycles guaranteed ...



# PUR Control cable | CFSPECIAL-792 especially for axis 7 on robots

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

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>flexible</b>	-40 °F to +176 °F (-40 °C to +80 °C)
		<b>fixed</b>	-58 °F to +176 °F (-50 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	9,84 ft/s (3 m/s)
		<b>gliding</b>	6,56 ft/s (2 m/s)
	<b>a max.</b>		65,6 ft/s² (20 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and up to 328 ft (100 m) for gliding applications, Class	

### Cable structure

	<b>Conductor</b>	Conductor consisting of bare copper wires (according to EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core identification</b>	According to bus specification. Schedule delivery program
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in E-Chains® (following DIN EN 50363-10-2). Color: Jet black (similar to RAL 9005)

### Electrical Information

	<b>Nominal voltage</b>	1000 V
	<b>Testing voltage</b>	4000 V (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

**Configurators** ▶ [www.igus.com/CFSP792](http://www.igus.com/CFSP792)

	<b>Offshore</b>	MUD-resistant following NEK 606 - status 2009
	<b>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicon-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/CSA</b>	<b>CFSPECIAL-792-011:</b> Style 10258 and 20234, 1000 V, 80 °C <b>CFSPECIAL-792-012:</b> Style 11323 and 21223, 1000 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79 2012 chapter 12.9
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Complies to 2011/65/EU (RoHS-II)
	<b>CE</b>	Following 2014/35/EC

### Typical application areas

- Secure E-Chain® cable for axis 7 on robots
- Electrical specifications following KUKA (-011) and ABB (-012)

Part No.	Number of Conductors and rated cross section	Outer diameter max.		Copper index		Weight	
		in.	mm	lbs/mft	kg/km	lbs/mft	kg/km
CFSPECIAL-792-011	(5x(2x6.0+2x2.5)+ (2x(6x1.0)C)	1.40	35.5	840	1250	2026	2026
CFSPECIAL-792-012	18 G 2.5	1.04	26.5	366.2	545	618.2	920

Part No.	AWG	Core group	Color code
CFSPECIAL-792-011	10	10 x 6.0	Black with white numbers 1-9, one green-yellow
	14	10 x 2.5	Black with white numbers 10-18, one green-yellow
	17	12 x 1.0	Black with white numbers 19-30
CFSPECIAL-792-012	14	18 G 2.5	Black with white numbers 1-17, one green-yellow

**Order example: CFSPECIAL.792.011 – In your desired length**  
CFSPECIAL chainflex® series .792 igus® key .011 Code robot type

Online order ▶ [www.chainflex.com/CFBRAID](http://www.chainflex.com/CFBRAID)

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



# Pneumatic hose | CFAIR



- For maximum mechanical load requirements
- PUR hose
- Oil-resistant and coolant-resistant
- Abrasion-resistant
- Outside-toleranced
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7.5 x d
	<b>Temperature</b>	<b>flexible</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>fixed</b>	-40 °F to +185 °F (-40 °C to +85 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )

### Technical data

	<b>Material</b>	Abrasion-resistant on the basis of Polyurthane adapted to suit the requirements in E-Chains®. Color: Blue
	<b>Dimensions</b>	Outside-toleranced
	<b>Operating pressure</b>	174 psi at 68 °F (20 °C)
	<b>Vacuum</b>	-14.5 psi at 68 °F (20°C)

### Properties and approvals

	<b>Oil resistance</b>	Oil resistant
	<b>Silicon-free</b>	Free from substances that impair the wetting of paint (based on PV 3.10.07 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)

**Configurators** ► [www.igus.com/CAPU](http://www.igus.com/CAPU)

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Part No.	Internal diameter approx.		Wall thickness approx.		Outer diameter max.		Weight	
	in.	mm	in.	mm	in.	mm	lbs/mft	kg/km
CAPU-A-04-0	0.11	2.7	0.03	0.65	0.16	4.0	5.4	8
CAPU-A-06-0	0.16	4.0	0.04	1.00	0.24	6.0	12.8	19
CAPU-A-08-0	0.22	5.7	0.05	1.15	0.31	8.0	20.1	30
CAPU-A-10-0	0.28	7.0	0.06	1.50	0.39	10.0	32.2	48
CAPU-A-12-0	0.31	8.0	0.08	2.00	0.47	12.0	51.0	76
CAPU-A-16-0	0.43	11.0	0.10	2.50	0.63	16.0	85.2	127
<hr/>								
CAPU-I-02	0.16	4.0	0.05	1.15	0.25	6.4	15.0	22
CAPU-I-03	0.19	4.8	0.06	1.50	0.31	8.0	26.0	39
CAPU-I-04	0.25	6.4	0.06	1.50	0.38	9.7	32.0	48
CAPU-I-06	0.31	8.0	0.09	2.29	0.50	12.7	45.0	67
CAPU-I-08	0.41	10.4	0.11	2.7	0.63	16.0	58.0	86

**Order example: CAPU-A-04-0 – In your desired length**  
CAPU Chainflex® series -A Code Material -04 Code Ø -0 Special identification

Online order ► [www.chainflex.com/CAPU](http://www.chainflex.com/CAPU)

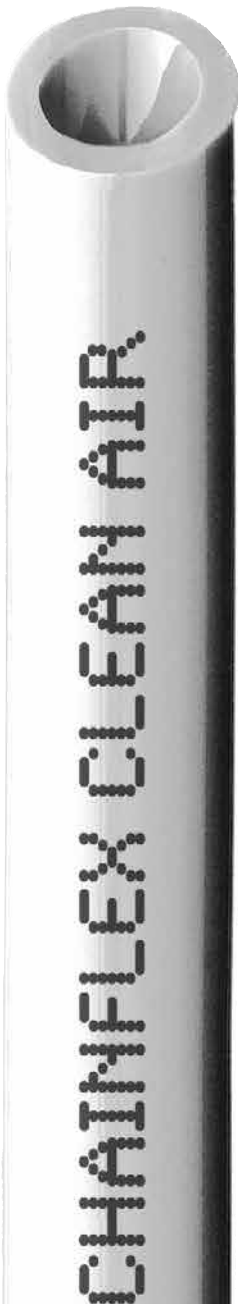
Delivery time 24hr or today.  
Delivery time means time until shipping of goods.



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.

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...

# Pneumatic hose | CFCleanAIR



- For maximum mechanical load requirements
- PE hose
- Oil-resistant and coolant-resistant
- Highly abrasion-resistant
- Outside-toleranced
- PVC-free/halogen-free

### Dynamic Information

	Bend radius	flexible	10 x d
		fixed	7.5 x d
	Temperature	flexible	-13 °F to +140 °F (-25 °C to +60 °C)
		fixed	-22 °F to +149 °F (-30 °C to +65 °C)
	v max.	unsupported	32.81 ft/s (10 m/s)
		gliding	19.69 ft/s (6 m/s)
	a max.		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )

### Technical data

	Material	Highly abrasion-resistant on the basis of Polyethylene adapted to suit the requirements in E-Chains®. Color: White
	Dimensions	Outside-toleranced
	Operating pressure	174 psi at 68 °F (20 °C)
	Vacuum	-14.5 psi at 68 °F (20 °C)

### Properties and approvals

	Oil resistance	Oil resistant
	Silicon-free	Free from substances that impair the wetting of paint (based on PV 3.10.07 – status 1992)
	Halogen-free	Following EN 50267-2-1
	Lead free	Following 2011/65/EC (RoHS-II)
	Cleanroom	According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1.

Configurators ► [www.igus.com/CAPE](http://www.igus.com/CAPE)

Part No.	Internal diameter approx.		Wall thickness approx.		Outer diameter max.		Weight	
	in.	mm	in.	mm	in.	mm	lbs/mft	kg/km
CAPE-A-04-0	0.11	2.7	0.03	0.65	0.16	4.0	5.4	8
CAPE-A-06-0	0.16	4.0	0.04	1.00	0.24	6.0	12.8	19
CAPE-A-08-0	0.22	5.7	0.05	1.15	0.31	8.0	20.1	30
CAPE-A-10-0	0.28	7.0	0.06	1.50	0.39	10.0	32.2	48
CAPE-A-12-0	0.31	8.0	0.08	2.00	0.47	12.0	51.0	76
CAPE-A-16-0	0.43	11.0	0.10	2.50	0.63	16.0	85.2	127

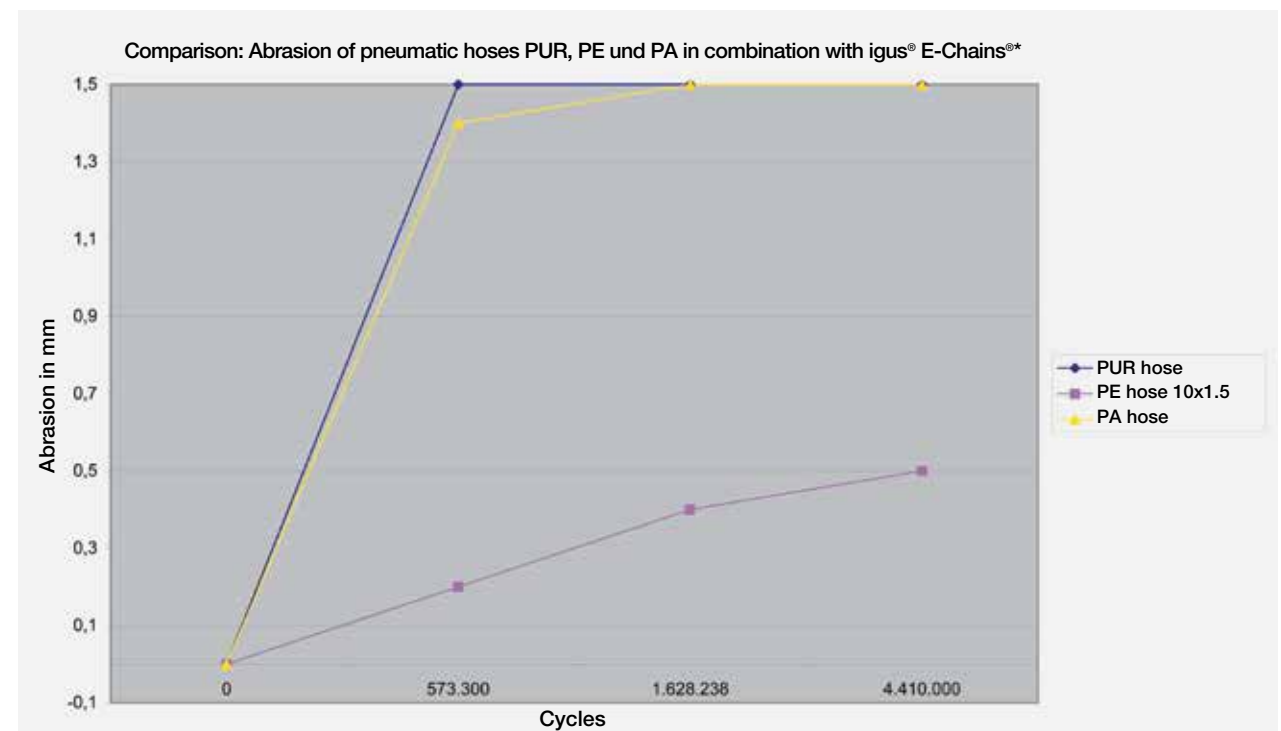
Order example: **CAPE-A-04-0** – In your desired length  
CAPE Chainflex® series -A Code Material -04 Code Ø -0 Special identification

Online order ► [www.chainflex.com/CAPE](http://www.chainflex.com/CAPE)

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



igus® material abrasion test



\* igus® E-Chain® with opening link 450.30

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

Image exemplary.





# Pneumatic hose | CFAIR



- For maximum mechanical load requirements
- PUR hose
- Oil-resistant and coolant-resistant
- Abrasion-resistant
- Outside-toleranced
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	<b>flexible</b>	min. 10 x d
		<b>fixed</b>	min. 7.5 x d
	<b>Temperature</b>	<b>flexible</b>	-13 °F to +176 °F (-25 °C to +80 °C)
		<b>fixed</b>	-40 °F to +185 °F (-40 °C to +85 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )

### Technical data

	<b>Material</b>	Abrasion-resistant on the basis of Polyurthane adapted to suit the requirements in E-Chains®. Color: Blue
	<b>Dimensions</b>	Outside-toleranced
	<b>Operating pressure</b>	174 psi at 68 °F (20 °C)
	<b>Vacuum</b>	-14.5 psi at 68 °F (20°C)

### Properties and approvals

	<b>Oil resistance</b>	Oil resistant
	<b>Silicon-free</b>	Free from substances that impair the wetting of paint (based on PV 3.10.07 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)

**Configurators** ► [www.igus.com/CAPU](http://www.igus.com/CAPU)

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

Part No.	Internal diameter approx.		Wall thickness approx.		Outer diameter max.		Weight	
	in.	mm	in.	mm	in.	mm	lbs/mft	kg/km
CAPU-A-04-0	0.11	2.7	0.03	0.65	0.16	4.0	5.4	8
CAPU-A-06-0	0.16	4.0	0.04	1.00	0.24	6.0	12.8	19
CAPU-A-08-0	0.22	5.7	0.05	1.15	0.31	8.0	20.1	30
CAPU-A-10-0	0.28	7.0	0.06	1.50	0.39	10.0	32.2	48
CAPU-A-12-0	0.31	8.0	0.08	2.00	0.47	12.0	51.0	76
CAPU-A-16-0	0.43	11.0	0.10	2.50	0.63	16.0	85.2	127
<hr/>								
CAPU-I-02	0.16	4.0	0.05	1.15	0.25	6.4	15.0	22
CAPU-I-03	0.19	4.8	0.06	1.50	0.31	8.0	26.0	39
CAPU-I-04	0.25	6.4	0.06	1.50	0.38	9.7	32.0	48
CAPU-I-06	0.31	8.0	0.09	2.29	0.50	12.7	45.0	67
CAPU-I-08	0.41	10.4	0.11	2.7	0.63	16.0	58.0	86

**Order example: CAPU-A-04-0 – In your desired length**  
CAPU Chainflex® series -A Code Material -04 Code Ø -0 Special identification

Online order ► [www.chainflex.com/CAPU](http://www.chainflex.com/CAPU)

Delivery time 24hr or today.  
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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.

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...



# Pneumatic hose | CFCleanAIR



- For maximum mechanical load requirements
- PE hose
- Oil-resistant and coolant-resistant
- Highly abrasion-resistant
- Outside-toleranced
- PVC-free/halogen-free

### Dynamic Information

	<b>Bend radius</b>	flexible	10 x d
		fixed	7.5 x d
	<b>Temperature</b>	flexible	-13 °F to +140 °F (-25 °C to +60 °C)
		fixed	-22 °F to +149 °F (-30 °C to +65 °C)
	<b>v max.</b>	unsupported	32.81 ft/s (10 m/s)
		gliding	19.69 ft/s (6 m/s)
	<b>a max.</b>		164.1 ft/s <sup>2</sup> (50 m/s <sup>2</sup> )

### Technical data

	<b>Material</b>	Highly abrasion-resistant on the basis of Polyethylene adapted to suit the requirements in E-Chains®. Color: White
	<b>Dimensions</b>	Outside-toleranced
	<b>Operating pressure</b>	174 psi at 68 °F (20 °C)
	<b>Vacuum</b>	-14.5 psi at 68 °F (20 °C)

### Properties and approvals

	<b>Oil resistance</b>	Oil resistant
	<b>Silicon-free</b>	Free from substances that impair the wetting of paint (based on PV 3.10.07 – status 1992)
	<b>Halogen-free</b>	Following EN 50267-2-1
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1, material/cable tested by IPA according to ISO standard 14644-1.

Configurators ► [www.igus.com/CAPE](http://www.igus.com/CAPE)

Part No.	Internal diameter approx.		Wall thickness approx.		Outer diameter max.		Weight	
	in.	mm	in.	mm	in.	mm	lbs/mft	kg/km
CAPE-A-04-0	0.11	2.7	0.03	0.65	0.16	4.0	5.4	8
CAPE-A-06-0	0.16	4.0	0.04	1.00	0.24	6.0	12.8	19
CAPE-A-08-0	0.22	5.7	0.05	1.15	0.31	8.0	20.1	30
CAPE-A-10-0	0.28	7.0	0.06	1.50	0.39	10.0	32.2	48
CAPE-A-12-0	0.31	8.0	0.08	2.00	0.47	12.0	51.0	76
CAPE-A-16-0	0.43	11.0	0.10	2.50	0.63	16.0	85.2	127

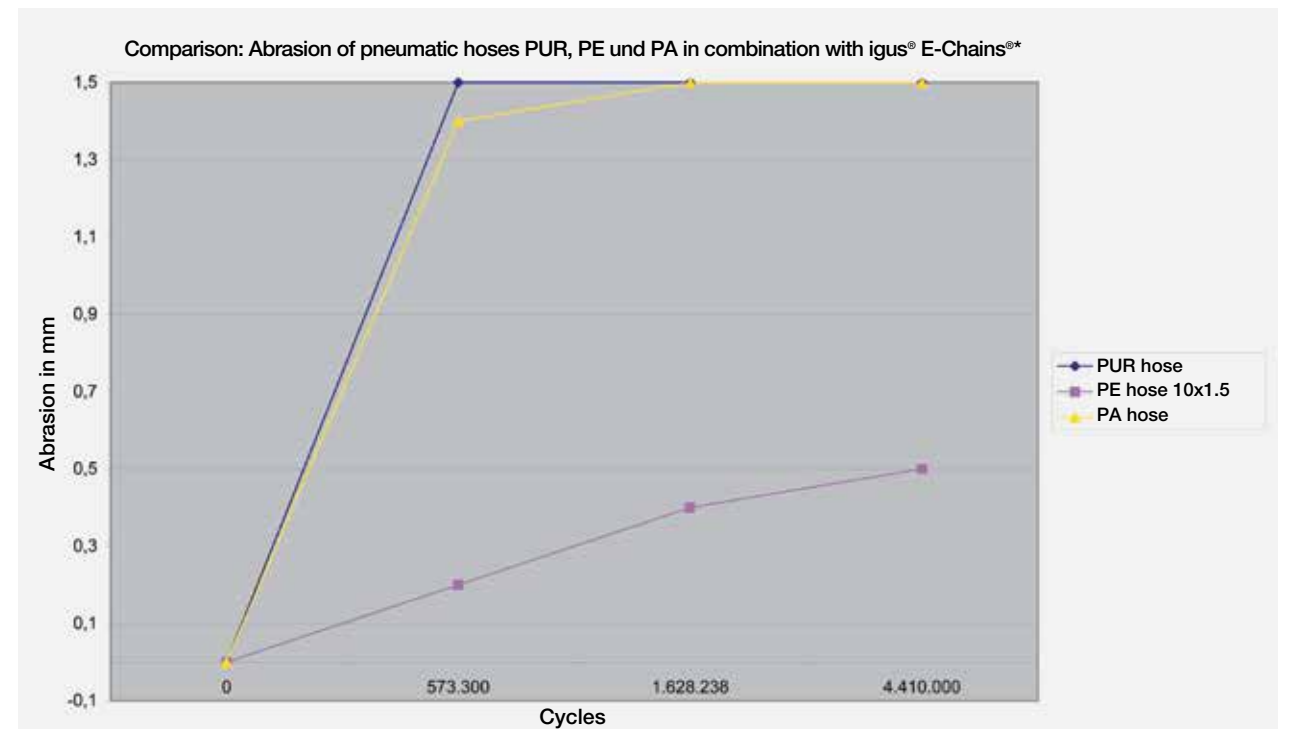
Order example: **CAPE-A-04-0** – In your desired length  
CAPE Chainflex® series -A Code Material -04 Code Ø -0 Special identification

Online order ► [www.chainflex.com/CAPE](http://www.chainflex.com/CAPE)

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



igus® material abrasion test



\* igus® E-Chain® with opening link 450.30

1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

Image exemplary.











# Camera

Video / vision / bus technology



## Chainflex® ReadyCable®



	Cable type	Jacket	Page
Video, vision and bus technology (with camera reference list ▶ 462)			
	FireWire	Pre-harnessed cable	TPE 434
	USB	Pre-harnessed cable	PVC/PUR/TPE 438
	GigE	Pre-harnessed cable	TPE 444
	LWL	Pre-harnessed cable	PVC 446
	LWL	Pre-harnessed cable	TPE 448
	LWL	Pre-harnessed cable (Robotics)	TPE 452
	Koax	Pre-harnessed cable (BNC/SMA)	TPE 454
	VGA/DVI-D/HDMI	Pre-harnessed cable	TPE 461

## TPE Bus cable | FireWire

- FireWire cable (1394a)
- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-49 °F to +158 °F (-45 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Core construction</b>	Conductors and pairs stranded with an especially short pitch length.
	<b>Color code</b>	<b>AWG26:</b> orange/blue, green/red. <b>AWG22:</b> black, white.
	<b>Element shield</b>	Extremely bending resistant, tinned copper shield over foil taping. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical information

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

### 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>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1

Requirements	Low	1	2	3	4	5	6	7	highest
Travel distance	Unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 6.6.4.1

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1589 and 21371, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>DNV-GL</b>	Certified according to GL type testing – Certificate no.: 61 937-14 HH
	<b>EAC</b>	Certified according to no. TC RU C-DE.ME77.B.01218
	<b>CTP</b>	Certified according to no. C-DE.PB49.B.00416
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU

### Typical application areas

- FireWire cable for use in E-Chains® in the industrial environment (Technical note see page 194)
- Transmission lengths of up to 32.81 ft (10 m)

### Camera reference list ► Page 462










More than 6 million movements in E-Chains® with 32.81 ft (10 m) cable length already successfully tested with FireWire CFBUS-055.





## TPE Bus cable | FireWire

- FireWire cable (1394a)
- For very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- Flame retardant
- Hydrolysis-/microbe-resistant








Delivery program FireWire (TPE) 12.5 x d									
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight		
			[in]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]	
<b>Male A/Male A</b> Pre-harnessed on both sides CFBUS-055	MAT9048160	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Male A/Female A</b> Pre-harnessed on both sides CFBUS-055	MAT9048621	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Male A/Male B</b> Pre-harnessed on both sides CFBUS-055	MAT9048623	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Male A/Female B</b> Pre-harnessed on both sides CFBUS-055	MAT9048625	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Female B/Female B</b> Pre-harnessed on both sides CFBUS-055	MAT9048627	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Female A/Female A</b> Pre-harnessed on both sides CFBUS-055	MAT9048620	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	
<b>Female A/Male B</b> Pre-harnessed on both sides CFBUS-055	MAT9048622	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84	

Note: The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

## Class 6.6.4.1

Requirements  
Travel distance  
Oil resistance  
Torsion

Low	1	2	3	4	5	6	7	highest
Unsupported	1	2	3	4	5	6	1,312 ft +	
none	1	2	3	4	highest			
none	1	2	3	±180°				

Delivery program FireWire (TPE) 12.5 x d										
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight			
			[in]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]		
<b>Female A/Female B</b> Pre-harnessed on both sides CFBUS-055	MAT9048624	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84		
<b>Male B/Male B</b> Pre-harnessed on both sides CFBUS-055	MAT9048626	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84		
<b>Male B/Female B</b> Pre-harnessed on both sides CFBUS-055	MAT9048628	2x(2x0.15)C+2x(0.34)C	0.31	8.0	27.55	41	56.45	84		
Connector										
Male A	(Polycarbonate GF cover)									with latch
Male B	(Heat shrink boot)									without latch
Female A	(Polycarbonate GF cover)									with latch
Female B	(Heat shrink boot)									without latch

Note: The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.



## Bus cable | USB 2.0/3.0

- USB cable 2.0 (TPE) / 3.0 (PVC/PUR)
- For medium/high mechanical load requirements
- PVC/PUR/TPE outer jacket
- Shielded
- Oil resistant, bio-oil resistant (TPE)
- Flame retardant
- Hydrolysis-/microbe-resistant (PUR/TPE)

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-49 °F to +158 °F (-45 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a max.</b>		100m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	Conductors and pairs stranded with an especially short pitch length.
	<b>Color code</b>	<b>AWG20:</b> red, black. <b>AWG28:</b> white, green (CFBUS-065). <b>AWG24:</b> white, green (CFBUS-066).
	<b>Overall shield</b>	Extremely bending-resistant tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical information

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

## 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>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1589 and 21371, 30 V, 80 °C
	<b>NFPA 79</b>	Complies to NFPA 79-2015 chapter 12.9
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU

### Typical application areas

- USB 2.0 cable for use in E-Chains® in the industrial environment (technical note see page 194)
- Transmission lengths CFBUS-065 of up to 16.4 ft (5 m)
- Transmission lengths CFBUS-066 of up to 32.81 ft (10 m)

Camera reference list ► Page 462



Image exemplary.

# TPE Bus cable | USB 2.0

- USB cable 2.0
- For very high mechanical load requirements
- TPE outer jacket
- Shielded
- Oil resistant, bio-oil resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

## Delivery program USB 2.0 (TPE) 12.5 x d

Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight	
			[in.]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]

### USB type A/open end of cable Pre-harnessed at one end



CFBUS-065	USB9040001	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040201	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### USB type A/A

Pre-harnessed on both sides



CFBUS-065	USB9040010	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040210	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### USB type B/open end of cable

Pre-harnessed at one end



CFBUS-065	USB9040020	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040220	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### Connectors

### USB 2.0 Type



**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

Requirements  
Travel distance  
Oil resistance  
Torsion

Low	1	2	3	4	5	6	7	highest
Unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				

# Class 6.6.4.1

## Delivery program USB 2.0 (TPE) 12.5 x d

Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight	
			[in.]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]

### USB type B/B

Pre-harnessed on both sides



CFBUS-065	USB9040030	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040230	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### USB Type A/B

Pre-harnessed on both sides



CFBUS-065	USB9040040	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040240	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### USB type A/A (Socket)

Pre-harnessed on both sides



CFBUS-065	USB9040060	((2xAWG28)+2xAWG20)C	0.22	5.5	17.47	26	30.24	45
CFBUS-066	USB9040260	((2xAWG24)+2xAWG20)C	0.26	6.5	21.50	32	37.63	56

### Connectors

### USB 2.0 Type







**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length. \* CFBUS-066 is delivered with heat shrink tubing over USB enclosure.





## PVC Bus cable | USB 3.0

- USB cable 3.0
- For medium mechanical load requirements
- PVC outer jacket
- Shielded
- Oil resistant
- Flame retardant

Delivery program USB 3.0 (PVC) 12.5 x d									
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight		
			[in.]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 3 m CFBUS-PVC-068	USB9640200	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 5 m CFBUS-PVC-068	USB9640201	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 7 m CFBUS-PVC-068	USB9640202	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / USB 3.0 micro-B Pre-harnessed on both sides - 2.5 m CFBUS-PVC-068	USB9640203	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	





### USB 3.0 connector types:



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
Also available from the roll in your desired length.

## PUR Bus cable | USB 3.0

- USB cable 3.0
- For medium mechanical load requirements
- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

Delivery program USB 3.0 (PUR) 12.5 x d									
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper index		Weight		
			[in.]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 3 m CFBUS-PUR-068	USB9540200	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 5 m CFBUS-PUR-068	USB9540201	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / open end of cable Pre-harnessed at one end – 7 m CFBUS-PUR-068	USB9540202	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	
USB 3.0 type A / USB 3.0 micro-B Pre-harnessed on both sides - 2.5 m CFBUS-PUR-068	USB9540203	((2x2xAWG28+2x(2x AWG28)C)C	0.28	7.0	27.55	41	48.38	72	

### USB 3.0 connector types:



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
Also available from the roll in your desired length.

# TPE Bus cable | GigE



- GigE cable
- For extremely heavy duty applications
- TPE outer jacket
- Shielded
- Oil resistant, bio-oil resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 12.5 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +158 °F (-35 °C to +70 °C)
		<b>flexible</b>	-49 °F to +158 °F (-45 °C to +70 °C)
		<b>fixed</b>	-58 °F to +158 °F (-50 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>a. max.</b>		328.1 ft/s² (100 m/s²)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6	

### Cable structure

	<b>Conductors</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following EN 60228).
	<b>Conductor insulation</b>	Mechanically high-quality TPE mixture.
	<b>Conductor construction</b>	2 conductors each stranded in pairs with short pitch lengths, conductor pairs also stranded with short pitch lengths.
	<b>Color code</b>	Color 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 tinned copper braid. 90 % optical coverage
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Violet (similar to RAL 4001)

### Electrical information

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

### 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>Flame resistance</b>	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1

# Class 6.6.4.1

	<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
	<b>UL/CSA</b>	Style 1589 and 21371, 30 V, 80 °C
	<b>NFFPA 79</b>	Complies to NFFPA 79-2015 chapter 12.9
	<b>CEI</b>	Following CEI 20-35
	<b>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF34-UL-25-04-D, tested by IPA according to standard 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU

### Typical application areas

- Ethernet cable for use in E-Chains® in the industrial environment. (technical note see page 194)
- Transmission lengths of up to 50 m

### Camera reference list ► Page 462

		Delivery program GigE (TPE) 12.5 x d							
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter [in.]	Outer diameter [mm]	Copper index [lbs/mft]	Copper index [kg/km]	Weight [lbs/mft]	Weight [kg/km]	
<b>RJ45 metal/RJ45 metal</b> Pre-harnessed on both sides									
<b>CFBUS-044</b>	<b>GIG9040001</b>	(4x(2x0.15))C	0.33	8.5	29.6	44	59.1	88	
<b>RJ45 metal/RJ45 plastic</b> Pre-harnessed on both sides									
<b>CFBUS-044</b>	<b>GIG9040002</b>	(4x(2x0.15))C	0.33	8.5	29.6	44	59.1	88	
<b>RJ45 metal/RJ45 metal</b> Pre-harnessed on both sides									
<b>CFROBOT8-045*</b>	<b>GIG9045001</b>	4x(2x0.14)C	0.33	8.5	26.2	39	46.4	69	
<b>RJ45 metal/RJ45 plastic</b> Pre-harnessed on both sides									
<b>CFROBOT8-045*</b>	<b>GIG9045002</b>	4x(2x0.14)C	0.33	8.5	26.2	39	46.4	69	
<b>Connectors</b>									
<b>RJ45 metal</b>									<b>8 poles</b>
<b>RJ45 plastic</b>									<b>8 poles, knurled screws</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length. \* Please read the product information for the twistable cable CFROBOT8-045 ► page 406

**1,244 types from stock ... no cutting costs\***  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

**36 months guarantee on every chainflex® cable ...**  
... up to 10 million cycles guaranteed ...



# PVC Fiber optic cable | Glass fiber

- Gradient glass-fiber cable for flexible mechanical load requirements
- PVC outer jacket
- Flame-retardant

### Dynamic Information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 7.5 x d
		<b>flexible</b>	min. 6 x d
		<b>fixed</b>	min. 4 x d
	<b>Temperature</b>	<b>E-Chain®</b>	41 °F to +158 °F (5 °C to +70 °C)
		<b>flexible</b>	23 °F to +158 °F (-5 °C to +70 °C)
		<b>fixed</b>	5 °F to +158 °F (-15 °C to +70 °C)
	<b>v max.</b>	<b>unsupported</b>	9.84 ft/s (3 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>		Unsupported travel distances up to 33 ft (10 m), Class 1

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange or blue with black numbers.
	<b>Outer jacket</b>	Low-adhesion, oil-resistant mixture on the basis of PVC, adapted to suit the requirements in E-Chains® (following DIN VDE 0281 Part 13). Color: Signal black (similar to RAL 9004)

### Properties and approvals

	<b>Flame resistance</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>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF240-02-24, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EU

### Typical application areas

- For low duty flexing applications
- Maximum EMC safety
- Preferably indoor applications
- Especially for unsupported travel distances
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

# Class 3.1.1.1

### Delivery program FOC (PVC) - 2 Fibers

Base article	igus® Part No.	Number of fibers	Fiber diameter	Outer diameter [in]	Outer diameter [mm]	Bend radius
<b>Connector ST/ST</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230001	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230002	2	62.5/125	0.28	7.0	7.5
<b>Connector SC/SC</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230003	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230004	2	62.5/125	0.28	7.0	7.5
<b>Connector LC/LC</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230005	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230006	2	62.5/125	0.28	7.0	7.5
<b>Connector ST/LC</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230007	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230008	2	62.5/125	0.28	7.0	7.5
<b>Connector ST/SC</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230009	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230010	2	62.5/125	0.28	7.0	7.5
<b>Connector LC/SC</b> Pre-harnessed on both sides						
CFLG88-2-50/125	LWL99230011	2	50/125	0.28	7.0	7.5
CFLG88-2-62.5/125	LWL99230012	2	62.5/125	0.28	7.0	7.5

### Connector



### Fiber Optic Cable Feeder





Requirements	Low	1	2	3	4	5	6	7	highest
Travel distance	Unsupported	1	2	3	4	5	6	1,312 ft +	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## TPE Fiber optic cable (FOC) | Glass fiber



- Gradient glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible to -40 °F
- PVC-free/halogen-free
- UV-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
		<b>flexible</b>	min. 4 x d
		<b>fixed</b>	min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>a max.</b>	<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange or blue with black numbers. Copper Fibers: Black with white numbers.
	<b>Overall shield</b>	Extremely bending-resistant aramide braid for torsion-protection.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to 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 EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)

## Class 7.5.4.1



According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1 Following 2014/35/EU

### Typical application areas

- Fiber optic cable for use in E-Chains® in the industrial environment (technical note see page 226)
- Transmission lengths of up to 328.1 ft (100 m)

### Camera reference list ► Page 462



Harnessed igus® E6 system on a camera application.



1,244 types from stock ... no cutting costs\*  
... no minimum order quantity ... \*(up to 10 cuts of the same part number)

36 months guarantee on every chainflex® cable ...  
... up to 10 million cycles guaranteed ...

## TPE Fiber optic cable (FOC) | Glass fiber

- Gradient glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible to -40 °F
- PVC-free/halogen-free
- UV-resistant

Delivery program FOC (TPE) 2 Fibers						
Delivery program Part no.	igus® Part No.	Number of fibers	Fiber diameter [µm]	Outer diameter [in.]	Outer diameter [mm]	Bend radius

### Connector ST/LC

Pre-harnessed on both sides\*\*

CFLG-2LB-50/125	LWL90412393	2	50/125	0.33	8.5	5.0 x d
CFLG-2LB-62.5/125	LWL90412396	2	62.5/125	0.33	8.5	5.0 x d



### Connector ST/ST

Pre-harnessed on both sides

CFLG-2LB-50/125	LWL90412394	2	50/125	0.33	8.5	5.0 x d
CFLG-2LB-62.5/125	LWL90412397	2	62.5/125	0.33	8.5	5.0 x d



### Connector LC/LC

Pre-harnessed on both sides

CFLG-2LB-50/125	LWL90412395	2	50/125	0.33	8.5	5.0 x d
CFLG-2LB-62.5/125	LWL90412398	2	62.5/125	0.33	8.5	5.0 x d



#### Connector

#### Connector



#### Fiber Optic Cable Feeder

#### Fiber Optic Cable Feeder

LWL90428935

Closed corrugated tube to feed in fiber optic cables (image shown cut open during installation)



**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

\*\* 2 ST coupling pieces (MAT0176314) needed to be ordered extra, if used as extension cable.

## Class 7.5.4.1

Delivery program FOC (TPE) 2 Fibers FOC patch cables for static installation*						
Delivery program Part no.	igus® Part No.	Number of fibers	Fiber diameter [µm]	Outer diameter [in.]	Outer diameter [mm]	Bend radius

### Connector ST/LC

Pre-harnessed on both sides\*\*

FFLG-2G-50/125	LWL90412399	2	50/125	0.26	6.5	12.5 x d
FFLG-2G-62.5/125	LWL90412402	2	62.5/125	0.26	6.5	12.5 x d



### Connector ST/ST

Pre-harnessed on both sides

FFLG-2G-50/125	LWL90412400	2	50/125	0.26	6.5	12.5 x d
FFLG-2G-62.5/125	LWL90412403	2	62.5/125	0.26	6.5	12.5 x d



### Connector LC/LC

Pre-harnessed on both sides

FFLG-2G-50/125	LWL90412401	2	50/125	0.26	6.5	12.5 x d
FFLG-2G-62.5/125	LWL90412404	2	62.5/125	0.26	6.5	12.5 x d



#### Connectors

#### Connector



#### Fiber Optic Cable Feeder

#### Fiber Optic Cable Feeder

LWL90428935

Closed corrugated tube to feed in fiber optic cables (image shown cut open during installation)



**Note:** The mentioned outer diameters are maximum values. Images exemplary.

Also available from the roll in your desired length. \* FOC patch cable extensions are for protected installation only. \*\* 2 ST coupling pieces (MAT0176314) needed to be ordered extra, if used as extension cable.



## TPE Fiber optic cable, twistable | CFROBOT5

- For torsion applications
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- UV resistant
- Low-temperature-flexible
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>twisted</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>twisted</b>	-31 °F to +176 °F (-35 °C to +80 °C)
		<b>flexible</b>	-58 °F to +176 °F (-50 °C to +80 °C)
		<b>fixed</b>	-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max. twisted</b>	180 °/s	
			<b>a max. twisted</b>
	<b>Travel distance</b>		
	<b>Torsion</b>	± 180°, with 3.281ft (1m) cable length	

### Cable structure

	<b>Conductors</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers around a central reinforced filler element.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to 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>Lead free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EU

### Typical application areas

- For extremely heavy duty applications with torsion movements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV resistant
- Especially for robots and movements in the 3D range

Image exemplary.

## Class 6.1.4.3

Delivery program CFROBOT5 (TPE) 2 Fibers ± 180°						
Delivery program Part no.	igus® Part No.	Number of fibers	Fiber diameter [µm]	Outer diameter [in.]	Outer diameter [mm]	Bend radius

<b>Connector ST/LC</b> Pre-harnessed on both sides**						
CFROBOT5-501	LWL90422491	2	50/125	0.33	8.5	12.5 x d

<b>Connector ST/ST</b> Pre-harnessed on both sides						
CFROBOT5-501	LWL90422492	2	50/125	0.33	8.5	12.5 x d

<b>Connector LC/LC</b> Pre-harnessed on both sides						
CFROBOT5-501	LWL90422493	2	50/125	0.33	8.5	12.5 x d

<b>Connector ST/LC</b> Pre-harnessed on both sides						
CFROBOT5-500	LWL90422494	2	62.5/125	0.33	8.5	12.5 x d

<b>Connector ST/ST</b> Pre-harnessed on both sides						
CFROBOT5-500	LWL90422495	2	62.5/125	0.33	8.5	12.5 x d

<b>Connector LC/LC</b> Pre-harnessed on both sides						
CFROBOT5-500	LWL90422496	2	62.5/125	0.33	8.5	12.5 x d

<b>Connectors</b>						
<b>Connector</b>						

<b>Fiber Optic Cable Feeder</b>						
<b>Fiber Optic Cable Feeder</b>						

<b>LWL90428935</b>						
Closed corrugated tube to feed in fiber optic cables (image shown cut open during installation)						

<b>Fiber identification</b>						
<b>Part no.</b>	<b>Color code</b>					
CFROBOT5-500	orange with white numerals					
CFROBOT5-501	blue with white numerals					

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
Also available from the roll in your desired length.  
\*\* 2 ST coupling pieces (MAT0176314) needed to be ordered extra, if used as extension cable.



# TPE Coax cable | CFK coax

- 50/75 Ω coaxial cable for very high mechanical load requirements
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- UV resistant
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
		<b>flexible</b>	min. 8 x d
		<b>fixed</b>	min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +212 °F (-35 °C to +100 °C)
		<b>flexible</b>	-58 °F to +212 °F (-50 °C to +100 °C)
		<b>fixed</b>	-67 °F to +212 °F (-55 °C to +100 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
		<b>gliding</b>	16.41 ft/s (5 m/s)
	<b>a max.</b>		328.1 ft/s <sup>2</sup> (100 m/s <sup>2</sup> )
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Conductors</b>	Multi-wire; adapted in single-wire diameter and pitch length to suit the requirements in E-Chains®
	<b>Conductor insulation</b>	Special FEP-isolating mixture.
	<b>Conductor construction</b>	Conductors cabled in one layer with especially short pitch length.
	<b>Color code</b>	Coaxial elements - See Table
	<b>Element shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70% linear, approx. 90 % optical
	<b>Element jacket</b>	TPE mixture adapted to suit the requirements in E-Chains®.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Schedule delivery program

### Electrical information

	<b>Nominal voltage</b>	500 V (following DIN VDE 0245)
	<b>Test voltage</b>	1500 V

### 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

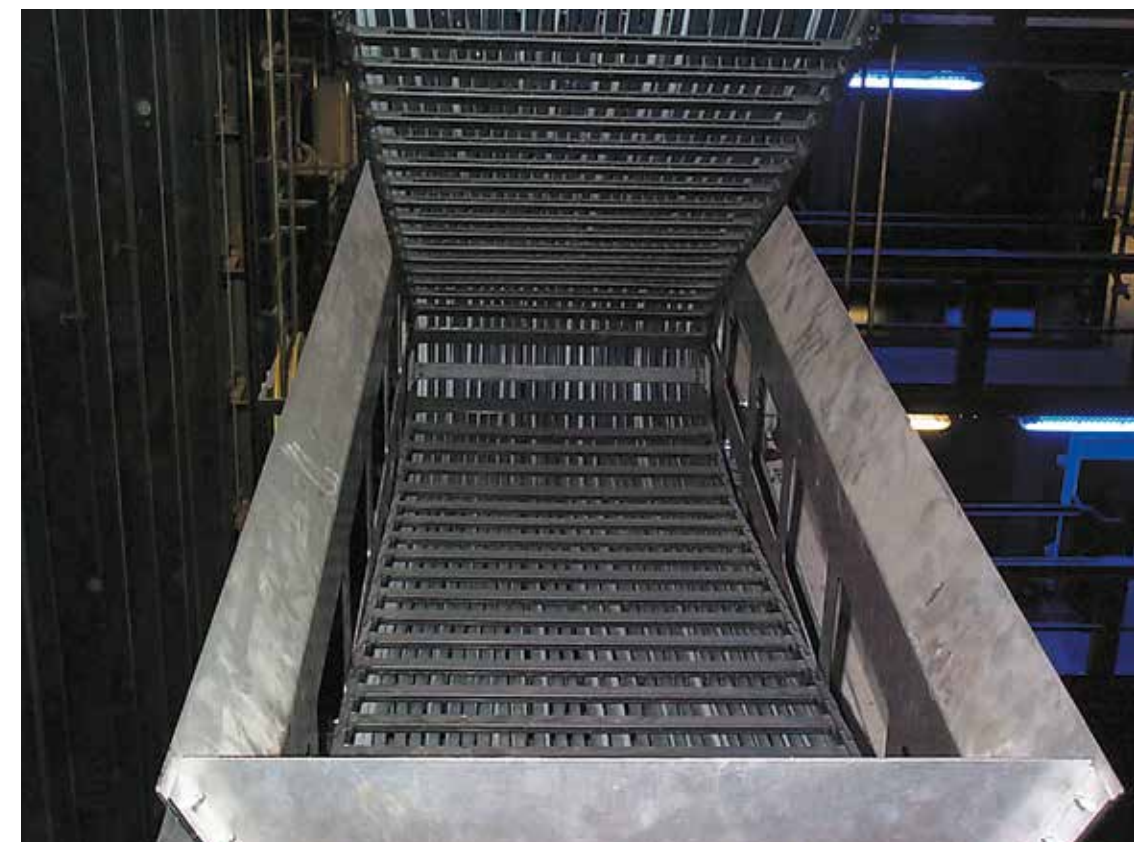
<b>Requirements</b>	Low	1	2	3	4	5	6	7	highest
<b>Travel distance</b>	Unsupported	1	2	3	4	5	6	1,312 ft +	
<b>Oil resistance</b>	none	1	2	3	4	highest			
<b>Torsion</b>	none	1	2	3	±180°				

## Class 6.6.4.1

- Silicone-free** Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)  
Certified according to no. TC RU C-DE.ME77.B.01254
- EAC**
- Lead free** Following 2011/65/EC (RoHS-II)
- Clean room** According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1  
Following 2014/35/EU
- CE**
- Info** The coaxial elements used in cables of the CFK coax1 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 CFK coax2 series are comparable with a HF50-0.9/2.95 according to MIL-C-17/28-RG58 and thus fit into an RG58 plug!

### Typical application areas

- For very high mechanical load requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications



Coax cable and other Chainflex® cables in platform technology. E-Chain®: System E4/4

# TPE Coax cable | CFKoax 50 Ω

- 50 Ω Coaxial cable for extremely heavy duty applications
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- UV resistant
- Hydrolysis-/microbe-resistant

Delivery program CFKOAX (TPE) 2 coaxial element - BNC + SMA									
Delivery program Part no.	igus® Part No.	Coaxial elements	Outer diameter [in.]	Outer diameter [mm]	Bend radius	Copper index [lbs/mft]	Copper index [kg/km]	Weight [lbs/mft]	Weight [kg/km]
<b>BNC Connector/SMA Connector</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90478758</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>BNC Connector/SMA Socket</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90478759</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>BNC Socket/SMA Connector</b> Pre-harnessed at one end CFKoax2-01	<b>MAT90478760</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>BNC socket/SMA socket</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90478761</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37

# Class 6.6.4.1

Requirements	Low	1	2	3	4	5	6	7	highest
Travel distance	Unsupported	1	2	3	4	5	6	7	1,312 ft +
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

Delivery program CFKoax (TPE) 1 coaxial element – BNC									
Delivery program Part no.	igus® Part No.	Coaxial elements	Outer diameter [in.]	Outer diameter [mm]	Bend radius	Copper index [lbs/mft]	Copper index [kg/km]	Weight [lbs/mft]	Weight [kg/km]
<b>Connector/Connector BNC</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455662</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Connector/Socket BNC</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455663</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Connector/open end of cable BNC</b> Pre-harnessed at one end CFKoax2-01	<b>MAT90455665</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Socket/Socket BNC</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455664</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Socket/open end of cable BNC</b> Pre-harnessed at one end CFKoax2-01	<b>MAT90455666</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
Delivery program CFKoax (TPE) 1 coaxial element – SMA									
<b>Connector/Connector SMA</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455667</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Connector/Socket SMA</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455668</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Socket/open end of cable SMA</b> Pre-harnessed at one end CFKoax2-01	<b>MAT90455670</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Socket/Socket SMA</b> Pre-harnessed on both sides CFKoax2-01	<b>MAT90455669</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37
<b>Socket/open end of cable SMA</b> Pre-harnessed at one end CFKoax2-01	<b>MAT90455671</b>	1	0.22	5.5	10 x d	13.4	20	24.9	37

Note: The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.



## TPE Coax cable | CFKoax 75 Ω

- 75 Ω Coaxial cable for extremely heavy duty applications
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- UV resistant
- Hydrolysis-/microbe-resistant

Delivery program CFKoax (TPE) 1 coaxial element						
Delivery program Part no.	igus® Part No.	Coaxial elements	Outer diameter [in.] [mm]	Bend radius	Copper index [lbs/mft] [kg/km]	Weight [lbs/mft] [kg/km]
<b>Connector/Connector</b> Pre-harnessed on both sides CFKoax1-01	<b>MAT90423401</b>	1	0.18 4.5	10 x d	4.7 7	15.5 23
<b>Connector/Socket</b> Pre-harnessed on both sides CFKoax1-01	<b>MAT90423400</b>	1	0.18 4.5	10 x d	4.7 7	15.5 23
<b>Connector/open end of cable</b> Pre-harnessed at one end CFKoax1-01	<b>MAT90423403</b>	1	0.18 4.5	10 x d	4.7 7	15.5 23
<b>Socket/Socket</b> Pre-harnessed on both sides CFKoax1-01	<b>MAT90423402</b>	1	0.18 4.5	10 x d	4.7 7	15.5 23
<b>Socket/open end of cable</b> Pre-harnessed at one end CFKoax1-01	<b>MAT90423404</b>	1	0.18 4.5	10 x d	4.7 7	15.5 23

Coaxial elements identification	
Part no.	Color code
CFKoax1-01	red

**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

## Class 6.6.4.1

Requirements  
Travel distance  
Oil resistance  
Torsion

Low	1	2	3	4	5	6	7	highest
Unsupported	1	2	3	4	5	6	7	1,312 ft +
none	1	2	3	4	highest			
none	1	2	3	±180°				

Delivery program CFKoax (TPE) 5 coaxial elements						
Delivery program Part no.	igus® Part No.	Coaxial elements	Outer diameter [in.] [mm]	Bend radius	Copper index [lbs/mft] [kg/km]	Weight [lbs/mft] [kg/km]
<b>Connector/Connector</b> Pre-harnessed on both sides CFKoax1-05	<b>MAT90423406</b>	5	0.39 10.0	10 x d	23.5 35	75.3 112
<b>Connector/Socket</b> Pre-harnessed on both sides CFKoax1-05	<b>MAT90423405</b>	5	0.39 10.0	10 x d	23.5 35	75.3 112
<b>Connector/open end of cable</b> Pre-harnessed at one end CFKoax1-05	<b>MAT90423408</b>	5	0.39 10.0	10 x d	23.5 35	75.3 112
<b>Socket/Socket</b> Pre-harnessed on both sides CFKoax1-05	<b>MAT90423407</b>	5	0.39 10.0	10 x d	23.5 35	75.3 112
<b>Socket/open end of cable</b> Pre-harnessed at one end CFKoax1-05	<b>MAT90423409</b>	5	0.39 10.0	10 x d	23.5 35	75.3 112

Coaxial elements identification	
Part no.	Color code
CFKoax1-05	red, green, blue, white, black





**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.





## TPE Coax cable | CFKoax 75 Ω

- VGA cable (DDC not implemented)
- 75 Ω Coaxial cable for extremely heavy duty applications
- TPE outer jacket
- Oil-resistant
- Bio-oil resistant
- UV resistant
- Hydrolysis-/microbe-resistant




Delivery program CFKoax (TPE)		VGA cable – SUB-D							
Delivery program Part no.	igus® Part No.	Coaxial elements	Outer diameter		Bend radius	Copper index		Weight	
			[in.]	[mm]		[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]
<b>Pin SUB-D/Pin SUB-D</b> Pre-harnessed on both sides 									
CFKoax1-05	MAT90455658	5	0.39	10.0	10 x d	23.5	35	75.3	112
<b>Pin SUB-D/Socket SUB-D</b> Pre-harnessed on both sides 									
CFKoax1-05	MAT90455659	5	0.39	10.0	10 x d	23.5	35	75.3	112
<b>Pin SUB-D/Connector BNC</b> Pre-harnessed on both sides 									
CFKoax1-05	MAT90455660	5	0.39	10.0	10 x d	23.5	35	75.3	112
<b>Socket SUB-D/Connector BNC</b> Pre-harnessed on both sides 									
CFKoax1-05	MAT90455661	5	0.39	10.0	10 x d	23.5	35	75.3	112

Coaxial elements identification	
Part no.	Color code
CFKoax1-05	red, green, blue, white, black

**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

## TPE Bus cable | DVI-D/HDMI

- DVI-D cable (digital only, single link)
- HDMI cable (CEC/ARC/HEC not implemented)
- For extremely heavy duty applications
- TPE outer jacket
- Oil-resistant, bio-oil-resistant
- Flame retardant
- Hydrolysis-/microbe-resistant

Delivery program bus cable (TPE)		DVI-D/HDMI							
Delivery program Part no.	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Bend radius	Copper index		Weight	
			[in.]	[mm]		[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]
<b>Pin DVI-D/Pin DVI-D</b> Pre-harnessed on both sides 									
CFBUS-070	MAT90455657	(4x(2xAWG28)C+ (2xAWG28)+ 3xAWG28)C	0.35	9.0	12.5 x d	24.9	37	63.2	94
<b>Pin DVI-D/Pin HDMI</b> Pre-harnessed on both sides 									
CFBUS-070	MAT90478691	(4x(2xAWG28)C+ (2xAWG28)+ 3xAWG28)C	0.35	9.0	12.5 x d	24.9	37	63.2	94
<b>Pin HDMI/Pin HDMI</b> Pre-harnessed on both sides 									
CFBUS-070	MAT90478692	(4x(2xAWG28)C+ (2xAWG28)+ 3xAWG28)C	0.35	9.0	12.5 x d	24.9	37	63.2	94

**Technical application areas:** Transmission length CFBUS.070 up to 7.5 m

**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.

**Note:** The mentioned outer diameters are maximum values. Images exemplary. Also available from the roll in your desired length.



## Camera reference list | Selection table

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m
ALLIED				
		Guppy F-033B	Pike F-032B Fiber	GB650 / GB650c
		Guppy F-033C	Pike F-032C Fiber	GB660 / GB660c
		Guppy F-036B	Pike F-100B Fiber	GB1380 / GB1380c
		Guppy F-036C	Pike F-100C Fiber	GB2450 / GB2450c
		Guppy F-038B	Pike F-145B Fiber	GC640 / GC640c
		Guppy F-038C	Pike F-145C Fiber	GC650 / GC650c
		Guppy F-038B NIR	Pike F-210B Fiber	GC655 / GC655c
		Guppy F-038C NIR	Pike F-210C Fiber	GC660 / GC660c
		Guppy F-044B	Pike F-421B Fiber	GC750 / GC750c
		Guppy F-044C	Pike F-421C Fiber	GC780 / GC780c
		Guppy F-044B NIR	Pike F-505B Fiber	GC1020 / GC1020c
		Guppy F-044C NIR	Pike F-505C Fiber	GC1280
		Guppy F-046B	Pike F-1100B Fiber	GC1290 / GC1290c
		Guppy F-046C	Pike F-1100C Fiber	GC1350 / GC1350c
		Guppy F-080B	Pike F-1600B Fiber	GC1380 / GC1380c
		Guppy F-080C	Pike F-1600C Fiber	GC1380CH / GC1380H
		Guppy F-146B	Stingray F-033B Fiber	GC1600 / GC1600c
		Guppy F-146C	Stingray F-033C Fiber	GC1600CH / GC1600H
		Guppy F-503B	Stingray F-046B Fiber	GC2450 / GC2450c
		Guppy F-503C	Stingray F-046C Fiber	GE640 / GE640c
		Marlin F-033B	Stingray F-080B Fiber	GE650 / GE650c
		Marlin F-033C	Stingray F-080C Fiber	GE680 / GE680c
		Marlin F-046B	Stingray F-125B Fiber	GE1050 / GE1050c
		Marlin F-046C	Stingray F-125C Fiber	GE1350 / GE1350c
		Marlin F-080B	Stingray F-145B Fiber	GE1380 / GE1380c
		Marlin F-080C	Stingray F-145C Fiber	GE1600 / GE1600c
		Marlin F-080B 30fps	Stingray F-146B Fiber	GE1650 / GE1650c
		Marlin F-080C 30fps	Stingray F-146C Fiber	GE1660 / GE1660c
		Marlin F-131B	Stingray F-201B Fiber	GE1900 / GE1900c
		Marlin F-131C	Stingray F-201C Fiber	GE1910 / GE1910c
		Marlin F-131B NIR	Stingray F-504B Fiber	GE2040 / GE2040c
		Marlin F-145B2	Stingray F-504C Fiber	GE4000 / GE4000c
		Marlin F-145C2		GE4900 / GE4900c
		Marlin F-146B		GS650 / GS650c
		Marlin F-146C		GS660 / GS660c
		Marlin F-201B		GS1380 / GS1380c
		Marlin F-201C		GS2450 / GS2450c
		Oscar F-320C		GX1050 / GX1050C
		Oscar F-510C		GX1660 / GX1660C
		Oscar F-810C		GX1910 / GX1910C
				GX1920 / GX1920C
				GX2300 / GX2300C
				GX2750 / GX2750C
				GX3300 / GX3300C



## Camera reference list | Selection table

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m
ALLIED				
				GX6600 / GX6600C
				GT660 / GT660C
				GT1290 / GT1290C
				GT1380 / GT1380C
				GT1600 / GT1600C
				GT1910 / GT1910C
				GT1920 / GT1920C
				GT2300 / GT2300C
				GT2450 / GT2450C
				GT2750 / GT2750C
				Manta G-032B/G-032C
				Manta G-033B/G-033C
				Manta G-046B/G-046C
				Manta G-125B/G-125C
				Manta G-145B/G-145C
				Manta G-145B/145C 30fps
				Manta G-145B-NIR
				Manta G-146B/G-146C
				Manta G-201B/G-201C
				Manta G-504B/G-504C



## Camera reference list | Selection table

ARTRAY

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m
<b>ARTRAY</b>				
ARTCAM-...	ARTCAM-...			
640-THERMO	640-THERMO			
320-THERMO	320-THERMO			
150P4-HDMI	150P4-HDMI			
150P4-HDMI-BW	150P4-HDMI-BW			
130MI-HDMI	130MI-HDMI			
130MI-HDMI-BW	130MI-HDMI-BW			
150P4-MOUT-DUAL	150P4-MOUT-DUAL			
150P4-MOUT-DUAL-BW	150P4-MOUT-DUAL-BW			
130MI-MOUT-DUAL	130MI-MOUT-DUAL			
130MI-MOUT-DUAL-BW	130MI-MOUT-DUAL-BW			
625KY	625KY			
ARTCAM-...	ARTCAM-...			
625KY-BW	625KY-BW			
500P II	500P II			
274KY	274KY			
274KY-BW	274KY-BW			
150P III	150P III			
150P III -BW	150P III -BW			
445KY	445KY			
445KY-BW	445KY-BW			
098 II	098 II			
098 II -BW	098 II -BW			
900MI	900MI			
500MI	500MI			
500MI-BW	500MI-BW			
300MI	300MI			
130MI	130MI			
130MI-BW	130MI-BW			
036MI	036MI			
036MI-BW	036MI-BW			
900SS	900SS			
500SS	500SS			
500SS-BW	500SS-BW			
300SS	300SS			
130SS	130SS			
130SS-BW	130SS-BW			
036SS	036SS			
036SS-BW	036SS-BW			
022MINI	022MINI			
022MINI-BW	022MINI-BW			

## Camera reference list | Selection table

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m
<b>Basler</b>				
		A102f		piA640-210gm/gc
		A102fc		piA1000-48gm/gc
		A311f		piA1600-35gm/gc
		A311fc		piA1900-32gm/gc
		A312f		piA2400-12gm/gc
		A312fc		ruL1024-19gm
		A601f		ruL1024-36gm
		A601fc		ruL1024-57gm
		A631f		ruL2048-10gm
		A631fc		ruL2048-19gm
		A641f		ruL2048-30gm
		A641fc		ruL2098-10gc
				scA640-70gm/gc
				scA640-74gm/gc
				scA750-60gm/gc
				scA780-54gm/gc
				scA1000-20gm/gc
				scA1000-30gm/gc
				scA1390-17gm/gc
				scA1400-17gm/gc
				scA1400-30gm/gc
				scA1600-14gm/gc
				scA1600-14gm/gc
<b>BAUMER</b>				
				EXG50/c
				LXG-80M/C
				LXG-120M/C
				LXG-200M/C
				MXG02/c
				MXG03/c
				MXG12/c
				MXG20/c
				MXGC20/c, 40/c, 40/c.2
				TXG02/c
				TXG03/c
				TXG06/c
				TXG08/c
				TXG12/c
				TXG13/c
				TXG14/c
				TXG14NIR
				TXG20/c
				TXG50/c
				SXG10/c
				SXG20/c
				SXG21/c
				SXG40/c
				SXG80/c
				HXG20/c, 20NIR
				HXG40/c, 40NIR
				VLG-02M / 02C
				VLG-03M / 03C
				VLG-12M / 12C
				VLG-20M / 20C
				VLG-22M / 22C
				VLG-23M / 23C
				VLG-24M / 24C
				VLG-40M / 40C
				VLG-40M.2 / 40C.2

BASLER

Baumer



## Camera reference list | Selection table



CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m

### ARTRAY

Lu series	Lt series
Lw series	
INFINITY series	
SKYnyx series	



### FRAMOS (smartek vision)

Giganetix series
Giganetix+ series
GC1281M
GC2041C
GC2591M/C
GC3851M/C
GC651M/C
GC652M/C
GC653M/C
GC781M/C
GC1031M/C
GC1291M/C
GC1391M/C
GC1392M/C
GC1621M/C
GC2441M/C
GC1021M/C
GC1601M/C
GC1921M/C

### FRAMOS (visiosens)

VFU series
VFU-P series



## Camera reference list | Selection table

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m

### iDS

UI-1220-M/C		UI-5220SE-M/C
UI-1240-M/C		UI-5240SE-M/C
UI-1460-C		UI-5540SE-M
UI-1480-M/C		UI-5640SE-C
UI-1490-M/C		UI-5550SE-C
UI-1540-M		UI-5460SE-C
UI-1640-C		UI-5480SE-M/C
UI-1550-C		UI-5490SE-M/C
UI-1460-C		UI-6140SE-M/C
UI-1640-C		UI-6210SE-M/C
UI-2140-M/C		UI-6410SE-M/C
UI-2210-M/C		UI-6220SE-M/C
UI-2410-M/C		UI-6230SE-M/C
UI-2220-M/C		UI-6240SE-M/C
UI-2230-M/C		UI-6250SE-M/C
UI-2240-M/C		UI-6280SE-M/C
UI-2250-M/C		UI-5220CP-M
UI-2280-M/C		UI-5240CP-M/C
UI-2310-M/C		UI-5480CP-M/C
UI-2410-M/C		UI-5220HE-M/C
UI-1220RE-M/C	UI-1220RE-M/C	UI-5240HE-M/C
UI-1240RE-M/C	UI-1240RE-M/C	UI-5540HE-M
UI-1540RE-M	UI-1540RE-M	UI-5640HE-C
UI-1640RE-C	UI-1640RE-C	UI-5550HE-C
UI-1540RE-M	UI-1540RE-M	UI-5460HE-C
UI-1550RE-C	UI-1550RE-C	UI-5480HE-M/C
UI-1460RE-C	UI-1460RE-C	UI-5490HE-M/C
UI-1480RE-M/C	UI-1480RE-M/C	UI-6210HE-M/C
UI-1490RE-M/C	UI-1490RE-M/C	UI-6410HE-M/C
UI-2140RE-M/C	UI-2140RE-M/C	UI-6220HE-M/C
UI-2210RE-M/C	UI-2210RE-M/C	UI-6230HE-M/C
UI-2410RE-M/C	UI-2410RE-M/C	UI-6240HE-M/C
UI-2220RE-M/C	UI-2220RE-M/C	UI-6250HE-M/C
UI-2230RE-M/C	UI-2230RE-M/C	UI-6280HE-M/C
UI-2240RE-M/C	UI-2240RE-M/C	
UI-2250RE-M/C	UI-2250RE-M/C	
UI-2280RE-M/C	UI-2280RE-M/C	
UI-2310RE-M/C	UI-2310RE-M/C	
UI-2410RE-M/C	UI-2410RE-M/C	



## Camera reference list | Selection table

CFBUS-065	CFBUS-066	CFBUS-055	CFLG-LB	CFBUS-044/045
USB 2.0 up to 5 m	USB 2.0 up to 10 m	FireWire up to 10 m	FOC up to 400 m	GigE up to 50 m
THE IMAGING SOURCE				
DMK 21AU04	DMK 21AU04	DMK 21F04		
DFK 21AU04	DFK 21AU04	DFK 21F04		
DBK 21AU04	DBK 21AU04	DMK 21AF04		
DMK 31AU03	DMK 31AU03	DFK 21AF04		
DFK 31AU03	DFK 31AU03	DBK 21AF04		
DBK 31AU03	DBK 31AU03	DMK 31AF03		
DMK 41AU02	DMK 41AU02	DFK 31AF03		
DFK 41AU02	DFK 41AU02	DBK 31AF03		
DBK 41AU02	DBK 41AU02	DMK 41AF02		
DMK 21BU04	DMK 21BU04	DFK 41AF02		
DFK 21BU04	DFK 21BU04	DBK 41AF02		
DBK 21BU04	DBK 21BU04	DMK 21BF04		
DMK 31BU03	DMK 31BU03	DFK 21BF04		
DFK 31BU03	DFK 31BU03	DBK 21BF04		
DBK 31BU03	DBK 31BU03	DMK 31BF03		
DMK 41BU02	DMK 41BU02	DFK 31BF03		
DFK 41BU02	DFK 41BU02	DBK 31BF03		
DBK 41BU02	DBK 41BU02	DMK 41BF02		
DMK 21BU04.H	DMK 21BU04.H	DFK 41BF02		
DFK 21BU04.H	DFK 21BU04.H	DBK 41BF02		
DBK 21BU04.H	DBK 21BU04.H	DMK 21BF04.H		
DMK 31BU03.H	DMK 31BU03.H	DFK 21BF04.H		
DFK 31BU03.H	DFK 31BU03.H	DBK 21BF04.H		
DBK 31BU03.H	DBK 31BU03.H	DMK 31BF03.H		
DMK 41BU02.H	DMK 41BU02.H	DFK 31BF03.H		
DFK 41BU02.H	DFK 41BU02.H	DBK 31BF03.H		
DBK 41BU02.H	DBK 41BU02.H	DMK 41BF02.H		
		DFK 41BF02.H		
		DBK 41BF02.H		
		DMK 21AF04-Z		
		DFK 21AF04-Z		
		DBK 21AF04-Z		
		DMK 31AF03-Z		
		DFK 31AF03-Z		
		DBK 31AF03-Z		
		DMK 21BF04-Z		
		DFK 21BF04-Z		
		DBK 21BF04-Z		
		DMK 31BF03-Z		
		DFK 31BF03-Z		
		DBK 31BF03-Z		
		DMK 21BF04-Z.H		
		DFK 21BF04-Z.H		
		DBK 21BF04-Z.H		
		DMK 31BF03-Z.H		
		DFK 31BF03-Z.H		
		DBK 31BF03-Z.H		









# Network

Network / Ethernet / FOC / Fieldbus



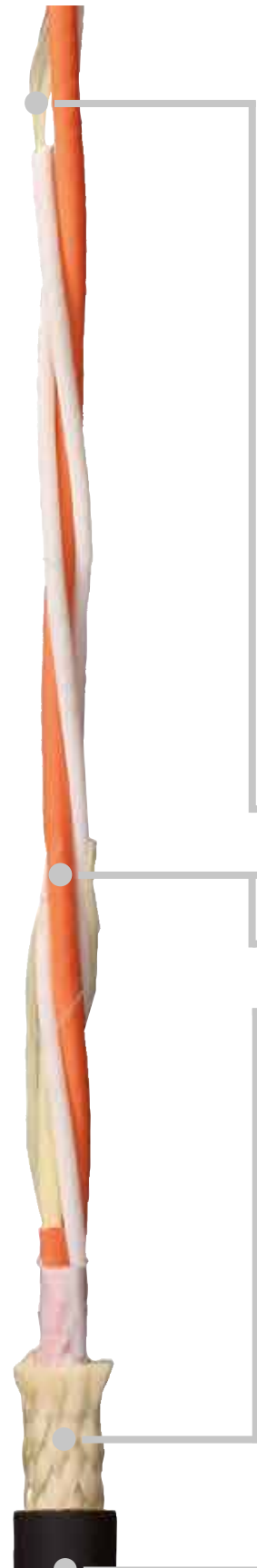
## Chainflex® readycable®



	Cable type	Jacket	Page
Network / Ethernet / FOC / Fieldbus			
	CFLG-LB	Gradient fiber glass cable, pre-harnessed	TPE 472
	CFLG-G	Gradient fiber glass cable, pre-harnessed	TPE 474
	CAT5	Ethernet cable, pre-harnessed	PVC/PUR/TPE 477
	CAT5	Ethernet cable, pre-harnessed, L-/T- angle	PVC/PUR/TPE 482
	CAT6	Ethernet cable, pre-harnessed	TPE 487
	CAT7	Ethernet cable, pre-harnessed	PUR/TPE 492
	Profibus	Profibus cable, pre-harnessed	PVC/PUR/TPE 494
	Profinet	Profinet cable, pre-harnessed	PVC/PUR/TPE 500



# TPE Fiber optic cable | CFLG-LB



- Gradient glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- Metal-free
- Oil-resistant
- Low-temperature-flexible to -40 °F
- PVC-free/halogen-free
- UV-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 5 x d
	<b>flexible</b>		min. 4 x d
	<b>fixed</b>		min. 3 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-31 °F to +176 °F (-35 °C to +80 °C)
	<b>flexible</b>		-58 °F to +176 °F (-50 °C to +80 °C)
	<b>fixed</b>		-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>a. max.</b>	<b>gliding</b>	19.69 ft/s (6 m/s)
	<b>Travel distance</b>	Unsupported travel distances and for gliding applications up to 328 ft (100 m), Class 5	

### Cable structure

	<b>Fibers</b>	50/125 µm, 62.5/125 µm special fixed wire elements with aramide strain relief.
	<b>Conductor construction</b>	Optical Fibers cabled with high-tensile aramid dampers and especially short pitch length.
	<b>Color code</b>	Optical Fibers: Orange or blue with black numbers.
	<b>Overall shield</b>	Extremely bending-resistant aramide braid for torsion-protection.
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: Jet black (similar to 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 EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EG

# Class 7.5.4.1

### Typical application areas

- For maximum mechanical load requirements at 5-7.5 x d
- Maximum EMC safety, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications (horizontal + vertical) up to 328 ft (100 m)
- Crane applications, conveyer technology, low temperature applications

### Delivery program FOC (TPE) 6 and 12 Fibers

Delivery program	igus® Part No.	Number of fibers	Fiber diameter [µm]	Outer diameter [in.]	Outer diameter [mm]	Bend radius
<b>CFLG-6LB-50/125</b>	<b>LWL9040091</b>	6	50/125	0.43	11.0	5.0 x d
<b>CFLG-6LB-62.5/125</b>	<b>LWL9040090</b>	6	62.5/125	0.43	11.0	5.0 x d
<b>CFLG-12LB-50/125</b>	<b>LWL90428938</b>	12	50/125	0.55	14.0	5.0 x d
<b>CFLG-12LB-62.5/125</b>	<b>LWL90428937</b>	12	62.5/125	0.55	14.0	5.0 x d

### Connector ST/ST Pre-harnessed on both sides



<b>CFLG-6LB-50/125</b>	<b>LWL90428946</b>	6	50/125	0.43	11.0	5.0 x d
<b>CFLG-6LB-62.5/125</b>	<b>LWL90428945</b>	6	62.5/125	0.43	11.0	5.0 x d
<b>CFLG-12LB-50/125</b>	<b>LWL90428942</b>	12	50/125	0.55	14.0	5.0 x d
<b>CFLG-12LB-62.5/125</b>	<b>LWL90428941</b>	12	62.5/125	0.55	14.0	5.0 x d

### Connector LC/LC Pre-harnessed on both sides



<b>CFLG-6LB-50/125</b>	<b>LWL90428944</b>	6	50/125	0.43	11.0	5.0 x d
<b>CFLG-6LB-62.5/125</b>	<b>LWL90428943</b>	6	62.5/125	0.43	11.0	5.0 x d
<b>CFLG-12LB-50/125</b>	<b>LWL90428940</b>	12	50/125	0.55	14.0	5.0 x d
<b>CFLG-12LB-62.5/125</b>	<b>LWL90428939</b>	12	62.5/125	0.55	14.0	5.0 x d

### Connector SC/SC Pre-harnessed on both sides



<b>CFLG-6LB-50/125</b>	<b>LWL90428944</b>	6	50/125	0.43	11.0	5.0 x d
<b>CFLG-6LB-62.5/125</b>	<b>LWL90428943</b>	6	62.5/125	0.43	11.0	5.0 x d
<b>CFLG-12LB-50/125</b>	<b>LWL90428940</b>	12	50/125	0.55	14.0	5.0 x d
<b>CFLG-12LB-62.5/125</b>	<b>LWL90428939</b>	12	62.5/125	0.55	14.0	5.0 x d

### Connectors



### Tube sinking

### Tube sinking



LWL90428935

Closed corrugated tube to feed in fiber optic cables (image shown cut open)

Note: The mentioned outer diameters are maximum values.

# TPE Fiber optic cable (FOC) | CFLG-G

- Glass-fiber cable for maximum mechanical load requirements
- TPE outer jacket
- PVC-free/halogen-free
- Low-temperature-flexible to -40 °F
- Hydrolysis-/microbe-resistant

### Dynamic information

	<b>Bend radius</b>	<b>E-Chain®</b>	min. 10 x d
	<b>flexible</b>		min. 8 x d
	<b>fixed</b>		min. 5 x d
	<b>Temperature</b>	<b>E-Chain®</b>	-40 °F to +176 °F (-40 °C to +80 °C)
	<b>flexible</b>		-58 °F to +176 °F (-50 °C to +80 °C)
	<b>fixed</b>		-67 °F to +176 °F (-55 °C to +80 °C)
	<b>v max.</b>	<b>unsupported</b>	32.81 ft/s (10 m/s)
	<b>gliding</b>		19.69 ft/s (6 m/s)
	<b>a max.</b>		65.6 ft/s² (20 m/s²)
	<b>Travel distance</b>		Unsupported travel distances and for gliding applications up to 1312 ft (400 m) and more, Class 6

### Cable structure

	<b>Fibers</b>	9/125 µm, 50/125 µm, 62.5/125 µm fibers in gel-filled hollow cores.
	<b>Conductor construction</b>	Strengthening rods with integrated torsion-protection braid in the outer jacket over a central gel-filled fiber tube.
	<b>Color code</b>	Fibers
	<b>Outer jacket</b>	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in E-Chains®. Color: 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 EN 50267-2-1
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Cleanroom</b>	According to ISO Class 1. Outer jacket material complies with CF9-15-07, tested by IPA according to standard 14644-1
	<b>CE</b>	Following 2014/35/EU

# Class 7.6.4.1

### Typical application areas

- For maximum mechanical load requirements
- Maximum EMC safety, with high transmission qualities in terms of glass-specific requirements
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications
- Unsupported travel distances and for gliding applications (horizontal) up to 1312 ft (400 m) and more
- Ship to shore, crane applications, conveyer technology, low temperature applications

### Delivery program CFLG-G (TPE) 6 and 12 Fibers

Delivery program	igus® Part No.	Number of fibers	Fiber diameter [µm]	Outer diameter [in.]	Outer diameter [mm]	Bend radius
	LWL9040030	6	50/125	0.45	11.5	10 x d
<b>incl. conversion to SC</b>	LWL9040031	6	50/125	0.45	11.5	10 x d
<b>incl. conversion to LC</b>	LWL9040032	6	50/125	0.45	11.5	10 x d
	LWL9040045	6	62.5/125	0.45	11.5	10 x d
<b>incl. conversion to SC</b>	LWL9040046	6	62.5/125	0.45	11.5	10 x d
<b>incl. conversion to LC</b>	LWL9040047	6	62.5/125	0.45	11.5	10 x d

### 6 Fibers, on both sides with ST connectors



### 12 Fibers, on both sides with ST connectors



	LWL9040060	12	50/125	0.45	11.5	10 x d
<b>incl. conversion to SC</b>	LWL9040061	12	50/125	0.45	11.5	10 x d
<b>incl. conversion to LC</b>	LWL9040062	12	50/125	0.45	11.5	10 x d
	LWL9040075	12	62.5/125	0.45	11.5	10 x d
<b>incl. conversion to SC</b>	LWL9040076	12	62.5/125	0.45	11.5	10 x d
<b>incl. conversion to LC</b>	LWL9040077	12	62.5/125	0.45	11.5	10 x d

### Tube sinking

### Tube sinking



LWL90428936

Closed corrugated tube to feed in fiber optic cables (image shown cut open)

### Fiber Identification

Part no.	Fiber identification	Hollow core identification
CFLG-6G-62.5/125-TC	light beige, yellow, green, red, violet, blue	orange
CFLG-6G-50/125-TC	light beige, yellow, green, red, violet, blue	blue
CFLG-12G-62.5/125-TC	light beige, yellow, green, red, violet, blue, lightblue, grey, brown, black, orange, pink	orange
CFLG-12G-50/125-TC	light beige, yellow, green, red, violet, blue, lightblue, grey, brown, black, orange, pink	blue

# Network

## Harnessed Ethernet cables



### Harnessed CAT5 cables

- Technical information **PVC**  
▶ Page 180+182
- Technical information **PUR**  
▶ Page 190+404
- Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	

#### Harting CAT5 connector



<b>PVC</b>	CAT9311001	(4x0.25)C	0.26	6.5	12.5
<b>PUR</b>	CAT9411001	(4x0.25)C	0.26	6.5	12.5
<b>TPE</b>	CAT9511001	(4x0.25)C	0.28	7.0	10

#### Harting CAT5 connector



<b>PVC</b>	CAT9311002	(4x0.25)C	0.26	6.5	12.5
<b>PUR</b>	CAT9411002	(4x0.25)C	0.26	6.5	12.5
<b>TPE</b>	CAT9511002	(4x0.25)C	0.28	7.0	10

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
**x** = without earth core  
 Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme



## Harnessed CAT5e cables

- Technical information **PVC** ▶ Page 180+182
- Technical information **iguPUR** ▶ Page 186
- Technical information **PUR** ▶ Page 190+404
- Technical information **TPE** ▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	

### Telegärtner CAT6<sub>A</sub> connector



PVC	CAT9121002	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321002	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221002	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421002	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621002	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721001	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521002	(4x(2x0.15))C	0.33	8.5	10

### Harting CAT6<sub>A</sub> connector



PVC	CAT9121003	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321003	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221003	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421003	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621003	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721002	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521003	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6 connector



PVC	CAT9121004	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321004	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221004	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421004	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621004	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721003	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521004	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6 / CAT6<sub>A</sub> connector



PVC	CAT9121005	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321005	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221005	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421005	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621005	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721004	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521005	(4x(2x0.15))C	0.33	8.5	10

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core

Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT5e cables

- Technical information **PVC** ▶ Page 180+182
- Technical information **iguPUR** ▶ Page 186
- Technical information **PUR** ▶ Page 190+404
- Technical information **TPE** ▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	

### Telegärtner CAT6 connector (RJ45/M12 x-coded)



PVC	CAT9121006	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321006	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221006	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421006	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621006	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721005	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521006	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6<sub>A</sub> connector (M12 x-coded)



PVC	CAT9121007	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321007	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221007	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421007	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621007	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721006	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521007	(4x(2x0.15))C	0.33	8.5	10

### Phoenix Contact CAT6<sub>A</sub> connector



PVC	CAT9121010	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321010	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221010	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421010	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621010	4x(2x0.14)C	0.33	8.5	10
TPE	CAT9521010	(4x(2x0.15))C	0.33	8.5	10

### Phoenix Contact CAT6<sub>A</sub> connector (M12 x-coded)



PVC	CAT9121013	(4x(2x0.14))C	0.30	7.5	15
PVC, oil-resistant	CAT9321013	(4x(2x0.15))C	0.30	7.5	12.5
iguPUR	CAT9221013	(4x(2x0.14))C	0.30	7.5	15
PUR	CAT9421013	(4x(2x0.15))C	0.30	7.5	12.5
PUR-ROBOT	CAT9621013	4x(2x0.14)C	0.33	8.5	10
PUR-SPECIAL	CAT9721011	(4x(2x0.15))C	0.37	9.5	12.5
TPE	CAT9521013	(4x(2x0.15))C	0.33	8.5	10

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core

Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT5e cables

● Technical information **PVC**  
▶ Page 184

● Technical information **PUR**  
▶ Page 190

Delivery program Straight (PVC/PUR/PUR-ROBOT/TPE) 4/8 poles					
Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius

### Harting CAT5 connector



TPE	CAT9040001	(2x(2x0.25))C	0.28	7.0	12.5 x d
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### Harting CAT5e connector



PVC, oil-resistant	CAT9340020	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240020	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440020	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040020	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector



PVC, oil-resistant	CAT9340060	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240060	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440060	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040060	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Phoenix Contact CAT5e connector



PVC, oil-resistant	CAT9340100	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240100	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440100	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040100	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector in Hummel housing



PVC, oil-resistant	CAT9340140	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240140	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440140	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040140	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector in Hummel housing



PVC, oil-resistant	CAT9340180	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240180	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440180	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040180	(4x(2x0.15))C	0.31	8.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT5e cables

● Technical information **PUR-ROBOT**  
▶ Page 404

● Technical information **TPE**  
▶ Page 194

Delivery program Cross-Over (PVC/PUR/PUR-ROBOT/TPE) 8 poles					
Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius

### Hirose CAT5e connector



PVC, oil-resistant	CAT9340040	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240040	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440040	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040040	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector



PVC, oil-resistant	CAT9340080	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240080	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440080	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040080	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Phoenix Contact CAT5e connector



PVC, oil-resistant	CAT9340120	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240120	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440120	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040120	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector in Hummel housing



PVC, oil-resistant	CAT9340160	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240160	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440160	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040160	(4x(2x0.15))C	0.31	8.0	12.5 x d

### Yamaichi CAT5 connector in Hummel housing



PVC, oil-resistant	CAT9340200	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR	CAT9240200	(4x(2x0.15))C	0.28	7.0	12.5 x d
PUR-ROBOT	CAT9440200	(4x(2x0.15))C	0.33	8.5	10 x d
TPE	CAT9040200	(4x(2x0.15))C	0.31	8.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

# Harnessed CAT5e cables PVC all with Hirose CAT5e connectors

● Technical information **PVC**  
▶ Page 182



Delivery program Straight (PVC) 8 poles						
Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius
CAT9340380	1	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340540	1	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340560	1	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340320	1	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340360	2	1	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340340	2	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340500	2	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340520	2	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340300	2	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340440	3	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340480	3	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340400	3	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340460	4	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340420	4	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
Delivery program Cross-Over (PVC) 8 poles						
CAT9340390	1	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340550	1	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340570	1	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340330	1	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340370	2	1	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340350	2	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340510	2	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340530	2	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340310	2	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340450	3	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340490	3	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340410	3	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340470	4	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9340430	4	5	(4x(2x0.15))C	0.28	7.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

# Harnessed CAT5e cables PUR all with Hirose CAT5e connectors

● Technical information **PUR**  
▶ Page 190



Delivery program Straight (PVC) 8 poles						
Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius
CAT9240380	1	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240540	1	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240560	1	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240320	1	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240360	2	1	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240340	2	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240500	2	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240520	2	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240300	2	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240440	3	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240480	3	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240400	3	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240460	4	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240420	4	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
Delivery program Cross-Over (PUR) 8 poles						
CAT9240390	1	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240550	1	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240570	1	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240330	1	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240370	2	1	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240350	2	2	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240510	2	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240530	2	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240310	2	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240450	3	3	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240490	3	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240410	3	5	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240470	4	4	(4x(2x0.15))C	0.28	7.0	12.5 x d
CAT9240430	4	5	(4x(2x0.15))C	0.28	7.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

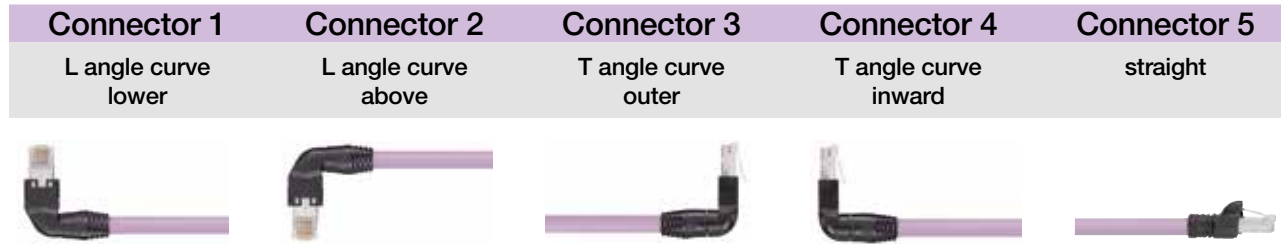




# Harnessed CAT5e cables PUR-ROBOT

all with Hirose CAT5e connectors

● Technical information **PUR-ROBOT**  
▶ Page 404



### Delivery program straight (PUR-ROBOT) 8 poles

Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
				[in.]	[mm]	
CAT9440380	1	2	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440540	1	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440560	1	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440320	1	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440360	2	1	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440340	2	2	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440500	2	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440520	2	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440300	2	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440440	3	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440480	3	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440400	3	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440460	4	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440420	4	5	(4x(2x0.15)C)	0.33	8.5	10 x d

### Delivery program Cross-Over (PUR-ROBOT) 8 poles

CAT9440390	1	2	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440550	1	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440570	1	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440330	1	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440370	2	1	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440350	2	2	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440510	2	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440530	2	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440310	2	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440450	3	3	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440490	3	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440410	3	5	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440470	4	4	(4x(2x0.15)C)	0.33	8.5	10 x d
CAT9440430	4	5	(4x(2x0.15)C)	0.33	8.5	10 x d

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

# Harnessed CAT5e cables TPE

all with Hirose CAT5e connectors

● Technical information **TPE**  
▶ Page 194



### Delivery program straight (TPE) 8 poles

Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
				[in.]	[mm]	
CAT9040380	1	2	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040540	1	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040560	1	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040320	1	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040360	2	1	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040340	2	2	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040500	2	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040520	2	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040300	2	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040440	3	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040480	3	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040400	3	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040460	4	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040420	4	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d

### Delivery program Cross-Over (TPE) 8 poles

CAT9040390	1	2	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040550	1	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040570	1	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040330	1	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040370	2	1	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040350	2	2	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040510	2	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040530	2	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040310	2	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040450	3	3	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040490	3	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040410	3	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040470	4	4	(4x(2x0.15)C)	0.31	8.0	12.5 x d
CAT9040430	4	5	(4x(2x0.15)C)	0.31	8.0	12.5 x d

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme



## Harnessed CAT5e cables

- Technical information **PVC** ▶ Page 182
- Technical information ▶ Page 190
- Techn. information **PUR-ROBOT** ▶ Page 404
- Technical information **TPE** ▶ Page 194

Delivery program connection cable (PVC/PUR/PUR-ROBOT/TPE)					
Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	

### Hirose CAT5e- / Intercontec connector



PVC, oil-resistant	CAT9340800	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR	CAT9240800	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR-ROBOT	CAT9440800	(4x(2x0.15))C	8.5	8.5	10 x d
TPE	CAT9040800	(4x(2x0.15))C	8.0	8.0	12.5 x d

### Delivery program extension cable (PVC/PUR/PUR-ROBOT/TPE)

### Intercontec connector



PVC, oil-resistant	CAT9340810	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR	CAT9240810	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR-ROBOT	CAT9440810	(4x(2x0.15))C	8.5	8.5	10 x d
TPE	CAT9040810	(4x(2x0.15))C	8.0	8.0	12.5 x d

### Delivery program termination Cable (PVC/PUR/PUR-ROBOT/TPE)

### Intercontec- / Hirose CAT5e connector



PVC, oil-resistant	CAT9340820	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR	CAT9240820	(4x(2x0.15))C	7.0	7.0	12.5 x d
PUR-ROBOT	CAT9440820	(4x(2x0.15))C	8.5	8.5	10 x d
TPE	CAT9040820	(4x(2x0.15))C	8.0	8.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
 x = without earth core  
 Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT6 cables

- Technical information **PVC** ▶ Page 182
- Technical information **PUR** ▶ Page 190
- Technical information **TPE** ▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	

### Telegärtner CAT6<sub>A</sub> connector



PVC, oil-resistant	CAT9331002	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431002	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531002	(4x(2x0.15))C	0.33	8.5	10

### Harting CAT6 connector



PVC, oil-resistant	CAT9331003	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431003	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531003	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6 connector



PVC, oil-resistant	CAT9331004	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431004	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531004	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6 connector (RJ45/M12 x-coded)



PVC, oil-resistant	CAT9331005	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431005	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531005	(4x(2x0.15))C	0.33	8.5	10

### Telegärtner CAT6 / CAT6<sub>A</sub> connector



PVC, oil-resistant	CAT9331006	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431006	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531006	(4x(2x0.15))C	0.33	8.5	10

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
 x = without earth core  
 Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT6 cables

● Technical information **PVC**  
▶ Page 182

● Technical information **PUR**  
▶ Page 190

● Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Phoenix Contact CAT6<sub>A</sub> connector</b>					
PVC, oil-resistant	CAT9331009	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431009	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531009	(4x(2x0.15))C	0.33	8.5	10
<b>Phoenix Contact CAT6<sub>A</sub> connector (M12 x-coded)</b>					
PVC, oil-resistant	CAT9331012	(4x(2x0.15))C	0.30	7.5	12.5
PUR	CAT9431012	(4x(2x0.15))C	0.30	7.5	12.5
TPE	CAT9531012	(4x(2x0.15))C	0.33	8.5	10

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme



## Harnessed CAT6 cables TPE

● Technical information **TPE**  
▶ Page 194

Delivery program straight (TPE) 8 poles					
Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Hirose CAT5e connector</b>					
TPE	CAT9040600	(4x(2x0.14))C	0.39	10.0	12.5 x d
<b>Phoenix Contact CAT6 connector</b>					
TPE	CAT9040640	(4x(2x0.14))C	0.39	10.0	12.5 x d
<b>Harting CAT6<sub>A</sub> connector</b>					
TPE	CAT9040680	(4x(2x0.14))C	0.39	10.0	12.5 x d
Delivery program Cross-Over (TPE) 8 poles					
<b>Hirose CAT5e connector</b>					
TPE	CAT9040620	(4x(2x0.14))C	0.39	10.0	12.5 x d
<b>Phoenix Contact CAT6 connector</b>					
TPE	CAT9040660	(4x(2x0.14))C	0.39	10.0	12.5 x d
<b>Harting CAT6<sub>A</sub> connector</b>					
TPE	CAT9040700	(4x(2x0.14))C	0.39	10.0	12.5 x d
Delivery program M12 x-coded connector (TPE)					
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
TPE	CAT9040760	(4x(2x0.14))C	0.39	10.0	12.5 x d
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
TPE	CAT9040720	(4x(2x0.14))C	0.39	10.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme





## Harnessed CAT6<sub>A</sub> cables

● Technical information **PVC**  
▶ Page 182

● Technical information **PUR**  
▶ Page 190+404

● Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9641001	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541001	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Harting CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9641002	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541002	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PVC, oil-resistant	CAT9341004	4x(2x0.20)C	0.37	9.5	12.5
PUR	CAT9441004	4x(2x0.20)C	0.37	9.5	12.5
PUR-ROBOT	CAT9641003	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541003	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector (RJ45/M12 x-coded)</b>					
PVC, oil-resistant	CAT9341005	4x(2x0.20)C	0.37	9.5	12.5
PUR	CAT9441005	4x(2x0.20)C	0.37	9.5	12.5
PUR-ROBOT	CAT9641004	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541004	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PVC, oil-resistant	CAT9341006	4x(2x0.20)C	0.37	9.5	12.5
PUR	CAT9441006	4x(2x0.20)C	0.37	9.5	12.5
PUR-ROBOT	CAT9641005	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541005	(4x(2x0.15)C)C	0.41	10.5	12.5

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT6<sub>A</sub> cables

● Technical information **PVC**  
▶ Page 182

● Technical information **PUR**  
▶ Page 190+404

● Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Phoenix Contact CAT6<sub>A</sub> connector (M12 x-coded)</b>					
PVC, oil-resistant	CAT9341010	4x(2x0.20)C	0.37	9.5	12.5
PUR	CAT9441010	4x(2x0.20)C	0.37	9.5	12.5
PUR-ROBOT	CAT9641009	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9541009	(4x(2x0.15)C)C	0.41	10.5	12.5

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT7 cables

Technical information **PUR**  
▶ Page 190

● Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Telegärtner CAT7 Connecting module</b>					
PUR-ROBOT	CAT9651001	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551001	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9651002	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551002	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Harting CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9651003	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551003*	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9651004	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551004	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Telegärtner CAT6<sub>A</sub> connector</b>					
PUR-ROBOT	CAT9651005	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551005	(4x(2x0.15)C)C	0.41	10.5	12.5

\* 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 mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

## Harnessed CAT7 cables

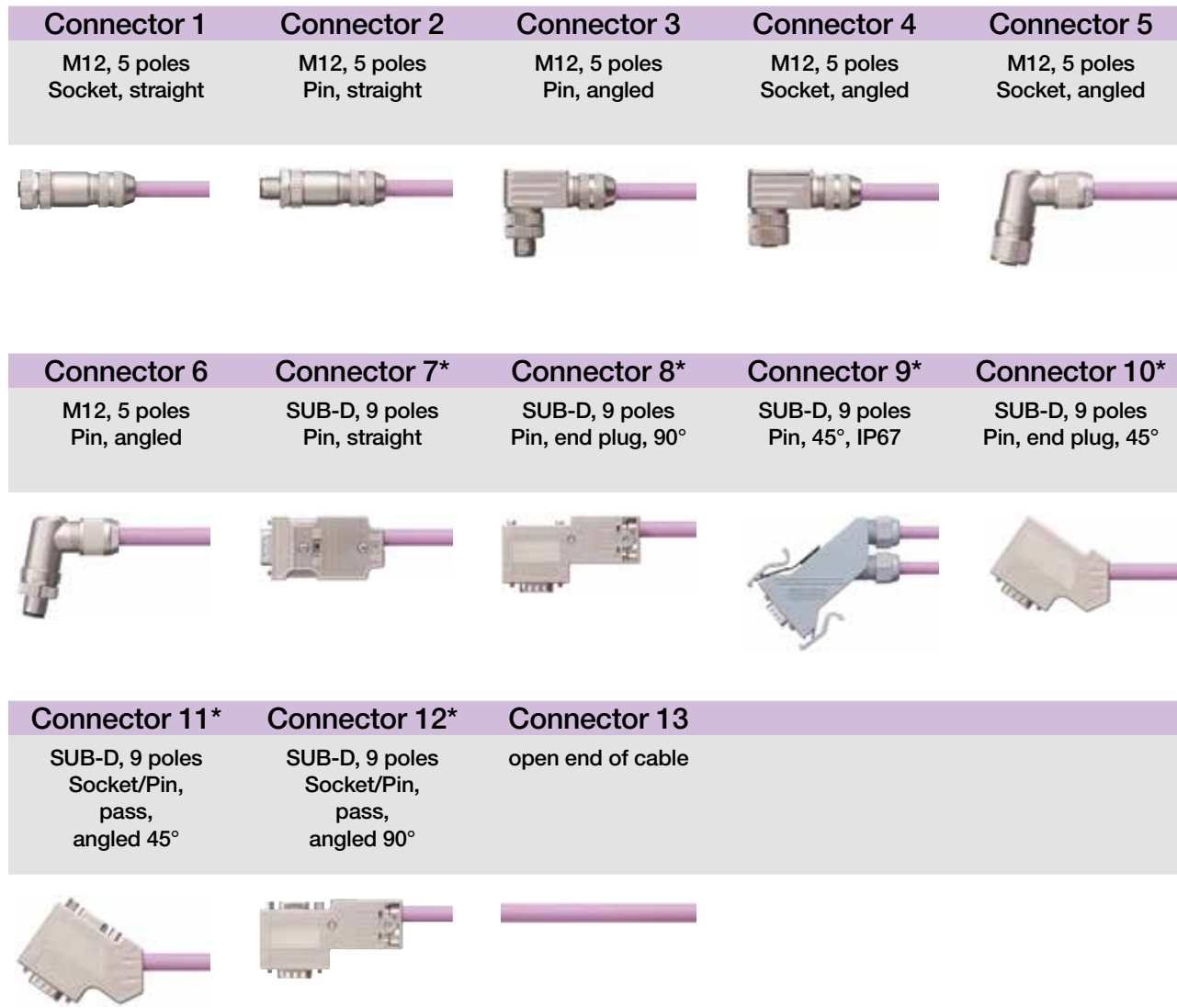
Technical information **PUR**  
▶ Page 190

● Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
			[in.]	[mm]	
<b>Phoenix Contact CAT6<sub>A</sub> connector (M12 x-coded)</b>					
PUR-ROBOT	CAT9651009	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551009	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Module PS-Tera/ Connector PS-Tera</b>					
PUR-ROBOT	CAT9651010	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551010	(4x(2x0.15)C)C	0.41	10.5	12.5
<b>Connector PS-Tera/ Connector PS-Tera</b>					
PUR-ROBOT	CAT9651011	4x(2x0.15)C	0.41	10.5	10
TPE	CAT9551011	(4x(2x0.15)C)C	0.41	10.5	12.5

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core  
Harnessing **RJ45 on both ends** ▶ T568A wiring scheme  
Harnessing **one end RJ45/one end M12 x-coded** ▶ T568B wiring scheme

● Technical information **PVC**  
▶ Page 182



\* Plugs with IN- und OUT connection always will be connected on the IN side if the cable is harnessed. More configurations on request.

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core

Delivery program (PVC)						
Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
				[in.]	[mm]	
BUS9041004	1	1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041001	1	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041011	1	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041006	1	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041005	1	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041002	2	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041013	2	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041007	2	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041054	2	7	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041059	2	8	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041062	2	9	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041055	2	10	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041003	2	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041066	3	4	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041064	3	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041065	4	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041014	5	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041010	5	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041012	5	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041009	6	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041008	6	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041053	7	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041056	7	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041061	8	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041060	9	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041063	9	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041052	10	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041057	10	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041058	11	IN 13/OUT 13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041051	12	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d

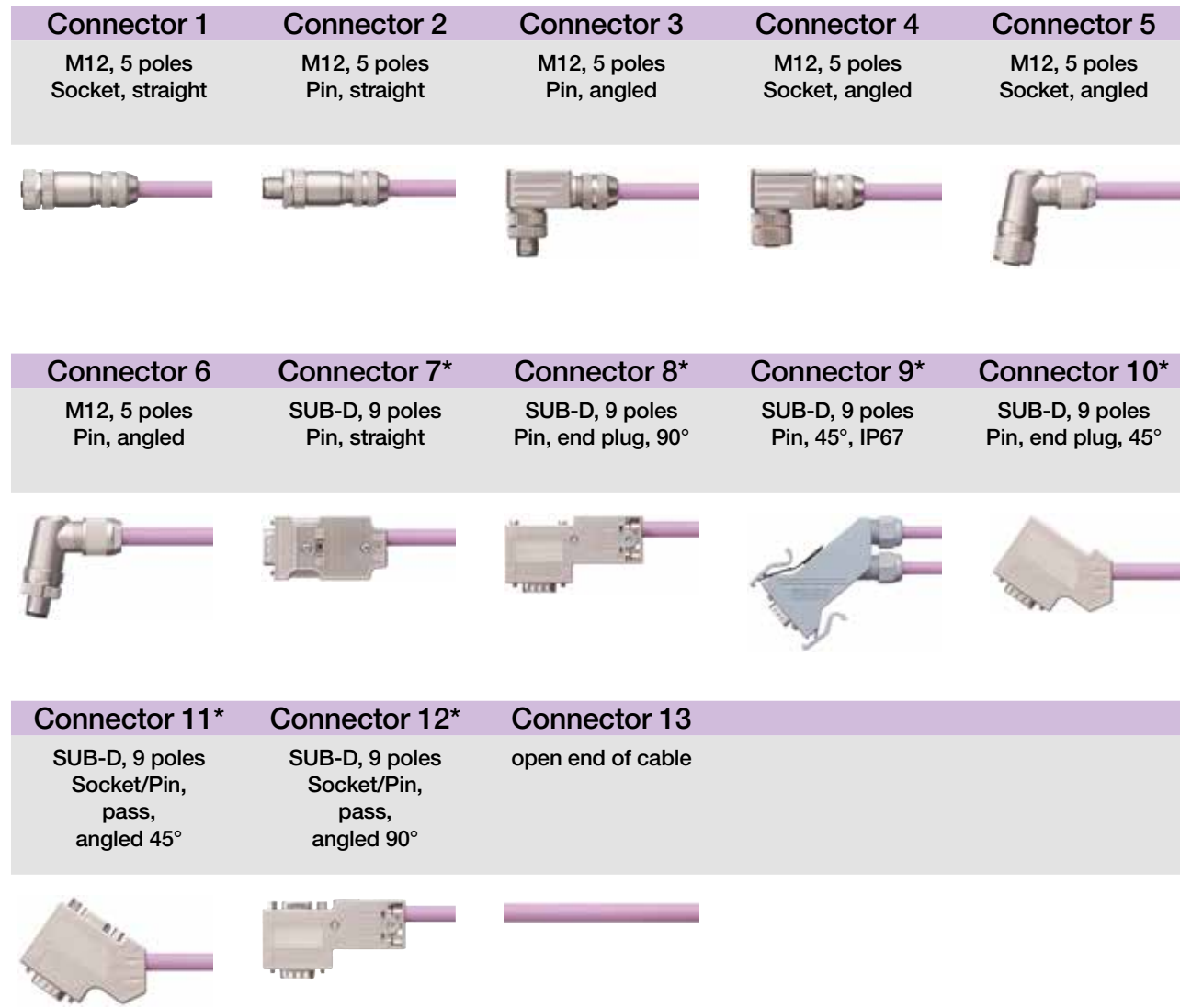
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core





# Network technology | Profibus cables PUR

● Technical information PUR  
 ► Page 190



\* Plugs with IN- und OUT connection always will be connected on the IN side if the cable is harnessed. More configurations on request.

**EPLAN download, configurators ► [www.igus.com/Profibus](http://www.igus.com/Profibus)**

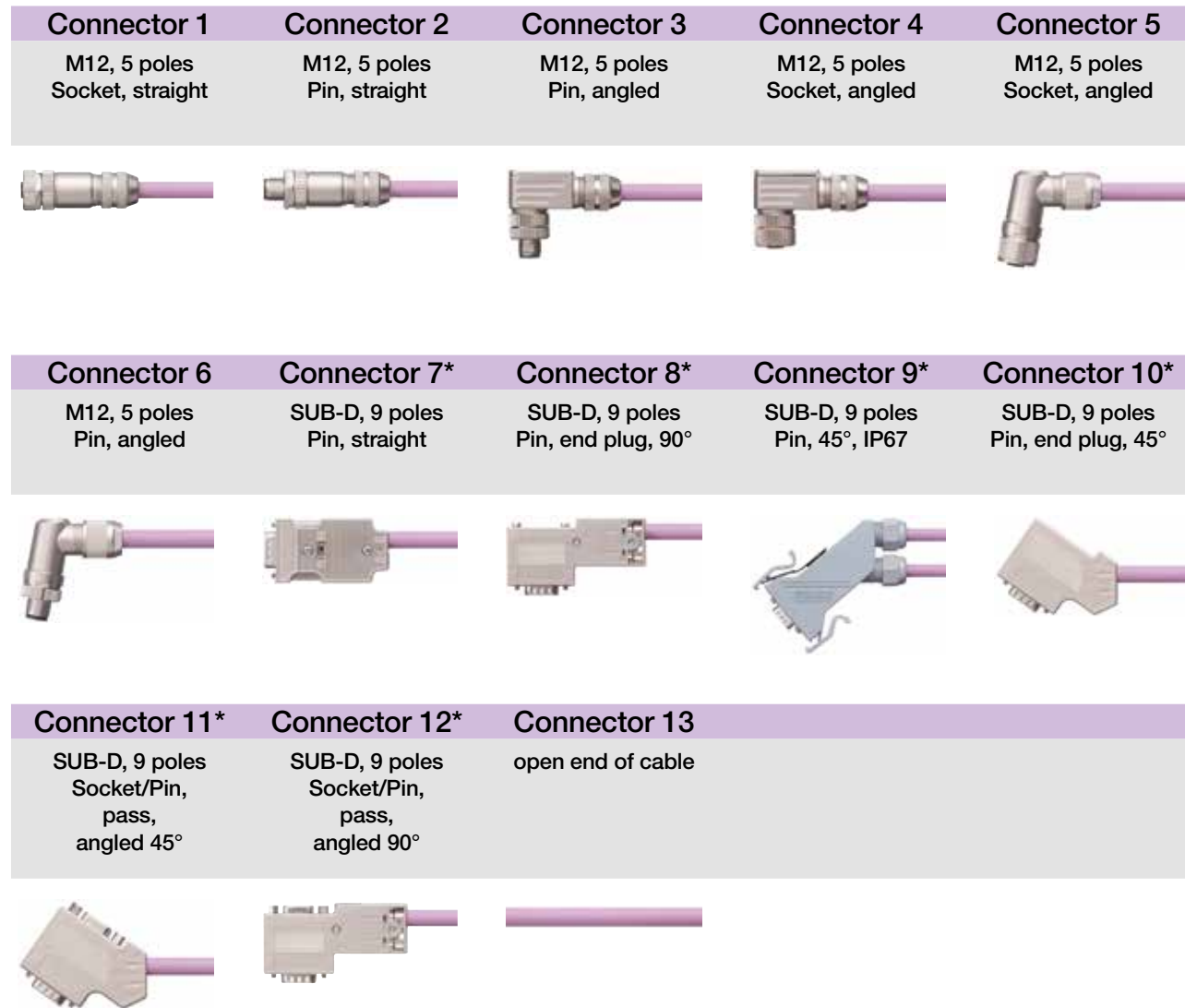
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
 G= with green-yellow earth core x= without earth core

Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
				[in.]	[mm]	
BUS9041104	1	1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041101	1	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041111	1	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041106	1	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041105	1	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041102	2	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041113	2	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041107	2	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041154	2	7	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041159	2	8	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041162	2	9	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041155	2	10	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041103	2	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041166	3	4	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041164	3	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041165	4	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041114	5	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041110	5	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041112	5	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041109	6	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041108	6	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041153	7	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041156	7	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041161	8	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041160	9	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041163	9	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041152	10	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041157	10	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041158	11	IN 13/OUT 13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041151	12	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
 G= with green-yellow earth core x= without earth core



● Technical information TPE  
▶ Page 194



\* Plugs with IN- und OUT connection always will be connected on the IN side if the cable is harnessed. More configurations on request.

Note: The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core

Delivery program (TPE)						
Delivery program Part No.	Harnessing with connector combination		Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter		Bend radius
				[in.]	[mm]	
BUS9041204	1	1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041201	1	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041211	1	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041206	1	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041205	1	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041202	2	2	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041213	2	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041207	2	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041254	2	7	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041259	2	8	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041262	2	9	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041255	2	10	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041203	2	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041266	3	4	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041264	3	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041265	4	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041214	5	5	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041210	5	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041212	5	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041209	6	6	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041208	6	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041253	7	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041256	7	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041261	8	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041260	9	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041263	9	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041252	10	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041257	10	13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041258	11	IN 13/OUT 13	(2x0.25)C	0.31	8.0	12.5 x d
BUS9041251	12	IN 2/OUT 1	(2x0.25)C	0.31	8.0	12.5 x d

Note: The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core



## Harnessed Profinet cables

- Technical information **PVC**  
▶ Page 180+182
- Technical information **iguPUR**  
▶ Page 186
- Technical information **PUR**  
▶ Page 190+404
- Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Bend radius
			[in.]	[mm]	

### Yamaichi Profinet connector



PVC	CAT9161001	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361001	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261001	(4x0.38)C	0.28	7.0	15
PUR	CAT9461001	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661001	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561001	(4x0.38)C	0.30	7.5	12.5

### Harting Profinet connector



PVC	CAT9161002	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361002	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261002	(4x0.38)C	0.28	7.0	15
PUR	CAT9461002	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661002	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561002	(4x0.38)C	0.30	7.5	12.5

### Harting Profinet connector



PVC	CAT9161003	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361003	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261003	(4x0.38)C	0.28	7.0	15
PUR	CAT9461003	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661003	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561003	(4x0.38)C	0.30	7.5	12.5

### Telegärtner Profinet connector



PVC	CAT9161004	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361004	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261004	(4x0.38)C	0.28	7.0	15
PUR	CAT9461004	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661004	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561004	(4x0.38)C	0.30	7.5	12.5

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core

## Harnessed Profinet cables

- Technical information **PVC**  
▶ Page 180+182
- Technical information **iguPUR**  
▶ Page 186
- Technical information **PUR**  
▶ Page 190+404
- Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Bend radius
			[in.]	[mm]	

### Telegärtner Profinet connector



PVC	CAT9161005	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361005	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261005	(4x0.38)C	0.28	7.0	15
PUR	CAT9461005	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661005	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561005	(4x0.38)C	0.30	7.5	12.5

### Telegärtner Profinet connector/ M12 Profinet connector (x-coded)



PVC	CAT9161006	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361006	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261006	(4x0.38)C	0.28	7.0	15
PUR	CAT9461006	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661006	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561006	(4x0.38)C	0.30	7.5	12.5

### Telegärtner M12 Profinet connector (x-coded)



PVC	CAT9161007	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361007	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261007	(4x0.38)C	0.28	7.0	15
PUR	CAT9461007	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661007	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561007	(4x0.38)C	0.30	7.5	12.5

### Telegärtner and Binder Profinet connector (d-coded)



PVC	CAT9161008	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361008	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261008	(4x0.38)C	0.28	7.0	15
PUR	CAT9461008	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661008	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561008	(4x0.38)C	0.30	7.5	12.5

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core



## Harnessed Profinet cables

- Technical information **PVC**  
▶ Page 180+182
- Technical information **iguPUR**  
▶ Page 186
- Technical information **PUR**  
▶ Page 190+404
- Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius
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### Telegärtner and Binder Profinet connector (RJ45/M12 d-coded)



PVC	CAT9161009	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361009	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261009	(4x0.38)C	0.28	7.0	15
PUR	CAT9461009	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661009	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561009	(4x0.38)C	0.30	7.5	12.5

### Phoenix Contact Profinet connector



PVC	CAT9161012	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361012	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261012	(4x0.38)C	0.28	7.0	15
PUR	CAT9461012	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661012	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561012	(4x0.38)C	0.30	7.5	12.5

### Phoenix Contact Profinet connector (x-coded)



PVC	CAT9161014	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361014	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261014	(4x0.38)C	0.28	7.0	15
PUR	CAT9461014	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661014	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561014	(4x0.38)C	0.30	7.5	12.5

### Siemens Profinet connector



PVC	CAT9161015	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361015	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261015	(4x0.38)C	0.28	7.0	15
PUR	CAT9461015	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661015	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561015	(4x0.38)C	0.30	7.5	12.5

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core

## Harnessed Profinet cables

- Technical information **PVC**  
▶ Page 180+182
- Technical information **iguPUR**  
▶ Page 186
- Technical information **PUR**  
▶ Page 190+404
- Technical information **TPE**  
▶ Page 194

Jacket	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter [in.] [mm]		Bend radius
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### Siemens Profinet connector



PVC	CAT9161016	(4x0.38)C	0.28	7.0	15
PVC, oil-resistant	CAT9361016	(4x0.38)C	0.28	7.0	12.5
iguPUR	CAT9261016	(4x0.38)C	0.28	7.0	15
PUR	CAT9461016	(4x0.38)C	0.28	7.0	12.5
PUR-ROBOT	CAT9661016	(2x(2x0.34))C	0.33	8.5	10
TPE	CAT9561016	(4x0.38)C	0.30	7.5	12.5

Note: The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core

# CF-INI

Initiators



# Chainflex® readycable®



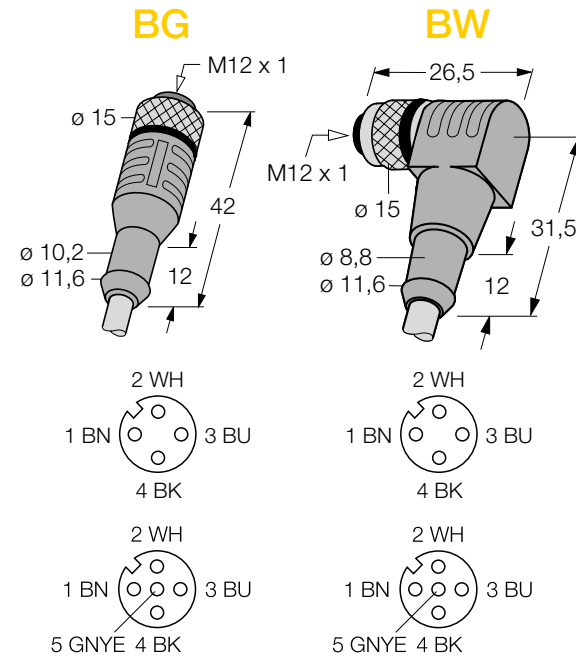
Cable type		Jacket	Page
<b>Initiators CF9 - CF-INI (minimum bend radius 5 x d)</b>			
		Connection cable M12 x 1, straight/angled	TPE 506
		Connection cable M12 x 1, straight/angled, LED	TPE 507
		Linking cable M12 x 1, straight/angled	TPE 508
		Connection cable M8 x 1, straight/angled	TPE 509
		Connection cable M8 x 1, angled, LED	TPE 510
		Linking cable M8 x 1, straight/angled	TPE 511
<b>Initiators CF10 – CF-INI (minimum bend radius 5 x d), shielded</b>			
		Connection cable M12 x 1, straight/angled	TPE 512
		Linking cable M12 x 1, straight/angled	TPE 513
<b>Initiators CF98 - CF-INI (minimum bend radius 4 x d)</b>			
		Connection cable M12 x 1, straight/angled	TPE 514
		Linking cable M12 x 1, straight/angled	TPE 515
		Connection cable M8 x 1, straight/angled	TPE 516
		Linking cable M8 x 1, straight/angled	TPE 517
<b>Chainflex® cables for actuator/sensor distribution box</b>			
		Connection cable M23, straight	TPE 518
		Linking cable M23, straight/angled	TPE 518

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Connection cable M12 x 1: Socket at the cable front, cable ends cut

Plug-type 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)
Number of poles	4-pole
Ampacity	4 A
Rated voltage of a winding	max. 250 V
Number of poles	5-pole (4-pole + PE)
Ampacity	4 A
Rated voltage of a winding	max. 60 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Connection cable M12 (CF9-03-04-INI\*/CF9-03-05-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm²]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
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#### Connection cable, straight



CF-INI-P4-M12-BG-3	MAT9043700	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M12-BG-5	MAT9043701	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BG-7	MAT9043702	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M12-BG-10	MAT9043703	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M12-BG-15	MAT9049426	4x0.34	4	0.20	5.0	49.22	15.0
CF-INI-P5-M12-BG-3	MAT9043737	5x0.34	5	0.22	5.5	9.84	3.0
CF-INI-P5-M12-BG-5	MAT9043738	5x0.34	5	0.22	5.5	16.41	5.0
CF-INI-P5-M12-BG-7	MAT9043739	5x0.34	5	0.22	5.5	22.97	7.0
CF-INI-P5-M12-BG-10	MAT9043740	5x0.34	5	0.22	5.5	32.81	10.0
CF-INI-P5-M12-BG-15	MAT90410077	5x0.34	5	0.22	5.5	49.22	15.0

#### Connection cable, angled



CF-INI-P4-M12-BW-3	MAT9043704	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M12-BW-5	MAT9043705	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BW-7	MAT9043706	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M12-BW-10	MAT9043707	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M12-BW-15	MAT9049430	4x0.34	4	0.20	5.0	49.22	15.0
CF-INI-P5-M12-BW-3	MAT9043742	5x0.34	5	0.22	5.5	9.84	3.0
CF-INI-P5-M12-BW-5	MAT9043743	5x0.34	5	0.22	5.5	16.41	5.0
CF-INI-P5-M12-BW-7	MAT9043744	5x0.34	5	0.22	5.5	22.97	7.0
CF-INI-P5-M12-BW-10	MAT9043745	5x0.34	5	0.22	5.5	32.81	10.0
CF-INI-P5-M12-BW-15	MAT90410078	5x0.34	5	0.22	5.5	49.22	15.0

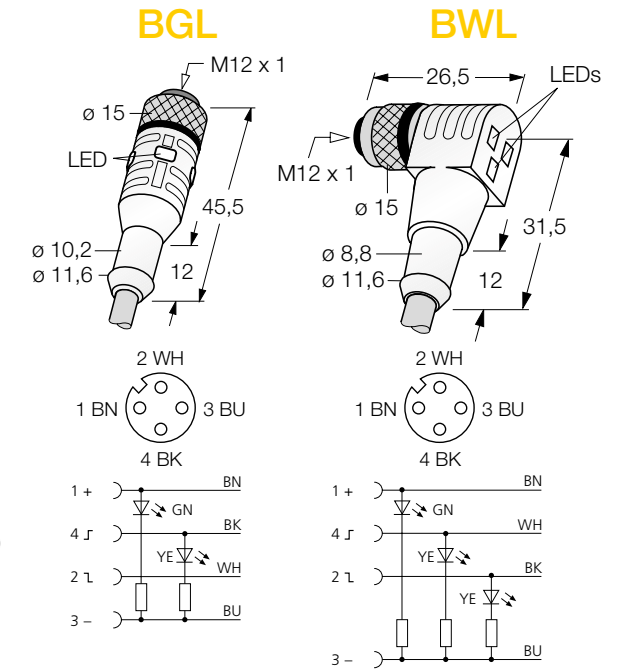
x = without earth core \* technical information ► Page 118

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Connection cable M12 x 1: Socket with LED at the cable front, cable ends cut

Plug-type 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)
Number of poles	4-pole
Ampacity	4 A
Rated voltage of a winding	10...30 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Operating voltage display	LED green
Switching state display	LED yellow/yellow
Switching function	pnp
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP66, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Connection cable M12 (CF9-03-04-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm²]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
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#### Connection cable with LED, straight



CF-INI-P4-M12-BGL2-3	MAT9043708	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M12-BGL2-5	MAT9043709	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BGL2-7	MAT9043710	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M12-BGL2-10	MAT9043711	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M12-BGL2-15	MAT90410087	4x0.34	4	0.20	5.0	49.22	15.0

#### Connection cable with LED, angled



CF-INI-P4-M12-BWL3-3	MAT9043712	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M12-BWL3-5	MAT9043713	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BWL3-7	MAT9043714	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M12-BWL3-10	MAT9043715	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M12-BWL3-15	MAT90410088	4x0.34	4	0.20	5.0	49.22	15.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



Note: The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 118  
x = without earth core



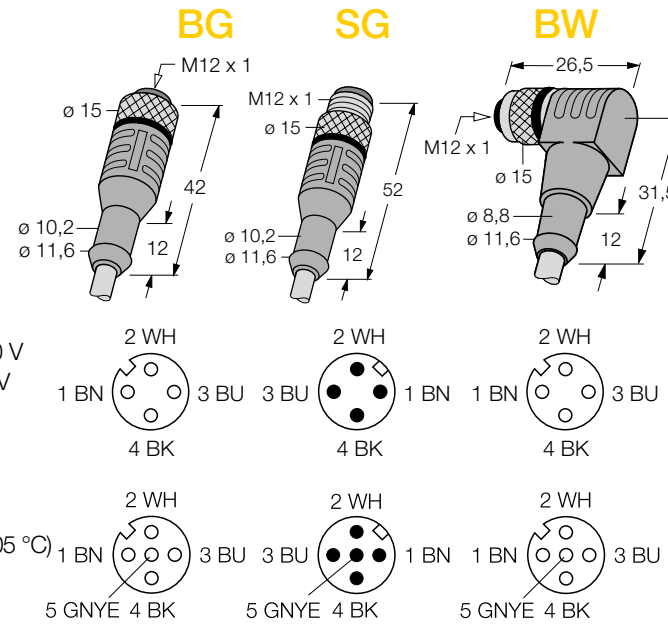
# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Linking cable M12 x 1:

#### Socket at the beginning of cable, cable end pin

Plug-type 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)
Plug-type connector	Connector, M12 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated
Rated voltage of a winding	4-pole: max. 250 V 5-pole (4-pole+PE): max. 60 V
Ampacity	4 A
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



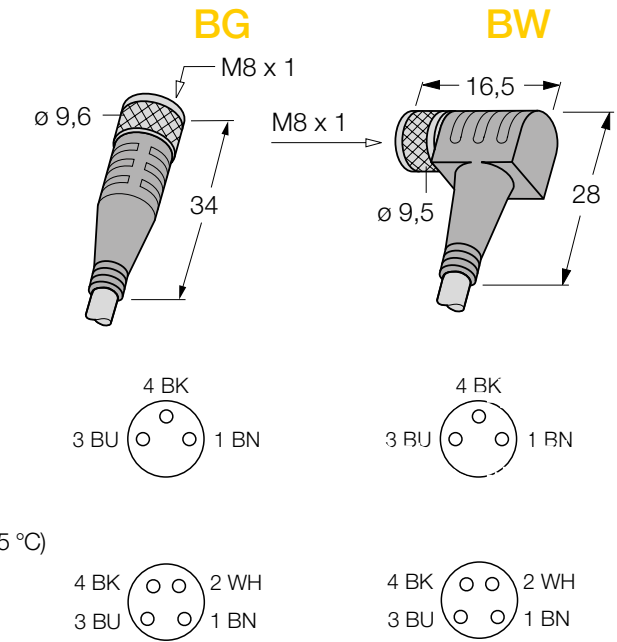
# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Connection cable M8 x 1:

#### Socket at the cable front, cable ends cut

Plug-type connector	Coupling, M8 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)
Number of poles	3-pole
Ampacity	4 A
Rated voltage of a winding	max. 60 V
Number of poles	4-pole
Ampacity	4 A
Rated voltage of a winding	max. 30 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Linking cable M12 (CF9-03-04-INI\*/CF9-03-05-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
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#### Linking cable, straight



CF-INI-P4-M12-BG/M12-SG-2	MAT90410312	4x0.34	4	0.20	5.0	6.56	2.0
CF-INI-P4-M12-BG/M12-SG-5	MAT90410313	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BG/M12-SG-10	MAT90410314	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P5-M12-BG/M12-SG-2	MAT90410339	5x0.34	5	0.22	5.5	6.56	2.0
CF-INI-P5-M12-BG/M12-SG-5	MAT90410340	5x0.34	5	0.22	5.5	16.41	5.0
CF-INI-P5-M12-BG/M12-SG-10	MAT90410341	5x0.34	5	0.22	5.5	32.81	10.0

#### Linking cable, angled



CF-INI-P4-M12-BW/M12-SG-2	MAT90410315	4x0.34	4	0.20	5.0	6.56	2.0
CF-INI-P4-M12-BW/M12-SG-5	MAT90410316	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M12-BW/M12-SG-10	MAT90410317	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P5-M12-BW/M12-SG-2	MAT90410342	5x0.34	5	0.22	5.5	6.56	2.0
CF-INI-P5-M12-BW/M12-SG-5	MAT90410343	5x0.34	5	0.22	5.5	16.41	5.0
CF-INI-P5-M12-BW/M12-SG-10	MAT90410344	5x0.34	5	0.22	5.5	32.81	10.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



Note: The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 118  
x = without earth core

#### Connection cable M8 (CF9-02-03-INI\*/CF9-03-04-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
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#### Connection cable, straight



CF-INI-P3-M8-BG-3	MAT9043716	3x0.25	3	0.18	4.5	9.84	3.0
CF-INI-P3-M8-BG-5	MAT9043717	3x0.25	3	0.18	4.5	16.41	5.0
CF-INI-P3-M8-BG-7	MAT9043718	3x0.25	3	0.18	4.5	22.97	7.0
CF-INI-P3-M8-BG-10	MAT9043719	3x0.25	3	0.18	4.5	32.81	10.0
CF-INI-P3-M8-BG-15	MAT9049416	3x0.25	3	0.18	4.5	49.22	15.0
CF-INI-P4-M8-BG-3	MAT9043728	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M8-BG-5	MAT9043729	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M8-BG-7	MAT9043730	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M8-BG-10	MAT9043731	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M8-BG-15	MAT9049466	4x0.34	4	0.20	5.0	49.22	15.0

#### Connection cable, angled

CF-INI-P3-M8-BW-3	MAT9043724	3x0.25	3	0.18	4.5	9.84	3.0
CF-INI-P3-M8-BW-5	MAT9043725	3x0.25	3	0.18	4.5	16.41	5.0
CF-INI-P3-M8-BW-7	MAT9043726	3x0.25	3	0.18	4.5	22.97	7.0
CF-INI-P3-M8-BW-10	MAT9043727	3x0.25	3	0.18	4.5	32.81	10.0
CF-INI-P3-M8-BW-15	MAT9049419	3x0.25	3	0.18	4.5	49.22	15.0
CF-INI-P4-M8-BW-3	MAT9043732	4x0.34	4	0.20	5.0	9.84	3.0
CF-INI-P4-M8-BW-5	MAT9043733	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M8-BW-7	MAT9043734	4x0.34	4	0.20	5.0	22.97	7.0
CF-INI-P4-M8-BW-10	MAT9043735	4x0.34	4	0.20	5.0	32.81	10.0
CF-INI-P4-M8-BW-15	MAT9049467	4x0.34	4	0.20	5.0	49.22	15.0

x = without earth core \* technical information ► Page 118

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Connection cable M8 x 1:

#### Socket with LED at the cable front, cable ends cut

Plug-type 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)

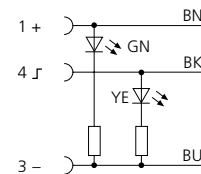
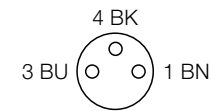
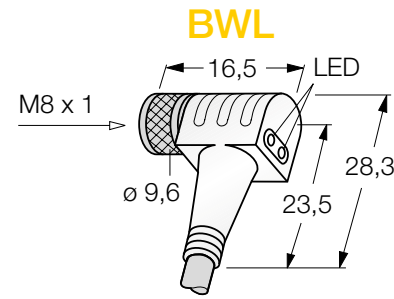
Number of poles	3-pole
Ampacity	4 A
Rated voltage of a winding	10...30 V

Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2

Operating voltage display	LED green
Switching state display	LED yellow/yellow
Switching function	pnp

Ambient temperature -31 °F to +221 °F (-35 °C to +105 °C)

Plug-type connectors	IP66, in screwed state
Protection class	IP66, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Connection cable M8 (CF9-02-03-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
Connection cable with LED, angled							
CF-INI-P3-M8-BWL2-3	MAT9043720	3x0.25	3	0.18	4.5	9.84	3.0
CF-INI-P3-M8-BWL2-5	MAT9043721	3x0.25	3	0.18	4.5	16.41	5.0
CF-INI-P3-M8-BWL2-7	MAT9043722	3x0.25	3	0.18	4.5	22.97	7.0
CF-INI-P3-M8-BWL2-10	MAT9043723	3x0.25	3	0.18	4.5	32.81	10.0
CF-INI-P3-M8-BWL2-15	MAT90410196	3x0.25	3	0.18	4.5	49.22	15.0



Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 118  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Linking cable M8 x 1:

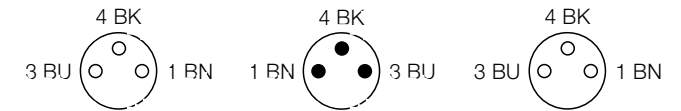
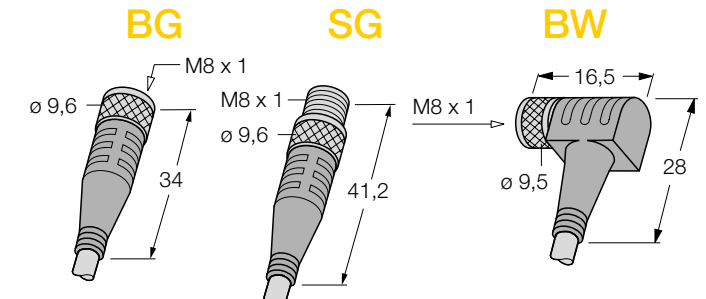
#### Socket at the beginning of cable, cable end pin

Plug-type connector	Coupling, M8 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)

Plug-type connector	Connector, M8 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, PP, black
Contacts	Metal, CuZn, gold-plated

Rated voltage of a winding	3-pole: max. 60 V 4-pole: max. 30 V
Ampacity	4 A
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2

Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	IP69K, in screwed state
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Linking cable M8 (CF9-02-03-INI\*/CF9-03-04-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]
Linking cable, straight							
CF-INI-P3-M8-BG/M8-SG-2	MAT90410324	3x0.25	3	0.18	4.5	6.56	2.0
CF-INI-P3-M8-BG/M8-SG-5	MAT90410325	3x0.25	3	0.18	4.5	16.41	5.0
CF-INI-P3-M8-BG/M8-SG-10	MAT90410326	3x0.25	3	0.18	4.5	32.81	10.0
CF-INI-P4-M8-BG/M8-SG-2	MAT90410333	4x0.34	4	0.20	5.0	6.56	2.0
CF-INI-P4-M8-BG/M8-SG-5	MAT90410334	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M8-BG/M8-SG-10	MAT90410335	4x0.34	4	0.20	5.0	32.81	10.0



#### Linking cable, angled

CF-INI-P3-M8-BW/M8-SG-2	MAT90410330	3x0.25	3	0.18	4.5	6.56	2.0
CF-INI-P3-M8-BW/M8-SG-5	MAT90410331	3x0.25	3	0.18	4.5	16.41	5.0
CF-INI-P3-M8-BW/M8-SG-10	MAT90410332	3x0.25	3	0.18	4.5	32.81	10.0
CF-INI-P4-M8-BW/M8-SG-2	MAT90410336	4x0.34	4	0.20	5.0	6.56	2.0
CF-INI-P4-M8-BW/M8-SG-5	MAT90410337	4x0.34	4	0.20	5.0	16.41	5.0
CF-INI-P4-M8-BW/M8-SG-10	MAT90410338	4x0.34	4	0.20	5.0	32.81	10.0



Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



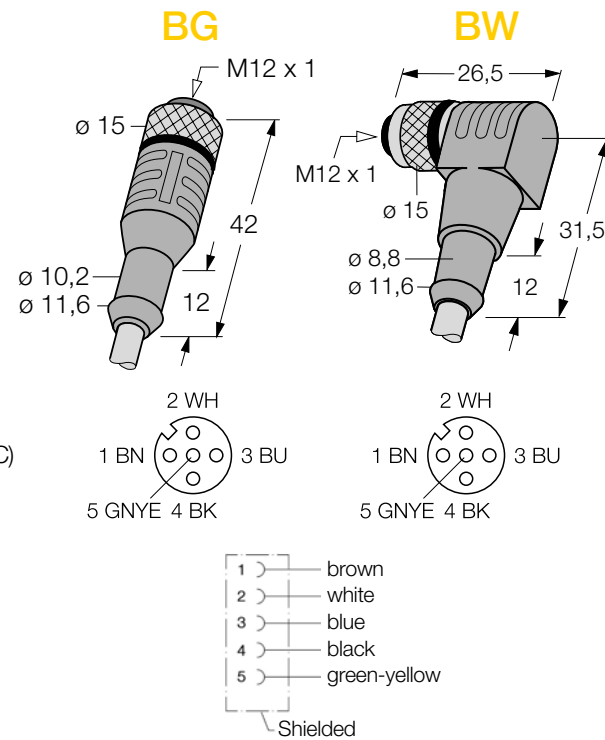
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 118  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Connection cable 360° shielded, M12 x 1: Socket at the cable front, cable ends cut

Plug-type 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)
Number of poles	5-pole (4-pole + PE)
Ampacity	4 A
Rated voltage of a winding	max. 60 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Connection cable M12 (CF10-03-05-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in] [mm]	Cable length [ft] [m]
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#### Connection cable 360° shielded, straight



CF10-INI-P5-C-M12-BG-3	MAT90424072	5x0.34	5	0.28 7.0	9.84 3.0
CF10-INI-P5-C-M12-BG-5	MAT90424073	5x0.34	5	0.28 7.0	16.41 5.0
CF10-INI-P5-C-M12-BG-7	MAT90424074	5x0.34	5	0.28 7.0	22.97 7.0
CF10-INI-P5-C-M12-BG-10	MAT90424075	5x0.34	5	0.28 7.0	32.81 10.0
CF10-INI-P5-C-M12-BG-15	MAT90424076	5x0.34	5	0.28 7.0	49.22 15.0

#### Connection cable 360° shielded, angled



CF10-INI-P5-C-M12-BW-3	MAT90424077	5x0.34	5	0.28 7.0	9.84 3.0
CF10-INI-P5-C-M12-BW-5	MAT90424078	5x0.34	5	0.28 7.0	16.41 5.0
CF10-INI-P5-C-M12-BW-7	MAT90424079	5x0.34	5	0.28 7.0	22.97 7.0
CF10-INI-P5-C-M12-BW-10	MAT90424080	5x0.34	5	0.28 7.0	32.81 10.0
CF10-INI-P5-C-M12-BW-15	MAT90424081	5x0.34	5	0.28 7.0	49.22 15.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



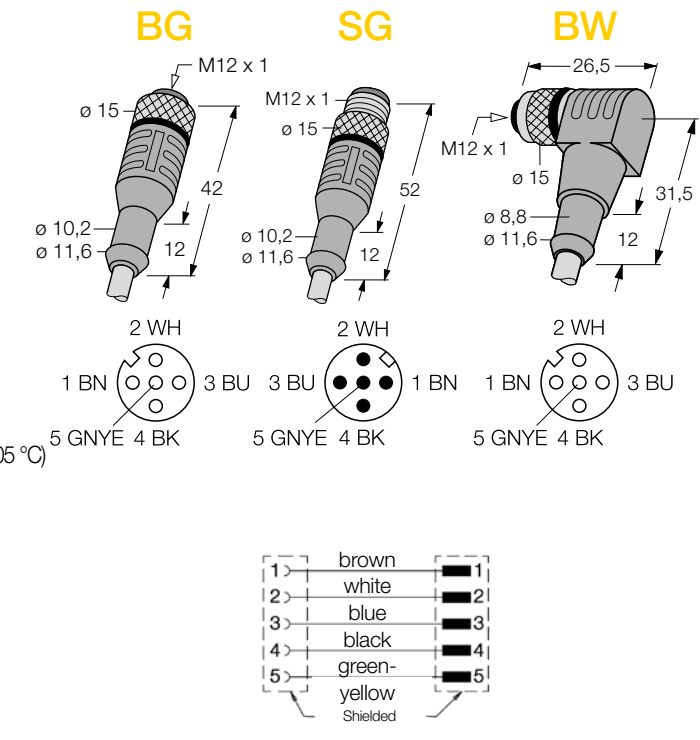
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 122  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cable for e-chains® (5 x d)

### Linking cable 360° shielded, M12 x 1: Socket at the beginning of cable, cable end pin

Plug-type 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)
Number of poles	5-pole (4-pole + PE)
Ampacity	4 A
Rated voltage of a winding	max. 60 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



#### Linking cable M12 (CF10-03-05-INI\*)

Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in] [mm]	Cable length [ft] [m]
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#### Linking cable 360° shielded, straight



CF10-INI-P5-C-M12-BG/M12-SG-2	MAT90424082	5x0.34	5	0.28 7.0	6.56 2.0
CF10-INI-P5-C-M12-BG/M12-SG-5	MAT90424083	5x0.34	5	0.28 7.0	16.41 5.0
CF10-INI-P5-C-M12-BG/M12-SG-10	MAT90424084	5x0.34	5	0.28 7.0	32.81 10.0

#### Linking cable 360° shielded, angled



CF10-INI-P5-C-M12-BW/M12-SG-2	MAT90424085	5x0.34	5	0.28 7.0	6.56 2.0
CF10-INI-P5-C-M12-BW/M12-SG-5	MAT90424086	5x0.34	5	0.28 7.0	16.41 5.0
CF10-INI-P5-C-M12-BW/M12-SG-10	MAT90424087	5x0.34	5	0.28 7.0	32.81 10.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 122  
x = without earth core

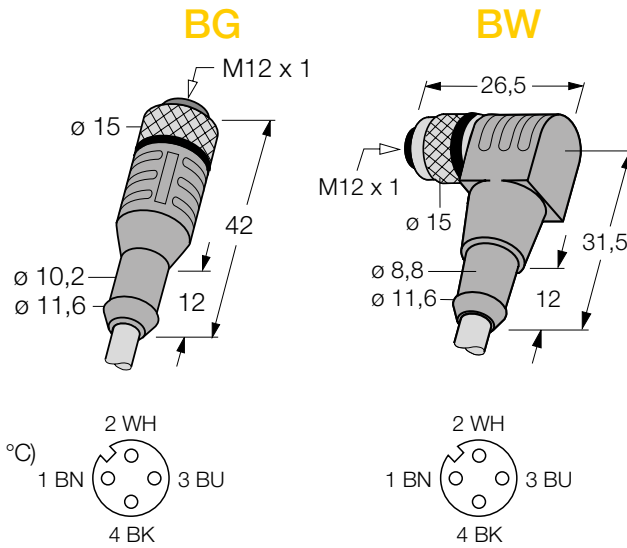


# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cables for e-chain® (4 x d)

### Connection cable M12 x 1: Socket at the cable front, cable ends cut

Plug-type 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)
Number of poles	4-pole
Ampacity	4 A
Rated voltage of a winding	max. 250 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



Connection cable M12 (CF98-03-04-INI*)							
Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]

#### Connection cable, straight



CF98-INI-P4-M12-BG-3	MAT90410235	4x0.34	4	0.22	5.5	9.84	3.0
CF98-INI-P4-M12-BG-5	MAT90410236	4x0.34	4	0.22	5.5	16.41	5.0
CF98-INI-P4-M12-BG-7	MAT90410237	4x0.34	4	0.22	5.5	22.97	7.0
CF98-INI-P4-M12-BG-10	MAT90410238	4x0.34	4	0.22	5.5	32.81	10.0
CF98-INI-P4-M12-BG-15	MAT90410239	4x0.34	4	0.22	5.5	49.22	15.0

#### Connection cable, angled



CF98-INI-P4-M12-BW-3	MAT90410240	4x0.34	4	0.22	5.5	9.84	3.0
CF98-INI-P4-M12-BW-5	MAT90410241	4x0.34	4	0.22	5.5	16.41	5.0
CF98-INI-P4-M12-BW-7	MAT90410242	4x0.34	4	0.22	5.5	22.97	7.0
CF98-INI-P4-M12-BW-10	MAT90410243	4x0.34	4	0.22	5.5	32.81	10.0
CF98-INI-P4-M12-BW-15	MAT90410244	4x0.34	4	0.22	5.5	49.22	15.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



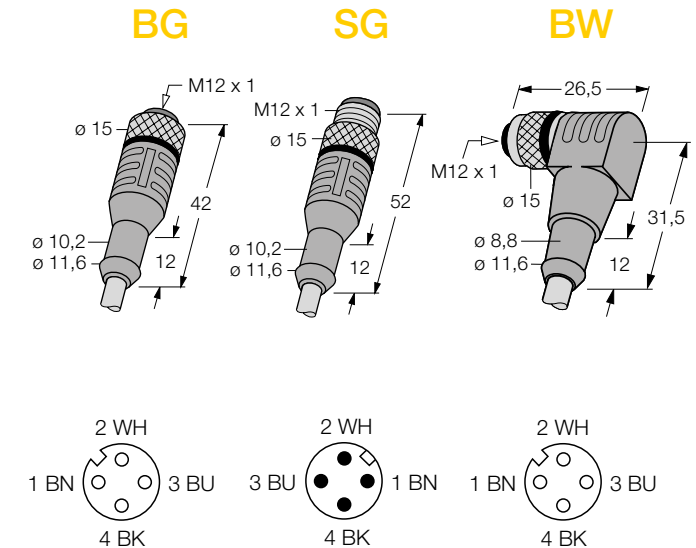
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 134  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cables for e-chain® (4 x d)

### Linking cable M12 x 1: Socket at the beginning of cable, cable end pin

Plug-type connector	Coupling, M12 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)
Plug-type connector	Connector, M12 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated
Rated voltage of a winding	4-pole: max. 250 V
Ampacity	4 A
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



Linking cable M12 (CF98-03-04-INI*)							
Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]

#### Linking cable, straight



CF98-INI-P4-M12-BG/M12-SG-2	MAT90410300	4x0.34	4	0.22	5.5	6.56	2.0
CF98-INI-P4-M12-BG/M12-SG-5	MAT90410301	4x0.34	4	0.22	5.5	16.41	5.0
CF98-INI-P4-M12-BG/M12-SG-10	MAT90410302	4x0.34	4	0.22	5.5	32.81	10.0

#### Linking cable, angled



CF98-INI-P4-M12-BW/M12-SG-2	MAT90410303	4x0.34	4	0.22	5.5	6.56	2.0
CF98-INI-P4-M12-BW/M12-SG-5	MAT90410304	4x0.34	4	0.22	5.5	16.41	5.0
CF98-INI-P4-M12-BW/M12-SG-10	MAT90410305	4x0.34	4	0.22	5.5	32.81	10.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



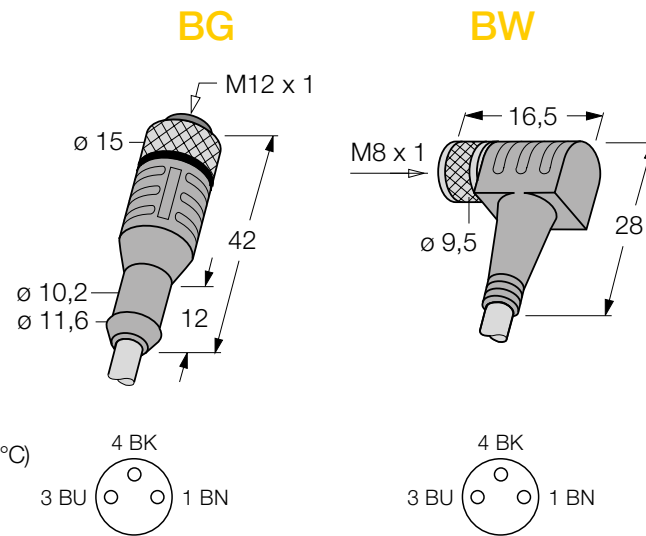
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 134  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cables for e-chain® (4 x d)

### Connection cable M8 x 1: Socket at the cable front, cable ends cut

Plug-type connector	Coupling, M8 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)
Number of poles	3-pole
Ampacity	4 A
Rated voltage of a winding	max. 60 V
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



Connection cable M8 (CF98-02-03-INI*)							
Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]

#### Connection cable, straight



CF98-INI-P3-M8-BG-3	MAT90410245	3x0.25	3	0.20	5.0	9.84	3.0
CF98-INI-P3-M8-BG-5	MAT90410246	3x0.25	3	0.20	5.0	16.41	5.0
CF98-INI-P3-M8-BG-7	MAT90410247	3x0.25	3	0.20	5.0	22.97	7.0
CF98-INI-P3-M8-BG-10	MAT90410248	3x0.25	3	0.20	5.0	32.81	10.0
CF98-INI-P3-M8-BG-15	MAT90410249	3x0.25	3	0.20	5.0	49.22	15.0

#### Connection cable, angled



CF98-INI-P3-M8-BW-3	MAT90410250	3x0.25	3	0.20	5.0	9.84	3.0
CF98-INI-P3-M8-BW-5	MAT90410251	3x0.25	3	0.20	5.0	16.41	5.0
CF98-INI-P3-M8-BW-7	MAT90410252	3x0.25	3	0.20	5.0	22.97	7.0
CF98-INI-P3-M8-BW-10	MAT90410253	3x0.25	3	0.20	5.0	32.81	10.0
CF98-INI-P3-M8-BW-15	MAT90410254	3x0.25	3	0.20	5.0	49.22	15.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



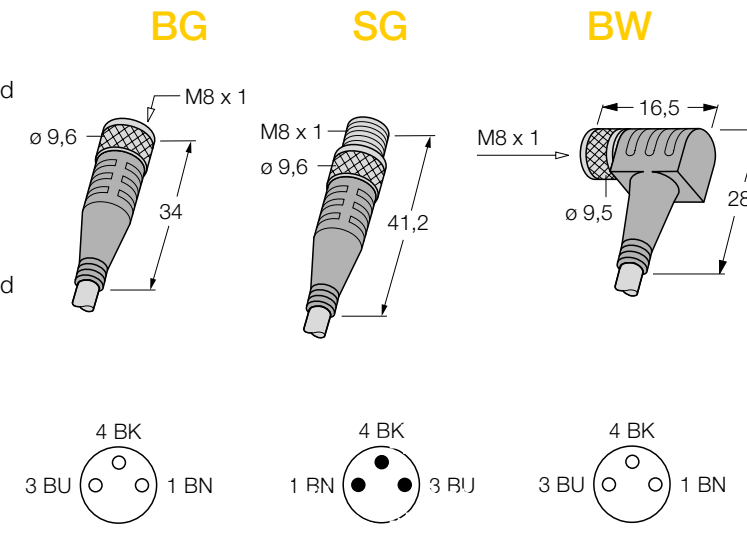
**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 134  
x = without earth core

# CF.INI | Chainflex® sensor/actuator cables

## Chainflex® sensor/actuator cables for e-chain® (4 x d)

### Linking cable M8 x 1: Socket at the beginning of cable, cable end pin

Plug-type connector	Coupling, M8 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, TPU, black
Contacts	Metal, CuZn, gold-plated
Seal	Plastic, FPM (Viton)
Plug-type connector	Connector, M8 x 1
Handle base	Plastic, PP, black
Union nut/screw	Metal, CuZn, nickel-plated
Contact base	Plastic, PP, black
Contacts	Metal, CuZn, gold-plated
Rated voltage of a winding	3-pole: max. 60 V
Ampacity	4 A
Insulating resistance	≥ 10 <sup>9</sup> Ω
Contact resistance	≤ 5 mΩ
Degree of soiling	3/2
Ambient temperature	-31 °F to +221 °F (-35 °C to +105 °C)
Plug-type connectors	
Protection class	IP69K, in screwed state
Mechanical service life	max. 100 insertion cycles



Linking cable M8 (CF98-02-03-INI*)							
Type	igus® Part No.	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Number of poles	Outer diameter [in]	Outer diameter [mm]	Cable length [ft]	Cable length [m]

#### Linking cable, straight



CF98-INI-P3-M8-BG/M8-SG-2	MAT90410306	3x0.25	3	0.20	5.0	6.56	2.0
CF98-INI-P3-M8-BG/M8-SG-5	MAT90410307	3x0.25	3	0.20	5.0	16.41	5.0
CF98-INI-P3-M8-BG/M8-SG-10	MAT90410308	3x0.25	3	0.20	5.0	32.81	10.0

#### Linking cable, angled



CF98-INI-P3-M8-BW/M8-SG-2	MAT90410309	3x0.25	3	0.20	5.0	6.56	2.0
CF98-INI-P3-M8-BW/M8-SG-5	MAT90410310	3x0.25	3	0.20	5.0	16.41	5.0
CF98-INI-P3-M8-BW/M8-SG-10	MAT90410311	3x0.25	3	0.20	5.0	32.81	10.0

Configurators  
► [www.igus.com/CFINI](http://www.igus.com/CFINI)



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* Technical information ► Page 134  
x = without earth core

# CF.INI | Chainflex® sensor/actuator distribution box

To connect sensor/actuator distribution boxes (5 x d)

Connection cable M23:

Socket/pin at the beginning of cable, cable ends cut

- Class 7.6.4
- Oil resistant
- Hydrolysis-/microbe-resistant
- Temperature moved: -31 °F to +221 °F (-35 °C to +105 °C),
- Minimum bend radius 5 x d
- Nominal voltage: 300/500 V
- Color: steel blue (similar to RAL 5011)

Connection cable M23				
Part No.	Number of poles	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter	
			[in]	[mm]
<b>Connection cable* Socket</b>				
MAT90436630	16+3	(4x4x0.34+3x0.75)	0.43	11.0
<b>Connection cable* Pin</b>				
MAT90436631	16+3	(4x4x0.34+3x0.75)	0.43	11.0

Linking cable M23				
Part No.	Number of poles	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter	
			[in]	[mm]
<b>Linking cable, angled</b>				
MAT90436628	16+3	(4x4x0.34+3x0.75)	0.43	11.0
<b>Linking cable, straight</b>				
MAT90436629	16+3	(4x4x0.34+3x0.75)	0.43	11.0

All cables available in your desired length.



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
\* igus® gladly pre-harnesses the cable according to your technical guidelines.  
x = without earth core

# CF.INI | Chainflex® sensor/actuator distribution box

To connect sensor/actuator distribution boxes (5 x d)

Connection cable M12:

Socket at the beginning of cable, cable end pin

Connection cable M12				
Part No.	Number of poles	Number of Conductors and rated cross section [mm <sup>2</sup> ]	Outer diameter	
			[in]	[mm]
<b>M12 8-pin socket - M12 8-pin pin - A-coded</b>				
MAT90478773	8	8 x 0.25	0.26	6.5
<b>M12 8-pin socket - A-coded</b>				
MAT90478774	8	8 x 0.25	0.26	6.5
<b>M12 8-pin pin - A-coded</b>				
MAT90478775	8	8 x 0.25	0.26	6.5
<b>M12 12-pin socket - M12 12-pin pin - A-coded</b>				
MAT90478776	12	12 x 0.25	0.31	8.0
<b>M12 12-pin socket - A-coded</b>				
MAT90478777	12	12 x 0.25	0.31	8.0
<b>M12 12-pin pin - A-coded</b>				
MAT90478778	12	12 x 0.25	0.31	8.0



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
x = without earth core



# 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 on both sides, straight 522
	Han 6B	Harnessed cable, Double locking lever on both sides, angled 522
	Han 10B	Harnessed cable, Single locking lever on both sides, straight 524
	Han 10B	Harnessed cable, Single locking lever on both sides, angled 524
	Han 10B	Harnessed cable, Double locking lever on both sides, straight 524
	Han 10B	Harnessed cable, Double locking lever on both sides, angled 524
	Han 16B	Harnessed cable, Single locking lever on both sides, straight 526
	Han 16B	Harnessed cable, Single locking lever on both sides, angled 526
	Han 16B	Harnessed cable, Double locking lever on both sides, straight 526
	Han 16B	Harnessed cable, Double locking lever on both sides, angled 526
	Han 24B	Harnessed cable, Single locking lever on both sides, straight 528
	Han 24B	Harnessed cable, Single locking lever on both sides, angled 528
	Han 24B	Harnessed cable, Double locking lever on both sides, straight 528
	Han 24B	Harnessed cable, Double locking lever on both sides, angled 528
<b>HARTING Connector sets (chapter Connectors from page 698)</b>		
	Connector sets with pin-inserts	740
	Connector sets Premium (pin + socket)	742

Jacket material	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper Index		Weight		R min. [x d]	Chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
			[in]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]						

**Han 6B Connector housing (pin) to Han 6B Connector housing (socket),  
Single locking lever on both sides, straight**



PVC	MAT90489360	7 G 1.5	0.49	12.5	74.59	111	167.99	250	12.5	CF880-15-07	09330062702	19300061440	09330062602	19300061440
PVC	MAT90489361	7 G 1.5	0.37	9.5	74.59	111	107.52	160	7.5	CF130-15-07-UL	09330062702	19300061440	09330062602	19300061440
PVC	MAT90489362	7 G 1.5	0.41	10.5	75.26	112	125.66	187	6.8	CF5-15-07	09330062702	19300061440	09330062602	19300061440
iguPUR	MAT90489363	7 G 1.5	0.49	12.5	74.59	111	156.57	233	12.5	CF890-15-07	09330062702	19300061440	09330062602	19300061440
PUR	MAT90489364	7 G 1.5	0.41	10.5	74.59	111	116.92	174	6.8	CF77-UL-15-07-D	09330062702	19300061440	09330062602	19300061440
PUR	MAT90489367	5G1.0+(2x1.0)C	0.41	10.5	57.79	86	95.42	142	10	CFROBOT9-001	09330062702	19300061440	09330062602	19300061440
TPE	MAT90489365	7 G 1.5	0.37	9.5	76.60	114	101.47	151	5	CF9-15-07	09330062702	19300061440	09330062602	19300061440
TPE	MAT90489366	7 G 1.5	0.45	11.5	74.59	111	138.43	206	5	CF9-UL-15-07	09330062702	19300061440	09330062602	19300061440

**Han 6B Connector housing (pin) to Han 6B Connector housing (socket),  
Single locking lever on both sides, angled**



PVC	MAT90489368	7 G 1.5	0.49	12.5	74.59	111	167.99	250	12.5	CF880-15-07	09330062702	19300061541	09330062602	19300061541
PVC	MAT90489369	7 G 1.5	0.37	9.5	74.59	111	107.52	160	7.5	CF130-15-07-UL	09330062702	19300061540	09330062602	19300061540
PVC	MAT90489370	7 G 1.5	0.41	10.5	75.26	112	125.66	187	6.8	CF5-15-07	09330062702	19300061540	09330062602	19300061540
iguPUR	MAT90489371	7 G 1.5	0.49	12.5	74.59	111	156.57	233	12.5	CF890-15-07	09330062702	19300061541	09330062602	19300061541
PUR	MAT90489372	7 G 1.5	0.41	10.5	74.59	111	116.92	174	6.8	CF77-UL-15-07-D	09330062702	19300061540	09330062602	19300061540
PUR	MAT90489375	5G1.0+(2x1.0)C	0.41	10.5	57.79	86	95.42	142	10	CFROBOT9-001	09330062702	19300061540	09330062602	19300061540
TPE	MAT90489373	7 G 1.5	0.37	9.5	76.60	114	101.47	151	5	CF9-15-07	09330062702	19300061540	09330062602	19300061540
TPE	MAT90489374	7 G 1.5	0.45	11.5	74.59	111	138.43	206	5	CF9-UL-15-07	09330062702	19300061540	09330062602	19300061540

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core

# Harnessed control cables | HARTING Han 10B

Jacket material	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter [in] [mm]	Copper Index [lbs/mft] [kg/km]	Weight [lbs/mft] [kg/km]	R min. [x d]	Chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
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## Han 10B Connector housing (pin) to Han 10B Connector housing (socket), Single locking lever on both sides, straight



PVC	MAT90489376	12 G 1.5	0.57 14.5	128.35 191	249.97 372	12.5	CF880-15-12	09330102702	19300101441	09330102602	19300101441
PVC	MAT90489377	12 G 1.5	0.51 13.0	128.35 191	192.86 287	7.5	CF130-15-12-UL	09330102702	19300101441	09330102602	19300101441
PVC	MAT90489378	12 G 1.5	0.59 15.0	128.35 191	185.46 276	6.8	CF5-15-12	09330102702	19300101441	09330102602	19300101441
iguPUR	MAT90489379	12 G 1.5	0.57 14.5	128.35 191	236.53 352	12.5	CF890-15-12	09330102702	19300101441	09330102602	19300101441
PUR	MAT90489380	12 G 1.5	0.55 14.0	128.35 191	206.97 308	6.8	CF77-UL-15-12-D	09330102702	19300101441	09330102602	19300101441
PUR	MAT90489383	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330102702	19300101441	09330102602	19300101441
TPE	MAT90489381	12 G 1.5	0.53 13.5	128.35 191	194.87 290	5	CF9-15-12	09330102702	19300101441	09330102602	19300101441
TPE	MAT90489382	12 G 1.5	0.63 16.0	128.35 191	258.04 384	5	CF9-UL-15-12	09330102702	19300101441	09330102602	19300101441

## Han 10B Connector housing (pin) to Han 10B Connector housing (socket), Single locking lever on both sides, angled



PVC	MAT90489384	12 G 1.5	0.57 14.5	128.35 191	249.97 372	12.5	CF880-15-12	09330102702	19300101541	09330102602	19300101541
PVC	MAT90489385	12 G 1.5	0.51 13.0	128.35 191	192.86 287	7.5	CF130-15-12-UL	09330102702	19300101541	09330102602	19300101541
PVC	MAT90489386	12 G 1.5	0.59 15.0	128.35 191	185.46 276	6.8	CF5-15-12	09330102702	19300101541	09330102602	19300101541
iguPUR	MAT90489387	12 G 1.5	0.57 14.5	128.35 191	236.53 352	12.5	CF890-15-12	09330102702	19300101541	09330102602	19300101541
PUR	MAT90489388	12 G 1.5	0.55 14.0	128.35 191	206.97 308	6.8	CF77-UL-15-12-D	09330102702	19300101541	09330102602	19300101541
PUR	MAT90489391	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330102702	19300101541	09330102602	19300101541
TPE	MAT90489389	12 G 1.5	0.53 13.5	128.35 191	194.87 290	5	CF9-15-12	09330102702	19300101541	09330102602	19300101541
TPE	MAT90489390	12 G 1.5	0.63 16.0	128.35 191	258.04 384	5	CF9-UL-15-12	09330102702	19300101541	09330102602	19300101541

## Han 10B Connector housing (pin) to Han 10B Connector housing (socket), Double locking lever on both sides, straight



PVC	MAT90489392	12 G 1.5	0.57 14.5	128.35 191	249.97 372	12.5	CF880-15-12	09330102702	19300101421	09330102602	19300101421
PVC	MAT90489393	12 G 1.5	0.51 13.0	128.35 191	192.86 287	7.5	CF130-15-12-UL	09330102702	19300101421	09330102602	19300101421
PVC	MAT90489394	12 G 1.5	0.59 15.0	128.35 191	185.46 276	6.8	CF5-15-12	09330102702	19300101421	09330102602	19300101421
iguPUR	MAT90489395	12 G 1.5	0.57 14.5	128.35 191	236.53 352	12.5	CF890-15-12	09330102702	19300101421	09330102602	19300101421
PUR	MAT90489396	12 G 1.5	0.55 14.0	128.35 191	206.97 308	6.8	CF77-UL-15-12-D	09330102702	19300101421	09330102602	19300101421
PUR	MAT90489399	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330102702	19300101421	09330102602	19300101421
TPE	MAT90489397	12 G 1.5	0.53 13.5	128.35 191	194.87 290	5	CF9-15-12	09330102702	19300101421	09330102602	19300101421
TPE	MAT90489398	12 G 1.5	0.63 16.0	128.35 191	258.04 384	5	CF9-UL-15-12	09330102702	19300101421	09330102602	19300101421

## Han 10B Connector housing (pin) to Han 10B Connector housing (socket), Double locking lever on both sides, angled



PVC	MAT90489400	12 G 1.5	0.57 14.5	128.35 191	249.97 372	12.5	CF880-15-12	09330102702	19300101521	09330102602	19300101521
PVC	MAT90489401	12 G 1.5	0.51 13.0	128.35 191	192.86 287	7.5	CF130-15-12-UL	09330102702	19300101521	09330102602	19300101521
PVC	MAT90489402	12 G 1.5	0.59 15.0	128.35 191	185.46 276	6.8	CF5-15-12	09330102702	19300101521	09330102602	19300101521
iguPUR	MAT90489403	12 G 1.5	0.57 14.5	128.35 191	236.53 352	12.5	CF890-15-12	09330102702	19300101521	09330102602	19300101521
PUR	MAT90489404	12 G 1.5	0.55 14.0	128.35 191	206.97 308	6.8	CF77-UL-15-12-D	09330102702	19300101521	09330102602	19300101521
PUR	MAT90489407	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330102702	19300101521	09330102602	19300101521
TPE	MAT90489405	12 G 1.5	0.53 13.5	128.35 191	194.87 290	5	CF9-15-12	09330102702	19300101521	09330102602	19300101521
TPE	MAT90489406	12 G 1.5	0.63 16.0	128.35 191	258.04 384	5	CF9-UL-15-12	09330102702	19300101521	09330102602	19300101521

Note: The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core



# Harnessed control cables | HARTING Han 16B

Jacket material	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter [in] [mm]	Copper Index [lbs/mft] [kg/km]	Weight [lbs/mft] [kg/km]	R min. [x d]	Chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
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## Han 16B Connector housing (pin) to Han 16B Connector housing (socket), Single locking lever on both sides, straight



PVC	MAT90489408	18 G 1.5	0.69 17.5	192.18 286	368.24 548	12.5	CF880-15-18	09330162702	19300161442	09330162602	19300161442
PVC	MAT90489409	18 G 1.5	0.69 17.5	192.18 286	325.23 484	7.5	CF130-15-18-UL	09330162702	19300161442	09330162602	19300161442
PVC	MAT90489410	18 G 1.5	0.77 19.5	191.51 285	333.30 496	6.8	CF5-15-18	09330162702	19300161442	09330162602	19300161442
iguPUR	MAT90489411	18 G 1.5	0.69 17.5	192.18 286	349.42 520	12.5	CF890-15-18	09330162702	19300161442	09330162602	19300161442
PUR	MAT90489412	18 G 1.5	0.67 17.0	192.18 286	320.53 477	6.8	CF77-UL-15-18-D	09330162702	19300161442	09330162602	19300161442
PUR	MAT90489415	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330162702	19300161442	09330162602	19300161442
TPE	MAT90489413	18 G 1.5	0.65 16.5	192.18 286	277.52 413	5	CF9-15-18	09330162702	19300161442	09330162602	19300161442
TPE	MAT90489414	18 G 1.5	0.75 19.0	192.18 286	371.60 553	5	CF9-UL-15-18	09330162702	19300161442	09330162602	19300161442

## Han 16B Connector housing (pin) to Han 16B Connector housing (socket), Single locking lever on both sides, angled



PVC	MAT90489416	18 G 1.5	0.69 17.5	192.18 286	368.24 548	12.5	CF880-15-18	09330162702	19300161542	09330162602	19300161542
PVC	MAT90489417	18 G 1.5	0.69 17.5	192.18 286	325.23 484	7.5	CF130-15-18-UL	09330162702	19300161542	09330162602	19300161542
PVC	MAT90489418	18 G 1.5	0.77 19.5	191.51 285	333.30 496	6.8	CF5-15-18	09330162702	19300161542	09330162602	19300161542
iguPUR	MAT90489419	18 G 1.5	0.69 17.5	192.18 286	349.42 520	12.5	CF890-15-18	09330162702	19300161542	09330162602	19300161542
PUR	MAT90489420	18 G 1.5	0.67 17.0	192.18 286	320.53 477	6.8	CF77-UL-15-18-D	09330162702	19300161542	09330162602	19300161542
PUR	MAT90489423	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330162702	19300161542	09330162602	19300161542
TPE	MAT90489421	18 G 1.5	0.65 16.5	192.18 286	277.52 413	5	CF9-15-18	09330162702	19300161542	09330162602	19300161542
TPE	MAT90489422	18 G 1.5	0.75 19.0	192.18 286	371.60 553	5	CF9-UL-15-18	09330162702	19300161542	09330162602	19300161542

## Han 16B Connector housing (pin) to Han 16B Connector housing (socket), Double locking lever on both sides, straight



PVC	MAT90489424	18 G 1.5	0.69 17.5	192.18 286	368.24 548	12.5	CF880-15-18	09330162702	19300161422	09330162602	19300161422
PVC	MAT90489425	18 G 1.5	0.69 17.5	192.18 286	325.23 484	7.5	CF130-15-18-UL	09330162702	19300161422	09330162602	19300161422
PVC	MAT90489426	18 G 1.5	0.77 19.5	191.51 285	333.30 496	6.8	CF5-15-18	09330162702	19300161422	09330162602	19300161422
iguPUR	MAT90489427	18 G 1.5	0.69 17.5	192.18 286	349.42 520	12.5	CF890-15-18	09330162702	19300161422	09330162602	19300161422
PUR	MAT90489428	18 G 1.5	0.67 17.0	192.18 286	320.53 477	6.8	CF77-UL-15-18-D	09330162702	19300161422	09330162602	19300161422
PUR	MAT90489431	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330162702	19300161422	09330162602	19300161422
TPE	MAT90489429	18 G 1.5	0.65 16.5	192.18 286	277.52 413	5	CF9-15-18	09330162702	19300161422	09330162602	19300161422
TPE	MAT90489430	18 G 1.5	0.75 19.0	192.18 286	371.60 553	5	CF9-UL-15-18	09330162702	19300161422	09330162602	19300161422

## Han 16B Connector housing (pin) to Han 16B Connector housing (socket), Double locking lever on both sides, angled



PVC	MAT90489432	18 G 1.5	0.69 17.5	192.18 286	368.24 548	12.5	CF880-15-18	09330162702	19300161522	09330162602	19300161522
PVC	MAT90489433	18 G 1.5	0.69 17.5	192.18 286	325.23 484	7.5	CF130-15-18-UL	09330162702	19300161522	09330162602	19300161522
PVC	MAT90489434	18 G 1.5	0.77 19.5	191.51 285	333.30 496	6.8	CF5-15-18	09330162702	19300161522	09330162602	19300161522
iguPUR	MAT90489435	18 G 1.5	0.69 17.5	192.18 286	349.42 520	12.5	CF890-15-18	09330162702	19300161522	09330162602	19300161522
PUR	MAT90489436	18 G 1.5	0.67 17.0	192.18 286	320.53 477	6.8	CF77-UL-15-18-D	09330162702	19300161522	09330162602	19300161522
PUR	MAT90489439	16G1.0+(2x1.0)C	0.63 16.0	139.10 207	217.72 324	10	CFROBOT9-004	09330162702	19300161522	09330162602	19300161522
TPE	MAT90489437	18 G 1.5	0.65 16.5	192.18 286	277.52 413	5	CF9-15-18	09330162702	19300161522	09330162602	19300161522
TPE	MAT90489438	18 G 1.5	0.75 19.0	192.18 286	371.60 553	5	CF9-UL-15-18	09330162702	19300161522	09330162602	19300161522

Note: The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core

# Harnessed control cables | HARTING Han 24B

Jacket material	igus® Part No.	Number of Conductors and rated cross section [mm²]	Outer diameter		Copper Index		Weight		R min. [x d]	Chainflex® cable	Insert 1 HARTING Part No.	Housing 1 HARTING Part No.	Insert 2 HARTING Part No.	Housing 2 HARTING Part No.
			[in]	[mm]	[lbs/mft]	[kg/km]	[lbs/mft]	[kg/km]						

## Han 24B Connector housing (pin) to Han 24B Connector housing (socket), Single locking lever on both sides, straight



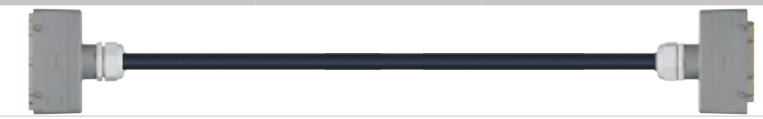
PVC	MAT90489440	25 G 1.5	0.83	21.0	266.10	396	516.07	768	12.5	CF880-15-25	09330242702	19300241442	09330242602	19300241442
PVC	MAT90489441	25 G 1.5	0.77	19.5	266.10	396	414.60	617	7.5	CF130-15-25-UL	09330242702	19300241442	09330242602	19300241442
PVC	MAT90489442	25 G 1.5	0.85	21.5	266.10	396	450.22	670	6.8	CF5-15-25	09330242702	19300241442	09330242602	19300241442
iguPUR	MAT90489443	25 G 1.5	0.83	21.0	266.10	396	492.55	733	12.5	CF890-15-25	09330242702	19300241442	09330242602	19300241442
PUR	MAT90489444	25 G 1.5	0.77	19.5	266.10	396	423.34	630	6.8	CF77-UL-15-25-D	09330242702	19300241442	09330242602	19300241442
PUR	MAT90489447	23G1.0+(2x1.0)C	0.77	19.5	192.18	286	310.45	462	10	CFROBOT9-005	09330242702	19300241442	09330242602	19300241442
TPE	MAT90489445	25 G 1.5	0.79	20.0	266.10	396	424.68	632	5	CF9-15-25	09330242702	19300241442	09330242602	19300241442
TPE	MAT90489446	25 G 1.5	0.87	22.0	266.10	396	508.01	756	5	CF9-UL-15-25	09330242702	19300241442	09330242602	19300241442

## Han 24B Connector housing (pin) to Han 24B Connector housing (socket), Single locking lever on both sides, angled



PVC	MAT90489448	25 G 1.5	0.83	21.0	266.10	396	516.07	768	12.5	CF880-15-25	09330242702	19300241542	09330242602	19300241542
PVC	MAT90489449	25 G 1.5	0.77	19.5	266.10	396	414.60	617	7.5	CF130-15-25-UL	09330242702	19300241542	09330242602	19300241542
PVC	MAT90489450	25 G 1.5	0.85	21.5	266.10	396	450.22	670	6.8	CF5-15-25	09330242702	19300241542	09330242602	19300241542
iguPUR	MAT90489451	25 G 1.5	0.83	21.0	266.10	396	492.55	733	12.5	CF890-15-25	09330242702	19300241542	09330242602	19300241542
PUR	MAT90489452	25 G 1.5	0.77	19.5	266.10	396	423.34	630	6.8	CF77-UL-15-25-D	09330242702	19300241542	09330242602	19300241542
PUR	MAT90489455	23G1.0+(2x1.0)C	0.77	19.5	192.18	286	310.45	462	10	CFROBOT9-005	09330242702	19300241542	09330242602	19300241542
TPE	MAT90489453	25 G 1.5	0.79	20.0	266.10	396	424.68	632	5	CF9-15-25	09330242702	19300241542	09330242602	19300241542
TPE	MAT90489454	25 G 1.5	0.87	22.0	266.10	396	508.01	756	5	CF9-UL-15-25	09330242702	19300241542	09330242602	19300241542

## Han 24B Connector housing (pin) to Han 24B Connector housing (socket), Double locking lever on both sides, straight



PVC	MAT90489456	25 G 1.5	0.83	21.0	266.10	396	516.07	768	12.5	CF880-15-25	09330242702	19300241422	09330242602	19300241422
PVC	MAT90489457	25 G 1.5	0.77	19.5	266.10	396	414.60	617	7.5	CF130-15-25-UL	09330242702	19300241422	09330242602	19300241422
PVC	MAT90489458	25 G 1.5	0.85	21.5	266.10	396	450.22	670	6.8	CF5-15-25	09330242702	19300241422	09330242602	19300241422
iguPUR	MAT90489459	25 G 1.5	0.83	21.0	266.10	396	492.55	733	12.5	CF890-15-25	09330242702	19300241422	09330242602	19300241422
PUR	MAT90489460	25 G 1.5	0.77	19.5	266.10	396	423.34	630	6.8	CF77-UL-15-25-D	09330242702	19300241422	09330242602	19300241422
PUR	MAT90489463	23G1.0+(2x1.0)C	0.77	19.5	192.18	286	310.45	462	10	CFROBOT9-005	09330242702	19300241422	09330242602	19300241422
TPE	MAT90489461	25 G 1.5	0.79	20.0	266.10	396	424.68	632	5	CF9-15-25	09330242702	19300241422	09330242602	19300241422
TPE	MAT90489462	25 G 1.5	0.87	22.0	266.10	396	508.01	756	5	CF9-UL-15-25	09330242702	19300241422	09330242602	19300241422

## Han 24B Connector housing (pin) to Han 24B Connector housing (socket), Double locking lever on both sides, angled



PVC	MAT90489464	25 G 1.5	0.83	21.0	266.10	396	516.07	768	12.5	CF880-15-25	09330242702	19300241522	09330242602	19300241522
PVC	MAT90489465	25 G 1.5	0.77	19.5	266.10	396	414.60	617	7.5	CF130-15-25-UL	09330242702	19300241522	09330242602	19300241522
PVC	MAT90489466	25 G 1.5	0.85	21.5	266.10	396	450.22	670	6.8	CF5-15-25	09330242702	19300241522	09330242602	19300241522
iguPUR	MAT90489467	25 G 1.5	0.83	21.0	266.10	396	492.55	733	12.5	CF890-15-25	09330242702	19300241522	09330242602	19300241522
PUR	MAT90489468	25 G 1.5	0.77	19.5	266.10	396	423.34	630	6.8	CF77-UL-15-25-D	09330242702	19300241522	09330242602	19300241522
PUR	MAT90489471	23G1.0+(2x1.0)C	0.77	19.5	192.18	286	310.45	462	10	CFROBOT9-005	09330242702	19300241522	09330242602	19300241522
TPE	MAT90489469	25 G 1.5	0.79	20.0	266.10	396	424.68	632	5	CF9-15-25	09330242702	19300241522	09330242602	19300241522
TPE	MAT90489470	25 G 1.5	0.87	22.0	266.10	396	508.01	756	5	CF9-UL-15-25	09330242702	19300241522	09330242602	19300241522

Note: The mentioned outer diameters are maximum values. Images exemplary.  
G= with green-yellow earth core x= without earth core

# Robotics

Harnessed hose packages  
and cables for robots



## Chainflex® ReadyCable®



page

### Hose packages for robots



ReadyChain® Robot Harnessed hose packages for welding robots

532

### Harnessed cables for axis 7 on robots

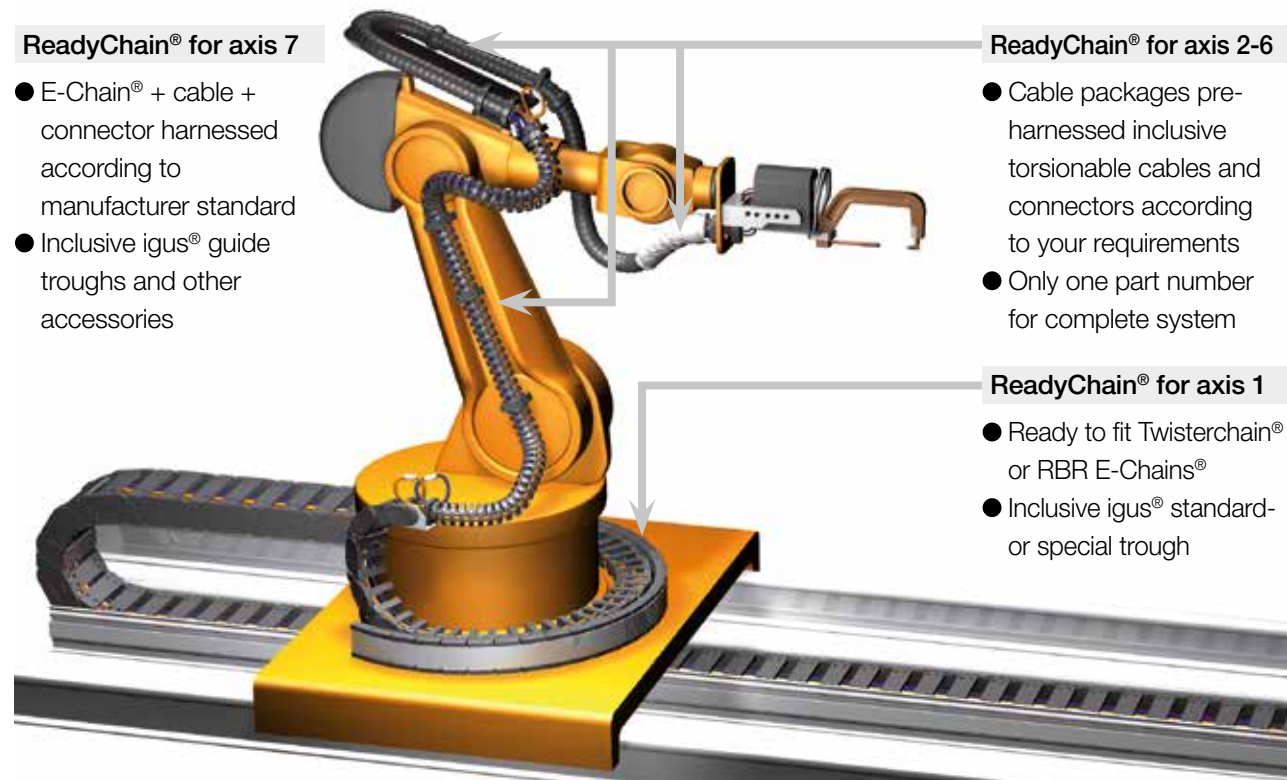


CFSPECIAL-792 Harnessed connecting cables for KUKA robots

534



Assembled energy supply systems, connectors and cables from igus®. Everything from a single source. Directly from the manufacturer. Quick delivery on your robot, delivered in 1-10 days



#### ReadyChain® for axis 7

- E-Chain® + cable + connector harnessed according to manufacturer standard
- Inclusive igus® guide troughs and other accessories

#### ReadyChain® for axis 2-6

- Cable packages pre-harnessed inclusive torsionable cables and connectors according to your requirements
- Only one part number for complete system

#### ReadyChain® for axis 1

- Ready to fit Twisterchain® or RBR E-Chains®
- Inclusive igus® standard- or special trough

#### Additional services for you

- Survey of existing systems on your robot by our sales engineers
- Optional system guarantee
- Worldwide readychain® specialists and 11 production sites for fast maintenance and spare part support

### Moving energy made easy – even with robot applications

The modular igus® 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.com/quickrobot](http://www.igus.com/quickrobot)

All igus® robotic components are tested in our laboratory and have already been reliably used in applications for many years. Our primary aim is to design a reliable overall 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.

## Triflex® ReadyChain® hose packages

Delivery program hose packages for welding robots	
Product range	Equipment hose package
Part No.	

### Welding axis 1-3

(1 m breakout/side + 1 m E-Chain® for each)



#### RRC-S-001

- Consisting of:
- 1 m TRCF-85-135-0, including mounting brackets
  - Welding cable (2x35 mm<sup>2</sup> + 1x25 mm<sup>2</sup>) including multi-contact TSB and TSS welding connector
  - Control cable (18x0.75 mm<sup>2</sup> + 5x0.75 mm<sup>2</sup>) including rectangular connector on both ends
  - Welding control cable (5x2x0.5 mm<sup>2</sup>) including rectangular connector on both ends
  - 3x hoses - DN12 red, green, blue - including fixture on both ends

### Welding axis 3-6

(1 m breakout/side + 1 m E-Chain® for each)



#### RRC-S-002


















- Consisting of:
- 1 m TRC-85-135-0 including protectors and mounting brackets
  - Welding cable (2x35 mm<sup>2</sup> + 1x25 mm<sup>2</sup>) including multi-contact TSB and TSS welding connector
  - Control cable (18x0.75 mm<sup>2</sup> + 5x0.75 mm<sup>2</sup>) including round connector and rectangular connector
  - Welding control cable (5x2x0.5 mm<sup>2</sup>) including rectangular connector on both ends
  - 3x hoses - DN12 red, green, blue - including fixture on both ends














## ... harnessed cables for Drive Technology ... Chainflex® ReadyCable® ▶▶

Selection according to manufacturers		Jacket	Page
<b>Harnessed cables for Drive Technology</b>			
	<b>Allen Bradley</b>	Motor/Servo/Servo-Hybrid-/ Brake/Feedback cables	PVC/PUR/TPE 544
	<b>B&amp;R</b>	Motor/Servo/EnDat-/Encoder/ Resolver/Bus cables	PVC/PUR/TPE 544
	<b>Baumüller</b>	Servo/Resolver/Pulse encoder cables	PVC/PUR/TPE 545
	<b>Beckhoff</b>	Motor/Servo/Servo-Hybrid/Encoder/ Thermal protection/Resolver cables	PVC/PUR/TPE 547
	<b>Berger Lahr</b>	Servo/Resolver cables	PVC/PUR/TPE 548
	<b>Control Techniques</b>	Motor/Servo/Encoder cables	PVC/PUR/TPE 548
	<b>Danaher Motion</b>	Motor/Servo/Signal cables	PVC/PUR/TPE 549
	<b>ELAU/Schneider Electric</b>	Servo/Encoder/Hybrid Servo cables	PVC/PUR/TPE 552
	<b>FAGOR</b>	Path measuring cables	PUR/TPE 553
	<b>Fanuc</b>	Power/Servo/Brake/ Encoder/Signal cables	PVC/PUR/TPE 553
	<b>Festo</b>	Servo/Encoder/Data/ Bus/Control cables	PVC/PUR/TPE 554
	<b>Heidenhain</b>	Servo/Adapter cables	PVC/PUR/TPE 554
	<b>Jetter</b>	Motor/Servo/Resolver cables	PVC/PUR/TPE 555
	<b>Lenze</b>	Servo/Resolver/Encoder/Feed- back-/ Decoder/Fan cables	PVC/PUR/TPE 555
	<b>LinMot</b>	Motor/Servo/Encoder cables	PVC/PUR 556
	<b>LTi DRIVES</b>	Servo/Encoder cables	PVC/PUR/TPE 556
	<b>Mitsubishi Electric</b>	Motor/Encoder cables	PVC/PUR 557

More "harnessed cables for drive technology" ▶ Page 538

To make the choice easier for you, we have classified all Chainflex® cables according to the criteria "requirements, oil-resistance and travel distance". For detailed information see the inside of the front cover flap.



Selection according to manufacturers		Jacket	Page
<b>Harnessed cables for Drive Technology</b>			
	<b>NUM</b>	Power/Servo/Encoder/Fan cables	PVC/PUR/TPE 557
	<b>Omron</b>	Motor/Encoder/Control cables	PVC/PUR/TPE 557
	<b>Parker</b>	Motor/Resolver cables	PVC/PUR/TPE 558
	<b>Rexroth</b>	Power/Encoder cables	PVC/PUR/TPE 558
	<b>SEW</b>	Power/Servo/Encoder/Hybrid Servo cables	PVC/PUR/TPE 560
	<b>Siemens</b>	Power/Servo/Signal cables	PVC/PUR/TPE 562
	<b>Stöber</b>	Servo/Encoder cables	PVC/PUR/TPE 565

More "Harnessed cables for Drive technology" ▶ Page 537

To make the choice easier for you, we have classified all Chainflex® cables according to the criteria "requirements, oil-resistance and travel distance". For detailed information see the inside of the front cover flap.

## Harnessed cables for Drive Technology

### Chainflex® PVC cables for the woodworking industry for example



#### Typical application areas – PVC

- For heavy duty applications
- Light oil influence
- Preferably indoor applications, but also outdoor ones at temperatures > 41 °F
- Unsupported travel distances and up to 328.1 ft for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/packaging machines, quick handling, indoor cranes, woodworking

### Chainflex® PUR cables for the machine tools industry for example



#### Typical application areas – PUR

- For extremely heavy duty applications
- Almost unlimited resistance to oil
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and up to 328.1 ft for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, semiconductor insertion, outdoor cranes, low-temperature applications

### Chainflex® TPE cables for outdoor use for example



#### Typical application areas – TPE

- For extremely heavy duty applications
- Almost unlimited resistance to oil, also with bio-oils
- Indoor and outdoor applications, UV-resistant
- Unsupported travel distances and up to 1,312 ft and more for gliding applications
- Storage and retrieval units for high-bay warehouses, machining units/machine tools, quick handling, clean room, 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 of igus® Chainflex® cables (you can find the green number

	1	2	3	4	5	6	7
Chainflex® series	CF31	CF35-UL	CF38	CF210-UL	CF21-UL	CF270-UL-D	CF27-D
Class	Class 5.5.2	Class 6.6.4	Class 7.6.4	Class 4.2.2	Class 5.5.2	Class 4.2.3	Class 6.5.3
Outer jacket	PVC	TPE	TPE	PVC	PVC	PUR	PUR
Shielded	✓	✓	✓	✓	✓	✓	✓
Minimum bending 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
Travel distance [ft]	≤ 328.1	≤ 1,312	≤ 1,312	≤ 32.81	≤ 328.1	≤ 32.81	≤ 328.1
Oil-resistant	✓	✓	✓	✓	✓	✓	✓
Oil-/coolant-resistant						✓	✓
Flame-retardant	✓	✓		✓	✓	✓	✓
Halogen-free			✓			✓	✓
Notch-resistant						✓	✓
Hydrolysis-/microbe-resistant		✓	✓			✓	✓
Temperature, from/to [°F]	23/+158	-31/+194	-31/+194	+41/+158	+41/+158	-13/+176	-13/+176
Nominal voltage [V]	1000	1000	1000	1000	1000	1000	1000
Color	Jet black	Signal black	Jet black	Pastel orange	Moss green	Pastel orange	Pastel orange
CE/CEI							
RoHS							
CleanRoom							
EAC/CTP							
UL/CSA + NFPA							
Desina							
More Information							
▶ Catalog page	322	342	348	282	290	296	304
www.igus.com/	CF31	CF35UL	CF38	CF210UL	CF21UL	CF270ULD	CF27D

# Chainflex® ReadyCable®

accordingly on the product pages of the respective manufacturers)

	8	9	10	11	12	13	14	15	16
Chainflex® series	CF211	CF111-D	CF113-D	CF11-D	CFBUS	CF240-PUR	CF211	CF113	CF11
Class	Class 4.2.2	Class 4.2.3	Class 6.5.3	Class 6.6.4	Class 6.6.4	Class 4.4.3	Class 5.5.2	Class 6.5.3	Class 6.6.4
Outer jacket	PVC	PUR	PUR	TPE	TPE	PUR	PVC	PUR	TPE
Shielded	✓	✓	✓	✓	✓	✓	✓	✓	✓
Minimum bending radius	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	10 x d	6.8 x d
Travel distance [ft]	≤ 32.81	≤ 32.81	≤ 328.1	≤ 1,312	≤ 1,312	≤ 65.62	≤ 328.1	≤ 328.1	≤ 1,312
Oil-resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil-/coolant-resistant		✓	✓			✓		✓	
Flame-retardant	✓	✓	✓		✓	✓	✓	✓	
Halogen-free		✓	✓	✓		✓		✓	✓
Notch-resistant		✓	✓			✓		✓	
Hydrolysis-/microbe-resistant		✓	✓	✓	✓	✓		✓	✓
Temperature, from/to [°F]	+41/+158	-13/+176	-13/+176	-31/+194	-31/+158	-13/+176	+41/+158	-13/+176	-31/+212
Nominal voltage [V]	50	50	50	50	50	300	300	300	300
Color	Yellow green	Yellow green	Yellow green	Yellow green	Red lilac	Silver gray	Silver gray	Anthracite gray	Steel blue
CE/CEI									
RoHS									
CleanRoom									
EAC/CTP									
UL/CSA + NFPA									
Desina									
More Information									
▶ Catalog page	244	254	260	268	194	146	150	-	158
www.igus.com/	CF211M	CF111D	CF113D	CF11D	CFBUS	CF240PUR	CF211	CF113	CF11

# ... harnessed cables for Drive Technology ... Chainflex® ReadyCable®

Selection chart of igus® Chainflex® cables (you can find the green number

	17	18	19	20	21	22	23
Chainflex® series	CF130-UL	CF140-UL	CF5	CF6	CF170-D	CF77-UL-D	CF78-UL
Class	Class 4.4.1	Class 4.4.1	Class 5.5.2	Class 5.5.2	Class 4.3.3	Class 5.5.3	Class 5.5.3
Outer jacket	PVC	PVC	PVC	PVC	PUR	PUR	PUR
Shielded		✓		✓			✓
Minimum bending radius	7.5 x d	7.5 x d	6.8 x d	6.8 x d	7.5 x d	6.8 x d	6.8 x d
Travel distance [ft]	≤ 164	≤ 164	≤ 164	≤ 164	≤ 65.62	≤ 328.1	≤ 328.1
Oil-resistant			✓	✓	✓	✓	✓
Oil-/coolant-resistant					✓	✓	✓
Flame-retardant	✓	✓	✓	✓		✓	✓
Halogen-free					✓	✓	✓
Notch-resistant						✓	✓
Hydrolysis-/microbe-resistant					✓	✓	✓
Temperature, from/to [°F]	+41/+158	+41/+158	+41/+158	+41/+158	-13/+176	-13/+176	-13/+176
Nominal voltage [V]	300	300	300	300	300	300	300
Color	Silver gray	Silver gray	Moss green	Moss green	Window gray	Window gray	Window gray
CE/CEI							
RoHS							
CleanRoom							
EAC/CTP							
UL/CSA + NFPA							
Desina							
More Information							
▶ Catalog page	82	86	90	94	-	106	110
www.igus.com/	CF130	CF140	CF5	CF6	CF170D	CF77	CF78

# ... harnessed cables for Drive Technology ... Chainflex® ReadyCable®

accordingly on the product pages of the respective manufacturers)

	24	25	26	27	28	29	30	31	32
Chainflex® series	CF9	CF10	CF9-UL	CF211-PUR	CF220-UL-H	CF280-UL-H	CFBUS-PVC	CFBUS-PUR	CF240
Class	Class 7.6.4	Class 7.6.4	Class 6.6.4	Class 5.5.3	Class 4.2.2	Class 4.2.3	Class 4.3.2	Class 4.3.3	Class 4.4.2.1
Outer jacket	TPE	TPE	TPE	PUR	PVC	PUR	PVC	PUR	PVC
Shielded		✓		✓	✓	✓	✓	✓	✓
Minimum bending radius	5 x d	5 x d	5 x d	7.5 x d	10 x d	10 x d	12.5 x d	12.5 x d	10 x d
Travel distance [ft]	> 1,312	> 1,312	> 1,312	≤ 328.1	≤ 32.81	≤ 32.81	≤ 65.62	≤ 65.62	≤ 50
Oil-resistant	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oil-/coolant-resistant				✓		✓		✓	
Flame-retardant			✓	✓	✓	✓	✓	✓	✓
Halogen-free	✓	✓				✓		✓	
Notch-resistant				✓		✓		✓	
Hydrolysis-/microbe-resistant	✓	✓	✓	✓		✓		✓	
Temperature, from/to [°F]	-31/+212	-31/+212	-31/+212	-13/+176	+41/+158	-13/+176	+41/+158	-4/+158	5/+158
Nominal voltage [V]	300	300	300	300	600	600	50	50	300/300
Color	Steel blue	Steel blue	Slate gray	Silver gray	Pastel orange	Pastel orange	Red lilac	Red lilac	Silver gray
CE/CEI									
RoHS									
CleanRoom									
EAC/CTP									
UL/CSA + NFPA									
Desina									
More Information									
▶ Catalog page	118	122	126	154	286	300	182	190	142
www.igus.com/	CF9	CF10	CF9UL	CF211PUR	CF220ULH	CF280ULH	CFBUSPVC	CFBUSPUR	CF240



... Allen Bradley ... B&R ...  
... harnessed cables for Drive Technology ...



Allen Bradley (Rockwell) – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR/TPE)</b>								
2090-CPWM7DF-08AFxx	566	566	566					
2090-CPWM7DF-10AFxx	566	566	566					
2090-CPWM7DF-12AFxx	566	566	566					
2090-CPWM7DF-14AFxx	566	566	566					
2090-CPWM7DF-16AFxx	566	566	566					
2090-XXNPMP-10SXX	566	566	566					
2090-XXNPMP-14SXX	566	566	566					
2090-XXNPMP-16SXX	567	567	567					
<b>Servo cables (PVC/PUR)</b>								
2090-CPBM4DF-16AFxx	567	567						
2090-CPBM7DF-08AFxx	567	567		▶ 2090-CPBM7E7-08AFxx	568	568		
				2090-CPBM7E7-10AFxx	568	568		
2090-CPBM7DF-14AFxx	568	568		▶ 2090-CPBM7E7-14AFxx	568	568		
2090-CPBM7DF-16AFxx	568	568		▶ 2090-CPBM7E7-16AFxx	568	568		
2090-XXNPMF-10SXX	569	569						
2090-XXNPMF-14SXX	569	569						
2090-XXNPMF-16SXX	569	569						
<b>Hybrid Servo cables (PVC/PUR)</b>								
2090-CSBM1DF-14AF	569	569						
2090-CSBM1DF-18AF	569	569						
2090-CSWM1DF-14AF	569	569						
2090-CSWM1DF-18AF	569	569						
<b>Brake cables (PVC/PUR)</b>								
2090-UXNBMP-18SXX	569	569						
<b>Feedback cables (PVC/PUR)</b>								
2090-CFBM4DF-CDAFxx		570						
2090-CFBM7DF-CDAFxx		570	570	▶ 2090-CFBM7E7-CDAFxx		570	570	
2090-CFBM7DF-CEAFxx		570		▶ 2090-CFBM7E7-CEAFxx		570	570	
2090-XXNFMF-Sxx		570	570					
2090-XXNFMP-Sxx		570	570					
i2090-CFBM4DF-CDAFxx		570	570					
i2090-CFBM7DF-CEAFxx		570	570					
B&R – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR)</b>								
i8BCMxxxx.1011A-0	571	571						
i8BCMxxxx.1034C-0	571	571						
i8BCMxxxx.1312A-0	571	571						
i8BCMxxxx.1322A-0	571	571						
i8CMxxx.12-0	571	571						
<b>Servo cables (PVC/PUR)</b>								
i8BCMxxxx.1111A-0	572	572						
i8BCMxxxx.1311A-0	572	572						
i8CMxxx.12-1	572	572						
i8CMxxx.12-3	572	572						
i8CMxxx.12-5	572	572						
<b>EnDat cables (PVC/PUR/TPE)</b>								
i8BCExxxx.1111A-0	572	572						
i8CExxx.12-1	572	572						

... B&R ... Baumüller ...  
... harnessed cables for Drive Technology ...



B&R – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Encoder cables (PVC/PUR/TPE)</b>								
i8BCFxxxx.1221B-0	573	573						
i8BCRxxxx.1121A-0	573	573	573					
i8BCSxxxx.1111A-0	573	573	573					
<b>Resolver cables (PVC/PUR/TPE)</b>								
i8BCRxxx.1111A-0	573	573	573					
i8CRxxx.12-1	573	573	573					
<b>Bus cables (PVC/PUR/TPE)</b>								
IX20CA3E61.xxxx	573	573	573					
IX67CA0E41.xxxx	573	573	573					
Baumüller – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
324781 (5 m)	574	574		324781 (5 m)	575	575		
324782 (7 m)	574	574		324782 (7 m)	575	575		
324783 (10 m)	574	574		324783 (10 m)	575	575		
324784 (15 m)	574	574		324784 (15 m)	575	575		
324785 (20 m)	574	574		324785 (20 m)	575	575		
324786 (25 m)	574	574		324786 (25 m)	575	575		
324787 (30 m)	574	574		324787 (30 m)	575	575		
324788 (35 m)	574	574		324788 (35 m)	575	575		
324789 (40 m)	575	575		324789 (40 m)	575	575		
324790 (50 m)	575	575		324790 (50 m)	575	575		
324791 (75 m)	575	575		324791 (75 m)	575	575		
324792 (100 m)	575	575		324792 (100 m)	575	575		
380967 (7 m)	576	576		380967 (7 m)	577	577		
413410 (10 m)	576	576		413410 (10 m)	577	577		
414840 (5 m)	576	576		414840 (5 m)	577	577		
414841 (15 m)	576	576		414841 (15 m)	577	577		
414842 (20 m)	576	576		414842 (20 m)	577	577		
414843 (25 m)	576	576		414843 (25 m)	577	577		
414846 (30 m)	576	576		414846 (30 m)	577	577		
414848 (35 m)	576	576		414848 (35 m)	577	577		
414849 (40 m)	576	576		414849 (40 m)	577	577		
414850 (50 m)	576	576		414850 (50 m)	577	577		
414851 (75 m)	577	577		414851 (75 m)	577	577		
414852 (100 m)	577	577		414852 (100 m)	577	577		
326577 (5 m)	578	578		326577 (5 m)	579	579		
326578 (7 m)	578	578		326578 (7 m)	579	579		
326579 (10 m)	578	578		326579 (10 m)	579	579		
326580 (15 m)	578	578		326580 (15 m)	579	579		
326581 (20 m)	578	578		326581 (20 m)	579	579		
326582 (25 m)	578	578		326582 (25 m)	579	579		
326583 (30 m)	578	578		326583 (30 m)	579	579		
326584 (35 m)	578	578		326584 (35 m)	579	579		
326585 (40 m)	578	578		326585 (40 m)	579	579		
326586 (50 m)	579	579		326586 (50 m)	579	579		
326587 (75 m)	579	579		326587 (75 m)	579	579		
326588 (100 m)	579	579		326588 (100 m)	579	579		
326589 (5 m)	580	580		326589 (5 m)	581	581		

... Baumüller ...  
... harnessed cables for Drive Technology ...



Baumüller – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Servo cables (PVC/PUR)</b>							
326591 (7 m)	580	580		326591 (7 m)	581	581	
326592 (10 m)	580	580		326592 (10 m)	581	581	
326593 (15 m)	580	580		326593 (15 m)	581	581	
326596 (25 m)	580	580		326596 (25 m)	581	581	
326597 (30 m)	580	580		326597 (30 m)	581	581	
326598 (35 m)	580	580		326598 (35 m)	581	581	
326599 (40 m)	580	580		326599 (40 m)	581	581	
326600 (5 m)	582	582		326600 (5 m)	583	583	
326601 (7 m)	582	582		326601 (7 m)	583	583	
326602 (10 m)	582	582		326602 (10 m)	583	583	
326603 (15 m)	582	582		326603 (15 m)	583	583	
326604 (20 m)	582	582		326604 (20 m)	583	583	
326605 (25 m)	582	582		326605 (25 m)	583	583	
326606 (30 m)	582	582		326606 (30 m)	583	583	
326607 (35 m)	582	582		326607 (35 m)	583	583	
326608 (40 m)	582	582		326608 (40 m)	583	583	
326609 (5 m)	584	584		326609 (5 m)	584	584	
326610 (7 m)	584	584		326610 (7 m)	584	584	
326611 (10 m)	584	584		326611 (10 m)	584	584	
326612 (15 m)	584	584		326612 (15 m)	584	584	
326613 (20 m)	584	584		326613 (20 m)	584	584	
326614 (25 m)	584	584		326614 (25 m)	584	584	
326615 (30 m)	584	584		326615 (30 m)	584	584	
326616 (35 m)	584	584		326616 (35 m)	584	584	
326617 (40 m)	584	584		326617 (40 m)	584	584	
<b>Resolver cables (PVC/PUR/TPE)</b>							
239540 (5 m)	585	585	585	239540 (5 m)	586	586	586
239541 (8 m)	585	585	585	239541 (8 m)	586	586	586
239542 (10 m)	585	585	585	239542 (10 m)	586	586	586
239543 (15 m)	585	585	585	239543 (15 m)	586	586	586
239544 (20 m)	585	585	585	239544 (20 m)	586	586	586
239545 (25 m)	585	585	585	239545 (25 m)	586	586	586
239547 (35 m)	585	585	585	239547 (35 m)	586	586	586
240520 (40 m)	585	585	585	240520 (40 m)	586	586	586
240521 (45 m)	585	585	585	240521 (45 m)	586	586	586
240522 (50 m)	586	586	586	240522 (50 m)	586	586	586
242954 (6 m)	586	586	586	242954 (6 m)	586	586	586
243379 (4 m)	586	586	586	243379 (4 m)	586	586	586
244033 (55 m)	586	586	586	244033 (55 m)	586	586	586
245484 (60 m)	586	586	586	245484 (60 m)	586	586	586
246658 (3 m)	586	586	586	246658 (3 m)	586	586	586
<b>Pulse encoder cables (PVC/PUR/TPE)</b>							
198962 (3 m)	587	587	587	198962 (3 m)	588	588	588
198963 (5 m)	587	587	587	198963 (5 m)	588	588	588
198964 (8 m)	587	587	587	198964 (8 m)	588	588	588
198965 (10 m)	587	587	587	198965 (10 m)	588	588	588
198966 (15 m)	587	587	587	198966 (15 m)	588	588	588
198967 (20 m)	587	587	587	198967 (20 m)	588	588	588

... Baumüller ... Beckhoff ...  
... harnessed cables for Drive Technology ...



Baumüller – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Pulse encoder cables (PVC/PUR/TPE)</b>							
198968 (25 m)	587	587	587	198968 (25 m)	588	588	588
198969 (30 m)	587	587	587	198969 (30 m)	588	588	588
208829 (40 m)	587	587	587	208829 (40 m)	588	588	588
225360 (35 m)	587	587	587	225360 (35 m)	588	588	588
369864 (3 m)	589	589	589	369864 (3 m)	590	590	590
371494 (20 m)	589	589	589	371494 (20 m)	590	590	590
378022 (50 m)	589	589	589	378022 (50 m)	590	590	590
380358 (35 m)	589	589	589	380358 (35 m)	590	590	590
382005 (45 m)	589	589	589	382005 (45 m)	590	590	590
389807 (7 m)	589	589	589	389807 (7 m)	590	590	590
389808 (9 m)	589	589	589	389808 (9 m)	590	590	590
391216 (40 m)	589	589	589	391216 (40 m)	590	590	590
393889 (2m)	589	589	589	393889 (2m)	590	590	590
393890 (8 m)	590	590	590	393890 (8 m)	590	590	590
393891 (10 m)	590	590	590	393891 (10 m)	590	590	590
393892 (15 m)	590	590	590	393892 (15 m)	590	590	590
393893 (25 m)	590	590	590	393893 (25 m)	590	590	590
393894 (30 m)	590	590	590	393894 (30 m)	590	590	590
394014 (5 m)	590	590	590	394014 (5 m)	590	590	590
<b>Beckhoff – Selection chart according to part number and outer jacket materials.</b>							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Motor cables (PVC/PUR)</b>							
ZK4500-8015-xxx	591	591					
ZK4500-8015-xxx	591	591					
ZK4500-8024-xxx	591	591					
ZK4501-8024-xxx	591	591					
ZK4530-8110-xxxx	591	591					
ZK4530-8110-xxxx	591	591					
<b>Servo cables (PVC/PUR)</b>							
ZK4000-2111-xxxx	591	591					
ZK4000-2112-xxxx	591	591					
ZK4000-2711-xxxx	591	591					
ZK4500-0023-xxxx	591	591		▶ ZK4501-0023-xxxx	592	592	
ZK4500-0024-xxxx	592	592		▶ ZK4501-0024-xxxx	592	592	
<b>Hybrid Servo cables (PVC/PUR)</b>							
ZK4500-8022-xxxx	592	592		▶ ZK4501-8022-xxxx	592	592	
ZK4500-8023-xxxx	592	592		▶ ZK4501-8023-xxxx	592	592	
<b>Encoder cables (PVC/PUR)</b>							
ZK4000-2410-xxxx	593	593					
ZK4000-2610-xxxx	593	593					
ZK4510-0020-xxxx	593	593		▶ ZK4511-0020-xxxx	593	593	
ZK4520-0020-xxxx	593	593					
<b>Thermal protection cables (PVC/TPE)</b>							
ZK4000-2510-xxxx	593		593				
<b>Resolver cables (PVC/TPE)</b>							
ZK4000-2210-xxxx	594	594	594				
ZK4000-2210-xxxx	594	594	594				
ZK4530-0010-xxxx	594	594	594		594	594	594

... Berger Lahr ... Control Techniques ...  
... harnessed cables for Drive Technology ...



Berger Lahr (Schneider Electric) – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Berger Lahr</b>							
Servo cables (PVC/PUR)							
VW3M5101Rxxx	595	595					
VW3M5102Rxxx	595	595					
Resolver cables (PVC/PUR/TPE)							
VW3M8101Rxxx	595	595	595				
<b>Control Techniques – Selection chart according to part number and outer jacket materials.</b>							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Control Techniques</b>							
Motor cables (PVC/TPE)							
PS B A A A XXX	596		596				
PS B A A B XXX	596		596				
PS B A B B XXX	596		596				
PS B A F A XXX	596		596				
PS B A F B XXX	596		596				
PS B B A A XXX	596		596				
PS B B A B XXX	596		596				
PS B B B B XXX	596		596				
PS B B F A XXX	596		596				
PS B B F B XXX	596		596				
PS B C A B XXX	597		597				
PS B C B B XXX	597		597				
PS B C F B XXX	597		597				
PS B D A B XXX	597		597				
PS B D B B XXX	597		597				
PS B D F B XXX	597		597				
PS B E A B XXX	597		597				
PS B E B B XXX	597		597				
PS B E F B XXX	597		597				
PS B G A A XXX	597		597				
PS B G A B XXX	597		597				
PS B G B B XXX	597		597				
PS B G F A XXX	597		597				
PS B G F B XXX	597		597				
Servo cables (PVC/PUR)							
PB B A A A XXX	598	598					
PB B A A B XXX	598	598					
PB B A B B XXX	598	598					
PB B A F A XXX	598	598					
PB B A F B XXX	598	598					
PB B A G B XXX	598	598					
PB B B A A XXX	598	598					
PB B B A B XXX	599	599					
PB B B B B XXX	599	599					
PB B B F A XXX	598	598					
PB B B F B XXX	599	599					
PB B B G B XXX	599	599					
PB B C A B XXX	599	599					
PB B C B B XXX	599	599					
PB B C F B XXX	599	599					
PB B C G B XXX	599	599					

... Control Techniques ... Danaher Motion ...  
... harnessed cables for Drive Technology ...



Control Techniques – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Control Techniques</b>							
Servo cables (PVC/PUR)							
PB B D A B XXX	599	599					
PB B D B B XXX	599	599					
PB B D F B XXX	599	599					
PB B D G B XXX	599	599					
PB B E A B XXX	599	599					
PB B E B B XXX	599	599					
PB B E F B XXX	599	599					
PB B E G B XXX	600	600					
PB B G A A XXX	598	598					
PB B G A B XXX	600	600					
PB B G B B XXX	600	600					
PB B G F A XXX	598	598					
PB B G F B XXX	600	600					
PB B G G B XXX	600	600					
Encoder cables (PVC/PUR/TPE)							
SS B A H C XXX	600	600	600				
SS B A H C XXX	600	600	600				
SS B A H H XXX	600	600	600				
<b>Danaher Motion – Selection chart according to part number and outer jacket materials.</b>							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Danaher Motion</b>							
Motor cables (PVC/TPE)							
88959 (5 m)	601		601				
88960 (10 m)	601		601				
88962 (15 m)	601		601				
88964 (20 m)	601		601				
88966 (25 m)	601		601				
89918 (5 m)	601		601				
89918 (5 m)	601		601				
89918 (5 m)	601		601				
89952 (10 m)	601		601				
89952 (10 m)	601		601				
89952 (10 m)	601		601				
89953 (15 m)	601		601				
89953 (15 m)	601		601				
89953 (15 m)	601		601				
89954 (20 m)	601		601				
89954 (20 m)	601		601				
89954 (20 m)	601		601				
89956 (25 m)	601		601				
89956 (25 m)	601		601				
89956 (25 m)	601		601				
89959 (5 m)	601		601				
89959 (5 m)	601		601				
89960 (10 m)	601		601				
89960 (10 m)	601		601				
89962 (15 m)	601		601				
89962 (15 m)	601		601				
89964 (20 m)	601		601				
89964 (20 m)	601		601				



... Danaher Motion ...  
... harnessed cables for Drive Technology ...



Danaher Motion – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/TPE)</b>								
89966 (25 m)	601		601					
89966 (25 m)	601		601					
90083 (5 m)	601		601					
90083 (5 m)	601		601					
90083 (5 m)	601		601					
90084 (10 m)	601		601					
90084 (10 m)	601		601					
90084 (10 m)	601		601					
90085 (15 m)	601		601					
90085 (15 m)	601		601					
90085 (15 m)	601		601					
90086 (20 m)	602		602					
90086 (20 m)	602		602					
90086 (20 m)	602		602					
90087 (25 m)	602		602					
90087 (25 m)	602		602					
90087 (25 m)	602		602					
102575 (5 m)	602		602					
102576 (10 m)	602		602					
102806 (15 m)	602		602					
102807 (20 m)	602		602					
102808 (25 m)	602		602					
107473 (5 m)	602		602					
107474 (10 m)	602		602					
107475 (15 m)	602		602					
107476 (20 m)	602		602					
107477 (25 m)	603		603					
107485 (5 m)	603		603					
107486 (10 m)	603		603					
107487 (15 m)	603		603					
107488 (20 m)	603		603					
107489 (25 m)	603		603					
200456 (5 m)	603		603					
200457 (10 m)	603		603					
200458 (15 m)	603		603					
200459 (20 m)	603		603					
200460 (25 m)	603		603					
200468 (5 m)	604		604					
200469 (10 m)	604		604					
200470 (15 m)	604		604					
200471 (20 m)	604		604					
200472 (25 m)	604		604					
200618 (5 m)	604		604					
200619 (10 m)	604		604					
200620 (15 m)	604		604					
200621 (20 m)	604		604					
200621 (20 m)	604		604					
200622 (25 m)	604		604					
200622 (25 m)	604		604					

... Danaher Motion ...  
... harnessed cables for Drive Technology ...



Danaher Motion – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/TPE)</b>								
200622 (25 m)	604		604					
<b>Servo cables (PVC/PUR)</b>								
89957 (5 m)	605	605						
89961 (10 m)	605	605						
89963 (15 m)	605	605						
89965 (20 m)	605	605						
89967 (25 m)	605	605						
89968 (5 m)	605	605						
89969 (25 m)	605	605						
89970 (10 m)	605	605						
89971 (15 m)	605	605						
89972 (20 m)	606	606						
90088 (5 m)	606	606						
90089 (10 m)	606	606						
90090 (15 m)	606	606						
90091 (20 m)	606	606						
90092 (25 m)	606	606						
102579 (5 m)	606	606						
102580 (10 m)	606	606						
102809 (15 m)	606	606						
102810 (20 m)	607	607						
102811 (25 m)	607	607						
107479 (5 m)	607	607						
107480 (10 m)	607	607						
107481 (15 m)	607	607						
107482 (20 m)	607	607						
107483 (25 m)	607	607						
107491 (5 m)	607	607						
107492 (10 m)	608	608						
107493 (15 m)	608	608						
107494 (20 m)	608	608						
107495 (25 m)	608	608						
200462 (5 m)	608	608						
200463 (10 m)	608	608						
200464 (15 m)	608	608						
200465 (20 m)	608	608						
200466 (25 m)	608	608						
200474 (5 m)	609	609						
200475 (10 m)	609	609						
200476 (15 m)	609	609						
200477 (20 m)	609	609						
200478 (25 m)	609	609						
200478 (25 m)	609	609						
200623 (5 m)	609	609						
200624 (10 m)	609	609						
200625 (15 m)	609	609						
200626 (20 m)	609	609						
200627 (25 m)	609	609						

... Danaher Motion ... ELAU/Schneider Electric ...  
... harnessed cables for Drive Technology ...



Danaher Motion – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Signal cables (PVC/TPE)</b>								
84972 (5 m)	610		610					
84973 (10 m)	610		610					
84974 (15 m)	610		610					
84975 (20 m)	610		610					
85034 (5 m)	611		611					
85035 (10 m)	611		611					
85036 (15 m)	611		611					
85037 (20 m)	611		611					
85039 (5 m)	611		611					
85040 (10 m)	611		611					
85041 (15 m)	611		611					
85042 (20 m)	611		611					
87655 (25 m)	610		610					
90287 (5 m)	610		610					
91019 (10 m)	610		610					
91807 (20 m)	610		610					
91811 (15 m)	610		610					
92205 (25 m)	610		610					
107915 (5 m)	610		610					
107916 (10 m)	610		610					
107917 (15 m)	610		610					
107918 (20 m)	610		610					
107919 (25 m)	610		610					
ELAU / Schneider Electric – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
E-MO-067	612	612						
E-MO-087	612	612						
E-MO-092	612	612						
E-MO-111 SH-Motor 1.5	612	612						
E-MO-113 SH-Motor 2.5	612	612						
<b>Encoder cables (PVC/PUR/TPE)</b>								
E-FB-060	613		613					
E-FB-071	613	613	613					
E-FB-080	613	613	613					
<b>Hybrid Servo cables (PUR)</b>								
iE-MO-109, iVW3E1109Rxxx		613						
iE-MO-117, iVW3E1117Rxxx		613						
iE-MO-118, iVW3E1118Rxxx		613						
iE-MO-119, iVW3E1119Rxxx		613						
iE-MO-120, iVW3E1120Rxxx		613						
iE-MO-121, iVW3E1121Rxxx		613						
iE-MO-124, iVW3E1124Rxxx		613						
iE-MO-125, iVW3E1125Rxxx		613						
iE-MO-126, iVW3E1126Rxxx		613						
iE-MO-127, iVW3E1127Rxxx		613						

Danaher Motion

ELAU / Schneider Electric

... Fagor ... Fanuc ...  
... harnessed cables for Drive Technology ...



Fagor – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Path measuring cables (PUR/TPE)</b>								
				▶ IEEC-x		614	614	
				▶ IXC-C2-D		614	614	
				▶ IXC-C2-FN2		614	614	
<b>Path measuring cables (PUR/TPE)</b>								
				▶ iXC-C2-H		614	614	
				▶ iXC-C4-D		614	614	
				▶ iXC-C8-F-C9		614	614	
				▶ iXC-C8-F-D		615	615	
				▶ iXC-C8-FN		615	615	
Fanuc – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Power cables (PVC/PUR/TPE)</b>								
LX660-8077-T261	616	616	616					
LX660-8077-T264	616	616	616					
LX660-8077-T265	616	616	616					
LX660-8077-T266	616	616	616					
LX660-8077-T267	616	616	616					
LX660-8077-T270	616	616	616					
LX660-8077-T271	617	617	617					
LX660-8077-T272	617	617	617					
LX660-8077-T273	617	617	617					
LX660-8077-T291	617	617	617					
LX660-8077-T292	617	617	617					
LX660-8077-T293	617	617	617					
LX660-8077-T296	618	618	618					
LX660-8077-T298	618	618	618					
LX660-8077-T300	618	618	618					
<b>Servo cables (PUR)</b>								
LX660-8077-T259		619						
LX660-8077-T274		619						
LX660-8077-T416		619						
LX660-8077-T451		619						
LX660-8077-T470		619						
LX660-8077-T471		619						
<b>Brake cables (PUR)</b>								
LX660-8077-T311		619						
<b>Encoder cable (PUR)</b>								
LX660-4077-T304		619						
<b>Signal cables (PUR/TPE)</b>								
LX660-2018-T015		620						
LX660-4077-T296		620	620					
LX660-4077-T297		620	620					
LX660-4077-T302		620	620					
LX660-4077-T303		620	620					
LX660-4077-T310		620	620					
LX660-4077-T319		620	620					

Fagor

Fanuc

... Festo ... Heidenhain ...  
... harnessed cables for Drive Technology ...



Festo – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
NEBM-M23G8-E-xxx-N-LE8	621	621						
NEBM-M23G8-E-xxx-N-LE7	621	621						
NEBM-M40G8-E-xxx-N-LE7	621	621						
NEBM-M16G8-E-xxx-Q7-LE8		621						
<b>Encoder cables (PVC/PUR/TPE)</b>								
NEBM-M23G12-E-xxx-N-S1G9	621	621	621					
<b>Data cables (PVC/PUR/TPE)</b>								
NEBM-M12G8-E-xxx-N-S1G15	621	621	621					
NEBM-M12G8-E-xxx-S1G9	621	621	621					
NEBM-M12W8-E-xxx-N-S1G15	622	622	622					
NEBM-S1G15-E-xxx-LE6	622	622	622					
KES-MC-1-SUB-9-xxx	622	622						
KDI-MC-M8-SUB-9-xxx	622	622						
NEBM-S1G9-E-xxx-LE6	622	622						
<b>Bus cables (PVC/PUR/TPE)</b>								
FBA-CO-SUB-9-M12	622	622	622					
<b>Control cables (PVC/PUR)</b>								
KPWR-MC-1-SUB-9HC-xxx	622	622						
Heidenhain – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
352 960-xx	623	623						
352 962-xx	623	623						
352 963-xx	623	623						
<b>Adapter cables (PVC/PUR/TPE)</b>								
289 440-xx	624	624	624					
298 399-xx		624	624					
298 400-xx		624	624					
298 402-xx		624	624					
309 738-xx		624	624					
309 774-xx		625	625					
309 777-xx		625	625					
309 778-xx		625	625					
309 779-xx		627	627					
309 780-xx		627	627					
309 783-xx		624	624					
310 193-xx		625	625					
310 197-xx		625	625					
310 199-xx		625	625					
323 897-xx		625	625					
324 544-xx		626	626					
332 115-xx		626	626					
335 077-xx		626	626					
336 376-xx	624	624	624					
354 411-xx		626	626					
354 770-xx		627	627					
355 398-xx		626	626					
360 472-xx		626	626					

... Heidenhain ... Jetter ... Lenze ...  
... harnessed cables for Drive Technology ...



Heidenhain – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Adapter cables (PVC/PUR/TPE)</b>								
368 172-xx		625	625					
533 627-xx		625	625					
604 419-xx		624	624					
Jetter – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR/TPE)</b>								
Kabel Nr. 26.1	628	628	628					
Kabel Nr. 201	628	628	628					
Kabel Nr. 203	628	628	628					
<b>Servo cables (PVC/PUR)</b>								
Kabel Nr. 24.1	628	628						
Kabel Nr. 202	628	628						
Kabel Nr. 204	628	628						
<b>Resolver cables (PVC/PUR/TPE)</b>								
Kabel Nr. 23	629	629	629					
Kabel Nr. 423	629	629	629					
Kabel Nr. 523	629	629	629					
Kabel Nr. 723	629	629	629					
Lenze – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
EWLMxxxGMS-015C	630	630		▶ EWLMxxxZM-015C	632	632		
EWLMxxxGMS-025	630	630		▶ EWLMxxxZM-025	632	632		
EWLMxxxGMS-040I	630	630						
EYP0010AxxxxA00P01	630	630		▶ EYP0010VxxxxM01P01	632	632		
EYP0010AxxxxM01A00	630	630		▶ EYP0010VxxxxM01P01	632	632		
EYP0011AxxxxA00P01	630	630		▶ EYP0011VxxxxM01P01	632	632		
EYP0011AxxxxM01A00	630	630		▶ EYP0011VxxxxM01P01	632	632		
EYP0012AxxxxA00P01	630	630		▶ EYP0012VxxxxM01P01	632	632		
EYP0012AxxxxA00P02	631	631		▶ EYP0012VxxxxM02P02	632	632		
EYP0012AxxxxM01A00	631	631		▶ EYP0012VxxxxM01P01	632	632		
EYP0012AxxxxM02A00	631	631		▶ EYP0012VxxxxM02P02	632	632		
EYP0013AxxxxA00P02	631	631		▶ EYP0013VxxxxM02P02	632	632		
EYP0013AxxxxM02A00	631	631		▶ EYP0013VxxxxM02P02	632	632		
EYP0014AxxxxA00P03	631	631		▶ EYP0014VxxxxM03P03	632	632		
EYP0014AxxxxM03A00	631	631		▶ EYP0014VxxxxM03P03	632	632		
EYP0015AxxxxA00P03	631	631		▶ EYP0015VxxxxM03P03	632	632		
EYP0015AxxxxM03A00	631	631		▶ EYP0015VxxxxM03P03	632	632		
EYP0016AxxxxA00P03	631	631		▶ EYP0016VxxxxM03P03	632	632		
EYP0016AxxxxM03A00	631	631		▶ EYP0016VxxxxM03P03	632	632		
<b>Resolver cables (PVC/PUR/TPE)</b>								
EWLRxxxGM-T	633	633	633	▶ EWLRxxxZMST	633	633	633	
EWLRxxxGX-T	633	633	633					
<b>Encoder cables (PVC/PUR/TPE)</b>								
EWLExxxGM-T	633	633	633	▶ EWLExxxZMST	633	633	633	
EWLExxxGX-T	633	633	633					
<b>Feedback cables (PVC/PUR/TPE)</b>								
EYF0017AxxxxA00W02	634	634	634					
EYF0018AxxxxA00S03	635	635	635					



... Lenze ... LinMot ... LTI DRIVES ...  
... harnessed cables for Drive Technology ...



Lenze – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Feedback cables (PVC/PUR/TPE)</b>								
EYF0018AxxxxA00W02	634	634	634					
EYF0018AxxxxF02S03	634	634	634					
EYF0018AxxxxF02W02	634	634	634					
EYF0019AxxxxF02S03	634	634	634	▶ EYF0019VxxxxA00G02	635		635	
				EYF0019VxxxxF02G02	635	635	635	
				EYF0019VxxxxF06G07		635	635	
EYF0020AxxxxA00S04	634	634	634					
EYF0020AxxxxA00S05	635	635	635					
				EYF0020VxxxxA00G01	635	635	635	
EYF0020AxxxxF01S04	634	634	634					
EYF0020AxxxxF01S05	634	634	634					
				EYF0020VxxxxF01G01	635	635	635	
EYF0021AxxxxA00S03	635	635	635					
EYF0021AxxxxF03S03	634	634	634					
EYF0021AxxxxF07S03	634	634	634					
				EYF0022VxxxxA00G03	635	635	635	
				EYF0022VxxxxF03G03	635	635	635	
<b>Decoder cables (PVC/PUR/TPE)</b>								
EYD0017AxxxxW01S01	636	636	636					
EYD0017AxxxxW01S02	636	636	636					
EYD0017AxxxxW03S01	636	636	636					
EYD0017AxxxxW03S02	636	636	636					
<b>Fan cables (PVC/PUR/TPE)</b>								
EWLLxxxGMS	637		637	▶ EWLLxxxZM	637		637	
EYL002AxxxxL01A00	637		637	▶ EYL002VxxxxL01J01	637		637	
				EYL002VxxxxA00J01	637		637	
EYL002AxxxxL02A00	637		637	▶ EYL002VxxxxL02J02	637		637	
				EYL002VxxxxA00J02	637	637	637	
<b>LinMot – Selection chart according to part number and outer jacket materials.</b>								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR)</b>								
P10-70x...-D01/D02-MS	638	638						
<b>Servo cables (PVC/PUR)</b>								
P10-70x...-D03-MS	638	638						
<b>Encoder cables (PUR)</b>								
P10-70x...D0x-SMC20		638						
P10-70x...D0x-SME20		638						
<b>LTI DRIVES – Selection chart according to part number and outer jacket materials.</b>								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Servo cables (PVC/PUR)</b>								
KM3-KSxxx	639	639		▶ KM3-KSxxx	639	639		
KM3-KSxxx-24A	639	639		▶ KM3-KSxxx-24A	639	639		
KM3-KSxxx-63A	639	639		▶ KM3-KSxxx-63A	639	639		
<b>Encoder cables (PVC/PUR/TPE)</b>								
KGH2-KSxxx	640		640	▶ KGH2-KSxxx	640		640	
KGH3-KSxxx	640		640	▶ KGH3-KSxxx	640		640	
KGS2-KSxxx		640	640	▶ KGS2-KSxxx		640	640	
KRY2-CDF-KSxxx	640	640	640	▶ KRY2-CDF-KSxxx	640	640	640	
KRY2-KSxxx	640	640	640	▶ KRY2-KSxxx	640	640	640	

... Mitsubishi Electric ... NUM ... Omron ...  
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Mitsubishi Electric – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR)</b>								
MR-BKS1CBL-xxx-A1-H	641	641						
MR-BKS1CBL-xxx-A2-H	641	641						
MR-PWS1CBL-xxx-A1-H	641	641						
MR-PWS1CBL-xxx-A2-H	641	641						
PCS025N-xxx-C4	641	641						
PCS015N-xxx-0-0C4	641	641						
PCS025N-xx.0-0C5	641	641						
PCS040N-xx.0-0C4	641	641						
PCS040N-xx.0-0C5	641	641						
PCS060N-xx.0-0C5	641	641						
<b>Encoder cables (PVC/PUR)</b>								
MR-J3ENCBL-xxx-A1-H	642	642						
MR-J3ENCBL-xxx-A2-H	642	642						
MR-J3ENSCBL-xxx-H	642	642						
<b>NUM – Selection chart according to part number and outer jacket materials.</b>								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Power cables (PVC/TPE)</b>								
AGOFRU018LMxxx	643		643	▶ AGOFRU018LMxxx	643		643	
AGOFRU019LMxxx	643		643	▶ AGOFRU019LMxxx	643		643	
<b>Servo cables (PVC/PUR)</b>								
AGOFRU018Mxxx	643	643		▶ AGOFRU018Mxxx	643	643		
AGOFRU019Mxxx	643	643		▶ AGOFRU019Mxxx	643	643		
AGOFRU020Mxxx	643	643		▶ AGOFRU020Mxxx	644	644		
<b>Encoder cables (PVC/TPE)</b>								
AGOFRU029Mxxx	644		644	▶ AGOFRU029Mxxx	644		644	
AGOFRU030Mxxx	644		644	▶ AGOFRU030Mxxx	644		644	
<b>Fan cables (PVC/TPE)</b>								
AGOFRU012Mxxx	644		644	▶ AGOFRU012Mxxx	644		644	
<b>Omron – Selection chart according to part number and outer jacket materials.</b>								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/TPE)</b>								
R88A-CAWA-xxxS-DE	645		645					
R88A-CAWCxxxS-E	645		645					
R88A-CAWCxxx	645		645					
R88A-CAWDxxxS-E	645		645					
R88A-CAWDxxxS	645		645					
R88A-CAWFxxxS-E	645		645					
<b>Encoder cables (PVC/PUR/TPE)</b>								
JZSP-CHP800-xx-E	645	645	645					
JZSP-CHP800-xx-ME	645	645	645					
JZSP-CSP21-XX-E-G1	645	645	645					
R88A-CRWA-xxxC-DE	646	646	646					
R88A-CRWBxxxN-E	646	646	646					
R88A-CRWBxxxN	646	646	646					
<b>Control cables (PVC/PUR/TPE)</b>								
JZSP-CHM000-xx-E	646	646	646					
JZSP-CHM000-xx-ME	647	647	647					
JZSP-CHM030-xx-E	646	646	646					
JZSP-CHM030-xx-ME	647	647	647					

... Omron ... Parker ... Rexroth ...  
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Omron – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Omron</b>								
Control cables (PVC/PUR/TPE)								
JZSP-CSM22-xx-E-G1	647	647	647					
R88A-CAWCxxxB-E	647	647	647					
R88A-CAWExxxB	647	647	647					
Parker – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Parker</b>								
Motor cables (PVC/PUR)								
iMOK42	648	648						
iMOK43	648	648						
iMOK44	648	648						
iMOK45	648	648						
iMOK54	648	648						
iMOK55	648	648						
iMOK57	648	648						
Resolver cables (PVC/PUR/TPE)								
iREK32	649	649	649					
iREK33	649	649	649					
iREK41	649	649	649					
iREK42	649	649	649					
Rexroth – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Rexroth</b>								
Power cables (PVC/PUR)								
IKG0331	650	650		▶ IKG0332	654	654		
IKG4008	650	650		▶ IKG4006	654	654		
IKG4009	650	650		▶ IKG4006	654	654		
IKG4017	650	650		▶ IKG4006	654	654		
IKG4018	650	650						
IKG4020	650	650						
IKG4020	650	650						
IKG4055	650	650						
IKG4060	650	650						
IKG4067	650	650		▶ IKG4061	654	654		
IKG4070	650	650		▶ IKG4061	654	654		
IKG4072	650	650		▶ IKG4074	654	654		
IKG4087	651	651		▶ IKG4081	654	654		
IKG4090	651	651		▶ IKG4081	654	654		
IKG4100	651	651						
IKG4103	651	651						
IKG4107	651	651						
IKG4118	651	651						
IKG4119	651	651						
IKG4147	651	651		▶ IKG4141	654	654		
IKG4150	651	651		▶ IKG4141	654	654		
IKG4155	651	651		▶ IKG4141	654	654		
IKG4164	652	652						
IKG4167	652	652		▶ IKG4161	654	654		
IKG4172	652	652						

... Rexroth ...  
... harnessed cables for Drive Technology ...



Rexroth – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Rexroth</b>								
Power cables (PVC/PUR)								
IKG4173	652	652						
IKG4186	652	652						
IKG4200	652	652						
IKG4204	652	652						
IKL0001	652	652		▶ IKL0003	652	652		
IKL0002	652	652						
IKL0006	652	652						
IKL0011	652	652						
IKL0012	652	652						
IKL0021	653	653		▶ IKL0023	652	652		
IKL0022	653	653						
IKL0041	653	653						
IKL0042	653	653						
IKL0061	653	653						
IKL0081	653	653		▶ IKL0089	652	652		
IKL0101	653	653						
IKL0121	653	653						
IKL0161	653	653		▶ IKL0168	652	652		
RKL0006	655	655						
RKL0013	655	655						
RKL0014	655	655						
RKL0019	655	655						
RKL0053	655	655						
RKL0054	655	655						
RKL4300	655	655		▶ RKL4304	658	658		
RKL4301	655	655		▶ RKL4304	658	658		
RKL4302	655	655		▶ RKL4305	658	658		
RKL4303	655	655		▶ RKL4305	658	658		
RKL4306	655	655		▶ RKL4311	658	658		
RKL4307	656	656		▶ RKL4311	658	658		
RKL4308	656	656						
RKL4309	656	656						
RKL4310	656	656		▶ RKL4312	658	658		
RKL4313	656	656		▶ RKL4316	659	659		
RKL4314	656	656		▶ RKL4316	659	659		
RKL4315	656	656		▶ RKL4316	659	659		
RKL4317	656	656		▶ RKL4319	659	659		
RKL4318	656	656		▶ RKL4319	659	659		
RKL4320	657	657						
RKL4321	657	657		▶ RKL4336	659	659		
RKL4322	657	657						
RKL4323	657	657		▶ RKL4338	659	659		
RKL4324	657	657						
RKL4325	657	657						
RKL4326	657	657		▶ RKL4336	659	659		
RKL4327	657	657						

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Rexroth – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Power cables (PVC/PUR)</b>								
RKL4328	657	657		▶ RKL4338	659	659		
RKL4329	657	657						
RKL4330	658	658		▶ RKL4340	659	659		
RKL4331	658	658		▶ RKL4341	659	659		
RKL4332	658	658						
RKL4343	658	658						
RKL4344	658	658						
<b>Encoder cables (PVC/PUR/TPE)</b>								
IKS0230	660	660	660	▶ IKS0232	661	661	661	
IKS0251			660	▶ IKS0255			661	
IKS0253			660	▶ IKS0255			661	
IKS0259			660					
IKS0262			660					
IKS0301	660	660	660	▶ IKS0303	661	661	661	
IKS0315	660	660	660					
IKS0374	660	660	660					
IKS4001	660	660	660					
IKS4002	660	660	660					
IKS4020	660	660	660	▶ IKS4376	662	662	662	
IKS4038	660	660	660					
IKS4041	660	660	660					
IKS4042	660	660	660	▶ IKS4151 / IKS4153	661	661	661	
IKS4066	660	660	660					
IKS4103	661	661	661	▶ IKS4322	662	662	662	
IKS4142	661	661	661	▶ IKS4376	662	662	662	
IKS4314	661	661	661					
IKS4374	661	661	661					
IKS4375	661	661	661					
IKS4384	661	661	661					
IKS4389	661	661	661					
RKG0014	662	662	662					
RKG0020	662	662	662					
RKG0026	662	662	662					
RKG0028	662	662	662					
RKG4200	662	662	662	RKG4201	662	662	662	
<b>SEW – Selection chart according to part number and outer jacket materials.</b>								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR/TPE)</b>								
0199 1809	663	663	663	▶ 0199 5502	664	664	664	
0199 1825	663	663	663	▶ 0199 5529	664	664	664	
0199 1841	663	663	663	▶ 0199 5545	664	664	664	
0199 1868	663	663	663	▶ 0199 5561	664	664	664	
0199 1884	663	663	663	▶ 0199 5588	664	664	664	
0590 4773	663	663	663	▶ 0590 3610	665	665	665	
				1333 2457	665	665	665	
				1333 2465	665	665	665	
				1333 2473	665	665	665	
0590 4803	663	663	663					

... SEW ...  
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SEW – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Motor cables (PVC/PUR/TPE)</b>								
0590 6245	663	663	663					
0590 6253	663	663	663					
1335 0293	664	664	664	▶ 1335 0021	665	665	665	
1335 0307	664	664	664	▶ 1335 0048	665	665	665	
1335 0315	664	664	664	▶ 1335 0056	665	665	665	
<b>Servo cables (PVC/PUR)</b>								
0199 1906	666	666		▶ 0199 2007	667	667		
0199 1922	666	666		▶ 0199 2023	668	668		
0199 1949	666	666		▶ 0199 204X	668	668		
0199 1965	666	666		▶ 0199 2066	668	668		
0199 1981	666	666		▶ 0199 2082	668	668		
1332 4861	666	666		▶ 0593 6500	668	668		
1335 0153	666	666		▶ 1335 0099	668	668		
1335 0161	666	666		▶ 1335 0102	668	668		
1335 0188	666	666		▶ 1335 0110	668	668		
1335 0234	666	666		▶ 1335 4221	668	668		
1335 0242	667	667		▶ 1335 4248	668	668		
1335 0250	667	667						
1335 4302	667	667						
1335 4310	667	667						
1335 4329	667	667		▶ 1335 4337	668	668		
1335 4388	667	667						
1335 4396	667	667						
1342 1603	667	667						
<b>Encoder cables (PVC/PUR)</b>								
0198 9308	669	669		▶ 0593 9682	669	669		
0199 3194	669	669		▶ 0199 5413		669		
0199 4875	669	669		▶ 0199 5421	669			
1332 4535	669	669		▶ 0199 5391	669			
1332 4551	669	669		▶ 0199 5405		669		
1332 7429	669	669		▶ 0199 5413		669		
1332 7437	669	669						
<b>Hybrid Servo cables (PUR)</b>								
i0186 725 3		670						
i0593 516 4		670						
i0817 112 2		670						
i0186 742 3		670						
i0186 741 5		670						
i0593 076 6		670						
i0593 278 5		670						
i0816 325 1		670						
i0593 755 8		670						
i0816 326 X		670						
i0817 948 4		670						
i0816 208 5		670						
i0817 887 9		670						
i0187 889 5		670						
i0817 886 0		670						
i0817 888 7		670						





Siemens – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Power cables (PVC/PUR/TPE)</b>								
6FX_002-5CA01	671	671	671	▶ 6FX_002-5CA05	675	675	675	
6FX_002-5CA11	671	671	671	▶ 6FX_002-5CA15	675	675	675	
6FX_002-5CA13	671	671	671					
6FX_002-5CA21	671	671	671	▶ 6FX_002-5CA28	675	675	675	
6FX_002-5CA23	671	671	671	▶ 6FX_002-5CX28	675	675	675	
6FX_002-5CA31	671	671	671	▶ 6FX_002-5CA38	675	675	675	
6FX_002-5CA41	671	671	671	▶ 6FX_002-5CA48	675	675	675	
6FX_002-5CA51	671	671	671	▶ 6FX_002-5CA58	675	675	675	
6FX_002-5CA61	671	671	671	▶ 6FX_002-5CA68	675	675	675	
6FX_002-5CG01	672	672	672					
6FX_002-5CG11	672	672	672	▶ 6FX_002-5CA15	675	675	675	
6FX_002-5CG13	672	672	672	▶ 6FX_002-5CX18	675	675	675	
6FX_002-5CG21	672	672	672	▶ 6FX_002-5CA28	675	675	675	
6FX_002-5CG23	672	672	672	▶ 6FX_002-5CX28	675	675	675	
6FX_002-5CG31	672	672	672	▶ 6FX_002-5CA38	675	675	675	
6FX_002-5CG41	672	672	672	▶ 6FX_002-5CA48	675	675	675	
6FX_002-5CG51	672	672	672	▶ 6FX_002-5CA58	675	675	675	
6FX_002-5CG61	672	672	672	▶ 6FX_002-5CA68	675	675	675	
6FX_002-5CS01	673	673	673					
6FX_002-5CS02	674	674	674					
6FX_002-5CS11	673	673	673	▶ 6FX_002-5CA15	675	675	675	
6FX_002-5CS12	674	674	674					
6FX_002-5CS13	673	673	673	▶ 6FX_002-5CX18	675	675	675	
6FX_002-5CS21	673	673	673					
6FX_002-5CS23	674	674	674	▶ 6FX_002-5CX28	675	675	675	
6FX_002-5CS31	673	673	673					
6FX_002-5CS41	673	673	673	▶ 6FX_002-5CA48	675	675	675	
6FX_002-5CS42	674	674	674					
6FX_002-5CS51	673	673	673	▶ 6FX_002-5CA58	675	675	675	
6FX_002-5CS52	674	674	674					
6FX_002-5CS54	674	674	674	▶ 6FX_002-5CA68	675	675	675	
6FX_002-5CS61	673	673	673	▶ 6FX_002-5CA68				
6FX_002-5CS62	674	674	674					
6FX_002-5CS64	674	674	674	▶ 6FX_002-5CX18	675	675	675	
<b>Power cables (PVC/PUR/TPE) - SpeedTec</b>								
6FX_002-5CG10	682	682	682					
6FX_002-5CG12	682	682	682					
6FX_002-5CG22	682	682	682					
6FX_002-5CG32	682	682	682	▶ 6FX_002-5CQ38	685	685	685	
6FX_002-5CG42	682	682	682					
6FX_002-5CG52	682	682	682					
6FX_002-5CG62	682	682	682	▶ 6FX_002-5CQ68	685	685	685	
6FX_002-5CN01	682	682	682					
6FX_002-5CN11	682	682	682					
6FX_002-5CN21	682	682	682					
6FX_002-5CN31	683	683	683	▶ 6FX_002-5CQ38	685	685	685	

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Siemens – Selection chart according to part number and outer jacket materials.								
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE	
<b>Power cables (PVC/PUR/TPE) - SpeedTec</b>								
6FX_002-5CN41	683	683	683					
6FX_002-5CN51	683	683	683					
6FX_002-5CN54	683	683	683					
6FX_002-5CN61	683	683	683	▶ 6FX_002-5CQ68	685	685	685	
6FX_002-5CN64	683	683	683	▶ 6FX_002-5CQ68	685	685	685	
6FX_002-5CQ01	684	684	684					
6FX_002-5CQ11	684	684	684					
6FX_002-5CQ21	684	684	684					
6FX_002-5CQ31	684	684	684	▶ 6FX_002-5CQ38	685	685	685	
6FX_002-5CQ41	684	684	684					
6FX_002-5CQ51	684	684	684					
6FX_002-5CQ61	684	684	684	▶ 6FX_002-5CQ68	685	685	685	
<b>Servo cables (PVC/PUR)</b>								
6FX_002-5DA01	676	676		▶ 6FX_002-5DA05	680	680		
6FX_002-5DA11	676	676		▶ 6FX_002-5DA15	680	680		
6FX_002-5DA21	676	676		▶ 6FX_002-5DA28	680	680		
6FX_002-5DA23	677	677		▶ 6FX_002-5DX28	681	681		
6FX_002-5DA31	676	676		▶ 6FX_002-5DA38	680	680		
6FX_002-5DA33	677	677		▶ 6FX_002-5DX38	681	681		
6FX_002-5DA41	676	676		▶ 6FX_002-5DA48	680	680		
6FX_002-5DA43	677	677		▶ 6FX_002-5DX48	681	681		
6FX_002-5DA51	676	676		▶ 6FX_002-5DA58	680	680		
6FX_002-5DA61	676	676		▶ 6FX_002-5DA68	680	680		
6FX_002-5DG01	677	677		▶ 6FX_002-5DA05	680	680		
6FX_002-5DG11	677	677		▶ 6FX_002-5DA15	680	680		
6FX_002-5DG13	677	677						
6FX_002-5DG21	677	677						
6FX_002-5DG23		677						
6FX_002-5DG31	677	677						
6FX_002-5DG33		677						
6FX_002-5DG41	677	677		▶ 6FX_002-5DA48	680	680		
6FX_002-5DG43		678						
6FX_002-5DG51	678	678						
6FX_002-5DG61	678	678						
6FX_002-5DS01	678	678						
6FX_002-5DS11	678	678		▶ 6FX_002-5DA15	680	680		
6FX_002-5DS13	678	678						
6FX_002-5DS21	678	678						
6FX_002-5DS23		679						
6FX_002-5DS33		679						
6FX_002-5DS41	678	678		▶ 6FX_002-5DA48	680	680		
6FX_002-5DS43		679						
6FX_002-5DS51	678	678						
6FX_002-5DS54	679	679						
6FX_002-5DS61	678	678						
6FX_002-5DS64	679	679						

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Siemens – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Servo cables (PVC/PUR) - SpeedTec</b>							
6FX_002-5DG10	686	686		▶ 6FX_002-5DN05	689	689	
6FX_002-5DG12	686	686		▶ 6FX_002-5DN15	689	689	
6FX_002-5DG22	686	686		▶ 6FX_002-5DQ28	689	689	
6FX_002-5DG32	686	686		▶ 6FX_002-5DQ38	689	689	
6FX_002-5DG42	686	686		▶ 6FX_002-5DQ48	689	689	
6FX_002-5DG52	686	686		▶ 6FX_002-5DQ58	689	689	
6FX_002-5DG62	686	686		▶ 6FX_002-5DQ68	689	689	
6FX_002-5DN01	687	687		▶ 6FX_002-5DN05	689	689	
6FX_002-5DN11	687	687		▶ 6FX_002-5DN15	689	689	
6FX_002-5DN21	687	687		▶ 6FX_002-5DQ28	689	689	
6FX_002-5DN31	687	687		▶ 6FX_002-5DQ38	689	689	
6FX_002-5DN41	687	687		▶ 6FX_002-5DQ48	689	689	
6FX_002-5DN51	687	687		▶ 6FX_002-5DQ58	689	689	
6FX_002-5DN54	687	687		▶ 6FX_002-5DQ58	689	689	
6FX_002-5DN61	687	687		▶ 6FX_002-5DQ68	689	689	
6FX_002-5DN64	687	687		▶ 6FX_002-5DQ68	689	689	
6FX_002-5DQ01	688	688		▶ 6FX_002-5DN05	689	689	
6FX_002-5DQ11	688	688		▶ 6FX_002-5DN15	689	689	
6FX_002-5DQ21	688	688		▶ 6FX_002-5DQ28	689	689	
6FX_002-5DQ31	688	688		▶ 6FX_002-5DQ38	689	689	
6FX_002-5DQ41	688	688		▶ 6FX_002-5DQ48	689	689	
6FX_002-5DQ51	688	688		▶ 6FX_002-5DQ58	689	689	
6FX_002-5DQ61	688	688		▶ 6FX_002-5DQ68	689	689	
<b>Signal cables (PVC/PUR/TPE)</b>							
6FX_002-1DC00	694	694					
6FX_002-2AD00	690	690	690	▶ 6FX_002-2AD04	693	693	693
6FX_002-2AH00	692	692	692	▶ 6FX_002-2AH04	693	693	693
6FX_002-2CA11	690	690	690	▶ 6FX_002-2CB54	693	693	693
6FX_002-2CA15	690	690	690	▶ 6FX_002-2CA54	693	693	693
6FX_002-2CA31	690	690	690	▶ 6FX_002-2CA34	693	693	693
6FX_002-2CA51	690	690	690	▶ 6FX_002-2CA54	693	693	693
6FX_002-2CA71	690	690	690				
6FX_002-2CB31		691	691	▶ 6FX_002-2CB34		693	693
6FX_002-2CB51	691	691	691	▶ 6FX_002-2CC14	693	693	693
6FX_002-2CC11	691	691	691	▶ 6FX_002-2CB54	693	693	693
6FX_002-2CD01	691	691	691	▶ 6FX_002-2CB54	693	693	693
6FX_002-2CF01	691	691	691				
6FX_002-2CF02	691	691	691	▶ 6FX_002-2CF04	693	693	693
6FX_002-2CG00	691	691	691	▶ 6FX_002-2CB54	693	693	693
6FX_002-2CH00	691	691	691	▶ 6FX_002-2AD04	693	693	693
6FX_002-2CK00	692	692	692				
6FX_002-2CL00	692	692	692				
6FX_002-2DC10	694	694					
6FX_002-2DC20	694	694					
6FX_002-2EQ00	692	692	692				
6FX_002-2EQ10	692	692	692	6FX_002-2EQ14	693	693	693

Siemens

... Siemens ... Stöber ...  
... harnessed cables for Drive Technology ...






Siemens – Selection chart according to part number and outer jacket materials.							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Signal cables DriveCliq (PUR)</b>							
i6FX8002-2DC30-1AD0(3m)		694		i6FX8002-2DC34-1AD0(3m)		694	
i6FX8002-2DC30-1AF0(5m)		694		i6FX8002-2DC34-1AF0(5m)		694	
i6FX8002-2DC30-1BA0(10m)		694		i6FX8002-2DC34-1BA0(10m)		694	
i6FX8002-2DC30-1BF0(15m)		694		i6FX8002-2DC34-1BF0(15m)		694	
i6FX8002-2DC30-1CA0(20m)		694		i6FX8002-2DC34-1CA0(20m)		694	
i6FX8002-2DC30-1CF0(25m)		694		i6FX8002-2DC34-1CF0(25m)		694	
i6FX8002-2DC30-1DA0(30m)		694		i6FX8002-2DC34-1DA0(30m)		694	
<b>Stöber – Selection chart according to part number and outer jacket materials.</b>							
Basic cable	PVC	PUR	TPE	Extension cable	PVC	PUR	TPE
<b>Servo cables (PVC/PUR)</b>							
Gr.1-Motor-1,0mm <sup>2</sup>	695	695					
Gr.1-Motor-1,5mm <sup>2</sup>	695	695					
Gr.1-Motor-2,5mm <sup>2</sup>	695	695					
Gr.1-Motor-4,0mm <sup>2</sup>	695	695					
Gr.1,5-Motor-4,0mm <sup>2</sup>	695	695					
Gr.1,5-Motor-6,0mm <sup>2</sup>	695	695					
Gr.1,5-Motor-10,0mm <sup>2</sup>	695	695					
<b>Encoder cables (PVC/PUR/TPE)</b>							
Encoder ED/EK iSDS4000	696	696	696				
Encoder ES iSDS4000	696	696	696				
Encoder HTL	696	696	696				
Resolver iMDS5000	696	696	696				
Resolver iSDS4000	696	696	696				

Stöber

# Allen Bradley | harnessed drive cables ... optionally with PVC/PUR/TPE jacket





\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Allen Bradley Motor cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
2090-CPWM7DF-08AFxx	PVC	MAT9761704	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861706	(4 G 10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9961707	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	
	TPE	MAT9961708	(4 G 10.0)C	0.77 19.5	7.5	<b>3</b>	
2090-CPWM7DF-10AFxx	PVC	MAT9761703	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9861705	(4 G 6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9961705	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
	TPE	MAT9961706	(4 G 6.0)C	0.63 16.0	7.5	<b>3</b>	
<b>Basic cable</b> 							
2090-CPWM7DF-12AFxx	PVC	MAT9761702	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	PUR	MAT9861704	(4 G 4.0)C	0.49 12.5	10	<b>6</b>	
	TPE	MAT9961709	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>	
	TPE	MAT9961704	(4 G 4.0)C	0.53 13.5	7.5	<b>3</b>	
2090-CPWM7DF-14AFxx	PVC	MAT9761701	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861703	(4 G 2.5)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9861702	(4 G 2.5)C	0.49 12.5	7.5	<b>7</b>	
	TPE	MAT9961710	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
2090-CPWM7DF-16AFxx	TPE	MAT9961711	(4 G 2.5)C	0.45 11.5	7.5	<b>3</b>	
	PVC	MAT9761758	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861760	(4 G 1.5)C	0.37 9.5	10	<b>6</b>	
	PUR	MAT9861759	(4 G 1.5)C	0.41 10.5	7.5	<b>7</b>	
TPE	MAT9961761	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>		
<b>Basic cable</b> 							
2090-XXNPMP-10SXX	PVC	MAT9761712	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9961718	(4 G 6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9961703	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
	TPE	MAT9961715	(4 G 6.0)C	0.63 16.0	7.5	<b>3</b>	
2090-XXNPMP-14SXX	PVC	MAT9761711	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9961717	(4 G 2.5)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9851711	(4 G 2.5)C	0.49 12.5	7.5	<b>7</b>	
	TPE	MAT9961702	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
TPE	MAT9961714	(4 G 2.5)C	0.45 11.5	7.5	<b>3</b>		

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Allen Bradley | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543




Allen Bradley Motor cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
2090-XXNPMP-16SXX	PVC	MAT9761710	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861701	(4 G 1.5)C	0.41 10.5	7.5	<b>7</b>	
	PUR	MAT9961716	(4 G 1.5)C	0.37 9.5	10	<b>6</b>	
	TPE	MAT9961701	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
	TPE	MAT9961713	(4 G 1.5)C	0.37 9.5	7.5	<b>3</b>	
<b>Allen Bradley Servo cables</b> 							
<b>Basic cable</b>							
2090-CPBM4DF-16AFxx	PVC	MAT9751757	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751756	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851755	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851754	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
<b>Basic cable</b> 							
2090-CPBM7DF-08AFxx	PVC	MAT9751745	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851736	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851735	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
<b>Extension cable</b> 							
2090-CPBM7DF-08AFxx	PVC	MAT9751706	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751705	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851712	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851705	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Allen Bradley | harnessed drive cables ... optionally with PVC/PUR jacket





\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Allen Bradley Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
2090-CPBM7DF-14AFxx	PVC	MAT9751744	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751743	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851734	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851733	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
2090-CPBM7DF-16AFxx	PVC	MAT9751742	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751741	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851732	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851731	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
<b>Extension cable</b> 							
2090-CPBM7E7-08AFxx	PVC	MAT9751709	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851710	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851709	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
2090-CPBM7E7-10AFxx	PVC	MAT9751708	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751707	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851714	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851713	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
<b>Extension cable</b> 							
2090-CPBM7E7-14AFxx	PVC	MAT9751747	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751746	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851738	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851737	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
2090-CPBM7E7-16AFxx	PVC	MAT9751749	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751748	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851740	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851739	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Allen Bradley | harnessed drive cables ... optionally with PVC/PUR jacket







\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Allen Bradley Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
2090-XXNPMF-10SXX	PVC	MAT9711730	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9961722	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9811726	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851708	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
	PUR	MAT9851708	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
<b>Basic cable</b> 							
2090-XXNPMF-14SXX	PVC	MAT9711729	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9961721	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9811725	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851707	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
2090-XXNPMF-16SXX	PVC	MAT9711728	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9961720	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9811724	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851706	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
<b>Servo hybrid cables Allen Bradley</b> 							
<b>Basic cable</b>							
2090-CSBM1DF-14AF	PVC	MAT9751703	(4G2.5+(2x1.0)C)+(2xAWG22)C)C	0.59 15.0	10	<b>28</b>	
	PUR	MAT9851703	(4G2.5+(2x1.0)C)+(2xAWG22)C)C	0.59 15.0	10	<b>29</b>	
2090-CSBM1DF-18AF	PVC	MAT9751701	(4G1.0+(2x0.75)C)+(2xAWG22)C)C	0.49 12.5	10	<b>28</b>	
	PUR	MAT9851701	(4G1.0+(2x0.75)C)+(2xAWG22)C)C	0.49 12.5	10	<b>29</b>	
2090-CSWM1DF-14AF	PVC	MAT9751704	(4G2.5+(2x1.0)C)+(2xAWG22)C)C	0.59 15.0	10	<b>28</b>	
	PUR	MAT9851704	(4G2.5+(2x1.0)C)+(2xAWG22)C)C	0.59 15.0	10	<b>29</b>	
2090-CSWM1DF-18AF	PVC	MAT9751702	(4G1.0+(2x0.75)C)+(2xAWG22)C)C	0.49 12.5	10	<b>28</b>	
	PUR	MAT9851702	(4G1.0+(2x0.75)C)+(2xAWG22)C)C	0.49 12.5	10	<b>29</b>	
<b>Brake cables Allen Bradley</b> 							
<b>Basic cable</b>							
2090-UXNBMP-18SXX	PVC	MAT9961719	(3 G 0.75)C	0.31 8.0	6.8	<b>20</b>	
	PVC	MAT9711727	(3 G 0.75)C	0.31 8.0	7.5	<b>18</b>	
	PUR	MAT9811705	(3 G 0.75)C	0.31 8.0	6.8	<b>23</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Allen Bradley | harnessed drive cables ... optionally with PUR/TPE jacket






\* Technical information on the cable quality: **Selection chart 1 to 32** ▶ page 540-543

Allen Bradley Feedback cables			PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
2090-CFBM4DF-CDAFxx	PUR	MAT9841753	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
2090-CFBM7DF-CDAFxx	PUR	MAT9841750	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	PUR	MAT9841771	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.35 9.0	10	<b>9</b>	
	TPE	MAT9941764	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
2090-CFBM7DF-CEAFxx	PUR	MAT9841752	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
<b>Extension cable</b> 							
2090-CFBM7E7-CDAFxx	PUR	MAT9841751	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	PUR	MAT9841772	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.35 9.0	10	<b>9</b>	
	TPE	MAT9941765	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
2090-CFBM7E7-CEAFxx	PUR	MAT9741776	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	PUR	MAT9841773	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.35 9.0	10	<b>9</b>	
	TPE	MAT9941766	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
2090-XXNFMF-Sxx	PUR	MAT9841770	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	PUR	MAT9941709	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9941763	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
2090-XXNFMP-Sxx	PUR	MAT9941704	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	PUR	MAT9841769	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9941762	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
i2090-CFBM4DF-CDAFxx	PUR	MAT9841775	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.35 9.0	10	<b>9</b>	
	TPE	MAT9941768	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
i2090-CFBM7DF-CEAFxx	PUR	MAT9841774	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.35 9.0	10	<b>9</b>	
	TPE	MAT9941767	(3x(4x0.14)+(2x0.14+2x0.34)+2x1.5)C	0.41 10.5	7.5	<b>11</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# B&R | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selection chart 1 to 32** ▶ page 540-543

B&R Motor cables			PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
i8BCMxxxx.1011A-0	PVC	MAT9610008	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>5</b>	
	PUR	MAT9850108	(4G0.75+2x(2x0.34)C)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9600008	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>7</b>	
<b>Basic cable</b> 							
i8BCMxxxx.1034C-0	PVC	MAT9610009	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>5</b>	
	PUR	MAT9850109	(4G0.75+2x(2x0.34)C)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9600009	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>7</b>	
<b>Basic cable</b> 							
i8BCMxxxx.1312A-0	PVC	MAT9750106	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9610012	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850106	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9600012	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
<b>Basic cable</b> 							
i8BCMxxxx.1322A-0	PVC	MAT9750107	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9610013	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850107	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9600013	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
<b>Basic cable</b> 							
i8CMxxx.12-0	PVC	MAT9610000	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>5</b>	
	PUR	MAT9850100	(4G0.75+2x(2x0.34)C)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9600000	(4G0.75+2x(2x0.34)C)C	0.49 12.5	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# B&R | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

B&R Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



i8BCMxxx.1111A-0	PVC	MAT9750104	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9610010	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850104	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9600010	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
i8BCMxxx.1311A-0	PVC	MAT9750105	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>4</b>
	PVC	MAT9610011	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850105	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>6</b>
	PUR	MAT9600011	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>

### Basic cable



i8CMxxx.12-1	PVC	MAT9750101	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9610001	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850101	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9600001	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
i8CMxxx.12-3	PVC	MAT9750102	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>4</b>
	PVC	MAT9610002	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5	<b>5</b>
	PUR	MAT9850102	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>6</b>
	PUR	MAT9600002	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
i8CMxxx.12-5	PVC	MAT9610003	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850103	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9600003	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>

B&R EnDat cables		PVC/PUR/TPE		
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### Basic cable



i8BCExxx.1111A-0	PVC	MAT9670002	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9820102	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9660002	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
i8CExxx.12-1	PVC	MAT9670001	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9820101	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9660001	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# B&R | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

B&R Encoder cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



i8BCFxxx.1221B-0	PVC	MAT9670003	((4x0.14)+2x(2x0.34))C	0.28	7.0	10	<b>8</b>
	PUR	MAT9840103	((4x0.14)+2x(2x0.34))C	0.28	7.0	10	<b>9</b>

### Basic cable



i8BCRxxx.1121A-0	PVC	MAT9640015	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9840105	(3x(2x0.25))C	0.28	7.0	7.5	<b>27</b>
	TPE	MAT9630015	(3x(2x0.25))C	0.31	8.0	6.8	<b>16</b>

### Basic cable



i8BCSxxx.1111A-0	PVC	MAT9670004	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9820104	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	PUR	MAT9840114	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	TPE	MAT9660004	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>

B&R Resolver cables		PVC/PUR/TPE		
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### Basic cable



i8BCRxxx.1111A-0	PVC	MAT9640001	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9840102	(3x(2x0.25))C	0.33	8.5	10	<b>15</b>
	TPE	MAT9630010	(3x(2x0.25))C	0.31	8.0	6.8	<b>16</b>
i8CRxxx.12-1	PVC	MAT9640010	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9840101	(3x(2x0.25))C	0.33	8.5	10	<b>15</b>
	TPE	MAT9630001	(3x(2x0.25))C	0.31	8.0	6.8	<b>16</b>

B&R Bus cables		PVC/PUR/TPE		
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### Basic cable


iX20CA3E61.xxxx	PVC	MAT9630100	(4x0.38)C	0.28	7.0	12.5	<b>30</b>
	PUR	MAT9730101	(4x0.38)C	0.28	7.0	12.5	<b>31</b>
	TPE	MAT9930102	(4x0.38)C	0.30	7.5	12.5	<b>12</b>
iX67CA0E41.xxxx	PVC	MAT9630103	(4x0.38)C	0.28	7.0	12.5	<b>30</b>
	PUR	MAT9730104	(4x0.38)C	0.28	7.0	12.5	<b>31</b>
	TPE	MAT9930105	(4x0.38)C	0.30	7.5	12.5	<b>12</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket



\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>15 A Basic cable</b> 							
324781 (5 m)	PVC	MAT9750201	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850201	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324782 (7 m)	PVC	MAT9750202	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295002	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850202	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296002	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324783 (10 m)	PVC	MAT9750203	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295003	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850203	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296003	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324784 (15 m)	PVC	MAT9750204	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295004	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850204	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296004	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324785 (20 m)	PVC	MAT9750205	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295005	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850205	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296005	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324786 (25 m)	PVC	MAT9750206	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295006	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850206	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296006	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324787 (30 m)	PVC	MAT9750207	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295007	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850207	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296007	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324788 (35 m)	PVC	MAT9750208	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295008	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850208	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296008	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket


\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>15 A Basic cable</b> 							
324789 (40 m)	PVC	MAT9750209	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295009	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850209	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296009	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324790 (50 m)	PVC	MAT9750210	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295010	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850210	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296010	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324791 (75 m)	PVC	MAT9750211	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295011	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850211	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296011	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
324792 (100 m)	PVC	MAT9750212	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9295012	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850212	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9296012	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
<b>15 A Extension cable</b> 							
	PVC	MAT9750213	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9297001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850213	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9298001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket



\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>20 A Basic cable</b> 							
380967 (7 m)	PVC	MAT9750215	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295021	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850215	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296021	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
413410 (10 m)	PVC	MAT9750216	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295022	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850216	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296022	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414840 (5 m)	PVC	MAT9750214	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295020	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850214	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296020	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414841 (15 m)	PVC	MAT9750217	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295023	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850217	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296023	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414842 (20 m)	PVC	MAT9750218	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295024	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850218	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296024	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414843 (25 m)	PVC	MAT9750219	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295025	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850219	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296025	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414846 (30 m)	PVC	MAT9750220	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295026	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850220	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296026	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414848 (35 m)	PVC	MAT9750221	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295027	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850221	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296027	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414849 (40 m)	PVC	MAT9750222	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295028	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850222	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296028	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414850 (50 m)	PVC	MAT9750223	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295029	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850223	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296029	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>20 A Basic cable</b> 							
414851 (75 m)	PVC	MAT9750224	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295030	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850224	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296030	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
414852 (100 m)	PVC	MAT9750225	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295031	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850225	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296031	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
<b>20 A Extension cable</b> 							
	PVC	MAT9750226	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9297020	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850226	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9298020	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>21 A Basic cable</b>							
326577 (5 m)	PVC	MAT9750227	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295040	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850227	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296040	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326578 (7 m)	PVC	MAT9750228	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295041	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850228	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296041	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326579 (10 m)	PVC	MAT9750229	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295042	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850229	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296042	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326580 (15 m)	PVC	MAT9750230	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295043	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850230	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296043	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326581 (20 m)	PVC	MAT9750231	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295044	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850231	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296044	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326582 (25 m)	PVC	MAT9750232	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295045	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850232	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296045	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326583 (30 m)	PVC	MAT9750233	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295046	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850233	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296046	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326584 (35 m)	PVC	MAT9750234	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295047	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850234	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296047	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326585 (40 m)	PVC	MAT9750235	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295048	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850235	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296048	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>21 A Basic cable</b>							
326586 (50 m)	PVC	MAT9750236	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295049	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850236	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296049	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326587 (75 m)	PVC	MAT9750237	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295050	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850237	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296050	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326588 (100 m)	PVC	MAT9750238	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9295051	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850238	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9296051	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
<b>21 A Extension cable</b>							
326589 (150 m)	PVC	MAT9750239	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9297040	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850239	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9298040	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>28 A Basic cable</b>							
326589 (5 m)	PVC	MAT9750240	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295060	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9296060	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PUR	MAT9850240	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
326591 (7 m)	PVC	MAT9750241	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295061	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850241	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296061	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326592 (10 m)	PVC	MAT9750242	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295062	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850242	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296062	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326593 (15 m)	PVC	MAT9750243	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295063	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850243	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296063	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326594 (20 m)	PVC	MAT9750244	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295064	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9296064	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PUR	MAT9850244	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
326596 (25 m)	PVC	MAT9750245	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295065	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850245	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296065	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326597 (30 m)	PVC	MAT9750246	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295066	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850246	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296066	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326598 (35 m)	PVC	MAT9750247	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295067	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850247	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296067	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
326599 (40 m)	PVC	MAT9750248	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9295068	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850248	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9296068	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>28 A Extension cable</b>							
326599 (40 m)	PVC	MAT9750249	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9297060	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9850249	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9298060	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>36 A Basic cable</b>							
326600 (5 m)	PVC	MAT9750250	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295070	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850250	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296070	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326601 (7 m)	PVC	MAT9750251	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295071	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850251	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296071	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326602 (10 m)	PVC	MAT9750252	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295072	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850252	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296072	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326603 (15 m)	PVC	MAT9750253	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295073	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850253	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296073	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326604 (20 m)	PVC	MAT9750254	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295074	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850254	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296074	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326605 (25 m)	PVC	MAT9750255	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295075	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850255	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296075	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326606 (30 m)	PVC	MAT9750256	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295076	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850256	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296076	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326607 (35 m)	PVC	MAT9750257	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295077	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850257	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296077	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
326608 (40 m)	PVC	MAT9750258	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9295078	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850258	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9296078	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>36 A Extension cable</b>							
326600 (5 m)	PVC	MAT9750259	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9297070	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9850259	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9298070	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## 50 A Basic cable



326609 (5 m)	PVC	MAT9295080	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850260	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296080	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326610 (7 m)	PVC	MAT9295081	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850261	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296081	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326611 (10 m)	PVC	MAT9295082	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850262	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296082	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326612 (15 m)	PVC	MAT9295083	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850263	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296083	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326613 (20 m)	PVC	MAT9295084	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850264	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296084	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326614 (25 m)	PVC	MAT9295085	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850265	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296085	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326615 (30 m)	PVC	MAT9295086	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850266	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296086	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326616 (35 m)	PVC	MAT9295087	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850267	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296087	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
326617 (40 m)	PVC	MAT9295088	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9850268	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT9296088	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>

## 50 A Extension cable



PVC	MAT9297080	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
PUR	MAT9850269	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
PUR	MAT9298080	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Resolver cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## SRS/SRM50 & SKS/SKM36 Basic cable



239540 (5 m)	PVC	MAT9290003	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940203	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840203	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
239541 (8 m)	TPE	MAT9291003	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PVC	MAT9290005	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940205	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
239542 (10 m)	PUR	MAT9840205	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291005	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PVC	MAT9290006	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
239543 (15 m)	PUR	MAT9940206	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840206	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291006	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
239544 (20 m)	PVC	MAT9290007	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940207	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840207	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
239545 (25 m)	TPE	MAT9291007	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PUR	MAT9940208	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840208	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
239546 (30 m)	PVC	MAT9290008	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	TPE	MAT9291008	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PUR	MAT9940209	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
239547 (35 m)	PUR	MAT9840209	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291009	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PVC	MAT9290010	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
240520 (40 m)	PUR	MAT9940210	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840210	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291010	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
240521 (45 m)	PVC	MAT9290011	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940211	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840211	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
240522 (40 m)	TPE	MAT9291011	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PVC	MAT9290012	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940212	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
240523 (40 m)	PUR	MAT9840212	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291012	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
	PVC	MAT9290013	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
240524 (45 m)	PUR	MAT9940213	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840213	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291013	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Resolver cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>SRS/SRM50 &amp; SKS/SKM36 Basic cable</b>							
240522 (50 m)	PVC	MAT9290014	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940214	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840214	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291014	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
242954 (6 m)	PVC	MAT9290004	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940204	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840204	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291004	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
243379 (4 m)	PVC	MAT9290002	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940202	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840202	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291002	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
244033 (55 m)	PVC	MAT9290015	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940215	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840215	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291015	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
245484 (60 m)	PVC	MAT9290016	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940216	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840216	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291016	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
246658 (3 m)	PVC	MAT9290001	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940201	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840201	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291001	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>



<b>SRS/SRM50 &amp; SKS/SKM36 Extension cable</b>							
	PVC	MAT9292001	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940217	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840217	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9293001	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Pulse encoder cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Pulse encoder Basic cable</b>							
198962 (3 m)	PVC	MAT9290020	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940218	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840218	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291020	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198963 (5 m)	PVC	MAT9290021	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940219	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840219	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291021	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198964 (8 m)	PVC	MAT9290022	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940220	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840220	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291022	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198965 (10 m)	PVC	MAT9290023	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940221	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840221	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291023	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198966 (15 m)	PVC	MAT9290024	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940222	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840222	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291024	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198967 (20 m)	PVC	MAT9290025	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940223	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840223	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291025	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198968 (25 m)	PVC	MAT9290026	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940224	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840224	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291026	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
198969 (30 m)	PVC	MAT9290027	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940225	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840225	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291027	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
208829 (40 m)	PVC	MAT9290029	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940227	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840227	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291029	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>
225360 (35 m)	PVC	MAT9290028	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9940226	(5x(2x0.14)+2x0.5)C	0.31	8.0	10	<b>9</b>
	PUR	MAT9840226	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>10</b>
	TPE	MAT9291028	(5x(2x0.14)+2x0.5)C	0.35	9.0	7.5	<b>11</b>



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Pulse encoder cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Pulse encoder Extension cable</b>							
	PVC	MAT9292020	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940228	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840228	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9293020	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	



# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Baumüller Pulse encoder cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>ECN1313/EQN1325 Basic cable</b>							
369864 (3 m)	PVC	MAT9290031	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940230	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840230	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291031	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
371494 (20 m)	PVC	MAT9290038	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940237	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840237	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291038	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
378022 (50 m)	PVC	MAT9290044	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940243	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840243	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291044	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
380358 (35 m)	PVC	MAT9290041	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940240	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840240	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291041	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
382005 (45 m)	PVC	MAT9290043	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940242	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840242	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291043	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
389807 (7 m)	PVC	MAT9290033	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940232	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840232	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291033	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
389808 (9 m)	PVC	MAT9290035	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	TPE	MAT9291035	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
389808 (9m)	PUR	MAT9940234	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840234	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
391216 (40 m)	PVC	MAT9290042	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940241	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840241	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291042	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393889 (2 m)	PVC	MAT9290030	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	TPE	MAT9291030	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393889 (2m)	PUR	MAT9940229	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840229	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

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igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Baumüller | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Baumüller Pulse encoder cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>ECN1313/EQN1325 Basic cable</b>							
393890 (8 m)	PVC	MAT9290034	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940233	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840233	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291034	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393891 (10 m)	PVC	MAT9290036	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940235	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840235	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291036	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393892 (15 m)	PVC	MAT9290037	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940236	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840236	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291037	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393893 (25 m)	PVC	MAT9290039	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940238	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840238	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291039	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
393894 (30 m)	PVC	MAT9290040	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940239	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840239	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291040	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
394014 (5 m)	PVC	MAT9290032	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940231	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840231	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9291032	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	
<b>ECN1313/EQN1325 Extension cable</b>							
	PVC	MAT9292030	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9940244	(5x(2x0.14)+2x0.5)C	0.31 8.0	10	<b>9</b>	
	PUR	MAT9840244	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>10</b>	
	TPE	MAT9293030	(5x(2x0.14)+2x0.5)C	0.35 9.0	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Beckhoff | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Beckhoff Servo hybrid cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
ZK4500-8015-xxx	PVC	MAT9750314	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.65 16.5	10	<b>4</b>	
	PUR	MAT9850314	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.61 15.5	10	<b>6</b>	
ZK4500-8024-xxx	PVC	MAT9750312	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.57 14.5	10	<b>6</b>	
	PUR	MAT9850312	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.53 13.5	10	<b>4</b>	
ZK4501-8024-xxx	PVC	MAT9850313	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9750313	(4 G 2.5+(2x1.0)C)+(2xAWG22)C)C	0.53 13.5	10	<b>4</b>	
ZK4530-8110-xxxx	PVC	MAT9381006	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9382006	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	

## Beckhoff Servo cables PVC/PUR


<b>Basic cable</b>							
ZK4000-2111-xxxx	PVC	MAT9750305	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9371005	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9850305	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9372005	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
ZK4000-2711-xxxx	PVC	MAT9750307	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9371007	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9850307	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9372007	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
<b>Basic cable</b>							
ZK4000-2112-xxxx	PVC	MAT9750306	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9371006	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850306	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9372006	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
<b>Basic cable</b>							
ZK4500-0023-xxxx	PVC	MAT9750301	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9371001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850301	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9372001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Beckhoff | harnessed drive cables ... optionally with PVC/PUR jacket







\* Technical information on the cable quality: **Seleaction chart 1 to 32** ▶ page 540-543

Beckhoff Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
ZK4500-0024-xxxx	PVC	MAT9750302	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9371002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850302	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9372002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
<b>Extension cable</b>							
ZK4501-0023-xxxx	PVC	MAT9750303	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9371003	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9850303	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9372003	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
<b>Extension cable</b>							
ZK4501-0024-xxxx	PVC	MAT9750304	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9371004	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9850304	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9372004	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
Beckhoff Servo hybrid cables		PVC/PUR					
<b>Basic cable</b>							
ZK4500-8022-xxxx	PVC	MAT9850308	(4 G 1.0+(2x0.75)C)+(2xAWG22)C)C	0.51 13.0	10	<b>4</b>	
	PUR	MAT9750308	(4 G 1.0+(2x0.75)C)+(2xAWG22)C)C	0.51 13.0	10	<b>6</b>	
<b>Basic cable</b>							
ZK4500-8023-xxxx	PVC	MAT9850309	(4 G 1.5+(2x0.75)C)+(2xAWG22)C)C	0.53 13.5	10	<b>4</b>	
	PUR	MAT9750309	(4 G 1.5+(2x0.75)C)+(2xAWG22)C)C	0.53 13.5	10	<b>6</b>	
<b>Extension cable</b>							
ZK4501-8022-xxxx	PVC	MAT9850310	(4 G 1.0+(2x0.75)C)+(2xAWG22)C)C	0.51 13.0	10	<b>4</b>	
	PUR	MAT9750310	(4 G 1.0+(2x0.75)C)+(2xAWG22)C)C	0.51 13.0	10	<b>6</b>	
<b>Extension cable</b>							
ZK4501-8023-xxxx	PVC	MAT9850311	(4 G 1.5+(2x0.75)C)+(2xAWG22)C)C	0.53 13.5	10	<b>4</b>	
	PUR	MAT9750311	(4 G 1.5+(2x0.75)C)+(2xAWG22)C)C	0.53 13.5	10	<b>6</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Beckhoff | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ▶ page 540-543

Beckhoff Encoder cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
ZK4000-2410-xxxx	PVC	MAT9381005	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	PUR	MAT9382005	(8x(2x0.25))C	0.45 11.5	10	<b>15</b>	
<b>Basic cable</b>							
ZK4000-2610-xxxx	PVC	MAT9381004	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	PUR	MAT9382004	(8x(2x0.25))C	0.45 11.5	10	<b>15</b>	
<b>Basic cable</b>							
ZK4510-0020-xxxx	PVC	MAT9381001	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	PUR	MAT9382001	(8x(2x0.25))C	0.45 11.5	10	<b>15</b>	
<b>Basic cable</b>							
ZK4520-0020-xxxx	PVC	MAT9381002	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9382002	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
<b>Extension cable</b>							
ZK4511-0020-xxxx	PVC	MAT9381003	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	PUR	MAT9382003	(8x(2x0.25))C	0.45 11.5	10	<b>15</b>	
Beckhoff Thermo edge protection cables		PVC/TPE					
<b>Basic cable</b>							
ZK4000-2510-xxxx	TPE	MAT9386001	(2x0.25)C	0.20 5.0	7.5	<b>11</b>	
	TPE	MAT9387001	(4x0.34)C	0.24 6.0	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Beckhoff | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Beckhoff Resolver cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
ZK4000-2210-xxxx	PVC	MAT9383003	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9384003	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9920303	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
<b>Basic cable</b>							
ZK4530-0010-xxxx	PVC	MAT9383001	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9384001	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9920301	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
<b>Extension cable</b>							
ZK4531-0020-xxxx	PVC	MAT9383002	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9384002	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9920302	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
Beckhoff Network cable EtherCAT			TPE				
<b>Basic cable</b>							
ZK1090-9191-xxxx	TPE	MAT9385001	(4x0.25)C	0.28 7.0	10	<b>12</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Berger Lahr | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Berger Lahr Servo cables			PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
VW3M5101Rxxx	PVC	MAT94503001	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT94502001	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT94501001	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
VW3M5102Rxxx	PUR	MAT94500001	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
	PVC	MAT94503002	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT94502003	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
VW3M5102Rxxx	PUR	MAT94501003	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT94500003	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
Berger Lahr Resolver cables			PVC/PUR/TPE				
<b>Basic cable</b>							
VW3M8101Rxxx	PVC	MAT94603001	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT94601001	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT94600001	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Control Techniques | harnessed drive cables

## ... optionally with PVC/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Control Techniques Motor cables			PVC/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



PS B A A A XXX	PVC	MAT9560002	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9540002	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960502	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
PS B A F A XXX	PVC	MAT9560005	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9540005	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960505	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
PS B B A A XXX	PVC	MAT9560003	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9960503	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
	TPE	MAT9540003	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
PS B B F A XXX	PVC	MAT9560006	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9540006	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960506	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
PS B G A A XXX	PVC	MAT9560001	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9540001	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960501	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
PS B G F A XXX	PVC	MAT9560004	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9960504	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	TPE	MAT9540004	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>

### Basic cable



PS B A A B XXX	PVC	MAT9560008	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9540008	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960508	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
PS B A B B XXX	PVC	MAT9560020	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9540020	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960520	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
PS B A F B XXX	PVC	MAT9560014	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9960514	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
	TPE	MAT9540014	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
PS B B A B XXX	PVC	MAT9560009	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9540009	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960509	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
PS B B B B XXX	PVC	MAT9560021	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9540021	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960521	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
PS B B F B XXX	PVC	MAT9560015	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9960515	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
	TPE	MAT9540015	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Control Techniques | harnessed drive cables

## ... optionally with PVC/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Control Techniques Motor cables			PVC/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



PS B C A B XXX	PVC	MAT9560010	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	TPE	MAT9540010	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
	TPE	MAT9960510	(4 G 6.0)C	0.63	16.0	7.5	<b>3</b>
PS B C B B XXX	PVC	MAT9560022	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	TPE	MAT9960522	(4 G 6.0)C	0.63	16.0	7.5	<b>3</b>
	TPE	MAT9540022	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
PS B C F B XXX	PVC	MAT9560016	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	TPE	MAT9540016	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
	TPE	MAT9960516	(4 G 6.0)C	0.63	16.0	7.5	<b>3</b>
PS B D A B XXX	PVC	MAT9560011	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	TPE	MAT9960511	(4 G 10.0)C	0.77	19.5	7.5	<b>3</b>
	TPE	MAT9540011	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
PS B D B B XXX	PVC	MAT9560023	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	TPE	MAT9960523	(4 G 10.0)C	0.77	19.5	7.5	<b>3</b>
	TPE	MAT9540023	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
PS B D F B XXX	PVC	MAT9560017	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	TPE	MAT9540017	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
	TPE	MAT9960517	(4 G 10.0)C	0.77	19.5	7.5	<b>3</b>
PS B E A B XXX	PVC	MAT9560012	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	TPE	MAT9960512	(4 G 16.0)C	0.91	23.0	7.5	<b>3</b>
	TPE	MAT9540012	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>
PS B E B B XXX	PVC	MAT9560024	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	TPE	MAT9960524	(4 G 16.0)C	0.91	23.0	7.5	<b>3</b>
	TPE	MAT9540024	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>
PS B E F B XXX	PVC	MAT9560018	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	TPE	MAT9960518	(4 G 16.0)C	0.91	23.0	7.5	<b>3</b>
	TPE	MAT9540018	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>
PS B G A B XXX	PVC	MAT9560007	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9960507	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	TPE	MAT9540007	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
PS B G B B XXX	PVC	MAT9560019	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9960519	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	TPE	MAT9540019	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
PS B G F B XXX	PVC	MAT9560013	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9960513	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	TPE	MAT9540013	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Control Techniques | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Control Techniques Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



PB B A A A XXX	PVC	MAT9750502	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560041	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540041	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PB B A F A XXX	PVC	MAT9750505	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560044	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540044	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PB B B A A XXX	PVC	MAT9750503	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560042	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540042	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B B F A XXX	PVC	MAT9750506	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560045	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540045	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B G A A XXX	PVC	MAT9750501	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9560040	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9540040	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
PB B G F A XXX	PVC	MAT9750504	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9560043	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9540043	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

### Basic cable



PB B A A B XXX	PVC	MAT9750508	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560047	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540047	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PB B A B B XXX	PVC	MAT9750516	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560059	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540059	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PB B A F B XXX	PVC	MAT9750512	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560053	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540053	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PB B A G B XXX	PVC	MAT9750520	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9560065	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9540065	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Control Techniques | harnessed drive cables

## ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Control Techniques Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



PB B B A B XXX	PVC	MAT9750509	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560048	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540048	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B B B B XXX	PVC	MAT9750517	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560060	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540060	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B B F B XXX	PVC	MAT9750513	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560054	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540054	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B B G B XXX	PVC	MAT9750521	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9560066	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9540066	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
PB B C A B XXX	PVC	MAT9750510	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9560049	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9540049	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
PB B C B B XXX	PVC	MAT9750518	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9560061	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9540061	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
PB B C F B XXX	PVC	MAT9750514	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9560055	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9540055	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
PB B C G B XXX	PVC	MAT9750522	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9560067	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9540067	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
PB B D A B XXX	PVC	MAT9560050	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9540050	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	PUR	MAT9540050	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
PB B D B B XXX	PVC	MAT9560062	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9540062	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	PUR	MAT9540062	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
PB B D F B XXX	PVC	MAT9560056	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9540056	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	PUR	MAT9540056	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
PB B D G B XXX	PVC	MAT9560068	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9540068	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	PUR	MAT9540068	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
PB B E A B XXX	PVC	MAT9560051	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9540051	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
	PUR	MAT9540051	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
PB B E B B XXX	PVC	MAT9560063	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9540063	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
	PUR	MAT9540063	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
PB B E F B XXX	PVC	MAT9560057	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9540057	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
	PUR	MAT9540057	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Control Techniques | harnessed drive cables

## ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Control Techniques Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



PB B E G B XXX	PVC	MAT9560069	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9540069	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
PB B G A B XXX	PVC	MAT9750507	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9560046	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
PB B G B B XXX	PUR	MAT9540046	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750515	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
PB B G B B XXX	PVC	MAT9560058	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9540058	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750511	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
PB B G F B XXX	PVC	MAT9560052	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9540052	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750519	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
PB B G G B XXX	PVC	MAT9560064	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9540064	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

Control Techniques Encoder cables			PVC/PUR/TPE				
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### Basic cable



SS B A H C XXX	PVC	MAT9560100	(4x(2x0.34)+4x0.5)C	0.35	9.0	10	<b>8</b>
	PUR	MAT9840501	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT9540100	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>11</b>
SS B A H H XXX	PVC	MAT9560101	(4x(2x0.34)+4x0.5)C	0.35	9.0	10	<b>8</b>
	PUR	MAT9840502	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>10</b>
SS B A H N XXX	TPE	MAT9540101	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>11</b>
	PVC	MAT9560104	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35	9.0	10	<b>8</b>
	PUR	MAT9840505	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT9540104	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41	10.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Danaher Motion Motor cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



88959 (5 m)	TPE	MAT9960626	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
88960 (10 m)	TPE	MAT9960627	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
88962 (15 m)	TPE	MAT9960628	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
88964 (20 m)	TPE	MAT9960629	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
88966 (25 m)	TPE	MAT9960630	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
89918 (5 m)	PVC	MAT9340068	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440068	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960621	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
89952 (10 m)	PVC	MAT9340069	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440069	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960622	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
89953 (15 m)	PVC	MAT9340070	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440070	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960623	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
89954 (20 m)	PVC	MAT9340071	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440071	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960624	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
89956 (25 m)	PVC	MAT9340072	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440072	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960625	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
89959 (5 m)	PVC	MAT9340004	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440004	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
89960 (10 m)	PVC	MAT9340073	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440073	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
89962 (15 m)	PVC	MAT9340074	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440074	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
89964 (20 m)	PVC	MAT9340075	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440075	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
89966 (25 m)	PVC	MAT9340076	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440076	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
90083 (5 m)	PVC	MAT9340063	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440063	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960616	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
90084 (10 m)	PVC	MAT9340064	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440064	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960617	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
90085 (15 m)	PVC	MAT9340065	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440065	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960618	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ▶ page 540-543

Danaher Motion Motor cables			PVC/TPE	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



90086 (20 m)	PVC	MAT9340066	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440066	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960619	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
90087 (25 m)	PVC	MAT9340067	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440067	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960620	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

### Basic cable



102575 (5 m)	PVC	MAT9340058	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440058	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960611	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
102576 (10 m)	PVC	MAT9340059	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440059	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960612	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
102806 (15 m)	PVC	MAT9340060	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440060	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960613	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
102807 (20 m)	PVC	MAT9340061	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440061	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960614	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
102808 (25 m)	PVC	MAT9340062	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440062	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960615	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

### Basic cable



107473 (5 m)	PVC	MAT9340053	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440053	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960606	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107474 (10 m)	PVC	MAT9340054	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440054	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960607	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107475 (15 m)	PVC	MAT9340055	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440055	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960608	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107476 (20 m)	PVC	MAT9340056	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440056	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960609	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ▶ page 540-543

Danaher Motion Motor cables			PVC/TPE	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



107477 (25 m)	PVC	MAT9340057	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440057	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960610	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

### Basic cable



107485 (5 m)	PVC	MAT9340002	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440002	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960601	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107486 (10 m)	PVC	MAT9340049	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440049	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960602	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107487 (15 m)	PVC	MAT9340050	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440050	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960603	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107488 (20 m)	PVC	MAT9340051	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440051	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960604	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
107489 (25 m)	PVC	MAT9340052	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440052	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960605	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

### Basic cable



200456 (5 m)	PVC	MAT9340077	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440077	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960631	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
200457 (10 m)	PVC	MAT9340078	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440078	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960632	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
200458 (15 m)	PVC	MAT9340079	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440079	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960633	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
200459 (20 m)	PVC	MAT9340080	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440080	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960634	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
200460 (25 m)	PVC	MAT9340081	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9440081	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
	TPE	MAT9960635	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Danaher Motion | harnessed drive cables

## ... optionally with PVC/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Danaher Motion Motor cables			PVC/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



200468 (5 m)	PVC	MAT9340082	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440082	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960636	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
200469 (10 m)	PVC	MAT9340083	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440083	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960637	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
200470 (15 m)	PVC	MAT9340084	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440084	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960638	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
200471 (20 m)	PVC	MAT9340085	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440085	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960639	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
200472 (25 m)	PVC	MAT9340086	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	TPE	MAT9440086	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	TPE	MAT9960640	(4 G 2.5)C	0.45	11.5	7.5	<b>3</b>
200618 (5 m)	PVC	MAT9340087	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9440087	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960641	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
200619 (10 m)	PVC	MAT9340088	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9440088	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960642	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
200620 (15 m)	PVC	MAT9340089	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9440089	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960643	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
200621 (20 m)	PVC	MAT9340090	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9440090	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960644	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
200622 (25 m)	PVC	MAT9340091	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9440091	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9960645	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Danaher Motion Servo cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



89957 (5 m)	PVC	MAT9750621	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340024	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850621	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
89961 (10 m)	PUR	MAT9440024	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750622	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340025	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
89963 (15 m)	PUR	MAT9850622	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440025	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750623	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
89965 (20 m)	PVC	MAT9340026	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850623	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440026	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
89967 (25 m)	PVC	MAT9750624	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340027	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850624	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
89968 (5 m)	PUR	MAT9440027	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750625	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340028	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
89969 (25 m)	PUR	MAT9850625	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440028	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT9750626	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
89970 (10 m)	PVC	MAT9340029	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850626	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440029	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
89971 (15 m)	PVC	MAT9750630	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340033	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850630	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
89972 (20 m)	PUR	MAT9440033	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
	PVC	MAT9750627	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340030	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
89973 (25 m)	PUR	MAT9850627	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440030	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
	PVC	MAT9750628	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
89974 (5 m)	PVC	MAT9340031	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850628	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440031	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Danaher Motion Servo cables			PVC/PUR	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



89972 (20 m)	PVC	MAT9750629	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340032	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850629	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440032	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
90088 (5 m)	PVC	MAT9750616	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340019	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850616	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440019	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
90089 (10 m)	PVC	MAT9750617	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340020	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850617	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440020	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
90090 (15 m)	PVC	MAT9750618	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340021	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850618	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440021	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
90091 (20 m)	PVC	MAT9750619	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340022	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850619	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440022	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
90092 (25 m)	PVC	MAT9750620	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340023	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850620	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440023	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

### Basic cable



102579 (5 m)	PVC	MAT9750611	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340014	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850611	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440014	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
102580 (10 m)	PVC	MAT9750612	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340015	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850612	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440015	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
102809 (15 m)	PVC	MAT9750613	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340016	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850613	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440016	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Danaher Motion Servo cables			PVC/PUR	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



102810 (20 m)	PVC	MAT9750614	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340017	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850614	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440017	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
102811 (25 m)	PVC	MAT9750615	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340018	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850615	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440018	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

### Basic cable



107479 (5 m)	PVC	MAT9750606	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340009	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850606	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440009	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107480 (10 m)	PVC	MAT9750607	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340010	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850607	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440010	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107481 (15 m)	PVC	MAT9750608	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340011	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850608	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440011	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107482 (20 m)	PVC	MAT9750609	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340012	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850609	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440012	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107483 (25 m)	PVC	MAT9750610	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340013	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850610	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440013	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

### Basic cable



107491 (5 m)	PVC	MAT9750601	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850601	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Danaher Motion Servo cables			PVC/PUR	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



107492 (10 m)	PVC	MAT9750602	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340005	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850602	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440005	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107493 (15 m)	PVC	MAT9750603	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340006	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850603	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440006	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107494 (20 m)	PVC	MAT9750604	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340007	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850604	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440007	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
107495 (25 m)	PVC	MAT9750605	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340008	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850605	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440008	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

### Basic cable



200462 (5 m)	PVC	MAT9750631	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340034	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850631	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440034	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
200463 (10 m)	PVC	MAT9750632	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340035	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850632	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440035	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
200464 (15 m)	PVC	MAT9750633	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340036	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850633	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440036	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
200465 (20 m)	PVC	MAT9750634	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340037	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850634	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440037	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
200466 (25 m)	PVC	MAT9750635	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9340038	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9850635	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9440038	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables

## ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Danaher Motion Servo cables			PVC/PUR	Info *			
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



200474 (5 m)	PVC	MAT9750636	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340039	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850636	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440039	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
200475 (10 m)	PVC	MAT9750637	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340040	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850637	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440040	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
200476 (15 m)	PVC	MAT9750638	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340041	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850638	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440041	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
200477 (20 m)	PVC	MAT9750639	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340042	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850639	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440042	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
200478 (25 m)	PVC	MAT9750640	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9340043	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9850640	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9440043	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
200623 (5 m)	PVC	MAT9750641	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9340044	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9850641	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9440044	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
200624 (10 m)	PVC	MAT9750642	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9340045	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9850642	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9440045	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
200625 (15 m)	PVC	MAT9750643	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9340046	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9850643	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9440046	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
200626 (20 m)	PVC	MAT9750644	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9340047	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9850644	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9440047	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
200627 (25 m)	PVC	MAT9750645	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9340048	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9850645	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9440048	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Danaher Motion | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Danaher Motion Signal cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
84972 (5 m)	PVC	MAT9320001	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9840601	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9330001	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
84973 (10 m)	PVC	MAT9320009	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9840602	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9330009	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
84974 (15 m)	PVC	MAT9320010	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9840603	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9330010	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
84975 (20 m)	PVC	MAT9320011	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9840604	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9330011	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
87655 (25 m)	PVC	MAT9320012	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9840605	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9330012	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
90287 (5 m)	PVC	MAT9320002	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330002	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
91019 (10 m)	PVC	MAT9320013	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330013	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
91807 (20 m)	PVC	MAT9320015	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330015	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
91811 (15 m)	PVC	MAT9320014	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330014	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
92205 (25 m)	PVC	MAT9320016	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330016	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
107915 (5 m)	PVC	MAT9320004	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330004	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
107916 (10 m)	PVC	MAT9320017	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330017	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
107917 (15 m)	PVC	MAT9320018	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330018	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
107918 (20 m)	PVC	MAT9320019	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330019	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	
107919 (25 m)	PVC	MAT9320020	(8x(2x0.25))C	0.41 10.5	7.5	<b>14</b>	
	TPE	MAT9330020	(8x(2x0.34))C	0.51 13.0	6.8	<b>16</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary. igus® gladly pre-harnesses the cable according to your technical specifications. G = with green-yellow earth core x = without earth core

# Danaher Motion | harnessed drive cables ... optionally with PVC/PUR/TPE jacket





\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Danaher Motion Signal cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
85034 (5 m)	PVC	MAT9320007	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840606	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330007	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85035 (10 m)	PVC	MAT9320021	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840607	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330021	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85036 (15 m)	PVC	MAT9320022	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840608	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330022	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85037 (20 m)	PVC	MAT9320023	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840609	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330023	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
<b>Basic cable</b>							
85039 (5 m)	PVC	MAT9320008	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840610	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330008	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85040 (10 m)	PVC	MAT9320024	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840611	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330024	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85041 (15 m)	PVC	MAT9320025	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840612	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330025	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	
85042 (20 m)	PVC	MAT9320026	(6x(2x0.25))C	0.35 9.0	7.5	<b>14</b>	
	PUR	MAT9840613	(6x(2x0.25))C	0.39 10.0	10	<b>15</b>	
	TPE	MAT9330026	(6x(2x0.25))C	0.39 10.0	6.8	<b>16</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary. igus® gladly pre-harnesses the cable according to your technical specifications. G = with green-yellow earth core x = without earth core

# ELAU | harnessed drive cables ... optionally with PVC/PUR jacket




\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

ELAU / Schneider Electric Servo cables			PVC/PUR	Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543
<b>Basic cable</b> 						
<b>E-MO-067</b>	PVC	MAT9750701	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>
	PVC	MAT9470001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>
	PUR	MAT9850701	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>
	PUR	MAT9470101	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>
<b>E-MO-092</b>	PVC	MAT9750704	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>
	PVC	MAT9470004	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>
	PUR	MAT9850704	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>
	PUR	MAT9470104	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>
<b>Basic cable</b> 						
<b>E-MO-087</b>	PVC	MAT9750703	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>
	PVC	MAT9470003	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>
	PUR	MAT9850703	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>
	PUR	MAT9470103	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>
<b>Basic cable</b> 						
<b>E-MO-111 SH-Motor 1.5</b>	PVC	MAT9750702	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>
	PVC	MAT9470002	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>
	PUR	MAT9850702	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>
	PUR	MAT9470102	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>
<b>Basic cable</b> 						
<b>E-MO-113 SH-Motor 2.5</b>	PVC	MAT9750705	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>
	PVC	MAT9470005	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>
	PUR	MAT9850705	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>
	PUR	MAT9470105	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# ELAU | harnessed drive cables ... optionally with PVC/PUR/TPE jacket






\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

ELAU / Schneider Electric Encoder cables			PVC/PUR/TPE	Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543
<b>Basic cable</b> 						
<b>E-FB-060</b>	PVC	MAT9480001	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>
	TPE	MAT9480101	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>
<b>E-FB-071</b>	PVC	MAT9480002	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>
	PUR	MAT9940702	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>
	TPE	MAT9480102	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>
<b>Basic cable</b> 						
<b>E-FB-080</b>	PVC	MAT9480003	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>
	PUR	MAT9940703	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>
	TPE	MAT9480103	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>
ELAU / Schneider Electric Hybrid Servo cables			PUR	Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 488-491
<b>Basic cable</b> 						
<b>iE-MO-109, iWV3E1109Rxxx</b>		MAT9850706	(4G2,5+2x(2x1,5)C)C	0.63 16,0		<b>6</b>
<b>iE-MO-117, iWV3E1117Rxxx</b>		MAT9850707	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-118, iWV3E1118Rxxx</b>		MAT9850708	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-119, iWV3E1119Rxxx</b>		MAT9850709	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-120, iWV3E1120Rxxx</b>		MAT9850710	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-121, iWV3E1121Rxxx</b>		MAT9850711	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-124, iWV3E1124Rxxx</b>		MAT9850712	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-125, iWV3E1125Rxxx</b>		MAT9850713	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-126, iWV3E1126Rxxx</b>		MAT9850714	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>
<b>iE-MO-127, iWV3E1127Rxxx</b>		MAT9850715	5G2,5+(4xAWG24)C+(2x0,25)C	0.53 13,5		<b>29</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Fagor | harnessed drive cables ... optionally with PUR/TPE jacket



\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Fagor Path measurement cables		PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable</b> 							
iEEC-x	PUR	MAT9950808	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850808	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520070	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C2-D	PUR	MAT9950801	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850801	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520001	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C2-FN2	PUR	MAT9950807	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850807	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520060	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C2-H	PUR	MAT9950803	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850803	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520020	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C4-D	PUR	MAT9950802	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850802	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520010	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C8-F-C9	PUR	MAT9950805	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT9850805	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9520040	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Fagor | harnessed drive cables ... optionally with PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543





Fagor Path measurement cables		PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable</b> 							
iXC-C8-F-D	PUR	MAT9950804	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT9850804	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9520030	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
<b>Extension cable</b> 							
iXC-C8-FN	PUR	MAT9950806	(4x(2x0.14)+4x0.5)C	0.33	8.5	10	<b>9</b>
	PUR	MAT9850806	(4x(2x0.14)+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9520050	(4x(2x0.14)+4x0.5)C	0.35	9.0	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# Fanuc | harnessed drive cables ... optionally with PVC/PUR/TPE jacket




\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Fanuc Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b> 							
LX660-8077-T261	PVC	MAT9760901	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9210061	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9200061	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9960901	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
<b>Basic cable</b> 							
LX660-8077-T264	PVC	MAT9760902	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9200064	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9210064	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9960902	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
LX660-8077-T266	PVC	MAT9760904	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9200066	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9210066	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9960904	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
<b>Basic cable</b> 							
LX660-8077-T265	PVC	MAT9760903	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9200065	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9210065	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9960903	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
LX660-8077-T267	PVC	MAT9760905	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9200067	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9210067	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9960905	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
<b>Basic cable</b> 							
LX660-8077-T270	PVC	MAT9760906	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9200070	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9210070	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9960906	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Fanuc | harnessed drive cables ... optionally with PVC/PUR/TPE jacket




\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Fanuc Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b> 							
LX660-8077-T271	PVC	MAT9760907	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9200071	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9210071	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9960907	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
LX660-8077-T272	PVC	MAT9760908	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9200072	(4G10.0)C	0.71	18.0	10	<b>6</b>
	PUR	MAT9210072	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	TPE	MAT9960908	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
LX660-8077-T273	PVC	MAT9760909	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9200073	(4G10.0)C	0.71	18.0	10	<b>6</b>
	PUR	MAT9210073	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	TPE	MAT9960909	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
<b>Basic cable</b> 							
LX660-8077-T291	PVC	MAT9760910	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9200091	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9210091	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9960910	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
LX660-8077-T293	PVC	MAT9760912	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9200093	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9210093	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9960912	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
<b>Basic cable</b> 							
LX660-8077-T292	PVC	MAT9760911	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9200092	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9210092	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9960911	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Fanuc | harnessed drive cables ... optionally with PVC/PUR/TPE jacket






\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Fanuc Power cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
LX660-8077-T296	PVC	MAT9760913	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9200096	(4G2.5)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9210096	(4G2.5)C	0.49 12.5	7.5	<b>7</b>	
	TPE	MAT9960913	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
<b>Basic cable</b> 							
LX660-8077-T298	PVC	MAT9760914	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	PUR	MAT9200098	(4G4.0)C	0.49 12.5	10	<b>6</b>	
	PUR	MAT9210098	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
	TPE	MAT9960914	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>	
<b>Basic cable</b> 							
LX660-8077-T300	PVC	MAT9760915	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9200300	(4G2.5)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9210300	(4G2.5)C	0.49 12.5	7.5	<b>7</b>	
	TPE	MAT9960915	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Fanuc | harnessed drive cables ... mit PUR


\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Fanuc Servo cables		PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
LX660-8077-T259	PUR	MAT9850916	(4G1.5)C	0.37 9.5	10	<b>6</b>	
<b>Basic cable</b> 							
LX660-8077-T274	PUR	MAT9850921	(4G2.5)C	0.45 11.5	10	<b>6</b>	
LX660-8077-T416	PUR	MAT9850923	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
LX660-8077-T451	PUR	MAT9850920	(4G2.5)C	0.45 11.5	10	<b>6</b>	
<b>Basic cable</b> 							
LX660-8077-T470	PUR	MAT9850925	(4G4.0)C	0.49 12.5	10	<b>6</b>	
<b>Basic cable</b> 							
LX660-8077-T471	PUR	MAT9850917	(4G4.0)C	0.49 12.5	10	<b>6</b>	
<b>Fanuc Brake cable PUR</b>							
<b>Basic cable</b> 							
LX660-8077-T311	PUR	MAT9810919	(3 G 0.75)C	0.31 8.0	6.8	<b>23</b>	
<b>Fanuc Encoder cable PUR</b>							
<b>Basic cable</b>							
LX660-4077-T304	PVC	MAT9840918	(3x2x0.18+6x1)C	0.37 9.5			

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Fanuc | harnessed drive cables ... optionally with PUR/TPE jacket


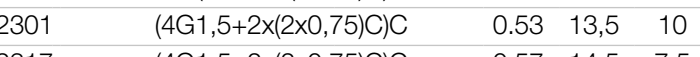





\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Fanuc Signal cables		PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
LX660-2018-T015	PUR	MAT9840924	((4x0.25)+3x(2x0.25+2x0.5))C	0.37 9.5	10	<b>9</b>	
<b>Basic cable</b>							
LX660-4077-T296	PUR	MAT9300296	((2x0.25)+5x0.5)C	0.28 7.0	10	<b>9</b>	
	PUR	MAT9840901	((2x0.25)+5x0.5)C	0.33 8.5	7.5	<b>10</b>	
	TPE	MAT9310296	((2x0.25)+5x0.5)C	0.33 8.5	7.5	<b>11</b>	
<b>Basic cable</b>							
LX660-4077-T297	PUR	MAT9300297	((2x0.25)+5x0.5)C	0.28 7.0	10	<b>9</b>	
	PUR	MAT9840902	((2x0.25)+5x0.5)C	0.33 8.5	7.5	<b>10</b>	
	TPE	MAT9310297	((2x0.25)+5x0.5)C	0.33 8.5	7.5	<b>11</b>	
<b>Basic cable</b>							
LX660-4077-T302	PUR	MAT9840903	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>10</b>	
	PUR	MAT9300302	((4x0.25)+3x(2x0.25+2x0.5))C	0.37 9.5	10	<b>9</b>	
	TPE	MAT9310302	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>11</b>	
<b>Basic cable</b>							
LX660-4077-T303	PUR	MAT9840904	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>10</b>	
	PUR	MAT9300303	((4x0.25)+3x(2x0.25+2x0.5))C	0.37 9.5	10	<b>9</b>	
	TPE	MAT9310303	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>11</b>	
<b>Basic cable</b>							
LX660-4077-T310	TPE	MAT9940922	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>11</b>	
<b>Basic cable</b>							
LX660-4077-T319	PUR	MAT9840905	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>10</b>	
	PUR	MAT9300319	((4x0.25)+3x(2x0.25+2x0.5))C	0.37 9.5	10	<b>9</b>	
	TPE	MAT9310319	((4x0.25)+3x(2x0.25+2x0.5))C	0.43 11.0	7.5	<b>11</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Festo | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Festo Servo cable		PVC/PUR			* Info		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
NEBM-M23G8-E-xxx-N-LE8	PVC	MAT9752300	(4G2,5+2x(2x1,5))C	0.63 16,0	10	<b>4</b>	
	PVC	MAT9752316	(4G2,5+2x(2x1,5))C	0.67 17,0	7,5	<b>5</b>	
	PUR	MAT9852300	(4 G 2,5+(4x0,5))C	0.53 13,5	10	<b>6</b>	
	PUR	MAT9852316	(4G2,5+(4x0,5))C	0.57 14,5	7,5	<b>7</b>	
NEBM-M23G8-E-xxx-N-LE7	PVC	MAT9752301	(4G1,5+2x(2x0,75))C	0.53 13,5	10	<b>4</b>	
	PVC	MAT9752317	(4G1,5+2x(2x0,75))C	0.57 14,5	7,5	<b>5</b>	
	PUR	MAT9852301	(4 G 1,5+2x(2x0,75))C	0.53 13,5	10	<b>6</b>	
	PUR	MAT9852317	(4G1,5+2x(2x0,75))C	0.55 14,0	7,5	<b>7</b>	
<b>Basic cable</b>							
NEBM-M40G8-E-xxx-N-LE7	PVC	MAT9752302	(4G2,5+2x(2x1,5))C	0.63 16,0	10	<b>4</b>	
	PVC	MAT9752318	(4G2,5+2x(2x1,5))C	0.67 17,0	7,5	<b>5</b>	
	PUR	MAT9852302	(4 G 2,5+2x(2x1,5))C	0.63 16,0	10	<b>6</b>	
	PUR	MAT9852318	(4G2,5+2x(2x1,5))C	0.67 17,0	7,5	<b>7</b>	
<b>Basic cable</b>							
NEBM-M16G8-E-xxx-Q7-LE8	PUR	MAT9852303	(4 G 0,75+2x(2x0,34))C	0.45 11,5	10	<b>6</b>	
Festo Encoder cables		PVC/PUR/TPE			* Info		
<b>Basic cable</b>							
NEBM-M23G12-E-xxx-N-S1G9	PVC	MAT9742308	(3x(2x0,14))C+2x(0,5)C	0.37 9,5	10	<b>8</b>	
	PUR	MAT9842308	(3x(2x0,14))C+2x(0,5)C	0.37 9,5	10	<b>9</b>	
	PUR	MAT9822324	(3x(2x0,14))C+2x(0,5)C	0.41 10,5	7,5	<b>10</b>	
	TPE	MAT9842308	(3x(2x0,14))C+2x(0,5)C	0.39 10,	7,5	<b>11</b>	
Festo Data cables		PVC/PUR/TPE			* Info		
<b>Basic cable</b>							
NEBM-M12G8-E-xxx-N-S1G15	PVC	MAT9722305	(4 x (2 x 0,25))C	0.31 8,0	7,5	<b>14</b>	
	PUR	MAT9822305	(4 x (2 x 0,25))C	0.30 7,5	7,5	<b>27</b>	
	PUR	MAT9822321	(4 x (2 x 0,25))C	0.35 9,0	10	<b>15</b>	
	TPE	MAT9922305	(4 x (2 x 0,25))C	0.33 8,5	6,8	<b>16</b>	
<b>Basic cable</b>							
NEBM-M12G8-E-xxx-S1G9	PVC	MAT9722306	(4 x (2 x 0,25))C	0.31 8,0	7,5	<b>14</b>	
	PUR	MAT9822306	(4 x (2 x 0,25))C	0.30 7,5	7,5	<b>27</b>	
	PUR	MAT9822322	(4 x (2 x 0,25))C	0.35 9,0	10	<b>15</b>	
	TPE	MAT9922306	(4 x (2 x 0,25))C	0.33 8,5	6,8	<b>16</b>	



# Festo | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selection chart 1 to 32** ► page 540-543

Festo Data cables		PVC/PUR/TPE					* Info
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



NEBM-M12W8-E-xxx-N-S1G15	PVC	MAT9722307	(4 x (2 x 0,25))C	0.31	8,0	7,5	<b>14</b>
	PUR	MAT9822307	(4 x (2 x 0,25))C	0.30	7,5	7,5	<b>27</b>
	PUR	MAT9822323	(4 x (2 x 0,25))C	0.35	9,0	10	<b>15</b>
	TPE	MAT9822307	(4 x (2 x 0,25))C	0.33	8,5	6,8	<b>16</b>

### Basic cable



NEBM-S1G15-E-xxx-LE6	PVC	MAT9722309	(4 x (2 x 0,5))C	0.37	9,5	7,5	<b>14</b>
	PUR	MAT9822309	(4 x (2 x 0,5))C	0.37	9,5	7,5	<b>27</b>
	PUR	MAT9822325	(4 x (2 x 0,5))C	0.43	11,0	10	<b>15</b>
	TPE	MAT9922309	(4 x (2 x 0,5))C	0.37	9,5	6,8	<b>16</b>

### Basic cable



KES-MC-1-SUB-9-xxx	PVC	MAT9722310	(14 x 0,14)C	0.30	7,5	10	<b>32</b>
	PUR	MAT9822310	(14 x 0,14)C	0.31	8,0	10	<b>13</b>

### Basic cable



KDI-MC-M8-SUB-9-xxx	PVC	MAT9722311	(3 x 0,25)C	0.20	5,0	10	<b>32</b>
	PUR	MAT9822311	(3 x 0,25)C	0.24	6,0	10	<b>13</b>

### Basic cable



NEBM-S1G9-E-xxx-LE6	PVC	MAT9722313	(7 x 0,34)C	0.30	7,5	10	<b>32</b>
	PUR	MAT9822313	(7 x 0,34)C	0.31	8,0	10	<b>13</b>

Festo Bus cables		PVC/PUR/TPE					* Info
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### Basic cable



FBA-CO-SUB-9-M12	PVC	MAT9732312	(4x0,5)C	0.33	8,5	12,5	<b>30</b>
	PUR	MAT9832312	(4x0,5)C	0.33	8,5	12,5	<b>31</b>
	TPE	MAT9932312	(4x0,5)C	0.31	8,0		<b>12</b>

Festo Control cables		PVC/PUR					* Info
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### Basic cable



KPWR-MC-1-SUB-9HC-xxx	PVC	MAT9712320	(3 G 1,5)C	0.35	9,0	7,5	<b>18</b>
	PUR	MAT9812320	(3 G 1,5)C	0.37	9,5	6,8	<b>23</b>

# Heidenhain | harnessed drive cables ... optionally with PVC/PUR jacket

Heidenhain Servo cables		PVC/PUR					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Linking cable




352 960-xx	PVC	MAT94907005	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9761001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT93907005	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9861001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
352 962-xx	PVC	MAT94907007	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9761003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT93907007	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
352 963-xx	PUR	MAT9861003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PVC	MAT94907006	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9761002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT93907006	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
PUR	MAT9861002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Heidenhain | harnessed drive cables ... optionally with PVC/PUR/TPE jacket




\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Heidenhain Adapter cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable</b> 							
298 399-xx	PUR	MAT9941011	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
	PUR	MAT94905001	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93905001	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
298 400-xx	PUR	MAT9941012	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
	PUR	MAT94906002	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93906002	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
289 440-xx	PVC	MAT9741002	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT94901005	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT93901005	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
309 783-xx	PUR	MAT9941008	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
	PUR	MAT94903003	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93903003	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
	PVC	MAT9741001	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
336 376-xx	PUR	MAT94901004	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT93901004	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
	PUR	MAT9941003	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
604 419-xx	PUR	MAT94901003	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93901003	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
	PUR	MAT9941016	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
298 402-xx	PUR	MAT94909001	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93909001	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
	PUR	MAT9941007	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
309 738-xx	PUR	MAT94903001	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93903001	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Heidenhain | harnessed drive cables ... optionally with PVC/PUR/TPE jacket






\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Heidenhain Adapter cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable</b> 							
309 774-xx	PUR	MAT94906001	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93906001	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
368 172-xx	PVC	MAT9741003	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT94903002	(3x(2x0.14)C+2x(0.5)C)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT93903002	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
<b>Linking cable</b> 							
309 777-xx	PUR	MAT9941013	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
	PUR	MAT94907001	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93907001	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
309 778-xx	PUR	MAT9941014	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.41 10.5	10	<b>9</b>	
	PUR	MAT94907002	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.45 11.5	7.5	<b>10</b>	
	TPE	MAT93907002	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.45 11.5	7.5	<b>11</b>	
	PUR	MAT9941004	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
533 627-xx	PUR	MAT94901006	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93901006	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
	PUR	MAT9941016	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
310 193-xx	PUR	MAT94907003	(3x(2x0.14)C+(2x0.5)C)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT93907003	(3x(2x0.14)C+(2x0.5)C)C	0.41 10.5	7.5	<b>11</b>	
<b>Linking cable</b> 							
310 197-xx	PUR	MAT94902001	(3x(2x0.14)C+(2x0.5)C)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT93902001	(3x(2x0.14)C+(2x0.5)C)C	0.41 10.5	7.5	<b>11</b>	
310 199-xx	PUR	MAT9941006	(4x(2x0.14)+4x0.5)C	0.33 8.5	10	<b>9</b>	
	PUR	MAT94902003	(4x(2x0.14)+4x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT93902003	(4x(2x0.14)+4x0.5)C	0.35 9.0	7.5	<b>11</b>	
	PUR	MAT9941015	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.41 10.5	10	<b>9</b>	
323 897-xx	PUR	MAT94907004	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.45 11.5	7.5	<b>10</b>	
	TPE	MAT93907004	(2x(2x(2x0.14))+(4x0.14)C+(4x0.5)C)	0.45 11.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Heidenhain | harnessed drive cables ... optionally with PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Heidenhain Adapter cables		PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable</b> 							
324 544-xx	PUR	MAT9941005	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94902002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93902002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
<b>Linking cable</b> 							
332 115-xx	PUR	MAT9941001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94901001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93901001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
<b>Linking cable</b> 							
335 077-xx	PUR	MAT94908001	(4x(2x0.14))+4x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT93908001	(4x(2x0.14))+4x0.5)C	0.35	9.0	7.5	<b>11</b>
<b>Linking cable</b> 							
354 411-xx	PUR	MAT9941009	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94904001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93904001	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
355 398-xx	PUR	MAT9941010	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94904002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93904002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
<b>Linking cable</b> 							
360 472-xx	PUR	MAT9941002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94901002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93901002	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Heidenhain | harnessed drive cables ... optionally with PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Heidenhain Adapter cables		PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable</b>							
309 779-xx	PUR	MAT994xxx	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT94907008	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT93907008	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
<b>Linking cable</b>							
309 780-xx	PVC	MAT9741004	(3x(2x0.14)C+2x(0.5)C)C	0.37	9.5	10	<b>8</b>
	PUR	MAT94909002	(3x(2x0.14)C+2x(0.5)C)C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT93909002	(3x(2x0.14)C+2x(0.5)C)C	0.39	10.0	7.5	<b>11</b>
<b>Linking cable</b>							
354 770-xx	TPE	MAT94910002	((2xAWG24))+2xAWG20)C	0.26	6.5	12.5	<b>12</b>
	TPE	MAT94910001	((2xAWG28))+2xAWG20)C	0.22	5.5	12.5	<b>12</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# Jetter | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Jetter Motor cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



Kabel Nr. 201	PVC	MAT9761805	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861806	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9851807	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9961808	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
Kabel Nr. 203	PVC	MAT9761809	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861810	(4G4.0)C	0.49	12.5	10	<b>6</b>
	PUR	MAT9851811	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
	TPE	MAT9961812	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
Kabel Nr. 26.1	PVC	MAT9761801	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9851803	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861802	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961804	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>

Jetter Servo cables			PVC/PUR			
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## Basic cable



Kabel Nr. 202	PVC	MAT9751806	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9861807	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9851808	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
Kabel Nr. 204	PVC	MAT9751810	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9861811	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>6</b>
	PUR	MAT9851812	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>

## Basic cable



Kabel Nr. 24.1	PVC	MAT9751802	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9861803	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9851804	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Jetter | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Jetter Resolver cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



Kabel Nr. 523	PVC	MAT9741807	(5x(2x0.25))C	0.33	8.5	7.5	<b>14</b>
	PUR	MAT9841808	(5x(2x0.25))C	0.37	9.5	10	<b>15</b>
	TPE	MAT9941809	(5x(2x0.25))C	0.35	9.0	6.8	<b>16</b>
Kabel Nr. 723	PVC	MAT9741810	(5x(2x0.25))C	0.33	8.5	7.5	<b>14</b>
	PUR	MAT9841811	(5x(2x0.25))C	0.37	9.5	10	<b>15</b>
	TPE	MAT9941812	(5x(2x0.25))C	0.35	9.0	6.8	<b>16</b>

## Basic cable



Kabel Nr. 23	PVC	MAT9741801	(3x(2x0.14)C+2x(0.5)C)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9841802	(3x(2x0.14)C+(2x0.5)C)C	0.43	11.0	7.5	<b>10</b>
	TPE	MAT9941803	(3x(2x0.14)C+(2x0.5)C)C	0.41	10.5	7.5	<b>11</b>
Kabel Nr. 423	PVC	MAT9741804	(3x(2x0.14)C+2x(0.5)C)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9841805	(3x(2x0.14)C+(2x0.5)C)C	0.43	11.0	7.5	<b>10</b>
	TPE	MAT9941806	(3x(2x0.14)C+(2x0.5)C)C	0.41	10.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Lenze Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
EWLMxxxGMS-015C	PVC	MAT9751101	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130001	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851101	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120001	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EWLMxxxGMS-025	PVC	MAT9751102	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130002	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851102	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120002	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
<b>Basic cable</b>							
EWLMxxxGMS-040I	PVC	MAT9751130	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751129	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851130	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851129	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
EYP0010AxxxxA00P01	PVC	MAT9751116	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130063	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851118	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120063	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0010AxxxxM01A00	PVC	MAT9751107	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130050	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851105	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120050	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0011AxxxxA00P01	PVC	MAT9751117	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130064	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851119	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120064	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0011AxxxxM01A00	PVC	MAT9751108	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130051	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851106	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120051	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0012AxxxxA00P01	PVC	MAT9751118	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130065	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851120	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120065	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR jacket


\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Lenze Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
EYP0012AxxxxA00P02	PVC	MAT9751113	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130058	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851113	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120058	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0012AxxxxM01A00	PVC	MAT9751109	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130052	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851107	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120052	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0012AxxxxM02A00	PVC	MAT9751110	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130053	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851108	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120053	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0013AxxxxA00P02	PVC	MAT9751114	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9130059	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851114	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9120059	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
EYP0013AxxxxM02A00	PVC	MAT9751111	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9130054	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851109	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9120054	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
EYP0014AxxxxA00P03	PVC	MAT9751115	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9130060	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851115	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9120060	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
EYP0014AxxxxM03A00	PVC	MAT9751112	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9851110	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PVC	MAT9130055	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9120055	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
EYP0015AxxxxA00P03	PVC	MAT9130061	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851116	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9120061	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
	PUR	MAT9120061	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
EYP0015AxxxxM03A00	PVC	MAT9130056	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851111	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9120056	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
	PUR	MAT9120056	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
EYP0016AxxxxA00P03	PVC	MAT9130062	(4G16.0+(2x1.5)C)C	0.98 25.0	7.5	<b>5</b>	
	PUR	MAT9851117	(4G16.0+(2x1.5)C)C	0.94 24.0	10	<b>6</b>	
	PUR	MAT9120062	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	
	PUR	MAT9120062	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	
EYP0016AxxxxM03A00	PVC	MAT9130057	(4G16.0+(2x1.5)C)C	0.98 25.0	7.5	<b>5</b>	
	PUR	MAT9851112	(4G16.0+(2x1.5)C)C	0.94 24.0	10	<b>6</b>	
	PUR	MAT9120057	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	
	PUR	MAT9120057	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR jacket







\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Servo cables			PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable</b> 							
EWLMxxxZM-015C	PVC	MAT9751103	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130006	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851103	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120006	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EWLMxxxZM-025	PVC	MAT9751104	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130007	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851104	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120007	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0010VxxxxM01P01	PVC	MAT9751122	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130071	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851126	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120071	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0011VxxxxM01P01	PVC	MAT9751123	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9130072	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851127	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9120072	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
EYP0012VxxxxM01P01	PVC	MAT9751124	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130073	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851128	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120073	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0012VxxxxM02P02	PVC	MAT9751119	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9130066	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851121	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9120066	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
EYP0013VxxxxM02P02	PVC	MAT9751120	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9130067	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851122	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9120067	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
EYP0014VxxxxM03P03	PVC	MAT9751121	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9130068	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851123	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9120068	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
EYP0015VxxxxM03P03	PVC	MAT9130069	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851124	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9120069	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
	PUR	MAT9120070	(4G16.0+(2x1.5)C)C	0.98 25.0	7.5	<b>5</b>	
EYP0016VxxxxM03P03	PUR	MAT9851125	(4G16.0+(2x1.5)C)C	0.94 24.0	10	<b>6</b>	
	PUR	MAT9120070	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Resolver cables			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
EWLRxxxGM-T	PVC	MAT9130021	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT9841101	(3x(2x0.14)C+(2x0.5)C)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9120021	(3x(2x0.14)C+(2x0.5)C)C	0.41 10.5	7.5	<b>11</b>	
	<b>Linking cable</b> 						
EWLRxxxZMST	PVC	MAT9130022	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT9841102	(3x(2x0.14)C+(2x0.5)C)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9120022	(3x(2x0.14)C+(2x0.5)C)C	0.41 10.5	7.5	<b>11</b>	
<b>Terminal box connection cable</b> 							
EWLRxxxGX-T	PVC	MAT9130023	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT9841103	(3x(2x0.14)C+(2x0.5)C)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9120023	(3x(2x0.14)C+(2x0.5)C)C	0.41 10.5	7.5	<b>11</b>	
Lenze Encoder cables			PVC/PUR/TPE				
<b>Basic cable</b> 							
EWLExxxGM-T	PVC	MAT9130026	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841104	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9120026	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
<b>Linking cable</b> 							
EWLExxxZMST	PVC	MAT9130027	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841105	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9120027	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
<b>Terminal box connection cable</b> 							
EWLExxxGX-T	PVC	MAT9130028	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841106	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9120028	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Lenze | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Feedback cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



EYF0018AxxxxF02S03	PVC	MAT9130088	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	TPE	MAT9120088	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0019AxxxxF02S03	PUR	MAT9121088	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
EYF0020AxxxxF01S05	PVC	MAT9130090	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121090	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120090	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
EYF0021AxxxxF03S03	PVC	MAT9130086	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	10	<b>8</b>
	PUR	MAT9121086	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9120086	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>11</b>
EYF0021AxxxxF07S03	PUR	MAT9841111	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9941111	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>11</b>

## Basic cable



EYF0018AxxxxF02W02	PVC	MAT9130087	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9121087	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
	TPE	MAT9120087	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0020AxxxxF01S04	PVC	MAT9130089	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121089	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120089	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>

## Basic cable



EYF0017AxxxxA00W02	PUR	MAT9121091	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
EYF0018AxxxxA00W02	PVC	MAT9130091	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	TPE	MAT9120091	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0020AxxxxA00S04	PVC	MAT9130092	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121092	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120092	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Feedback cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



EYF0018AxxxxA00S03	PVC	MAT9130095	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9121095	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
	TPE	MAT9120095	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0020AxxxxA00S05	PVC	MAT9130093	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121093	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120093	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
EYF0021AxxxxA00S03	PVC	MAT9130094	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	10	<b>8</b>
	PUR	MAT9121094	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9120094	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>11</b>

## Linking cable



EYF0019VxxxxF02G02	PVC	MAT9130084	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9121084	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
	TPE	MAT9120084	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0019VxxxxF06G07	PUR	MAT9121096	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
	TPE	MAT9120096	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0020VxxxxF01G01	PVC	MAT9130083	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121083	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120083	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
EYF0022VxxxxF03G03	PVC	MAT9130085	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	10	<b>8</b>
	PUR	MAT9121085	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9120085	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>11</b>

## Extension cable



EYF0019VxxxxA00G02	PVC	MAT9130081	4x(2x0.14)C+2x(1.0)C	0.37	9.5	10	<b>8</b>
	PUR	MAT9121081	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>10</b>
	TPE	MAT9120081	4x(2x0.14)C+2x(1.0)C	0.39	10.0	7.5	<b>11</b>
EYF0020VxxxxA00G01	PVC	MAT9130080	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9121080	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120080	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
EYF0022VxxxxA00G03	PVC	MAT9130082	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	10	<b>8</b>
	PUR	MAT9121082	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9120082	3x(2x0.14)C+(4x0.14)C+2x(2x0.5)C	0.45	11.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Decoder cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Linking cable</b>							
EYD0017AxxxxW01S01	PVC	MAT9130100	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841107	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120100	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
<b>Linking cable</b>							
EYD0017AxxxxW01S02	PVC	MAT9130101	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841108	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120101	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
<b>Linking cable</b>							
EYD0017AxxxxW03S01	PVC	MAT9130102	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841109	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120102	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>
<b>Linking cable</b>							
EYD0017AxxxxW03S02	PVC	MAT9130103	3x(2x0.14)C+(3x0.14)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841110	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>10</b>
	TPE	MAT9120103	3x(2x0.14)C+(3x0.14)C	0.31	8.0	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Lenze | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Lenze Fan cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b>							
EWLLxxxGMS	PVC	MAT9761101	3G1.0	0.26	6.5	7.5	<b>17</b>
	PVC	MAT9130031	3 G 1.0	0.26	6.5	6.8	<b>19</b>
	TPE	MAT9120031	3 G 1.0	0.24	6.0	5	<b>24</b>
	TPE	MAT9961101	3 G 1.0	0.30	7.5	5	<b>26</b>
EYL002AxxxxL01A00	PVC	MAT9130040	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	TPE	MAT9120040	5 G 1.0	0.30	7.5	5	<b>24</b>
EYL002AxxxxL02A00	PVC	MAT9130041	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	TPE	MAT9120041	5 G 1.0	0.30	7.5	5	<b>24</b>
<b>Linking cable</b>							
EWLLxxxZM	PVC	MAT9761102	3G1.0	0.26	6.5	7.5	<b>17</b>
	PVC	MAT9130032	3 G 1.0	0.26	6.5	6.8	<b>19</b>
	TPE	MAT9120032	3 G 1.0	0.24	6.0	5	<b>24</b>
	TPE	MAT9961102	3 G 1.0	0.30	7.5	5	<b>26</b>
EYL002VxxxxL01J01	PVC	MAT9130044	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	TPE	MAT9120044	5 G 1.0	0.30	7.5	5	<b>24</b>
EYL002VxxxxL02J02	PVC	MAT9130045	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	TPE	MAT9120045	5 G 1.0	0.30	7.5	5	<b>24</b>
<b>Extension cable</b>							
EYL002VxxxxA00J01	PVC	MAT9130042	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	TPE	MAT9120042	5 G 1.0	0.30	7.5	5	<b>24</b>
EYL002VxxxxA00J02	PVC	MAT9130043	5 G 1.0	0.31	8.0	6.8	<b>19</b>
	PUR	MAT9861110	5 G 1.0	0.30	7.5	7.5	<b>21</b>
	TPE	MAT9120043	5 G 1.0	0.30	7.5	5	<b>24</b>
	TPE	MAT9961106	5 G 1.0	0.35	9.0	5	<b>26</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# LinMot | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

LinMot Motor cables		PVC/PUR					* Info
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cables</b>							
P10-70x...-D01/D02-MS	PVC	MAT9762401	(4G1,5)C	0.41 10,5	7,5	<b>1</b>	
	PUR	MAT9862401	(4G1,5)C	0.37 9,5	10	<b>6</b>	
	PUR	MAT9862402	(4G1,5)C	0.41 10,5	7,5	<b>7</b>	
<b>LinMot Servo cables</b>							
Basic cables		PVC/PUR					* Info
P10-70x...-D03-MS	PVC	MAT9752401	(4G1,5+(2x1,5)C)C	0.47 12,0	10	<b>4</b>	
	PVC	MAT9752402	(4G1,5+(2x1,5)C)C	0.51 13,0	7,5	<b>5</b>	
	PUR	MAT9852401	(4G1,5+(2x1,5)C)C	0.51 13,0	7,5	<b>7</b>	
	PUR	MAT9852402	(4G1,5+(2x1,5)C)C	0.47 12,0	10	<b>6</b>	
LinMot Encoder cables		PUR					
<b>Basic cables</b>							
P10-70x...D0x-SMC20	PUR	MAT9842401				-	
P10-70x...D0x-SME20	PUR	MAT9842402				-	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# LTI DRIVES | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Servo cables LTI DRIVES		PVC/PUR					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
KM3-KSxxx	PVC	MAT9020004	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9020003	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9020002	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9020001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
KM3-KSxxx-24A	PVC	MAT9020014	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9020013	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9020012	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9020011	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
<b>Basic cable</b>							
KM3-KSxxx-63A	PVC	MAT9020023	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9020022	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9020021	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	
<b>Extension cable</b>							
KM3-KSxxx-24A	PVC	MAT9022014	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9022013	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9022012	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9022011	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
KM3-KSxxx	PVC	MAT9022004	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9022003	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9022002	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9022001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
<b>Extension cable</b>							
KM3-KSxxx-63A	PVC	MAT9022023	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9022022	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9022021	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# LTI DRIVES | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Encoder cables LTI DRIVES			PVC/PUR/TPE				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



KGGH2-KSxxx	PVC	MAT9021004	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	TPE	MAT9021001	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>
KGGH3-KSxxx	PVC	MAT9021014	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	TPE	MAT9021011	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>
KGS2-KSxxx	PUR	MAT9021023	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT9021022	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9021021	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
KRY2-CDF-KSxxx	PVC	MAT9021034	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9021032	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9021031	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
KRY2-KSxxx	PVC	MAT9021044	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9021042	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9021041	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>

## Extension cable



KGGH2-KSxxx	PVC	MAT9023004	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	TPE	MAT9023001	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>
KGGH3-KSxxx	PVC	MAT9023014	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	TPE	MAT9023011	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>
KGS2-KSxxx	PUR	MAT9023023	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.41	10.5	10	<b>9</b>
	PUR	MAT9023022	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>10</b>
	TPE	MAT9023021	(2x(2x(2x0.14)))+(4x0.14)C+(4x0.5)C	0.45	11.5	7.5	<b>11</b>
KRY2-CDF-KSxxx	PVC	MAT9023034	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9023032	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9023031	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
KRY2-KSxxx	PVC	MAT9023044	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9023042	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9023041	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Mitsubishi Electric | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Mitsubishi Electric Motor cables			PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



MR-BKS1CBL-xxx-A1-H	PVC	MAT9712002	3 G 0.75	0.26	6.5	6.8	<b>19</b>
	PUR	MAT9812002	3 G 0.75	0.26	6.5	6.8	<b>22</b>
MR-BKS1CBL-xxx-A2-H	PVC	MAT9712004	3 G 0.75	0.26	6.5	6.8	<b>19</b>
	PUR	MAT9812004	3 G 0.75	0.26	6.5	6.8	<b>22</b>

## Basic cable



MR-PWS3CBL-xxx-A1-H	PVC	MAT9712001	4 G 0.75	0.28	7.0	6.8	<b>19</b>
	PUR	MAT9812001	4 G 0.75	0.28	7.0	6.8	<b>22</b>
	PVC	MAT9712003	4 G 0.75	0.28	7.0	6.8	<b>19</b>
	PUR	MAT9812003	4 G 0.75	0.28	7.0	6.8	<b>22</b>

## Basic cable





PCS025N-xxx-C4	PVC	MAT9752001	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PUR	MAT9852001	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9952001	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
PCS015N-xxx-0-0C4	PVC	MAT9752002	(4 G 1,5)C	0.41	10,5	10	<b>1</b>
	PUR	MAT9852002	(4 G 1,5)C	0.37	9,5	10	<b>6</b>
	PUR	MAT9952002	(4 G 1,5)C	0.41	10,5	7,5	<b>7</b>
PCS025N-xx.0-0C5	PVC	MAT9752003	(4 G 2,5)C	0.47	12,0	10	<b>1</b>
	PUR	MAT9852003	(4 G 2,5)C	0.45	11,5	10	<b>6</b>
	PUR	MAT9952003	(4 G 2,5)C	0.49	12,5	7,5	<b>7</b>
PCS040N-xx.0-0C4	PVC	MAT9752004	(4 G 4,0)C	0.53	13,5	10	<b>1</b>
	PUR	MAT9852004	(4 G 4,0)C	0.49	12,5	10	<b>6</b>
	PUR	MAT9952004	(4 G 4,0)C	0.53	13,5	7,5	<b>7</b>
PCS040N-xx.0-0C5	PVC	MAT9752005	(4 G 4,0)C	0.53	13,5	10	<b>1</b>
	PUR	MAT9852005	(4 G 4,0)C	0.49	12,5	10	<b>6</b>
	PUR	MAT9952005	(4 G 4,0)C	0.53	13,5	7,5	<b>7</b>
PCS060N-xx.0-0C5	PVC	MAT9752006	(4 G 6,0)C	0.63	16,0	10	<b>1</b>
	PUR	MAT9852006	(4 G 6,0)C	0.57	14,5	10	<b>6</b>
	PUR	MAT9952006	(4 G 6,0)C	0.63	16,0	7,5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core






## Mitsubishi Electric | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Mitsubishi Electric Encoder cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
MR-J3ENCBL-xxx-A1-H	PVC	MAT9722002	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9822002	(3x(2x0.25))C	0.28	7.0	7.5	<b>27</b>
MR-J3ENCBL-xxx-A2-H	PVC	MAT9722003	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9822003	(3x(2x0.25))C	0.28	7.0	7.5	<b>27</b>
<b>Basic cable</b> 							
MR-J3ENSCBL-xxx-H	PVC	MAT9722001	(3x(2x0.25))C	0.28	7.0	7.5	<b>14</b>
	PUR	MAT9822001	(3x(2x0.25))C	0.28	7.0	7.5	<b>13</b>

## NUM | harnessed drive cables ... optionally with PVC/PUR/TPE jacket








\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

NUM Power cables			PVC/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
AGOFRU018LMxxx	PVC	MAT9280051	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9282051	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
AGOFRU019LMxxx	TPE	MAT9961201	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	PVC	MAT9280052	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9282052	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9961202	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
<b>Extension cable</b> 							
AGOFRU018LMxxx	PVC	MAT9280061	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	TPE	MAT9282061	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
AGOFRU019LMxxx	TPE	MAT9961203	(4 G 1.5)C	0.37	9.5	7.5	<b>3</b>
	PVC	MAT9280062	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	TPE	MAT9282062	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
	TPE	MAT9961204	(4 G 4.0)C	0.53	13.5	7.5	<b>3</b>
NUM Servo cables			PVC/PUR				
<b>Basic cable</b> 							
AGOFRU018Mxxx	PVC	MAT9280001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9282001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
AGOFRU019Mxxx	PVC	MAT9280002	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9282002	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
<b>Basic cable</b> 							
AGOFRU020Mxxx	PVC	MAT9280003	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9282003	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
<b>Extension cable</b> 							
AGOFRU018Mxxx	PVC	MAT9280011	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9282011	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
AGOFRU019Mxxx	PVC	MAT9280012	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9282012	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# NUM | harnessed drive cables ... optionally with PVC/PUR/TPE jacket













\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

NUM Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable</b>							
AGOFRU020Mxxx	PVC	MAT9280013	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9282013	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
NUM Encoder cables		PVC/TPE					
<b>Basic cable</b>							
AGOFRU029Mxxx	PVC	MAT9284001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	TPE	MAT9286001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
<b>Extension cable</b>							
AGOFRU029Mxxx	PVC	MAT9284011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	TPE	MAT9286011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b>							
AGOFRU030Mxxx	PVC	MAT9289001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	TPE	MAT9289004	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
<b>Extension cable</b>							
AGOFRU030Mxxx	PVC	MAT9289011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	TPE	MAT9289014	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
NUM Fan cables		PVC/TPE					
<b>Basic cable</b>							
AGOFRU012Mxxx	PVC	MAT9289005	4G1.0	0.28 7.0	7.5	<b>17</b>	
	TPE	MAT9289007	4 G 1.0	0.26 6.5	5	<b>24</b>	
<b>Extension cable</b>							
AGOFRU012Mxxx	PVC	MAT9289015	4G1.0	0.28 7.0	7.5	<b>17</b>	
	TPE	MAT9289017	4 G 1.0	0.26 6.5	5	<b>24</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Omron | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Omron Motor cables		PVC/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b>							
R88A-CAWA-xxxS-DE	TPE	MAT9810004	(4 G 0.5)C	0.31 8.0	7.5	<b>2</b>	
	TPE	MAT9962104	(4 G 0.5)C	0.31 8.0	7.5	<b>3</b>	
R88A-CAWCxxxS-E	PVC	MAT9710003	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	TPE	MAT9810003	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
R88A-CAWCxxxS-E	TPE	MAT9962103	(4 G 1.5)C	0.37 9.5	7.5	<b>3</b>	
	PVC	MAT9710005	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
R88A-CAWCxxxS-E	TPE	MAT9962105	(4 G 1.5)C	0.37 9.5	7.5	<b>3</b>	
	TPE	MAT9810005	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
R88A-CAWDxxxS-E	PVC	MAT9710001	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	TPE	MAT9962101	(4 G 2.5)C	0.45 11.5	7.5	<b>3</b>	
R88A-CAWDxxxS-E	TPE	MAT9810001	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
	PVC	MAT9710006	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
R88A-CAWDxxxS-E	TPE	MAT9962106	(4 G 2.5)C	0.45 11.5	7.5	<b>3</b>	
	TPE	MAT9810006	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
R88A-CAWFxxxS-E	PVC	MAT9710002	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	TPE	MAT9962102	(4 G 4.0)C	0.53 13.5	7.5	<b>3</b>	
TPE	MAT9810002	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>		
Omron Encoder cables		PVC/PUR/TPE					
<b>Basic cable</b>							
JZSP-CHP800-xx-E	PVC	MAT9710009	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9842103	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9810009	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
<b>Basic cable</b>							
JZSP-CHP800-xx-ME	PVC	MAT9710008	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9842102	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9810008	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
<b>Basic cable</b>							
JZSP-CSP21-XX-E-G1	PVC	MAT9710011	(3x(2x0.25))C	0.28 7.0	7.5	<b>14</b>	
	PUR	MAT9842105	(3x(2x0.25))C	0.30 7.5	7.5	<b>10</b>	
	TPE	MAT9810011	(3x(2x0.25))C	0.30 7.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Omron | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ▶ page 540-543

Omron Encoder cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



R88A-CRWA-xxxC-DE	PVC	MAT9710012	(2x(2x0.25)+2x0.5)C	0.26	6.5	10	<b>8</b>
	PUR	MAT9842106	(2x(2x0.25)+2x0.5)C	0.28	7.0	7.5	<b>10</b>
	TPE	MAT9810012	(2x(2x0.25)+2x0.5)C	0.26	6.5	7.5	<b>11</b>

### Basic cable



R88A-CRWBxxxN-E	PVC	MAT9710007	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	PUR	MAT9842101	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9810007	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>
R88A-CRWBxxxN	PVC	MAT9710010	(4x(2x0.25)+2x1.0)C	0.33	8.5	10	<b>8</b>
	PUR	MAT9842104	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9810010	(4x(2x0.25)+2x1.0)C	0.37	9.5	7.5	<b>11</b>

Omron Control cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



JZSP-CHM000-xx-E	PVC	MAT9712103	(5 G 0.5)C	0.33	8.5	7.5	<b>18</b>
	PVC	MAT9710015	(5 G 0.5)C	0.35	9.0	6.8	<b>20</b>
	PUR	MAT9810015	(5 G 0.5)C	0.33	8.5	6.8	<b>23</b>
	TPE	MAT9912103	(5 x 0.5)C	0.30	7.5	5	<b>25</b>
JZSP-CHM030-xx-E	PVC	MAT9710017	(7 G 0.5)C	0.39	10.0	6.8	<b>20</b>
	PVC	MAT9712105	(7 G 0.75)C	0.39	10.0	7.5	<b>18</b>
	PUR	MAT9810017	(7 G 0.5)C	0.37	9.5	6.8	<b>23</b>
	TPE	MAT9912105	(7 x 0.5)C	0.33	8.5	5	<b>25</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Omron | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ▶ page 540-543

Omron Control cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable



JZSP-CHM000-xx-ME	PVC	MAT9712104	(5 G 0.5)C	0.33	8.5	7.5	<b>18</b>
	PVC	MAT9710016	(5 G 0.5)C	0.35	9.0	6.8	<b>20</b>
	PUR	MAT9810016	(5 G 0.5)C	0.33	8.5	6.8	<b>23</b>
	TPE	MAT9912104	(5 x 0.5)C	0.30	7.5	5	<b>25</b>
JZSP-CHM030-xx-ME	PVC	MAT9712106	(7 G 0.75)C	0.39	10.0	7.5	<b>18</b>
	PVC	MAT9710018	(7 G 0.5)C	0.39	10.0	6.8	<b>20</b>
	PUR	MAT9810018	(7 G 0.5)C	0.37	9.5	6.8	<b>23</b>
	TPE	MAT9912106	(7 x 0.5)C	0.33	8.5	5	<b>25</b>

### Basic cable



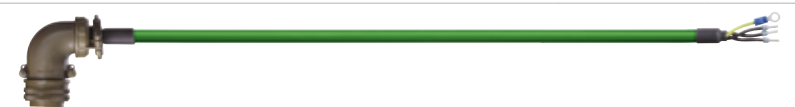
JZSP-CSM22-xx-E-G1	PVC	MAT9712102	(4 G 0.75)C	0.33	8.5	7.5	<b>18</b>
	PVC	MAT9710014	(4 G 0.75)C	0.33	8.5	6.8	<b>20</b>
	PUR	MAT9810014	(4 G 0.75)C	0.33	8.5	6.8	<b>23</b>
	TPE	MAT9912102	(4 G 0.75)C	0.30	7.5	5	<b>25</b>

### Basic cable



R88A-CAWCxxxB-E	PVC	MAT9712101	2 x 0.5	0.22	5.5	7.5	<b>17</b>
	PVC	MAT9710013	2 x 0.5	0.24	6.0	6.8	<b>19</b>
	PUR	MAT9810013	3 G 0.75	0.26	6.5	6.8	<b>22</b>
	TPE	MAT9912101	2 x 0.5	0.20	5.0	5	<b>24</b>

### Basic cable




R88A-CAWExxxB	PVC	MAT9710019	(2 x 0.5)C	0.28	7.0	6.8	<b>20</b>
	PVC	MAT9712107	(3 G 0.5)C	0.28	7.0	7.5	<b>18</b>
	PUR	MAT9810019	(4 G 0.5)C	0.31	8.0	6.8	<b>23</b>
	TPE	MAT9912107	(4 x 0.5)C	0.28	7.0	5	<b>25</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Parker | harnessed drive cables ... optionally with PVC/PUR jacket


\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Parker Motor cables		PVC/PUR					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
iMOK42	PVC	MAT9752255	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9752205	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9852255	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9852205	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
iMOK43	PVC	MAT9752257	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9752207	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9852257	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9852207	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
iMOK44	PVC	MAT9752256	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9752206	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9852256	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9852206	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
iMOK45	PVC	MAT9752258	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9752208	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9852258	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9852208	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
iMOK54	PVC	MAT9752252	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9752202	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9852252	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9852202	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
iMOK55	PVC	MAT9752251	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9752201	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9852251	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9852201	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
iMOK56	PVC	MAT9752253	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9752203	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9852253	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9852203	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
iMOK57	PVC	MAT9752254	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9752204	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9852254	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9852204	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Parker | harnessed drive cables ... optionally with PVC/PUR/TPE jacket


\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Parker Resolver cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
iREK32	PVC	MAT9722211	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9822211	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9922211	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
iREK33	PVC	MAT9722212	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9822212	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9922212	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
iREK41	PVC	MAT9722210	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9822210	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9922210	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	
iREK42	PVC	MAT9722209	(4x(2x0.25))C	0.31 8.0	7.5	<b>14</b>	
	PUR	MAT9822209	(4x(2x0.25))C	0.35 9.0	10	<b>15</b>	
	TPE	MAT9922209	(4x(2x0.25))C	0.33 8.5	6.8	<b>16</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket


\* Technical information on the cable quality: **Selecation chart 1 to 32** ► page 540-543

Rexroth Power cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKG0331	PVC	MAT9190014	(4G0.75+(2x0.5)C)C	0.45 11.5	7.5	<b>5</b>	
	PUR	MAT9090014	(4G0.75+(2x0.5)C)C	0.45 11.5	7.5	<b>7</b>	
IKG4008	PVC	MAT9190064	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851315	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
IKG4009	PUR	MAT9090064	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
	PVC	MAT9190001	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
IKG4017	PUR	MAT9851316	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9090001	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKG4018	PVC	MAT9190002	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851317	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
IKG4018	PUR	MAT9090002	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
	PVC	MAT9190003	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
IKG4020	PUR	MAT9851318	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9090003	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKG4020	PVC	MAT9190004	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851319	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
IKG4055	PUR	MAT9090004	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
	PVC	MAT9751309	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
IKG4055	PVC	MAT9190005	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851320	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
IKG4060	PUR	MAT9090005	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
	PVC	MAT9751310	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
IKG4060	PVC	MAT9190006	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851321	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
IKG4067	PUR	MAT9090006	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
	PVC	MAT9751311	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
IKG4067	PVC	MAT9190007	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9851322	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
IKG4070	PUR	MAT9090007	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PVC	MAT9751312	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
IKG4070	PVC	MAT9190008	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9851323	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
IKG4072	PUR	MAT9090008	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PVC	MAT9751313	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
IKG4072	PVC	MAT9190068	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9851324	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9090068	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecation chart 1 to 32** ► page 540-543


Rexroth Power cables			PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKG4087	PVC	MAT9751314	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9190009	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
IKG4090	PUR	MAT9851325	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9090009	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
IKG4090	PVC	MAT9751315	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9190010	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
IKG4100	PUR	MAT9851326	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9090010	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
IKG4100	PVC	MAT9190020	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851327	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
IKG4103	PUR	MAT9090020	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
	PVC	MAT9751316	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4107	PVC	MAT9190076	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851328	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKG4107	PUR	MAT9090076	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9751317	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4118	PVC	MAT9190011	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851329	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKG4118	PUR	MAT9090011	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9751318	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4119	PVC	MAT9190070	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851330	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKG4119	PUR	MAT9090070	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9751319	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4147	PVC	MAT9190038	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851332	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKG4150	PUR	MAT9090038	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9751320	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4150	PVC	MAT9190012	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851333	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKG4155	PUR	MAT9090012	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9751321	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKG4155	PVC	MAT9190028	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851334	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9090028	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKG4164	PVC	MAT9190035	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9851335	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9090035	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	
IKG4167	PVC	MAT9190013	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9851336	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9090013	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	
IKG4172	PVC	MAT9190069	(4G16.0+2x(2x1.5)C)C	1.08 27.5	7.5	<b>5</b>	
	PUR	MAT9851337	(4G16.0+2x(2x1.5)C)C	1.02 26.0	10	<b>6</b>	
	PUR	MAT9090069	(4G16.0+2x(2x1.5)C)C	1.04 26.5	7.5	<b>7</b>	
IKG4173	PVC	MAT9190072	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>5</b>	
	PUR	MAT9851338	(4G25.0+2x(2x1.5)C)C	1.12 28.5	10	<b>6</b>	
	PUR	MAT9090072	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>7</b>	
IKG4186	PVC	MAT9190021	(4G16.0+2x(2x1.5)C)C	1.08 27.5	7.5	<b>5</b>	
	PUR	MAT9851339	(4G16.0+2x(2x1.5)C)C	1.02 26.0	10	<b>6</b>	
	PUR	MAT9090021	(4G16.0+2x(2x1.5)C)C	1.04 26.5	7.5	<b>7</b>	
IKG4200	PVC	MAT9190032	(4G16.0+2x(2x1.5)C)C	1.08 27.5	7.5	<b>5</b>	
	PUR	MAT9851340	(4G16.0+2x(2x1.5)C)C	1.02 26.0	10	<b>6</b>	
	PUR	MAT9090032	(4G16.0+2x(2x1.5)C)C	1.04 26.5	7.5	<b>7</b>	
IKG4204	PVC	MAT9190052	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>5</b>	
	PUR	MAT9851341	(4G25.0+2x(2x1.5)C)C	1.12 28.5	10	<b>6</b>	
	PUR	MAT9090052	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>7</b>	
IKL0001	PVC	MAT9190022	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851301	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9090022	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKL0002	PVC	MAT9751354	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851385	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9851384	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKL0006	PVC	MAT9190067	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851302	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9090067	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKL0011	PVC	MAT9190023	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851303	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9090023	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	
IKL0012	PVC	MAT9751355	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>5</b>	
	PUR	MAT9851387	(4G1.0+2x(2x0.75)C)C	0.51 13.0	10	<b>6</b>	
	PUR	MAT9851386	(4G1.0+2x(2x0.75)C)C	0.53 13.5	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket


\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKL0021	PVC	MAT9751301	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9190024	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851304	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
IKL0022	PUR	MAT9090024	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
	PVC	MAT9751357	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751356	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
IKL0041	PUR	MAT9851389	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851388	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
	PVC	MAT9190017	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
IKL0042	PVC	MAT9751302	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PUR	MAT9851305	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9090017	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
IKL0061	PVC	MAT9190077	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PVC	MAT9751303	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PUR	MAT9851306	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
IKL0081	PUR	MAT9090077	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PVC	MAT9751304	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9190018	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
IKL0101	PUR	MAT9851307	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9090018	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
	PVC	MAT9751305	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
IKL0121	PVC	MAT9190030	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851308	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9090030	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
IKL0161	PVC	MAT9751306	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9190025	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851309	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
IKL0161	PUR	MAT9090025	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
	PVC	MAT9190019	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9851310	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
IKL0161	PUR	MAT9090019	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	
	PVC	MAT9190063	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>5</b>	
	PUR	MAT9851311	(4G25.0+2x(2x1.5)C)C	1.12 28.5	10	<b>6</b>	
	PUR	MAT9090063	(4G25.0+2x(2x1.5)C)C	1.22 31.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core


# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d]	Cable Page 540-543
<b>Linking cable with adapter plugs</b>							
							
IKG0332	PVC	MAT9190015	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>5</b>
	PUR	MAT9090015	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>7</b>
IKG4006	PVC	MAT9191001	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851342	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
IKG4016	PVC	MAT9191002	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851343	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
IKG4061	PVC	MAT9751322	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>4</b>
	PUR	MAT9851344	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>6</b>
IKG4074	PVC	MAT9751323	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>4</b>
	PUR	MAT9851345	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>6</b>
IKG4081	PVC	MAT9751324	(4G4.0+2x(2x1.5)C)C	0.67	17.0	7.5	<b>5</b>
	PUR	MAT9851346	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>6</b>
IKG4141	PVC	MAT9751325	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>4</b>
	PUR	MAT9851347	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>6</b>
IKG4161	PVC	MAT9191003	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5	<b>7</b>
	PUR	MAT9091003	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5	<b>7</b>
IKL0003	PVC	MAT9190036	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT9851348	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
IKL0023	PVC	MAT9090036	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
	PUR	MAT9751358	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
IKL0089	PVC	MAT9851391	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
	PUR	MAT9851390	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
IKL0168	PVC	MAT9751307	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PUR	MAT9191013	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
IKL0089	PVC	MAT9851312	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9091013	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
IKL0168	PVC	MAT9751308	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>4</b>
	PUR	MAT9191005	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5	<b>5</b>
IKL0168	PVC	MAT9851313	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>6</b>
	PUR	MAT9091005	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5	<b>7</b>
IKL0168	PVC	MAT9191006	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>5</b>
	PUR	MAT9851314	(4G25.0+2x(2x1.5)C)C	1.12	28.5	10	<b>6</b>
IKL0168	PVC	MAT9091006	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>7</b>

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d]	Cable Page 540-543
<b>Basic cable</b>							
							
RKL0006	PVC	MAT9751359	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851393	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
RKL0013	PVC	MAT9851392	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
	PUR	MAT9751360	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>5</b>
RKL0014	PVC	MAT9851394	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>7</b>
	PUR	MAT9751361	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
RKL0019	PVC	MAT9851396	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
	PUR	MAT9851395	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
RKL0053	PVC	MAT9751363	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PUR	MAT9751362	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
RKL0054	PVC	MAT9851398	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9851397	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
RKL4300	PVC	MAT9751364	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT98513100	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
RKL4301	PVC	MAT9851399	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
	PUR	MAT9751366	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
RKL4302	PVC	MAT9751365	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT98513102	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
RKL4303	PVC	MAT98513101	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
	PUR	MAT9751326	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
RKL4306	PVC	MAT9190071	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851349	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
RKL4307	PVC	MAT9090071	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
	PUR	MAT9751327	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
RKL4308	PVC	MAT9190037	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851350	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
RKL4309	PVC	MAT9851350	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9090037	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
RKL4310	PVC	MAT9190026	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851351	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
RKL4311	PVC	MAT9090026	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
	PUR	MAT9751328	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
RKL4312	PVC	MAT9190029	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851352	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
RKL4313	PVC	MAT9090029	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
	PUR	MAT9751328	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
RKL4314	PVC	MAT9190040	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851353	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
RKL4315	PVC	MAT9090040	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Rexroth Power cables		PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d] Cable Page 540-543
<b>Basic cable</b>						
RKL4307	PVC	MAT9751329	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>4</b>
	PVC	MAT9190041	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5 <b>5</b>
	PUR	MAT9851354	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>6</b>
	PUR	MAT9090041	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5 <b>7</b>
RKL4308	PVC	MAT9751330	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>4</b>
	PVC	MAT9190033	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>5</b>
	PUR	MAT9851355	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>6</b>
	PUR	MAT9090033	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>7</b>
RKL4309	PVC	MAT9751331	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>4</b>
	PVC	MAT9190042	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>5</b>
	PUR	MAT9851356	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>6</b>
	PUR	MAT9090042	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>7</b>
RKL4310	PVC	MAT9751332	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>4</b>
	PVC	MAT9190043	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>5</b>
	PUR	MAT9851357	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>6</b>
	PUR	MAT9090043	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>7</b>
RKL4313	PVC	MAT9751333	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>4</b>
	PVC	MAT9190062	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5 <b>5</b>
	PUR	MAT9851358	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>6</b>
	PUR	MAT9090062	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5 <b>7</b>
RKL4314	PVC	MAT9751334	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>4</b>
	PVC	MAT9190060	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5 <b>5</b>
	PUR	MAT9851359	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>6</b>
	PUR	MAT9090060	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5 <b>7</b>
RKL4315	PVC	MAT9751335	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>4</b>
	PVC	MAT9190059	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5 <b>5</b>
	PUR	MAT9851360	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>6</b>
	PUR	MAT9090059	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5 <b>7</b>
RKL4317	PVC	MAT9751336	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>4</b>
	PVC	MAT9190061	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5 <b>5</b>
	PUR	MAT9851361	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>6</b>
	PUR	MAT9090061	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5 <b>7</b>
RKL4318	PVC	MAT9751337	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>4</b>
	PVC	MAT9190047	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5 <b>5</b>
	PUR	MAT9851362	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>6</b>
	PUR	MAT9090047	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5 <b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

Rexroth Power cables		PVC/PUR				Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d] Cable Page 540-543
<b>Basic cable</b>						
RKL4320	PVC	MAT9751338	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>4</b>
	PVC	MAT9190039	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5 <b>5</b>
	PUR	MAT9851363	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>6</b>
	PUR	MAT9090039	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5 <b>7</b>
RKL4321	PVC	MAT9751339	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>4</b>
	PVC	MAT9190075	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>5</b>
	PUR	MAT9851364	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>6</b>
	PUR	MAT9090075	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>7</b>
RKL4322	PVC	MAT9751340	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>4</b>
	PVC	MAT9190078	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5 <b>5</b>
	PUR	MAT9851365	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>6</b>
	PUR	MAT9090078	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5 <b>7</b>
RKL4323	PVC	MAT9751341	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>4</b>
	PVC	MAT9190073	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5 <b>5</b>
	PUR	MAT9851366	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>6</b>
	PUR	MAT9090073	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5 <b>7</b>
RKL4324	PVC	MAT9190079	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5 <b>5</b>
	PUR	MAT9851367	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10 <b>6</b>
	PUR	MAT9090079	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5 <b>7</b>
RKL4325	PVC	MAT9751342	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>4</b>
	PVC	MAT9190049	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5 <b>5</b>
	PUR	MAT9851368	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10 <b>6</b>
	PUR	MAT9090049	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5 <b>7</b>
RKL4326	PVC	MAT9751343	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>4</b>
	PVC	MAT9190045	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>5</b>
	PUR	MAT9851369	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10 <b>6</b>
	PUR	MAT9090045	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5 <b>7</b>
RKL4327	PVC	MAT9751344	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>4</b>
	PVC	MAT9190050	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5 <b>5</b>
	PUR	MAT9851370	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10 <b>6</b>
	PUR	MAT9090050	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5 <b>7</b>
RKL4328	PVC	MAT9751345	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>4</b>
	PVC	MAT9190057	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5 <b>5</b>
	PUR	MAT9851371	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10 <b>6</b>
RKL4329	PUR	MAT9090057	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5 <b>7</b>
	PVC	MAT9190051	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5 <b>5</b>
	PUR	MAT9851372	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10 <b>6</b>
PUR	MAT9090051	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5 <b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



RKL4330	PVC	MAT9190080	(4G16.0+2x(2x1.5)C)C	1.08	27.5	7.5	<b>5</b>
	PUR	MAT9851373	(4G16.0+2x(2x1.5)C)C	1.02	26.0	10	<b>6</b>
	PUR	MAT9090080	(4G16.0+2x(2x1.5)C)C	1.04	26.5	7.5	<b>7</b>
RKL4331	PVC	MAT9190081	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>5</b>
	PUR	MAT9851374	(4G25.0+2x(2x1.5)C)C	1.12	28.5	10	<b>6</b>
	PUR	MAT9090081	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>7</b>
RKL4332	PVC	MAT9751367	(4G35.0+2x(2x1.5)C)C	1.34	34.0	7.5	<b>5</b>
	PUR	MAT98513103	(4G35.0+2x(2x1.5)C)C	1.34	34.0	7.5	<b>7</b>
	PUR	MAT98513104	(4G35.0+2x(2x1.5)C)C	1.38	35.0	10	<b>6</b>
RKL4343	PVC	MAT9751369	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>4</b>
	PVC	MAT9751368	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5	<b>5</b>
	PUR	MAT98513106	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>6</b>
RKL4344	PVC	MAT9751370	(4G16.0+2x(2x1.5)C)C		27.5	7.5	<b>5</b>
	PUR	MAT98513108	(4G16.0+2x(2x1.5)C)C		26.0	10	<b>6</b>
	PUR	MAT98513107	(4G16.0+2x(2x1.5)C)C		26.5	7.5	<b>7</b>

## Extension cable



RKL0035	PVC	MAT9751371	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>5</b>
	PUR	MAT98513109	(4G0.75+(2x0.5)C)C	0.45	11.5	7.5	<b>7</b>
RKL4304	PVC	MAT9751346	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9191007	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851375	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9091007	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
RKL4305	PVC	MAT9191008	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>5</b>
	PUR	MAT9851376	(4G1.0+2x(2x0.75)C)C	0.51	13.0	10	<b>6</b>
	PUR	MAT9091008	(4G1.0+2x(2x0.75)C)C	0.53	13.5	7.5	<b>7</b>
RKL4311	PVC	MAT9751347	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9191009	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851377	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
RKL4312	PUR	MAT9091009	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
	PVC	MAT9751348	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>4</b>
	PVC	MAT9191010	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5	<b>5</b>
	PUR	MAT9851378	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>6</b>
	PUR	MAT9091010	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Rexroth Power cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Extension cable



RKL4316	PVC	MAT9751349	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>4</b>
	PVC	MAT9191011	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5	<b>5</b>
	PUR	MAT9851379	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>6</b>
RKL4319	PUR	MAT9091011	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
	PVC	MAT9751350	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>4</b>
	PVC	MAT9191012	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5	<b>5</b>
RKL4335	PUR	MAT9851380	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>6</b>
	PUR	MAT9091012	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5	<b>7</b>
	PVC	MAT9751373	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>4</b>
RKL4336	PVC	MAT9751372	(4G1.5+2x(2x0.75)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT98513111	(4G1.5+2x(2x0.75)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT98513110	(4G1.5+2x(2x0.75)C)C	0.55	14.0	7.5	<b>7</b>
RKL4337	PVC	MAT9751351	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>4</b>
	PVC	MAT9191018	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5	<b>5</b>
	PUR	MAT9851381	(4G2.5+2x(2x1.5)C)C	0.63	16.0	10	<b>6</b>
RKL4338	PUR	MAT9091018	(4G2.5+2x(2x1.5)C)C	0.67	17.0	7.5	<b>7</b>
	PVC	MAT9751375	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>4</b>
	PVC	MAT9751374	(4G4.0+2x(2x1.5)C)C	0.73	18.5	7.5	<b>5</b>
RKL4339	PUR	MAT98513113	(4G4.0+2x(2x1.5)C)C	0.67	17.0	10	<b>6</b>
	PUR	MAT98513112	(4G4.0+2x(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
	PVC	MAT9751352	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>4</b>
RKL4340	PVC	MAT9191017	(4G6.0+2x(2x1.5)C)C	0.85	21.5	7.5	<b>5</b>
	PUR	MAT9851382	(4G6.0+2x(2x1.5)C)C	0.73	18.5	10	<b>6</b>
	PUR	MAT9091017	(4G6.0+2x(2x1.5)C)C	0.79	20.0	7.5	<b>7</b>
RKL4341	PVC	MAT9751376	(4G10.0+2x(2x1.5)C)C	0.94	24.0	7.5	<b>5</b>
	PUR	MAT98513115	(4G10.0+2x(2x1.5)C)C	0.89	22.5	10	<b>6</b>
	PUR	MAT98513114	(4G10.0+2x(2x1.5)C)C	0.93	23.5	7.5	<b>7</b>
RKL4342	PVC	MAT9191015	(4G16.0+2x(2x1.5)C)C	1.08	27.5	7.5	<b>5</b>
	PUR	MAT9851383	(4G16.0+2x(2x1.5)C)C	1.02	26.0	10	<b>6</b>
	PUR	MAT9091015	(4G16.0+2x(2x1.5)C)C	1.04	26.5	7.5	<b>7</b>
RKL4343	PVC	MAT9751377	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>5</b>
	PUR	MAT98513117	(4G25.0+2x(2x1.5)C)C	1.12	28.5	10	<b>6</b>
	PUR	MAT98513116	(4G25.0+2x(2x1.5)C)C	1.22	31.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables

## ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543



Rexroth Encoder cables		PVC/PUR/TPE				Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKS0230	PVC	MAT9110008	(2x(2x0.25)+2x0.5)C	0.26 6.5	10	<b>8</b>	
	PUR	MAT9841307	(2x(2x0.25)+2x0.5)C	0.28 7.0	7.5	<b>10</b>	
	TPE	MAT9100008	(2x(2x0.25)+2x0.5)C	0.26 6.5	7.5	<b>11</b>	
IKS0251	TPE	MAT9100014	(12 x 0.5)C	0.47 12.0	5	<b>25</b>	
IKS0253	TPE	MAT9100023	(12 x 0.5)C	0.47 12.0	5	<b>25</b>	
IKS0259	TPE	MAT9100032	(12 x 0.5)C	0.47 12.0	5	<b>25</b>	
IKS0262	TPE	MAT9100016	(12 x 0.5)C	0.47 12.0	5	<b>25</b>	
IKS0301	PVC	MAT9110015	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841308	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100015	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
IKS0315	PVC	MAT9110020	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841309	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100020	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
IKS0374	PVC	MAT9110011	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841310	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100011	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
IKS4001	PVC	MAT9110026	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841311	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9100026	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
IKS4002	PVC	MAT9110010	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841312	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9100010	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>11</b>	
IKS4020	PVC	MAT9110006	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841313	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9100006	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
IKS4038	PVC	MAT9110027	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841314	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9100027	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
IKS4041	PVC	MAT9110028	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841315	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9100028	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>11</b>	
IKS4042	PVC	MAT9110017	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841316	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100017	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
IKS4066	PVC	MAT9110025	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841317	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100025	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables

## ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

Rexroth Encoder cables		PVC/PUR/TPE				Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
IKS4103	PVC	MAT9110001	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841318	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100001	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
IKS4142	PVC	MAT9110007	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841319	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9100007	(4x(2x0.14)+(4x0.14)C+4x1.0)C	0.43 11.0	7.5	<b>11</b>	
IKS4314	PVC	MAT9110004	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841320	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100004	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
IKS4374	PVC	MAT9110002	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841321	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100002	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
IKS4375	PVC	MAT9110003	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841322	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100003	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
IKS4384	PVC	MAT9110005	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841323	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9100005	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>11</b>	
IKS4389	PVC	MAT9110033	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841324	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9100033	(3x(2x0.25)C+(3x0.25)+2x1.0)C	0.41 10.5	7.5	<b>11</b>	
<b>Linking cable with adapter plugs</b> 							
IKS0232	PVC	MAT9110009	(2x(2x0.25)+2x0.5)C	0.26 6.5	10	<b>8</b>	
	PUR	MAT9841325	(2x(2x0.25)+2x0.5)C	0.28 7.0	7.5	<b>10</b>	
	TPE	MAT9100009	(2x(2x0.25)+2x0.5)C	0.26 6.5	7.5	<b>11</b>	
IKS0255	TPE	MAT9100018	(12 x 0.5)C	0.47 12.0	5	<b>25</b>	
IKS0303	PVC	MAT9110019	(4x(2x0.25)+2x1.0)C	0.33 8.5	10	<b>8</b>	
	PUR	MAT9841326	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9100019	(4x(2x0.25)+2x1.0)C	0.37 9.5	7.5	<b>11</b>	
IKS4065	PVC	MAT9111001	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841327	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9101001	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	
IKS4151	PVC	MAT9111002	(4x(2x0.25)+2x0.5)C	0.31 8.0	10	<b>8</b>	
	PUR	MAT9841328	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>10</b>	
	TPE	MAT9101002	(4x(2x0.25)+2x0.5)C	0.37 9.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Rexroth | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Rexroth Encoder cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Linking cable with adapter plugs</b>							
IKS4153	PVC	MAT9111003	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841329	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9101003	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
IKS4322	PVC	MAT9111005	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841331	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9101005	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
IKS4376	PVC	MAT9111004	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841330	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9101004	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
<b>Basic cable</b>							
RKG0014	PVC	MAT9110030	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.39	10.0	10	<b>8</b>
	PUR	MAT9841301	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT9100030	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>11</b>
RKG0020	PVC	MAT9110034	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841302	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9100034	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
RKG0026	PVC	MAT9110029	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.39	10.0	10	<b>8</b>
	PUR	MAT9841303	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT9100029	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>11</b>
RKG0028	PVC	MAT9110031	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.39	10.0	10	<b>8</b>
	PUR	MAT9841304	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>10</b>
	TPE	MAT9100031	(3x(2x0.25)C)+(3x0.25)+2x1.0)C	0.41	10.5	7.5	<b>11</b>
RKG4200	PVC	MAT9110013	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841305	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9100013	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
<b>Linking cable with adapter plugs</b>							
RKG4201	PVC	MAT9111006	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841306	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9101006	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543



SEW Motor cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Connection cable (Amphenol)</b>							
0199 1809	PVC	MAT9410006	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861401	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9400006	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
0199 1825	PVC	MAT9410007	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861402	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	TPE	MAT9400007	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
0199 1841	PVC	MAT9410008	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861403	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9400008	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
0199 1868	PVC	MAT9410009	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861404	(4 G 6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9400009	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
0199 1884	PVC	MAT9410010	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861405	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9400010	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
<b>Connection cable</b>							
0590 4773	PVC	MAT9410012	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861406	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9400012	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
0590 4803	PVC	MAT9761415	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861415	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961415	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
0590 6245	PVC	MAT9761413	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861413	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961413	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
0590 6253	PVC	MAT9761414	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861414	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	TPE	MAT9961414	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# SEW | harnessed drive cables ... optionally with PVC/PUR/TPE jacket



\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

SEW Motor cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Connection cable</b> 							
1335 0293	PVC	MAT9761416	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861416	(4 G 6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961416	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
1335 0307	PVC	MAT9761417	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861417	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961417	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
1335 0315	PVC	MAT9761418	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	PUR	MAT9861418	(4 G 16.0)C	0.87	22.0	10	<b>6</b>
	TPE	MAT9961418	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>
<b>Extension cable (Amphenol)</b> 							
0199 5502	PVC	MAT9411006	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861407	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9401006	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
0199 5529	PVC	MAT9411007	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861408	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	TPE	MAT9401007	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
0199 5545	PVC	MAT9411008	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861409	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9401008	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
0199 5561	PVC	MAT9411009	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861410	(4 G 6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9401009	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
0199 5588	PVC	MAT9411010	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861411	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9401010	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

SEW Motor cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Extension cable</b> 							
0590 3610	PVC	MAT9411012	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861412	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9401012	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
<b>Extension cable</b> 							
1333 2457	PVC	MAT9761419	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861419	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961419	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
1333 2465	PVC	MAT9761420	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861420	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	TPE	MAT9961420	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
1333 2473	PVC	MAT9761421	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861421	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961421	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
1335 0021	PVC	MAT9761422	(4 G 4.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861422	(4 G 4.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961422	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
1335 0048	PVC	MAT9761423	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861423	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961423	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
1335 0056	PVC	MAT9761424	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	PUR	MAT9861424	(4 G 16.0)C	0.87	22.0	10	<b>6</b>
	TPE	MAT9961424	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

SEW Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Connection cable (Amphenol)</b>							
0199 1906	PVC	MAT9751401	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9410001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851401	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9400001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
0199 1922	PVC	MAT9751402	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9410002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9851402	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9400002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
0199 1949	PVC	MAT9751403	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9410003	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9851403	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9400003	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
0199 1965	PVC	MAT9751404	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9410004	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851404	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9400004	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
0199 1981	PVC	MAT9410005	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9851405	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9400005	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	

## Connection cable



1332 4861	PVC	MAT9751405	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9410011	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851406	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9400011	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
1335 0153	PVC	MAT9751422	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
	PVC	MAT9751440	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851422	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9851440	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	
1335 0161	PVC	MAT9751441	(4G10.0+2x(2x1.5)C)C	0.94 24.0	7.5	<b>5</b>	
	PUR	MAT9851423	(4G10.0+2x(2x1.5)C)C	0.89 22.5	10	<b>6</b>	
	PUR	MAT9851441	(4G10.0+2x(2x1.5)C)C	0.93 23.5	7.5	<b>7</b>	
1335 0188	PVC	MAT9751442	(4G16.0+2x(2x1.5)C)C	1.08 27.5	7.5	<b>5</b>	
	PUR	MAT9851424	(4G16.0+2x(2x1.5)C)C	1.02 26.0	10	<b>6</b>	
	PUR	MAT9851442	(4G16.0+2x(2x1.5)C)C	1.04 26.5	7.5	<b>7</b>	
1335 0234	PVC	MAT9751416	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751434	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851416	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851434	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ▶ page 540-543

SEW Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
1335 0242	PVC	MAT9751435	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851417	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851435	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
1335 0250	PVC	MAT9751436	(4G16.0+(2x1.5)C)C	0.98 25.0	7.5	<b>5</b>	
	PUR	MAT9851418	(4G16.0+(2x1.5)C)C	0.94 24.0	10	<b>6</b>	
	PUR	MAT9851436	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	
1335 4302	PUR	MAT9851419	(4G1.5+(3x1.0)C)C	0.55 14.0	10	<b>6</b>	
1335 4310	PVC	MAT9751420	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9751438	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
	PUR	MAT9851420	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9851438	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
1335 4329	PVC	MAT9751421	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
	PVC	MAT9751439	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9851421	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9851439	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
1335 4388	PUR	MAT9851413	(4G1.5+(3x1.0)C)C	0.55 14.0	10	<b>6</b>	
1335 4396	PVC	MAT9751414	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751432	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851414	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851432	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
1342 1603	PVC	MAT9751415	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751433	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851415	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851433	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	

## Extension cable (Amphenol)



0199 2007	PVC	MAT9751406	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9411001	(4G1.5+2x(2x0.75)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851407	(4G1.5+2x(2x0.75)C)C	0.53 13.5	10	<b>6</b>	
0199 2023	PUR	MAT9401001	(4G1.5+2x(2x0.75)C)C	0.55 14.0	7.5	<b>7</b>	
	PVC	MAT9751407	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>4</b>	
	PVC	MAT9411002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>5</b>	
0199 204X	PUR	MAT9851408	(4G2.5+2x(2x1.5)C)C	0.63 16.0	10	<b>6</b>	
	PUR	MAT9401002	(4G2.5+2x(2x1.5)C)C	0.67 17.0	7.5	<b>7</b>	
	PVC	MAT9751408	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>4</b>	
0199 2066	PVC	MAT9411003	(4G4.0+2x(2x1.5)C)C	0.73 18.5	7.5	<b>5</b>	
	PUR	MAT9851409	(4G4.0+2x(2x1.5)C)C	0.67 17.0	10	<b>6</b>	
	PUR	MAT9401003	(4G4.0+2x(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
	PVC	MAT9751409	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>4</b>	
0199 2066	PVC	MAT9411004	(4G6.0+2x(2x1.5)C)C	0.85 21.5	7.5	<b>5</b>	
	PUR	MAT9851410	(4G6.0+2x(2x1.5)C)C	0.73 18.5	10	<b>6</b>	
	PUR	MAT9401004	(4G6.0+2x(2x1.5)C)C	0.79 20.0	7.5	<b>7</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

SEW Servo cables		PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543
<b>Extension cable (Amphenol)</b>						
0199 2082	PVC	MAT9411005	(4G10.0+2x(2x1.5)C)C	24.0	7.5	<b>5</b>
	PUR	MAT9851411	(4G10.0+2x(2x1.5)C)C	22.5	10	<b>6</b>
	PUR	MAT9401005	(4G10.0+2x(2x1.5)C)C	23.5	7.5	<b>7</b>
<b>Extension cable</b>						
0593 6500	PVC	MAT9751410	(4G1.5+(2x1.5)C)C	0.47	12.0	<b>4</b>
	PVC	MAT9411011	(4G1.5+(2x1.5)C)C	0.51	13.0	<b>5</b>
	PUR	MAT9851412	(4G1.5+(2x1.5)C)C	0.47	12.0	<b>6</b>
	PUR	MAT9401011	(4G1.5+(2x1.5)C)C	0.51	13.0	<b>7</b>
1335 0099	PVC	MAT9751446	(4G6.0+2x(2x1.5)C)C	0.85	21.5	<b>5</b>
	PUR	MAT9851428	(4G6.0+2x(2x1.5)C)C	0.73	18.5	<b>6</b>
	PUR	MAT9851446	(4G6.0+2x(2x1.5)C)C	0.79	20.0	<b>7</b>
1335 0102	PVC	MAT9751447	(4G10.0+2x(2x1.5)C)C	0.94	24.0	<b>5</b>
	PUR	MAT9851429	(4G10.0+2x(2x1.5)C)C	0.89	22.5	<b>6</b>
	PUR	MAT9851447	(4G10.0+2x(2x1.5)C)C	0.93	23.5	<b>7</b>
1335 0110	PVC	MAT9751448	(4G16.0+2x(2x1.5)C)C	1.08	27.5	<b>5</b>
	PUR	MAT9851430	(4G16.0+2x(2x1.5)C)C	1.02	26.0	<b>6</b>
	PUR	MAT9851448	(4G16.0+2x(2x1.5)C)C	1.04	26.5	<b>7</b>
1335 4221	PUR	MAT9851425	(4G1.5+(3x1.0)C)C	0.55	14.0	<b>6</b>
1335 4248	PVC	MAT9751444	(4G2.5+2x(2x1.5)C)C	0.67	17.0	<b>5</b>
	PUR	MAT9851426	(4G2.5+2x(2x1.5)C)C	0.63	16.0	<b>6</b>
	PUR	MAT9851444	(4G2.5+2x(2x1.5)C)C	0.67	17.0	<b>7</b>
1335 4337	PVC	MAT9751445	(4G4.0+2x(2x1.5)C)C	0.73	18.5	<b>5</b>
	PUR	MAT9851427	(4G4.0+2x(2x1.5)C)C	0.67	17.0	<b>6</b>
	PUR	MAT9851445	(4G4.0+2x(2x1.5)C)C	0.71	18.0	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# SEW | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

SEW Encoder cables		PVC/PUR			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543
<b>Connection cable</b>						
0198 9308	PUR	MAT9841404	(3x(2x0.25))C	0.30	7.5	<b>7.5</b>
0199 3194	PUR	MAT9841401	(5x(2x0.25))C	0.37	9.5	<b>7.5</b>
0199 4875	PVC	MAT9741401	(5x(2x0.25))C	0.31	8.0	<b>10</b>
1332 4535	PVC	MAT9741403	(6x(2x0.25))C	0.33	8.5	<b>10</b>
1332 4551	PUR	MAT9841403	(6x(2x0.25))C	0.39	10.0	<b>7.5</b>
1332 7429	PVC	MAT9741402	(5x(2x0.25))C	0.31	8.0	<b>10</b>
1332 7437	PUR	MAT9841402	(5x(2x0.25))C	0.37	9.5	<b>7.5</b>
<b>Extension cable</b>						
0199 5391	PVC	MAT9741406	(6x(2x0.25))C	0.33	8.5	<b>10</b>
0199 5405	PUR	MAT9841406	(6x(2x0.25))C	0.39	10.0	<b>7.5</b>
0199 5413	PUR	MAT9841405	(5x(2x0.25))C	0.37	9.5	<b>7.5</b>
0199 5421	PVC	MAT9741405	(5x(2x0.25))C	0.31	8.0	<b>10</b>
0593 9682	PVC	MAT9741407	(5x(2x0.25))C	0.31	8.0	<b>10</b>
	PUR	MAT9841407	(5x(2x0.25))C	0.37	9.5	<b>7.5</b>



# SEW | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

SEW Hybrid Servo cables			PUR			* Info	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



0186 725 3	PUR	MAT9851443	4G1,5+(2x0,75)C+(3x0,75)C	0.55 14,0	10	<b>29</b>	
0593 516 4	PUR	MAT9851444	4G1,5+(2x0,75)C+(3x0,75)C	0.55 14,0	10	<b>29</b>	
0817 112 2	PUR	MAT9851445	4G1,5+(2x0,75)C+(3x0,75)C	0.55 14,0	10	<b>29</b>	
0186 742 3	PUR	MAT9851446	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0186 741 5	PUR	MAT9851447	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0593 076 6	PUR	MAT9851448	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0593 278 5	PUR	MAT9851449	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0816 325 1	PUR	MAT9851450	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0593 755 8	PUR	MAT9851451	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0816 326 X	PUR	MAT9851452	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0817 948 4	PUR	MAT9851453	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0816 208 5	PUR	MAT9851454	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0817 887 9	PUR	MAT9851455	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0187 889 5	PUR	MAT9851456	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0817 886 0	PUR	MAT9851457	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	
0817 888 7	PUR	MAT9851458	(7x2,5+(2x0,75)C)C	0.79 20,0	10	<b>29</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Power cables			PVC/PUR/TPE			Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



6FX_002-5CA01	PVC	MAT9150001	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861504	(4 G 1.5)C	0.37 9.5	10	<b>6</b>	
	TPE	MAT9050001	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
6FX_002-5CA11	PVC	MAT9150002	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861505	(4 G 2.5)C	0.45 11.5	10	<b>6</b>	
	TPE	MAT9050002	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	

## Basic cable



6FX_002-5CA13	PVC	MAT9150009	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861524	(4 G 10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9050009	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	
6FX_002-5CA23	PVC	MAT9150008	(4 G 16.0)C	0.93 23.5	7.5	<b>1</b>	
	PUR	MAT9861511	(4 G 16.0)C	0.87 22.0	10	<b>6</b>	
	TPE	MAT9050008	(4 G 16.0)C	0.91 23.0	7.5	<b>2</b>	

## Basic cable



6FX_002-5CA21	PVC	MAT9150003	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861506	(4 G 1.5)C	0.37 9.5	10	<b>6</b>	
	TPE	MAT9050003	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
6FX_002-5CA31	PVC	MAT9150004	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861507	(4 G 2.5)C	0.45 11.5	10	<b>6</b>	
	TPE	MAT9050004	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
6FX_002-5CA41	PVC	MAT9150005	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	PUR	MAT9861508	(4 G 4.0)C	0.49 12.5	10	<b>6</b>	
	TPE	MAT9050005	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>	
6FX_002-5CA51	PVC	MAT9150006	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9861509	(4 G 6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9050006	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
6FX_002-5CA61	PVC	MAT9150007	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861510	(4 G 10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9050007	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket


\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b> 							
6FX_002-5CG01	PVC	MAT9761512	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861542	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	PUR	MAT9861541	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	TPE	MAT9961512	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CG11	PVC	MAT9761514	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861546	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861545	(4 G 2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961514	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CG13	PVC	MAT9761520	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861553	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961520	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
6FX_002-5CG21	PVC	MAT9761513	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861544	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	PUR	MAT9861543	(4 G 1.5)C	0.41	10.5	7.5	<b>7</b>
	TPE	MAT9961513	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CG23	PVC	MAT9761521	(4 G 16.0)C	0.93	23.5	7.5	<b>1</b>
	PUR	MAT9861554	(4 G 16.0)C	0.87	22.0	10	<b>6</b>
	TPE	MAT9961521	(4 G 16.0)C	0.91	23.0	7.5	<b>2</b>
6FX_002-5CG31	PVC	MAT9761516	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861549	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861548	(4 G 2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961516	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CG41	PVC	MAT9761517	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861550	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961517	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CG51	PVC	MAT9761518	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861551	(4 G 6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961518	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CG61	PVC	MAT9761519	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861552	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961519	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket


\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543


Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b> 							
6FX_002-5CS01	PVC	MAT9150020	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861512	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	PUR	MAT9861501	(4 G 1.5)C	0.41	10.5	7.5	<b>7</b>
	TPE	MAT9050020	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CS11	PVC	MAT9761502	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861528	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861527	(4 G 2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961502	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CS13	PVC	MAT9761504	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861531	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961504	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>
6FX_002-5CS21	PVC	MAT9150021	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861513	(4 G 1.5)C	0.37	9.5	10	<b>6</b>
	PUR	MAT9861502	(4 G 1.5)C	0.41	10.5	7.5	<b>7</b>
	TPE	MAT9050021	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CS31	PVC	MAT9150022	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861514	(4 G 2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861503	(4 G 2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9050022	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CS41	PVC	MAT9150023	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861533	(4 G 4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9050023	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CS51	PVC	MAT9150024	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861535	(4 G 6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9050024	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CS61	PVC	MAT9761509	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861538	(4 G 10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961509	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543


Siemens Power cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-5CS02	PVC	MAT9761501	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861526	(4 G 1.5)C	0.37 9.5	10	<b>6</b>	
	PUR	MAT9861525	(4 G 1.5)C	0.41 10.5	7.5	<b>7</b>	
	TPE	MAT9961501	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
6FX_002-5CS12	PVC	MAT9761503	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861530	(4 G 2.5)C	0.45 11.5	10	<b>6</b>	
	PUR	MAT9861529	(4 G 2.5)C	0.49 12.5	7.5	<b>7</b>	
	TPE	MAT9961503	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
6FX_002-5CS42	PVC	MAT9761506	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	PUR	MAT9861534	(4 G 4.0)C	0.49 12.5	10	<b>6</b>	
	TPE	MAT9961506	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>	
6FX_002-5CS52	PVC	MAT9761507	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9861536	(4 G 6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9961507	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
6FX_002-5CS62	PVC	MAT9761510	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861539	(4 G 10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9961510	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	


<b>Basic cable</b> 							
6FX_002-5CS23	PVC	MAT9761515	(4 G 16.0)C	0.93 23.5	7.5	<b>1</b>	
	PUR	MAT9861547	(4 G 16.0)C	0.87 22.0	10	<b>6</b>	
	TPE	MAT9961515	(4 G 16.0)C	0.91 23.0	7.5	<b>2</b>	
6FX_002-5CS54	PVC	MAT9761508	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9861537	(4 G 6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9961508	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
6FX_002-5CS64	PVC	MAT9761511	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861540	(4 G 10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9961511	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	


**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable</b> 							
6FX_002-5CA05	PVC	MAT9151001	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861515	(4G1.5)C	0.37 9.5	10	<b>6</b>	
	TPE	MAT9051001	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
6FX_002-5CA15	PVC	MAT9151002	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861516	(4G2.5)C	0.45 11.5	10	<b>6</b>	
	TPE	MAT9051002	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	

<b>Extension cable</b> 							
6FX_002-5CA28	PVC	MAT9151003	(4 G 1.5)C	0.41 10.5	7.5	<b>1</b>	
	PUR	MAT9861517	(4G1.5)C	0.37 9.5	10	<b>6</b>	
	TPE	MAT9051003	(4 G 1.5)C	0.37 9.5	7.5	<b>2</b>	
6FX_002-5CA38	PVC	MAT9151004	(4 G 2.5)C	0.47 12.0	7.5	<b>1</b>	
	PUR	MAT9861518	(4G2.5)C	0.45 11.5	10	<b>6</b>	
	TPE	MAT9051004	(4 G 2.5)C	0.45 11.5	7.5	<b>2</b>	
6FX_002-5CA48	PVC	MAT9151005	(4 G 4.0)C	0.53 13.5	7.5	<b>1</b>	
	PUR	MAT9861519	(4G4.0)C	0.49 12.5	10	<b>6</b>	
	TPE	MAT9051005	(4 G 4.0)C	0.53 13.5	7.5	<b>2</b>	
6FX_002-5CA58	PVC	MAT9151006	(4 G 6.0)C	0.63 16.0	7.5	<b>1</b>	
	PUR	MAT9861520	(4G6.0)C	0.57 14.5	10	<b>6</b>	
	TPE	MAT9051006	(4 G 6.0)C	0.63 16.0	7.5	<b>2</b>	
6FX_002-5CA68	PVC	MAT9151007	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861521	(4G10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9051007	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	

<b>Extension cable</b> 							
6FX_002-5CX18	PVC	MAT9151009	(4 G 10.0)C	0.81 20.5	7.5	<b>1</b>	
	PUR	MAT9861522	(4G10.0)C	0.71 18.0	10	<b>6</b>	
	TPE	MAT9051009	(4 G 10.0)C	0.77 19.5	7.5	<b>2</b>	
6FX_002-5CX28	PVC	MAT9151008	(4 G 16.0)C	0.93 23.5	7.5	<b>1</b>	
	PUR	MAT9861523	(4G16.0)C	0.87 22.0	10	<b>6</b>	
	TPE	MAT9051008	(4 G 16.0)C	0.91 23.0	7.5	<b>2</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



6FX_002-5DA01	PVC	MAT9751501	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9160001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9851501	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9060001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
6FX_002-5DA11	PVC	MAT9751502	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9160002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851502	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9060002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>

## Basic cable



6FX_002-5DA21	PVC	MAT9751503	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9160003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9851503	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9060003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
6FX_002-5DA31	PVC	MAT9751504	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9160004	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851504	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9060004	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
6FX_002-5DA41	PVC	MAT9751505	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9160005	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9851505	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9060005	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
6FX_002-5DA51	PVC	MAT9751506	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9160006	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9851506	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>6</b>
	PUR	MAT9060006	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
6FX_002-5DA61	PVC	MAT9160007	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9851507	(4G10.0+(2x1.5)C)C	0.81	20.5	10	<b>6</b>
	PUR	MAT9060007	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Basic cable



6FX_002-5DA23	PVC	MAT9160008	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9851508	(4G16.0+(2x1.5)C)C	0.94	24.0	10	<b>6</b>
	PUR	MAT9060008	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
6FX_002-5DA33	PVC	MAT9160009	(4G25.0+(2x1.5)C)C	1.18	30.0	7.5	<b>5</b>
	PUR	MAT9060009	(4G25.0+(2x1.5)C)C	1.12	28.5	7.5	<b>7</b>
6FX_002-5DA43	PVC	MAT9160010	(4G35.0+(2x1.5)C)C	1.32	33.5	7.5	<b>5</b>
	PUR	MAT9060010	(4G35.0+(2x1.5)C)C	1.28	32.5	7.5	<b>7</b>

## Basic cable





6FX_002-5DG01	PVC	MAT9751529	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9751528	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9851541	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9851540	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
6FX_002-5DG11	PVC	MAT9751533	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9751532	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851545	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
6FX_002-5DG13	PUR	MAT9851544	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
	PVC	MAT9751541	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9851555	(4G10.0+(2x1.5)C)C	0.81	20.5	10	<b>6</b>
6FX_002-5DG21	PUR	MAT9851554	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
	PVC	MAT9751531	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9751530	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
6FX_002-5DG23	PUR	MAT9851543	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9851542	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
	PUR	MAT9851557	(4G16.0+(2x1.5)C)C	0.94	24.0	10	<b>6</b>
6FX_002-5DG31	PUR	MAT9851556	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
	PVC	MAT9751535	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9751534	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
6FX_002-5DG33	PUR	MAT9851547	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9851546	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
	PUR	MAT9851558	(4G25.0+(2x1.5)C)C	1.12	28.5	7.5	<b>7</b>
6FX_002-5DG41	PVC	MAT9751537	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9751536	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9851549	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9851548	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket



\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-5DG43	PUR	MAT9851559	(4G35.0+(2x1.5)C)C	1.28 32.5	7.5	<b>7</b>	
6FX_002-5DG51	PVC	MAT9751539	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751538	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851551	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851550	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DG61	PVC	MAT9751540	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851553	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851552	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
<b>Basic cable</b> 							
6FX_002-5DS01	PVC	MAT9751507	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9160020	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851509	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9060020	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DS11	PVC	MAT9751516	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751515	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851523	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851522	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DS13	PVC	MAT9751517	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851525	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851524	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
6FX_002-5DS21	PVC	MAT9751508	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9160021	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851510	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9060021	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DS41	PVC	MAT9751522	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751521	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851531	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851530	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
6FX_002-5DS51	PVC	MAT9751524	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751523	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851535	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851534	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DS61	PVC	MAT9160022	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851511	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9060022	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-5DS23	PUR	MAT9851527	(4G16.0+(2x1.5)C)C	0.94 24.0	10	<b>6</b>	
	PUR	MAT9851526	(4G16.0+(2x1.5)C)C	0.96 24.5	7.5	<b>7</b>	
6FX_002-5DS33	PUR	MAT9851532	(4G25.0+(2x1.5)C)C	1.12 28.5	7.5	<b>7</b>	
6FX_002-5DS43	PUR	MAT9851533	(4G35.0+(2x1.5)C)C	1.28 32.5	7.5	<b>7</b>	
<b>Basic cable</b> 							
6FX_002-5DS54	PVC	MAT9751526	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751525	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851537	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851536	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DS64	PVC	MAT9751527	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851539	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851538	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Extension cable



6FX_002-5DA05	PVC	MAT9751509	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9161001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9851512	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9061001	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
6FX_002-5DA15	PVC	MAT9751510	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9161002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851513	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9061002	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>

## Extension cable



6FX_002-5DA28	PVC	MAT9751511	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>4</b>
	PVC	MAT9161003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>5</b>
	PUR	MAT9851514	(4G1.5+(2x1.5)C)C	0.47	12.0	10	<b>6</b>
	PUR	MAT9061003	(4G1.5+(2x1.5)C)C	0.51	13.0	7.5	<b>7</b>
6FX_002-5DA38	PVC	MAT9751512	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>4</b>
	PVC	MAT9161004	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>5</b>
	PUR	MAT9851515	(4G2.5+(2x1.5)C)C	0.53	13.5	10	<b>6</b>
	PUR	MAT9061004	(4G2.5+(2x1.5)C)C	0.57	14.5	7.5	<b>7</b>
6FX_002-5DA48	PVC	MAT9751513	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>4</b>
	PVC	MAT9161005	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>5</b>
	PUR	MAT9851516	(4G4.0+(2x1.5)C)C	0.59	15.0	10	<b>6</b>
	PUR	MAT9061005	(4G4.0+(2x1.5)C)C	0.63	16.0	7.5	<b>7</b>
6FX_002-5DA58	PVC	MAT9751514	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>4</b>
	PVC	MAT9161006	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>5</b>
	PUR	MAT9851517	(4G6.0+(2x1.5)C)C	0.65	16.5	10	<b>6</b>
	PUR	MAT9061006	(4G6.0+(2x1.5)C)C	0.71	18.0	7.5	<b>7</b>
6FX_002-5DA68	PVC	MAT9161007	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9851518	(4G10.0+(2x1.5)C)C	0.81	20.5	10	<b>6</b>
	PUR	MAT9061007	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

## Extension cable



6FX_002-5DX18	PVC	MAT9161011	(4G10.0+(2x1.5)C)C	0.89	22.5	7.5	<b>5</b>
	PUR	MAT9851520	(4G10.0+(2x1.5)C)C	0.81	20.5	10	<b>6</b>
	PUR	MAT9061011	(4G10.0+(2x1.5)C)C	0.83	21.0	7.5	<b>7</b>
6FX_002-5DX28	PVC	MAT9161008	(4G16.0+(2x1.5)C)C	0.98	25.0	7.5	<b>5</b>
	PUR	MAT9851519	(4G16.0+(2x1.5)C)C	0.94	24.0	10	<b>6</b>
	PUR	MAT9061008	(4G16.0+(2x1.5)C)C	0.96	24.5	7.5	<b>7</b>
6FX_002-5DX38	PVC	MAT9161009	(4G25.0+(2x1.5)C)C	1.18	30.0	7.5	<b>5</b>
	PUR	MAT9061009	(4G25.0+(2x1.5)C)C	1.12	28.5	7.5	<b>7</b>
6FX_002-5DX48	PVC	MAT9161010	(4G35.0+(2x1.5)C)C	1.32	33.5	7.5	<b>5</b>
	PUR	MAT9061010	(4G35.0+(2x1.5)C)C	1.28	32.5	7.5	<b>7</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable SpeedTec



6FX_002-5CG10	PVC	MAT9761540	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861583	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861584	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961540	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CG12	PVC	MAT9761541	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861586	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861585	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961541	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CG22	PVC	MAT9761542	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861587	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861588	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961542	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CG32	PVC	MAT9761543	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861590	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861589	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961543	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CG42	PVC	MAT9761544	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861591	(4G4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961544	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CG52	PVC	MAT9761545	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861592	(4G6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961545	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CG62	PVC	MAT9761546	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861593	(4G10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961546	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

### Basic cable SpeedTec



6FX_002-5CN01	PVC	MAT9761531	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861570	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861571	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961531	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CN11	PVC	MAT9761532	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861573	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861572	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
6FX_002-5CN21	TPE	MAT9961532	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
	PVC	MAT9761533	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861574	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861575	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961533	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	

### Basic cable SpeedTec



6FX_002-5CN31	PVC	MAT9761534	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861577	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861576	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961534	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CN41	PVC	MAT9761535	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861578	(4G4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961535	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CN51	PVC	MAT9761536	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861579	(4G6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961536	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CN61	PVC	MAT9761538	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861581	(4G10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961538	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

### Basic cable SpeedTec



6FX_002-5CN54	PVC	MAT9761537	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861580	(4G6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961537	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CN64	PVC	MAT9761539	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861582	(4G10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961539	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d]	Cable Page 540-543
<b>Basic cable SpeedTec</b>							
6FX_002-5CQ01	PVC	MAT9761524	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861559	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861560	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961524	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CQ11	PVC	MAT9761525	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861562	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861561	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961525	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CQ21	PVC	MAT9761526	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861563	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861564	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961526	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CQ31	PVC	MAT9761527	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861566	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861565	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961527	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CQ41	PVC	MAT9761528	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861567	(4G4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961528	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CQ51	PVC	MAT9761529	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861568	(4G6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961529	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CQ61	PVC	MAT9761530	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT9861569	(4G10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961530	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Power cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm		R min. [x d]	Cable Page 540-543
<b>Extension cable SpeedTec</b>							
6FX_002-5CN05	PVC	MAT9761522	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861555	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861556	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961522	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CQ15	PVC	MAT9761523	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861558	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861557	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961523	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CQ28	PVC	MAT9761547	(4 G 1.5)C	0.41	10.5	7.5	<b>1</b>
	PUR	MAT9861594	(4G1.5)C	0.41	10.5	7.5	<b>7</b>
	PUR	MAT9861595	(4G1.5)C	0.37	9.5	10	<b>6</b>
	TPE	MAT9961547	(4 G 1.5)C	0.37	9.5	7.5	<b>2</b>
6FX_002-5CQ38	PVC	MAT9761548	(4 G 2.5)C	0.47	12.0	7.5	<b>1</b>
	PUR	MAT9861597	(4G2.5)C	0.45	11.5	10	<b>6</b>
	PUR	MAT9861596	(4G2.5)C	0.49	12.5	7.5	<b>7</b>
	TPE	MAT9961548	(4 G 2.5)C	0.45	11.5	7.5	<b>2</b>
6FX_002-5CQ48	PVC	MAT9761549	(4 G 4.0)C	0.53	13.5	7.5	<b>1</b>
	PUR	MAT9861598	(4G4.0)C	0.49	12.5	10	<b>6</b>
	TPE	MAT9961549	(4 G 4.0)C	0.53	13.5	7.5	<b>2</b>
6FX_002-5CQ58	PVC	MAT9761550	(4 G 6.0)C	0.63	16.0	7.5	<b>1</b>
	PUR	MAT9861599	(4G6.0)C	0.57	14.5	10	<b>6</b>
	TPE	MAT9961550	(4 G 6.0)C	0.63	16.0	7.5	<b>2</b>
6FX_002-5CQ68	PVC	MAT9761551	(4 G 10.0)C	0.81	20.5	7.5	<b>1</b>
	PUR	MAT98615100	(4G10.0)C	0.71	18.0	10	<b>6</b>
	TPE	MAT9961551	(4 G 10.0)C	0.77	19.5	7.5	<b>2</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable SpeedTec</b>							
6FX_002-5DG10	PVC	MAT9751589	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751588	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT98515107	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT98515106	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DG12	PVC	MAT9751593	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751592	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT98515111	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT98515110	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DG22	PVC	MAT9751591	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751590	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT98515109	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT98515108	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DG32	PVC	MAT9751595	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751594	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT98515113	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT98515112	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DG42	PVC	MAT9751597	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751596	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT98515115	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT98515114	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
6FX_002-5DG52	PVC	MAT9751599	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751598	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT98515117	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT98515116	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DG62	PVC	MAT97515100	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT98515119	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT98515118	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Seleaction chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable SpeedTec</b>							
6FX_002-5DN01	PVC	MAT9751571	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751570	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851589	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851588	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DN11	PVC	MAT9751573	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751572	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851591	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851590	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DN21	PVC	MAT9751575	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751574	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851593	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851592	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DN31	PVC	MAT9751577	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751576	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851595	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851594	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DN41	PVC	MAT9751579	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751578	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851597	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851596	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
6FX_002-5DN51	PVC	MAT9751581	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751580	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851599	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851598	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DN61	PVC	MAT9751584	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT98515103	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT98515102	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	
<b>Basic cable SpeedTec</b>							
6FX_002-5DN54	PVC	MAT9751583	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751582	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT98515101	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT98515100	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DN64	PVC	MAT9751586	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT98515105	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT98515104	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	



**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
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G = with green-yellow earth core x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable SpeedTec</b>							
6FX_002-5DQ01	PVC	MAT9751557	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751556	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851575	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851574	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DQ11	PVC	MAT9751559	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751558	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851577	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851576	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DQ21	PVC	MAT9751561	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751560	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851579	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851578	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DQ31	PVC	MAT9751563	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751562	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851581	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851580	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DQ41	PVC	MAT9751565	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751564	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851583	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851582	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
6FX_002-5DQ51	PVC	MAT9751567	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751566	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851585	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851584	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DQ61	PVC	MAT9751568	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851587	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851586	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
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G = with green-yellow earth core    x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543




Siemens Servo cables		PVC/PUR			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable SpeedTec</b>							
6FX_002-5DN05	PVC	MAT9751544	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751543	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851561	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851560	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DN15	PVC	MAT9751546	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751545	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851563	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851562	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DQ28	PVC	MAT9751548	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>4</b>	
	PVC	MAT9751547	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>5</b>	
	PUR	MAT9851565	(4G1.5+(2x1.5)C)C	0.47 12.0	10	<b>6</b>	
	PUR	MAT9851564	(4G1.5+(2x1.5)C)C	0.51 13.0	7.5	<b>7</b>	
6FX_002-5DQ38	PVC	MAT9751550	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>4</b>	
	PVC	MAT9751549	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>5</b>	
	PUR	MAT9851567	(4G2.5+(2x1.5)C)C	0.53 13.5	10	<b>6</b>	
	PUR	MAT9851566	(4G2.5+(2x1.5)C)C	0.57 14.5	7.5	<b>7</b>	
6FX_002-5DQ48	PVC	MAT9751552	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>4</b>	
	PVC	MAT9751551	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>5</b>	
	PUR	MAT9851569	(4G4.0+(2x1.5)C)C	0.59 15.0	10	<b>6</b>	
	PUR	MAT9851568	(4G4.0+(2x1.5)C)C	0.63 16.0	7.5	<b>7</b>	
6FX_002-5DQ58	PVC	MAT9751554	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>4</b>	
	PVC	MAT9751553	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>5</b>	
	PUR	MAT9851571	(4G6.0+(2x1.5)C)C	0.65 16.5	10	<b>6</b>	
	PUR	MAT9851570	(4G6.0+(2x1.5)C)C	0.71 18.0	7.5	<b>7</b>	
6FX_002-5DQ68	PVC	MAT9751555	(4G10.0+(2x1.5)C)C	0.89 22.5	7.5	<b>5</b>	
	PUR	MAT9851573	(4G10.0+(2x1.5)C)C	0.81 20.5	10	<b>6</b>	
	PUR	MAT9851572	(4G10.0+(2x1.5)C)C	0.83 21.0	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket




\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Signal cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-2AD00	PVC	MAT9170001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841501	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070001	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CA11	PVC	MAT9170002	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841502	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070002	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CA15	PVC	MAT9170003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841503	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070003	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2CA31	PVC	MAT9170004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841504	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9070004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5))C	0.43 11.0	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2CA51	PVC	MAT9170005	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841505	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070005	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CA71	PVC	MAT9170006	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841506	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070006	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket





\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Signal cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-2CB31	PUR	MAT9841507	(14x0.25)C	0.33 8.5	10	<b>13</b>	
	TPE	MAT9070007	(12 x 0.25)C	0.37 9.5	5	<b>25</b>	
6FX_002-2CB51	PVC	MAT9170008	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841508	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070008	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CC11	PVC	MAT9170009	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841509	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070009	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CD01	PVC	MAT9170010	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841510	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070010	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2CF01	PVC	MAT9170021	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841519	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070021	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CF02	PVC	MAT9170011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841511	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070011	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CG00	PVC	MAT9170012	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841512	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070012	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2CH00	PVC	MAT9170013	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841513	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070013	(3x(2x0.14)C+(4x0.14)+(2x0.5))C	0.41 10.5	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

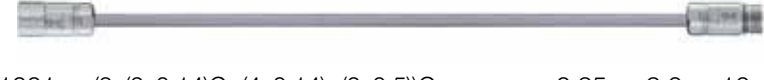
\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543

Siemens Signal cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Basic cable</b> 							
6FX_002-2CK00	PVC	MAT9170014	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT9841514	(3x(2x0.14)C+2x(0.5)C)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070014	(3x(2x0.14)C+2x(0.5)C)C	0.39 10.0	7.5	<b>11</b>	
6FX_002-2CL00	PVC	MAT9170015	(3x(2x0.14)C+2x(0.5)C)C	0.37 9.5	10	<b>8</b>	
	PUR	MAT9841515	(3x(2x0.14)C+2x(0.5)C)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070015	(3x(2x0.14)C+2x(0.5)C)C	0.39 10.0	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2AH00	PVC	MAT9170018	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841518	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9070018	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2EQ00	PVC	MAT9170016	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841516	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9070016	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>11</b>	
<b>Basic cable</b> 							
6FX_002-2EQ10	PVC	MAT9170017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841517	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9070017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core

# Siemens | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selecaion chart 1 to 32** ► page 540-543




Siemens Signal cables		PVC/PUR/TPE			Info *		
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter in. mm	R min. [x d]	Cable Page 540-543	
<b>Extension cable</b> 							
6FX_002-2AD04	PVC	MAT9171001	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841520	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071001	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2AH04	PVC	MAT9171018	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841529	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071018	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CA34	PVC	MAT9171004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841523	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9071004	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>11</b>	
6FX_002-2CA54	PVC	MAT9171003	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841522	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071003	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CB34	PUR	MAT9841525	(14x0.25)C	0.33 8.5	10	<b>13</b>	
	TPE	MAT9071007	(12 x 0.25)C	0.37 9.5	5	<b>25</b>	
6FX_002-2CB54	PVC	MAT9171002	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841521	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071002	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CC14	PVC	MAT9171009	(4x(2x0.34)+4x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841526	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071009	(4x(2x0.34)+4x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2CF04	PVC	MAT9171011	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.35 9.0	10	<b>8</b>	
	PUR	MAT9841527	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>10</b>	
	TPE	MAT9071011	(3x(2x0.14)C+(4x0.14)+(2x0.5)C	0.41 10.5	7.5	<b>11</b>	
6FX_002-2EQ14	PVC	MAT9171017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.39 10.0	10	<b>8</b>	
	PUR	MAT9841528	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>10</b>	
	TPE	MAT9071017	(3x(2x0.14)C+(4x0.14)+(4x0.25)+(2x0.5)C	0.43 11.0	7.5	<b>11</b>	

Note: The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core x = without earth core



# Siemens | harnessed drive cables ... optionally with PVC/PUR jacket



\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Siemens Signal cables		PVC/PUR					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable</b> 							
6FX_002-1DC00	PVC	MAT9741506	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>8</b>
	PUR	MAT9070032	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
	PUR	MAT9841532	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>9</b>
6FX_002-2DC10	PVC	MAT9741504	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>8</b>
	PUR	MAT9841530	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>9</b>
	PUR	MAT9070030	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
6FX_002-2DC20	PVC	MAT9741505	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>8</b>
	PUR	MAT9070031	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
	PUR	MAT9841531	(2x(2x0.15)+(2x0.38))C	0.30	7.5	10	<b>9</b>
<b>Basic cable</b> 							
i6FX8002-2DC30-1AD0(3m)	PUR	MAT9841534	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1AF0(5m)	PUR	MAT9841535	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1BA0(10m)	PUR	MAT9841536	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1BF0(15m)	PUR	MAT9841537	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1CA0(20m)	PUR	MAT9841538	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1CF0(25m)	PUR	MAT9841539	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC30-1DA0(30m)	PUR	MAT9841540	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
<b>Extension cable</b> 							
i6FX8002-2DC34-1AD0(3m)	PUR	MAT9841541	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1AF0(5m)	PUR	MAT9841542	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1BA0(10m)	PUR	MAT9841543	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1BF0(15m)	PUR	MAT9841544	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1CA0(20m)	PUR	MAT9841545	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1CF0(25m)	PUR	MAT9841546	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>
i6FX8002-2DC34-1DA0(30m)	PUR	MAT9841547	(2x(2x0.20)+(2x0.38))C	0.30	7.5	7.5	<b>10</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Stöber | harnessed drive cables ... optionally with PVC/PUR jacket

\* Technical information on the cable quality: **Selecaction chart 1 to 32** ► page 540-543

Stöber Servo cables		PVC/PUR					Info *	
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543	
				in.	mm			
<b>Basic cable iMDS5000 &amp; iMDS4000</b> 								
Size 1 Motor 1.0mm²	PVC	MAT9751601	(4G1.5+2x(2x0.75))C	0.53	13.5	10	<b>4</b>	
	PVC	MAT9430001	(4G1.0+2x(2x0.75))C	0.53	13.5	7.5	<b>5</b>	
	PUR	MAT9851601	(4G1.0+2x(2x0.75))C	0.51	13.0	10	<b>6</b>	
Size 1 Motor 1.5mm²	PUR	MAT9420001	(4G1.0+2x(2x0.75))C	0.53	13.5	7.5	<b>7</b>	
	PVC	MAT9751602	(4G1.5+2x(2x0.75))C	0.53	13.5	10	<b>4</b>	
	PVC	MAT9430002	(4G1.5+2x(2x0.75))C	0.57	14.5	7.5	<b>5</b>	
Size 1 Motor 2.5mm²	PUR	MAT9851602	(4G1.5+2x(2x0.75))C	0.53	13.5	10	<b>6</b>	
	PUR	MAT9420002	(4G1.5+2x(2x0.75))C	0.55	14.0	7.5	<b>7</b>	
	PVC	MAT9751603	(4G2.5+2x(2x1.5))C	0.63	16.0	10	<b>4</b>	
Size 1 Motor 4.0mm²	PVC	MAT9430003	(4G2.5+2x(2x1.5))C	0.67	17.0	7.5	<b>5</b>	
	PUR	MAT9851603	(4G2.5+2x(2x1.5))C	0.63	16.0	10	<b>6</b>	
	PUR	MAT9420003	(4G2.5+2x(2x1.5))C	0.67	17.0	7.5	<b>7</b>	
Size 1 Motor 4.0mm²	PVC	MAT9751604	(4G4.0+2x(2x1.5))C	0.67	17.0	10	<b>4</b>	
	PVC	MAT9430004	(4G4.0+2x(2x1.5))C	0.73	18.5	7.5	<b>5</b>	
	PUR	MAT9851604	(4G4.0+2x(2x1.5))C	0.67	17.0	10	<b>6</b>	
Size 1 Motor 4.0mm²	PUR	MAT9420004	(4G4.0+2x(2x1.5))C	0.71	18.0	7.5	<b>7</b>	
	<b>Basic cable iMDS5000 &amp; iMDS4000</b> 							
	Size 1.5 Motor 4.0mm²	PVC	MAT9751605	(4G4.0+2x(2x1.5))C	0.67	17.0	10	<b>4</b>
PVC		MAT9430005	(4G4.0+2x(2x1.5))C	0.73	18.5	7.5	<b>5</b>	
PUR		MAT9851605	(4G4.0+2x(2x1.5))C	0.67	17.0	10	<b>6</b>	
Size 1.5 Motor 6.0mm²	PUR	MAT9420005	(4G4.0+2x(2x1.5))C	0.71	18.0	7.5	<b>7</b>	
	PVC	MAT9751606	(4G6.0+2x(2x1.5))C	0.73	18.5	10	<b>4</b>	
	PVC	MAT9430006	(4G6.0+2x(2x1.5))C	0.85	21.5	7.5	<b>5</b>	
Size 1.5 Motor 6.0mm²	PUR	MAT9851606	(4G6.0+2x(2x1.5))C	0.73	18.5	10	<b>6</b>	
	PUR	MAT9420006	(4G6.0+2x(2x1.5))C	0.79	20.0	7.5	<b>7</b>	
	PVC	MAT9751607	(4G10.0+2x(2x1.5))C	0.94	24.0	7.5	<b>5</b>	
Size 1.5 Motor 10.0mm²	PUR	MAT9851607	(4G10.0+2x(2x1.5))C	0.89	22.5	10	<b>6</b>	
	PUR	MAT9420007	(4G10.0+2x(2x1.5))C	0.93	23.5	7.5	<b>7</b>	

**Note:** The mentioned outer diameters are maximum values. Images exemplary.  
igus® gladly pre-harnesses the cable according to your technical specifications.  
G = with green-yellow earth core    x = without earth core

# Stöber | harnessed drive cables ... optionally with PVC/PUR/TPE jacket

\* Technical information on the cable quality: **Selection chart 1 to 32** ► page 540-543

Stöber Encoder cables		PVC/PUR/TPE					Info *
Manufacturer Part No.	Jacket material	igus® Part No.	Number of Conductors and rated cross section	Outer diameter		R min. [x d]	Cable Page 540-543
				in.	mm		
<b>Basic cable iSDS4000</b>							
Encoder ED/ EK iSDS4000	PVC	MAT9431001	(4x(2x0.34)+4x0.5)C	0.35	9.0	10	<b>8</b>
	PUR	MAT9841601	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>10</b>
	PUR	MAT9941601	(4x(2x0.34)+4x0.5)C	0.35	9.0	10	<b>9</b>
	TPE	MAT9421001	(4x(2x0.34)+4x0.5)C	0.41	10.5	7.5	<b>11</b>
<b>Basic cable iSDS4000</b>							
Resolver iSDS4000	PVC	MAT9431003	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841603	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9421003	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
<b>Basic cable iSDS4000</b>							
Encoder ES iSDS4000	PUR	MAT9841602	((4x0.25)+3x(2x0.25+2x0.5))C	0.43	11.0	7.5	<b>10</b>
	PUR	MAT9941602	((4x0.25)+3x(2x0.25+2x0.5))C	0.37	9.5	10	<b>9</b>
	TPE	MAT9421002	((4x0.25)+3x(2x0.25+2x0.5))C	0.43	11.0	7.5	<b>11</b>
<b>Basic cable iMDS5000</b>							
Encoder iMDS5000	PVC	MAT9431004	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841604	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9421004	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
Encoder HTL	PVC	MAT9431006	(4x(2x0.25)+2x0.5)C	0.31	8.0	10	<b>8</b>
	PUR	MAT9841606	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>10</b>
	TPE	MAT9421006	(4x(2x0.25)+2x0.5)C	0.37	9.5	7.5	<b>11</b>
<b>Basic cable iMDS5000</b>							
Resolver iMDS5000	PVC	MAT9431005	(3x(2x0.25)C)C	0.35	9.0	10	<b>8</b>
	PUR	MAT9841605	(3x(2x0.25))C	0.30	7.5	7.5	<b>10</b>
	TPE	MAT9421005	(3x(2x0.25))C	0.30	7.5	7.5	<b>11</b>

**Note:** The mentioned outer diameters are maximum values. Images exemplary.

igus® gladly pre-harnesses the cable according to your technical specifications.

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





igus® connectors		Type	Page
<b>Connectors</b>			
	<b>SERIE A 623</b>	<b>Signal connector</b> M23 standard [6 to 19-pole] Standard/Speedtec	700
	<b>SERIE B 923</b>	<b>Power connector</b> Size 1 [6, 8 and 9-pole] Standard/Speedtec	705
	<b>SERIE C 940</b>	<b>Power connector</b> Size 1,5 [6, 8 and 9-pole] Standard/Speedtec	710
	<b>SERIE D 958</b>	<b>Power connector</b> Size 3 [6 and 8-pole] Standard	713
	<b>Springtec 615/915</b>	<b>Signal and power connector</b> Signal- [12-pole] and power connector [9-pole] Plastic- / Metal clamping ring	715
	<b>SERIE M17 617/917</b>	<b>Signal and power connector</b> M17 signal- [17-pole] and power connector [4 to 9-pole] Standard/Speedtec	723
	<b>SERIE S 623</b>	<b>Power connector</b> [1-pole] Standard	728
	<b>Connector sets</b> Individual connector sets from a quantity of 1		730
	<b>Tools and accessories</b>		732
	<b>SUB-D</b>	<b>Signal connector</b> SUB-D standard [9 to 44-pole]	734
	<b>Yamaichi Y-CONKIT</b>		738
	<b>HARTING</b>	<b>Connector sets</b> Standard and Premium	740
	<b>Glands</b>		744



## Signal connector M23 standard [6 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 insulation body

- 6, 7, [8+1], 9, 10, 12, 16, 17, [16+3]

### Technical data of the series A

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

### Electrical data signal 6 to 12-pole

Max. continuous nominal current	10 A
Nominal voltage	160 V (AC/DC)
Test voltage (L-L)	2500 V
Contact resistance	< 5 mΩ
Insertion cycles	> 50

### Electrical data signal 16 to 19-pole

Max. continuous nominal current	9 A
Nominal voltage	125 V (AC/DC)
Test voltage (L-L)	2500 V
Contact resistance	< 5 mΩ
Insertion cycles	> 50

### Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

### Used materials

Housing	Zinc die-casting/brass, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated



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## Signal connector [9 to 19-pole] (Metal work, EMC shielding)

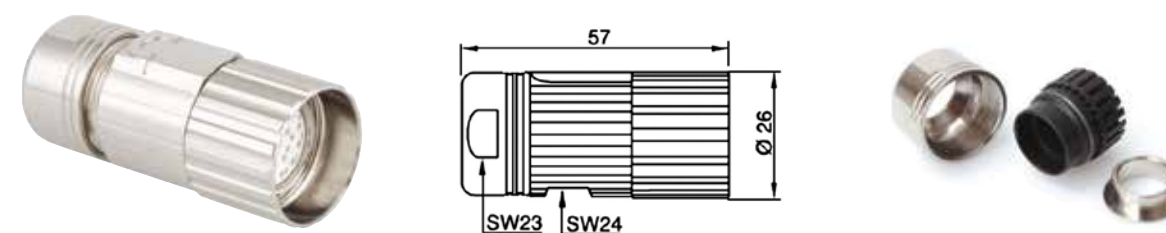


Image exemplary.

Part no.	Insulation body	Female crimping, slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping, slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT0179600	P type [8+1]-pole 3 coding slots	8x1.0	0.14-1.0	1x2.0	0.35-2.5	9.0-13,2	C+1+4
MAT0179601	E type 12-pole 3 coding slots	12x1.0	0.14-1.0			9.0-13,2	A
MAT0179602	P type 16-pole 1 coding slot	16x1.0	0.14-1.0			9.0-13,2	A
MAT0179603	P type 17-pole 3 coding slots	17x1.0	0.14-1.0			9.0-13,2	A
MAT0179604	P type [16+3]-pole 1 coding slot	16x1.0	0.14-1.0	3x1.5	0.14-1.0	9.0-13,2	C+1+5

## Lead-through with union nut (Metal construction, axial seal)



Image exemplary.

The lead-through is harnessed with above-mentioned contacts and insulation bodies. The technical specifications apply accordingly. A cable clamp is not required by virtue of the design.

Part no.	Number of poles	Crimping tool + insert
MAT0179605	[8+1]	C+1+4
MAT0179606	12	A
MAT0179607	16	A
MAT0179608	17	A
MAT0179609	[16+3]	C+1+5

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

## Signal connector [9 to 19-pole] (Metal work, EMC shielding)

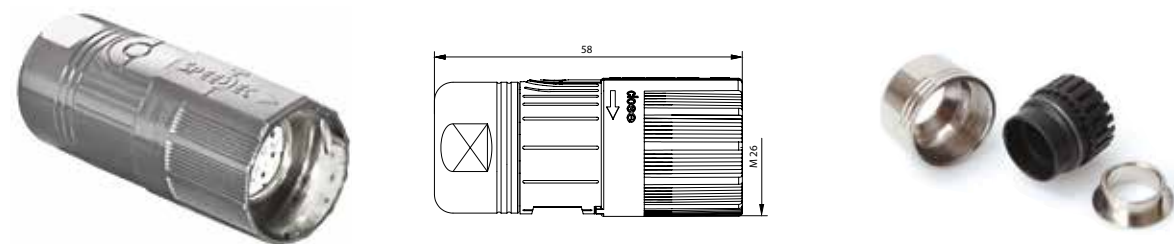


Image exemplary.

Part no.	Insulation body	Female crimping, slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping, slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01723461</b>	P type [8+1]-pole 3 coding slots	8x1.0	0.14-1.0	1x2.0	0.35-2.5	9.0-13,2	C+1+4
<b>MAT01723462</b>	E type 12-pole 3 coding slots	12x1.0	0.14-1.0			9.0-13,2	A
<b>MAT01723463</b>	P type 16-pole 1 coding slot	16x1.0	0.14-1.0			9.0-13,2	A
<b>MAT01723464</b>	P type 17-pole 3 coding slots	17x1.0	0.14-1.0			9.0-13,2	A
<b>MAT01723465</b>	P type [16+3]-pole 1 coding slot	16x1.0	0.14-1.0	3x1.5	0.14-1.0	9.0-13,2	C+1+5

## Lead-through with union nut (Metal construction, axial seal)

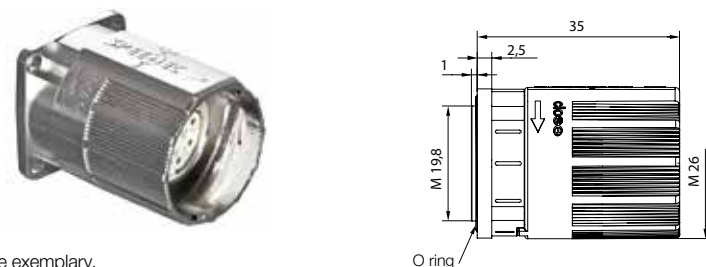


Image exemplary.

The lead-through is harnessed with above-mentioned contacts and insulation bodies. The technical specifications apply accordingly. A cable clamp is not required by virtue of the design.

Part no.	Number of poles	Crimping tool + insert
<b>MAT01723466</b>	[8+1]	C+1+4
<b>MAT01723467</b>	12	A
<b>MAT01723468</b>	16	A
<b>MAT01723469</b>	17	A
<b>MAT01723470</b>	[16+3]	C+1+5

Crimping tools and inserts ► page 732



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## Signal coupling [9 to 19-pole] (Metal work, EMC shielding)

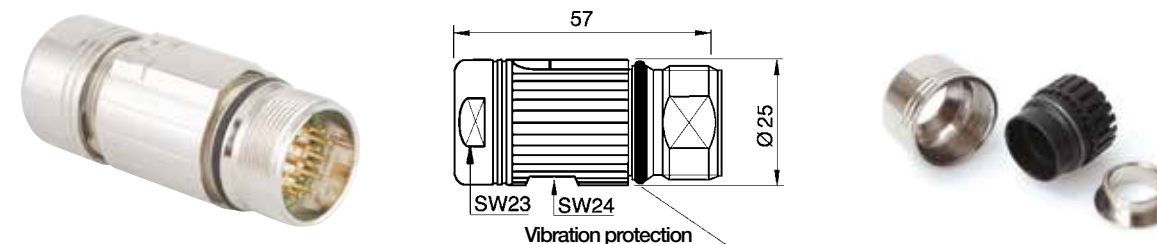


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT0179610</b>	E type [8+1]-pole 3 coding slots	8x1.0	0.14-1.0	1x2.0	0.35-2.5	9.0-13,2	C+1+4
<b>MAT0179611</b>	P type 12-pole 3 coding slots	12x1.0	0.14-1.0			9.0-13,2	A
<b>MAT0179612</b>	E type 16-pole 1 coding slot	16x1.0	0.14-1.0			9.0-13,2	A
<b>MAT0179613</b>	E type 17-pole 3 coding slots	17x1.0	0.14-1.0			9.0-13,2	A
<b>MAT0179614</b>	E type [16+3]-pole 1 coding slot	16x1.0	0.14-1.0	3x1.5	0.14-1.0	9.0-13,2	C+1+5

## Coupling with central attachment (Metal construction, EMC shielding)



Image exemplary.

The coupling with central attachment is harnessed with the above-mentioned contacts, insulation bodies and cable clamp. The technical specifications apply accordingly.

Part no.	Number of poles	Crimping tool + insert
<b>MAT0179615</b>	[8+1]	C+1+4
<b>MAT0179616</b>	12	A
<b>MAT0179617</b>	16	A
<b>MAT0179618</b>	17	A
<b>MAT0179619</b>	[16+3]	C+1+5

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

## Signal coupling [9 to 19-pole] (Metal work, EMC shielding)

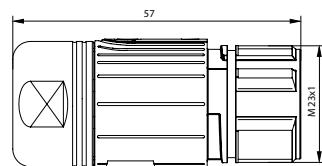
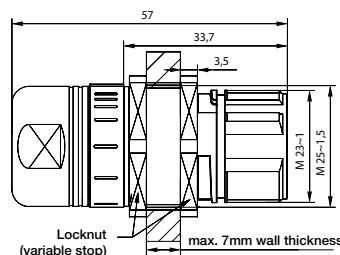


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT01723471	E type [8+1]-pole 3 coding slots	8x1.0	0.14-1.0	1x2.0	0.35-2.5	9.0-13,2	C+1+4
MAT01723472	P type 12-pole 3 coding slots	12x1.0	0.14-1.0			9.0-13,2	A
MAT01723473	E type 16-pole 1 coding slot	16x1.0	0.14-1.0			9.0-13,2	A
MAT01723474	E type 17-pole 3 coding slots	17x1.0	0.14-1.0			9.0-13,2	A
MAT01723475	E type [16+3]-pole 1 coding slot	16x1.0	0.14-1.0	3x1.5	0.14-1.0	9.0-13,2	C+1+5

## Coupling with central attachment (Metal construction, EMC shielding)



The coupling with central attachment is harnessed with the above-mentioned contacts, insulation bodies and cable clamp. The technical specifications apply accordingly.

Image exemplary.

Part no.	Number of poles	Crimping tool + insert
MAT01723476	[8+1]	C+1+4
MAT01723477	12	A
MAT01723478	16	A
MAT01723479	17	A
MAT01723480	[16+3]	C+1+5

Crimping tools and inserts ► page 732


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Power connector  
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 insulation body

- 6, 8, 9

## Technical data of the series B

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

## Electrical data power 6-pole

Max. continuous nominal current	max. 28 A (6-pole) max. 30 A (8/9-pole)
Nominal voltage	630 V (AC/DC)
Testing voltage (L-L)	6000 V
Contact resistance	< 3 mΩ
Insertion cycles	> 50

## Electrical data Signal 8 and 9-pole

Max. continuous nominal current	10 A
Nominal voltage	250 V (AC/DC)
Testing voltage (L-L)	2500 V
Contact resistance	< 5 mΩ
Insertion cycles	> 50

## Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

## Used materials

Housing	Zinc die-casting,/brass, nickel-plated (*)
Coupling nut	Brass, nickel-plated
Insulation body	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated

\*optional: Stainless steel



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)



Power connector [6 to 9-pole], nickel-plated (Metal work, EMC shielding)

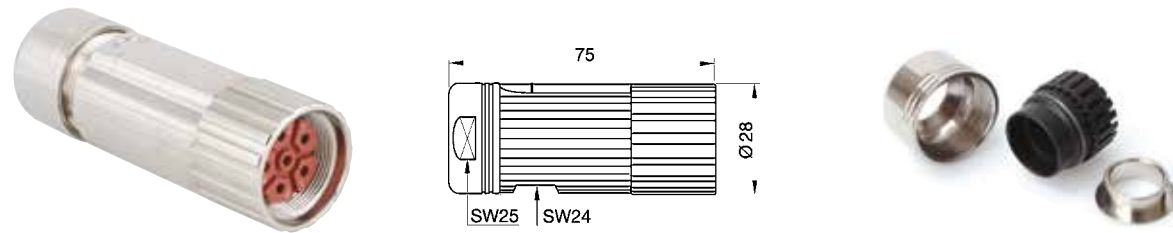


Image exemplary.

Part no.	Insulation body	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT0179620	P type 6-pole	6x2.0	0.35-2.5			9.5-14.5	C+2
MAT0179621	P type 8-pole	4x2.0	0.35-2.5	4x1.0	0.14-1.0	9.5-14.5	C+1+2
MAT0179622	P type 9-pole	4x2.0	0.35-2.5	5x1.0	0.14-1.0	9.5-14.5	C+1+2

Lead-through with union nut (Metal construction, axial seal)

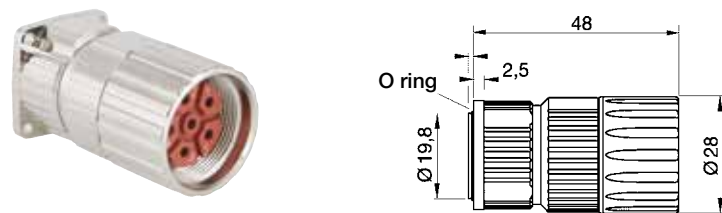


Image exemplary.

Part no.	Number of poles	Crimping tool + insert
MAT0178406	6	C+2
MAT0175661	8	C+1+2
MAT0179033	9	C+1+2

The lead-through is harnessed with above-mentioned contacts and insulation bodies. The technical specifications apply accordingly. A cable clamp is not required by virtue of the design.

Crimping tools and inserts ► page 732



Power connector [6 to 9-pole], nickel-plated (Metal work, EMC shielding)

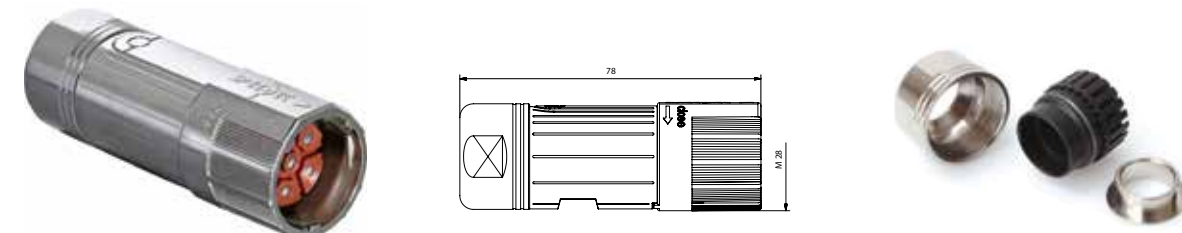


Image exemplary.

Part no.	Insulation body	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT01723481	P type 6-pole	6x2.0	0.35-2.5			9.5-14.5	C+2
MAT01723482	P type 8-pole	4x2.0	0.35-2.5	4x1.0	0.14-1.0	9.5-14.5	C+1+2
MAT01723483	P type 9-pole	4x2.0	0.35-2.5	5x1.0	0.14-1.0	9.5-14.5	C+1+2

Lead-through with union nut (Metal construction, axial seal)

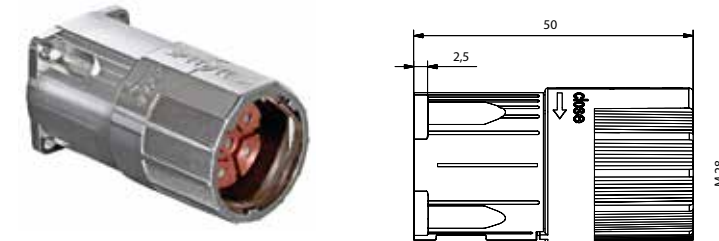


Image exemplary.

Part no.	Number of poles	Crimping tool + insert
MAT01723484	6	C+2
MAT01723485	8	C+1+2
MAT01723486	9	C+1+2

The lead-through is harnessed with above-mentioned contacts and insulation bodies. The technical specifications apply accordingly. A cable clamp is not required by virtue of the design.

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► www.chainflex.com

Power coupling [6 to 9-pole] nickel-plated (Metal work, EMC shielding)

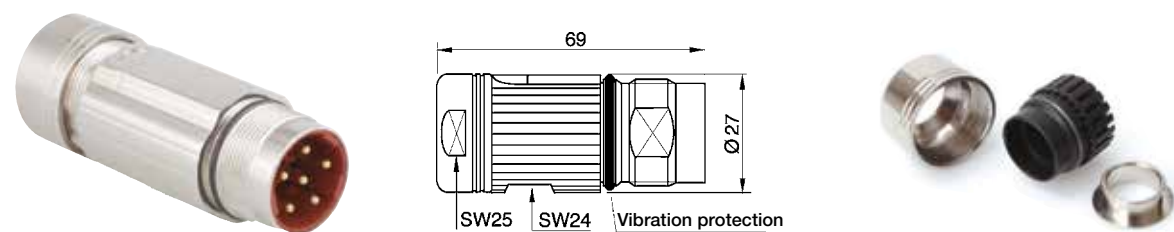


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT0179623	E type 6-pole	6x2.0	0.35-2.5			9.5-14.5	C+3
MAT0179624	E type 8-pole	4x2.0	0.35-2.5	4x1.0	0.14-1.0	9.5-14.5	C+3
MAT0179625	E type 9-pole	4x2.0	0.35-2.5	5x1.0	0.14-1.0	9.5-14.5	C+3

Coupling with central attachment (Metal construction, EMC shielding)

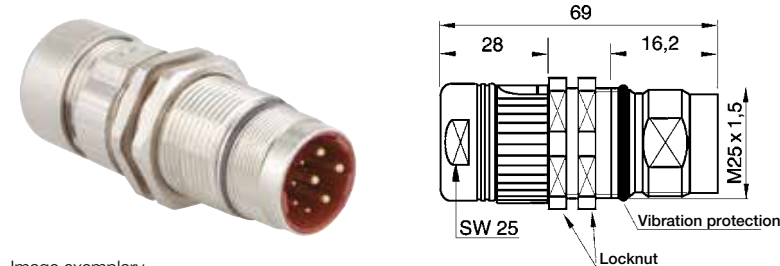


Image exemplary.

Part no.	Number of poles	Crimping tool + insert
MAT0179626	6	C+3
MAT0179627	8	C+3
MAT0179628	9	C+3

The coupling with central attachment is harnessed with the above-mentioned contacts, insulation bodies and cable clamp. The technical specifications apply accordingly.

Crimping tools and inserts ► page 732



Power coupling [6 to 9-pole] nickel-plated (Metal work, EMC shielding)

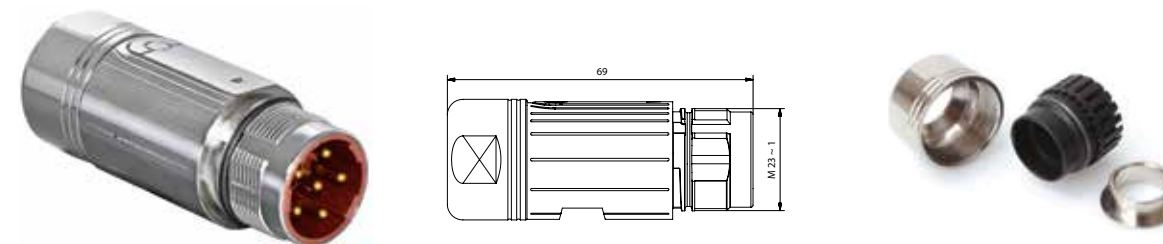


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT01723487	E type 6-pole	6x2.0	0.35-2.5			9.5-14.5	C+3
MAT01723488	E type 8-pole	4x2.0	0.35-2.5	4x1.0	0.14-1.0	9.5-14.5	C+3
MAT01723489	E type 9-pole	4x2.0	0.35-2.5	5x1.0	0.14-1.0	9.5-14.5	C+3

Coupling with central attachment (Metal construction, EMC shielding)

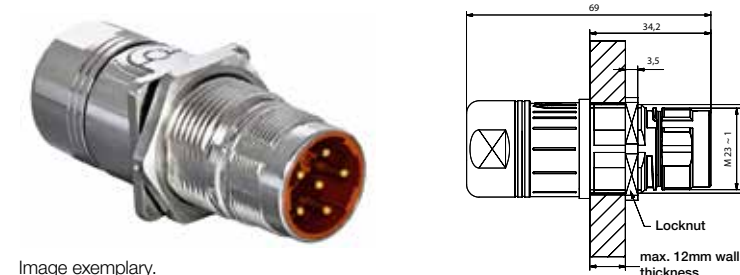


Image exemplary.

Part no.	Number of poles	Crimping tool + insert
MAT01723490	6	C+3
MAT01723491	8	C+3
MAT01723492	9	C+3

The coupling with central attachment is harnessed with the above-mentioned contacts, insulation bodies and cable clamp. The technical specifications apply accordingly.

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► www.chainflex.com

## Power connector 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 insulation body

- 6, 8, 9

### Technical data of the series C

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

### Electrical data power 6 to 19-pole

Max. continuous nominal current	75 A
Nominal voltage	630 V (AC/DC)
Testing voltage (L-L)	6000 V
Contact resistance	< 1 mΩ
Insertion cycles	> 50

### Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

### Used materials

Housing	Magnesium die-casting/Aluminium
Coupling nut	Brass, nickel-plated
Insulation body	PA 6.6/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM/HNBR
Clamping ring	Brass, nickel-plated



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## Power connector [6 to 9-pole], nickel-plated (Metal work, EMC shielding)

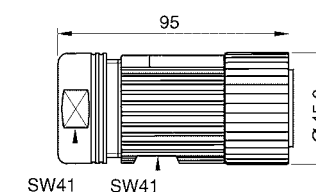


Image exemplary.

Part no.	Insulation body	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT0179629	P type 6-pole	4x3.6	1.5-10.0	2x2.0	0.5-2.5	9.0-16.5	D+9 + C+2
MAT0179630	P type 8-pole	4x3.6	1.5-10.0	4x2.0	0.5-2.5	9.0-16.5	D+9 + C+2
MAT0179631	P type 9-pole	4x3.6	1.5-10.0	5x2.0	0.5-2.5	9.0-16.5	D+9 + C+2

## Power coupling [6 to 9-pole] nickel-plated (Metal work, EMC shielding)

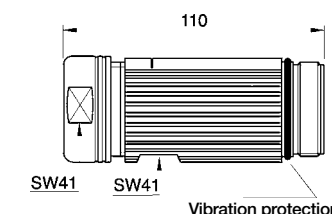


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
MAT0179632	E type 6-pole	4x3.6	1.5-10.0	2x2.0	0.5-2.5	9.0-16.5	D+9 + C+3
MAT0179633	E type 8-pole	4x3.6	1.5-10.0	4x2.0	0.5-2.5	9.0-16.5	D+9 + C+3
MAT0179634	E type 9-pole	4x3.6	1.5-10.0	5x2.0	0.5-2.5	9.0-16.5	D+9 + C+3

Crimping tools and inserts ► page 732

... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)



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## Power connector [6 to 9-pole], nickel-plated (Metal work, EMC shielding)

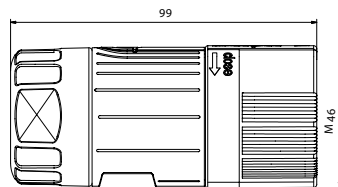


Image exemplary.

Part no.	Insulation body	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	HC-female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert	
<b>MAT01723501</b>	P type 6-pole		4x3.6	1.5-10.0	2x2.0	0.5-2.5	9.0-16.5	D+9 + C+2
<b>MAT01723502</b>	P type 8-pole		4x3.6	1.5-10.0	4x2.0	0.5-2.5	9.0-16.5	D+9 + C+2
<b>MAT01723503</b>	P type 9-pole		4x3.6	1.5-10.0	5x2.0	0.5-2.5	9.0-16.5	D+9 + C+2

## Power coupling [6 to 9-pole], nickel-plated (Metal work, EMC shielding)

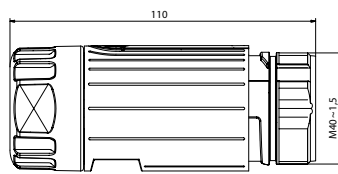


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert	
<b>MAT01723504</b>	E type 6-pole		4x3.6	1.5-10.0	2x2.0	0.5-2.5	9.0-16.5	D+9 + C+3
<b>MAT01723505</b>	E type 8-pole		4x3.6	1.5-10.0	4x2.0	0.5-2.5	9.0-16.5	D+9 + C+3
<b>MAT01723506</b>	E type 9-pole		4x3.6	1.5-10.0	5x2.0	0.5-2.5	9.0-16.5	D+9 + C+3

Crimping tools and inserts ► page 732


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Power connector  
Size 3 [6 and 9-pole]

## Types

- Connector
- Coupling
- Straight installation box with flange
- Angled installation box with flange

## Number of poles insulation body

- 6, 8

## Technical data of the series D

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

## Electrical data power 6 and 8-pole

Max. continuous nominal current	max. 150 A
Nominal voltage	630 V (AC/DC)
Testing voltage (L-L)	6000 V
Contact resistance	< 90 mΩ
Insertion cycles	> 50

## Electrical data Signal contacts

Max. continuous nominal current	12 A
Nominal voltage	250 V (AC/DC)
Testing voltage (L-L)	4000 V
Contact resistance	< 5 mΩ
Insertion cycles	> 50

## Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

## Used materials

Housing	Zinc die-casting, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body	PA 6.6/PBT, UL 94/V0
Contacts	Brass, silver-/gold-plated
Seals	FPM
Clamping ring	Aluminium, nickel-plated



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

## Power connector [6 and 8-pole] nickel-plated (Metal work, EMC shielding)

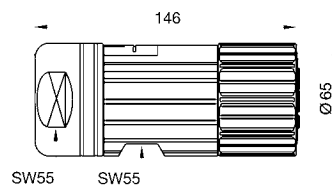


Image exemplary.

Part no.	Insulation body	Female crimping (power) [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping (signal) [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179635	P type 6-pole	4x10.0	10.0	2x1.6	1.5	17.0-36.0	E+10 + C+7
MAT0179636	P type 8-pole	4x10.0	10.0	4x1.6	1.5	17.0-36.0	E+10 + C+7

## Power coupling [6 and 8-pole] nickel-plated (Metal work, EMC shielding)

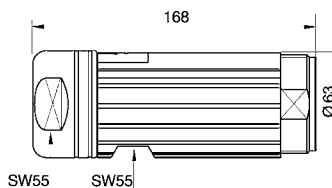


Image exemplary.

Part no.	Insulation body	Female crimping (power) [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping (signal) [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179637	E type 6-pole	4x10.0	10.0	2x1.6	1.5	17.0-36.0	E+10 + C+8
MAT0179638	E type 8-pole	4x10.0	10.0	4x1.6	1.5	17.0-36.0	E+10 + C+8

\* Crown clamp

Crimping tools and inserts ► page 732


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## Series 615 Signal- [12-pole] and Series 915 power connection [9-pole] – Plastic- / metal clamping ring

## Types

- Connector, plastic or metal clamping ring
- Coupling, plastic or metal clamping ring

## Number of poles insulation body

- Signal: 12
- Power: 9

## Technical data of the Series 615/915 Springtec

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

## Electrical data signal 12-pole

Max. continuous nominal current	3.6 A
Nominal voltage	63 V (AC /DC)
Testing voltage (L-L)	1500 V
Contact resistance	< 15 mΩ
Insertion cycles	> 50

## Electrical data Power 9-pole

Max. continuous nominal current	2.5 mm <sup>2</sup> : 20 A
Nominal voltage	630 V (AC /DC)
Testing voltage (L-L)	6000 V
Contact resistance	< 5 mΩ
Insertion cycles	> 50

## Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

## Used materials

Housing	Zinc die-casting,/brass, nickel-plated and plastic coated
Union nut	PA modif., 30% Gf.
Insulation body	PA/PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM / EPDM
Clamping ring	Brass, nickel-plated / PA modif., 30% Gf.

... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

Signal connector [12-pole], (Plastic clamping ring, EMC-shielding)

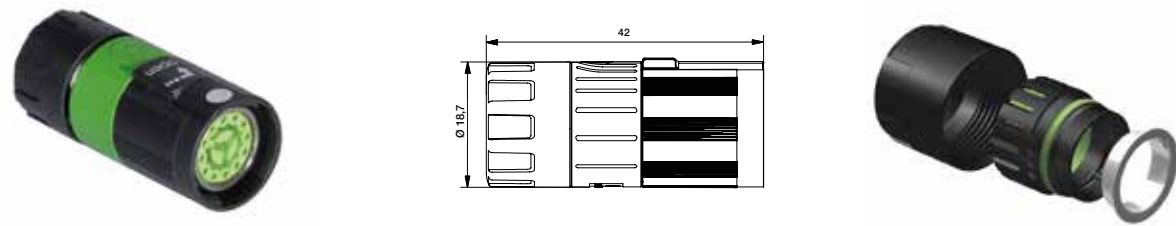


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730633</b>	P type 12-pole 	12 x 1 	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730634</b>	P type 12-pole 	12 x 1 	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730635</b>	P type 12-pole 	12 x 1 	0.1-0.75	8.5-10.5	C + 14

Signal connector [12-pole], nickel-plated (Metal clamping ring, EMC-shielding)

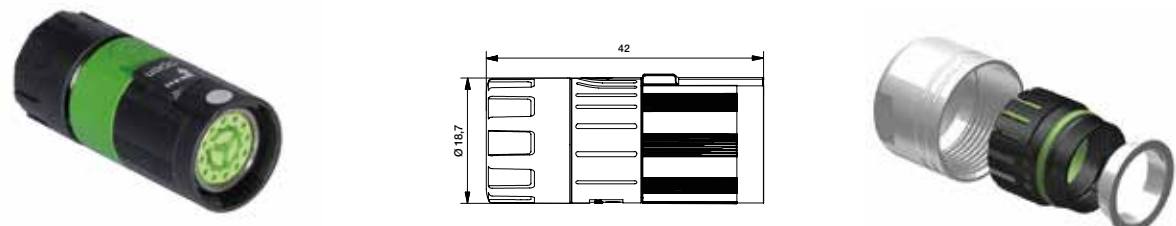


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730636</b>	P type 12-pole 	12 x 1 	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730637</b>	P type 12-pole 	12 x 1 	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730638</b>	P type 12-pole 	12 x 1 	0.1-0.75	8.5-10.5	C + 14

Crimping tools and inserts ► page 732



Signal connector [12-pole], nickel-plated (Metal clamping ring, EMC-shielding)

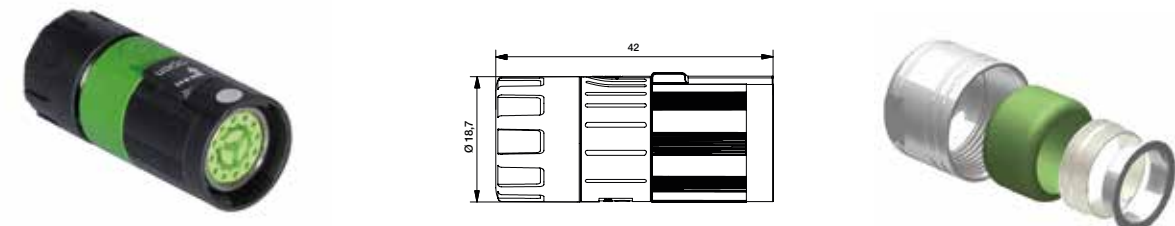




Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730639</b>	P type 12-pole 	12 x 1 	0.1-0.75	10.5-12.5	C + 14

Signal coupling [12-pole], (Plastic clamping ring, EMC-shielding)

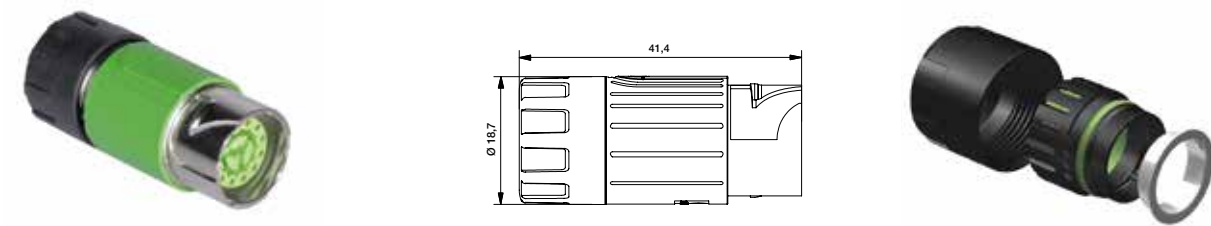


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730640</b>	E type 12-pole 	12 x 1 	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730641</b>	E type 12-pole 	12 x 1 	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730642</b>	E type 12-pole 	12 x 1 	0.1-0.75	8.5-10.5	C + 14

Crimping tools and inserts ► page 732



... no minimum order quantity ...

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Signal coupling [12-pole], nickel-plated (Metal clamping ring, EMC-shielding)

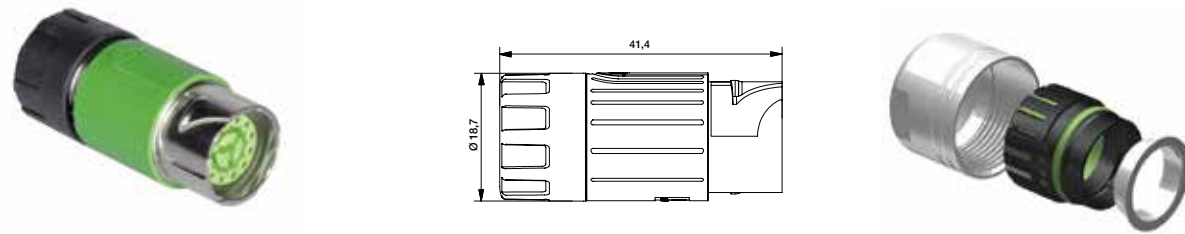


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730643</b>	E type 12-pole	12 x 1	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730644</b>	E type 12-pole	12 x 1	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730645</b>	E type 12-pole	12 x 1	0.1-0.75	8.5-10.5	C + 14

Signal coupling [12-pole], nickel-plated (Metal clamping ring, EMC-shielding)

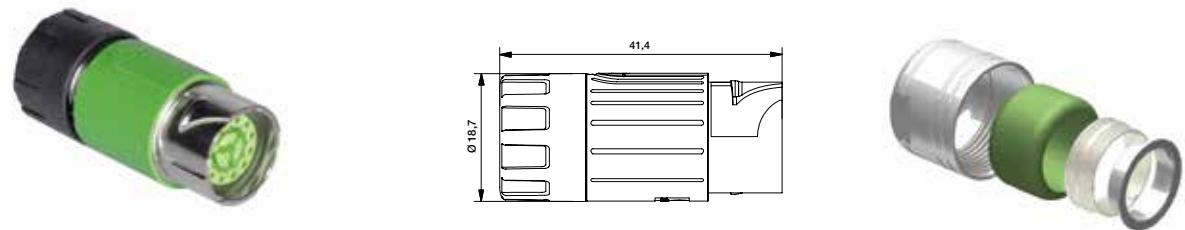


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730646</b>	E type 12-pole	12 x 1	0.1-0.75	10.5-12.5	C + 14

Power connector [9-pole], (Plastic clamping ring, EMC-shielding)

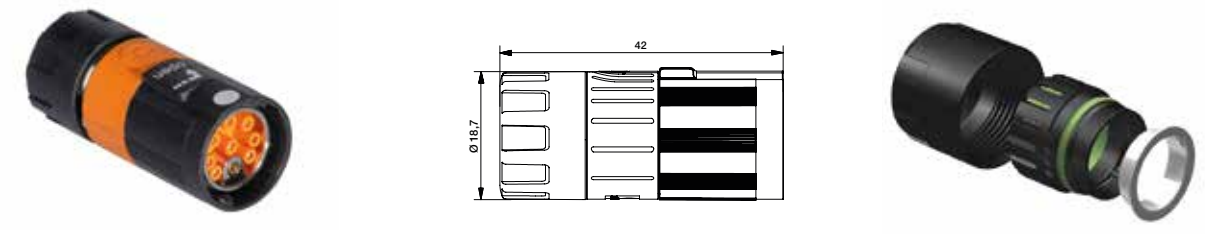


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730647</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730648</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730649</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	8.5-10.5	C + 14

Power connector [9-pole], nickel-plated (Metal clamping ring, EMC-shielding)

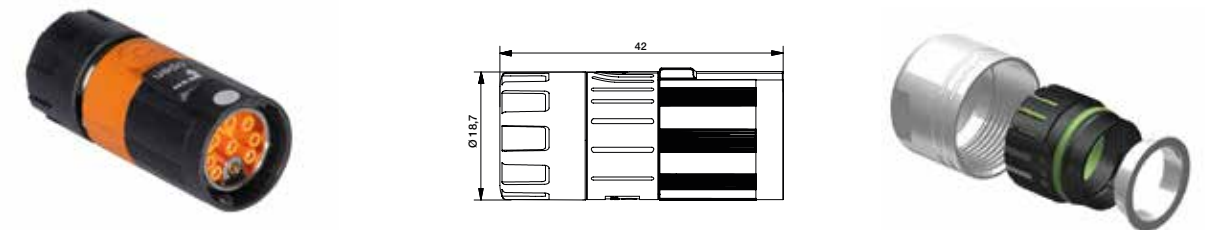


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730650</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730651</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730652</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	8.5-10.5	C + 14

Crimping tools and inserts ► page 732



Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

Power connector [9-pole], nickel-plated (Metal clamping ring, EMC-shielding)

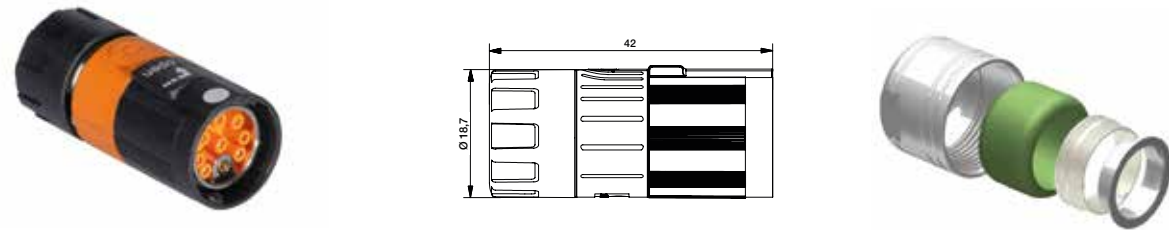


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730653</b>	P type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	10.5-12.5	C + 14

Power coupling [9-pole], (Plastic clamping ring, EMC-shielding)

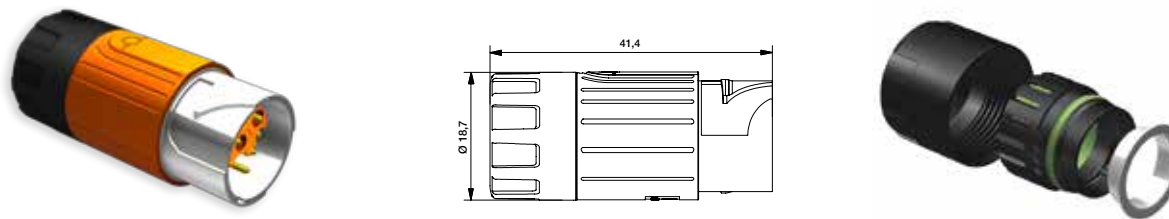


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730654</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730655</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730656</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	8.5-10.5	C + 14

Power coupling [9-pole], nickel-plated (Metal clamping ring, EMC-shielding)

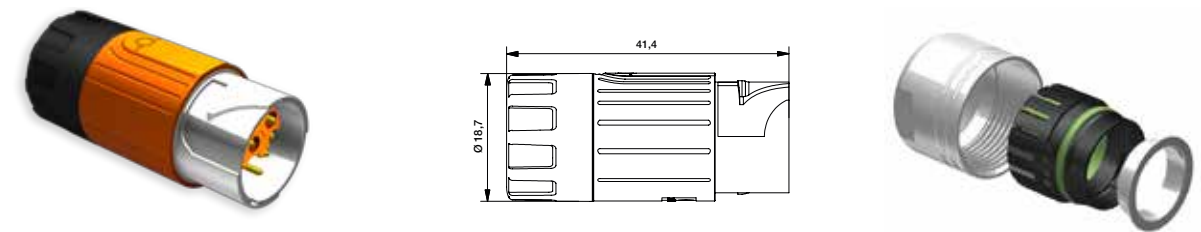


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730657</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	4.5-6.5	C + 14
<b>MAT01730658</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	6.5-8.5	C + 14
<b>MAT01730659</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	8.5-10.5	C + 14

Power coupling [9-pole], nickel-plated (Metal clamping ring, EMC-shielding)

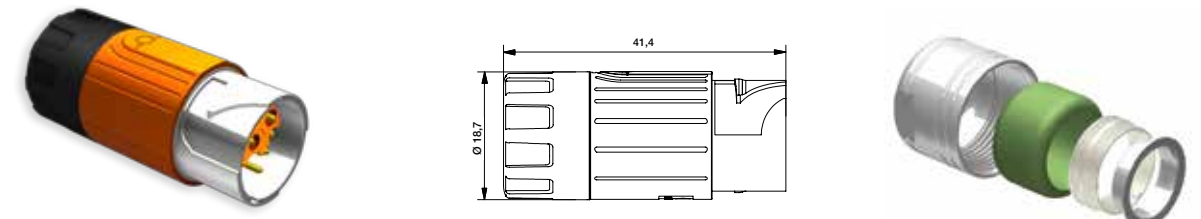


Image exemplary.

Part no.	Insulation body	Male crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area [mm]	Crimping tool + insert
<b>MAT01730660</b>	E type 9-pole	4 x 1	0.5-0.15	5 x 1	0.1-0.75	10.5-12.5	C + 14

Crimping tools and inserts ► page 732



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Crimping tools and inserts ► page 732



... no minimum order quantity ...

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**Signal and power connector**  
**M17 signal- [17-pole] and power connector [4 to 9-pole]**

**Types**

- Connector, standard and push-pull version
- Coupling, standard or with central attachment
- Straight installation box with flange
- Installation 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 insulation body**

- Signal: 17
- Power: 4, 7, 9

**Technical data of the series M17**

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

**Electrical data signal 17-pole**

Max. continuous nominal current	3.6 A
Nominal voltage	63 V (AC /DC)
Testing voltage (L-L)	1500 V
Contact resistance	< 15 mΩ
Insertion cycles	> 50

**Electrical data Power 4 and 7-pole**

	<b>4-pole</b>	<b>7-pole</b>
Max. continuous nominal current	2.5 mm <sup>2</sup> : 20 A	1 mm <sup>2</sup> : 10 A 1,5 mm <sup>2</sup> : 14 A
Nominal voltage	630 V (AC /DC)	630 V (AC /DC)
Testing voltage (L-L)	6000 V	6000 V
Contact resistance	< 5 mΩ	< 5 mΩ
Insertion cycles	> 50	> 50

**Electrical data Power 9-pole**

Max. continuous nominal current	Signal: 3.6 A	Power: 14 A
Nominal voltage	Signal: 63 V [AC/DC ]	Power: 630 V [AC/DC ]
Testing voltage (L-L)	Signal: 1500 V	Power: 6000 V
Contact resistance	Signal: < 15 mΩ	Power: < 5 mΩ
Insertion cycles	> 50	

**Data according to VDE 0110/EN 61984, Clause 6.19.2.2**

Degree of soiling	3
Over-voltage category	III
Max. installation height	6 562 ft (2 000 m)

**Used materials**

Housing	Zinc die-casting/brass, nickel-plated
Union nut	Brass, nickel-plated
Insulation body	PBT, UL 94/V0
Contacts	Brass, gold-plated
Seals	FPM
Clamping ring	Brass, nickel-plated



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

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)



Signal connector [17-pole], nickel-plated (Metal work, EMC-shielding)

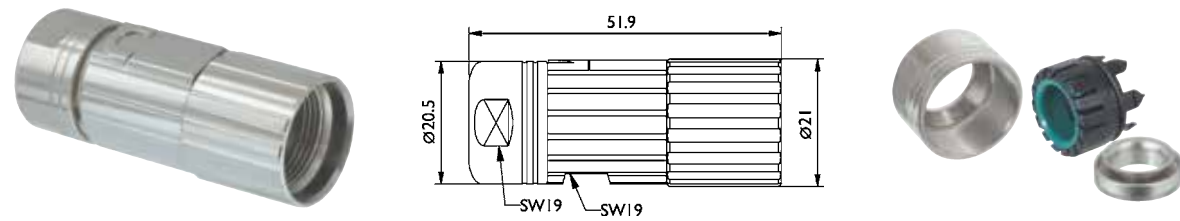


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area** [mm]	Crimping tool + insert
<b>MAT0179639</b>	P type 17-pole	17x0.6	0.14-0.5			9.5-12.0	B

Power connector [4 to 9-pole], nickel-plated (Metal work, EMC shielding)

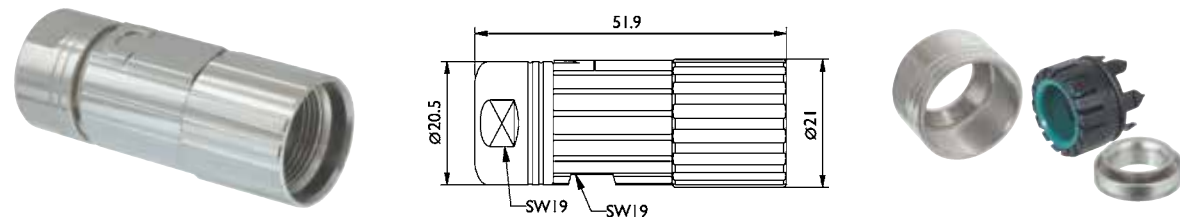


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area** [mm]	Crimping tool + insert
<b>MAT0179641</b>	P type 4-pole	4x1.5	0.35-2.5	1x2.0	0.35-2.5	9.5-12.0	C+1
<b>MAT0179643</b>	P type 7-pole	7x1.0*	0.5-1.5			9.5-12.0	A
<b>MAT0179645</b>	P type 9-pole	4x1.0*	0.5-1.5	5x0.6	0.14-0.5	9.5-12.0	A+B

\* HC female crimping  
\*\* Crown clamp

Crimping tools and inserts ► page 732



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Signal connector [17-pole], nickel-plated (Metal work, EMC-shielding)

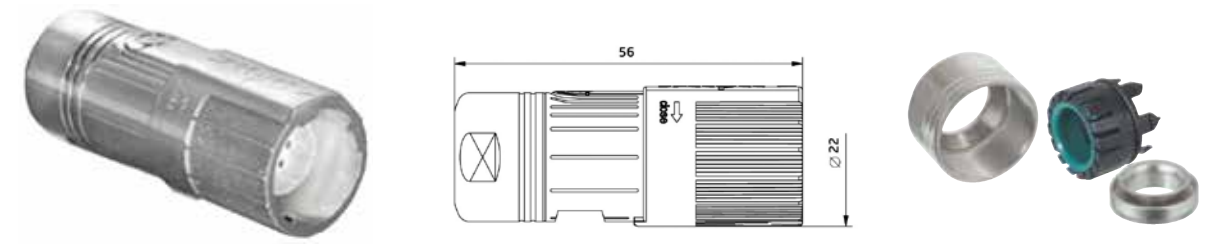


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area** [mm]	Crimping tool + insert
<b>MAT01723493</b>	P type 17-pole	17x0.6	0.14-0.5			9.5-12.0	B

Power connector [4 to 9-pole], nickel-plated (Metal work, EMC shielding)

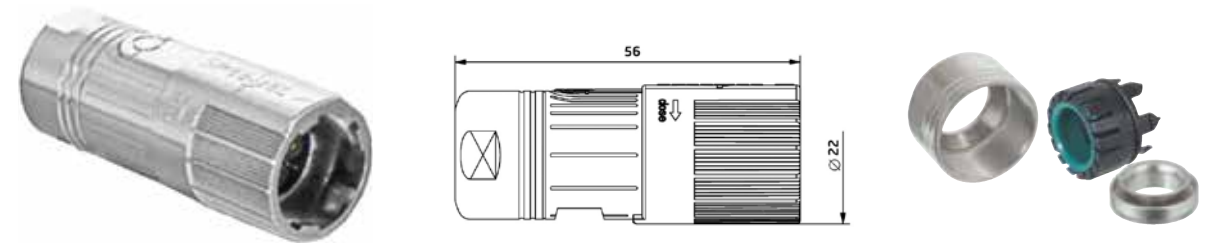


Image exemplary.

Part no.	Insulation body	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping slitted [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area** [mm]	Crimping tool + insert
<b>MAT01723495</b>	P type 4-pole	4x1.5	0.35-2.5	1x2.0	0.35-2.5	9.5-12.0	C+1
<b>MAT01723497</b>	P type 7-pole	7x1.0*	0.5-1.5			9.5-12.0	A
<b>MAT01723499</b>	P type 9-pole	4x1.0*	0.5-1.5	5x0.6	0.14-0.5	9.5-12.0	A+B

\* HC female crimping  
\*\* Crown clamp

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

Signal coupling [17-pole], nickel-plated (Metal work, EMC shielding)

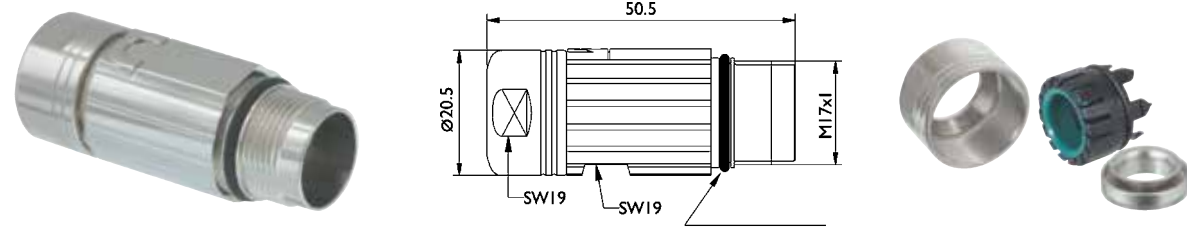


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179640	E type 17-pole	17x0.6	0.14-0.5			9.5-12.0	B

Power coupling [4 to 9-pole], nickel-plated (Metal work, EMC shielding)

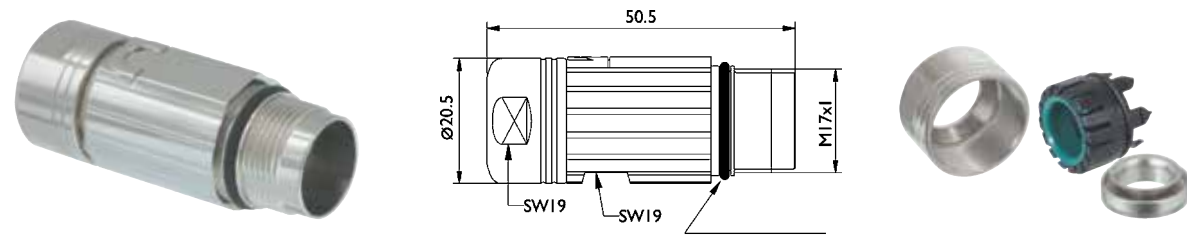


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179642	E type 4-pole	4x1.5	0.35-2.5	1x2.0	0.35-2.5	9.5-12.0	C+6
MAT0179644	E type 7-pole	7x1.0	0.5-1.5			9.5-12.0	A
MAT0179646	E type 9-pole	4x1.0	0.5-1.5	5x0.6	0.14-0.5	9.5-12.0	A+B

\* Crown clamp

Crimping tools and inserts ► page 732



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Signal coupling [17-pole], nickel-plated (Metal work, EMC shielding)

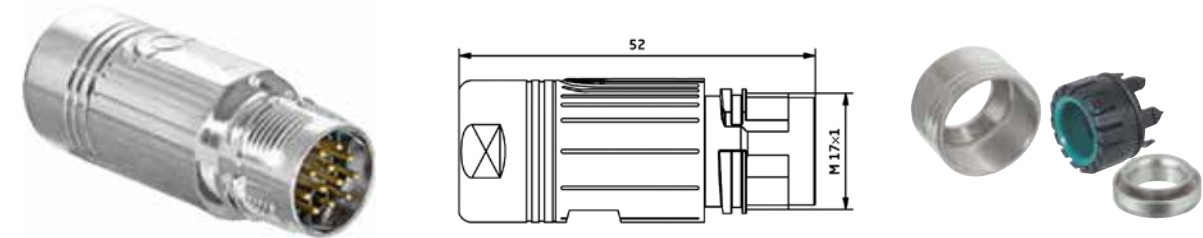


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT01723494	E type 17-pole	17x0.6	0.14-0.5			9.5-12.0	B

Power coupling [4 to 9-pole], nickel-plated (Metal work, EMC shielding)

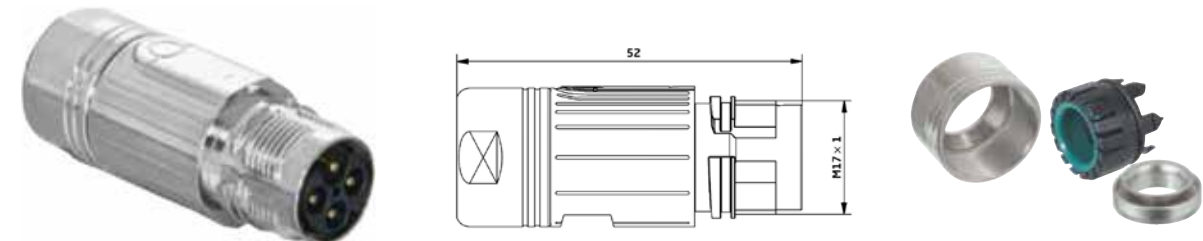


Image exemplary.

Part no.	Insulation body	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Male crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT01723496	E type 4-pole	4x1.5	0.35-2.5	1x2.0	0.35-2.5	9.5-12.0	C+6
MAT01723498	E type 7-pole	7x1.0	0.5-1.5			9.5-12.0	A
MAT01723500	E type 9-pole	4x1.0	0.5-1.5	5x0.6	0.14-0.5	9.5-12.0	A+B

\* Crown clamp

Crimping tools and inserts ► page 732



... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

## Power connector 1-pole

### Types

- Connector
- Coupling
- Straight installation box with flange

### Number of poles insulation body

- 1

### Technical data of the series S

Temperature range	-4 °F to +266 °F (-20 °C to +130 °C)
Protection class	IP 66/67 [plugged]

### Electrical data Power

Nominal voltage	630 V (AC/DC)
Testing voltage (L-L)	8000 V
Contact resistance	< 110 mΩ
Insertion cycles	> 50
Max. continuous nominal current	
At terminal cross-section 10 mm <sup>2</sup> :	80 A
At terminal cross-section 16 mm <sup>2</sup> :	100 A
At terminal cross-section 25 mm <sup>2</sup> :	130 A
At terminal cross-section 35 mm <sup>2</sup> :	160 A
At terminal cross-section 50 mm <sup>2</sup> :	200 A

### Data according to VDE 0110/EN 61984, Clause 6.19.2.2

Degree of soiling	3 [2]
Over-voltage category	IV
Max. installation height	6 562 ft (2 000 m)

### Used materials

Housing	Zinc die-casting/brass, nickel-plated
Coupling nut	Brass, nickel-plated
Insulation body	PA 6.6mod., UL 94/V0
Contacts	Brass, silver-plated
Seals	FPM
Clamping ring	Brass, nickel-plated

### Power connector [1-pole], nickel-plated (Metal construction, EMC shielding)

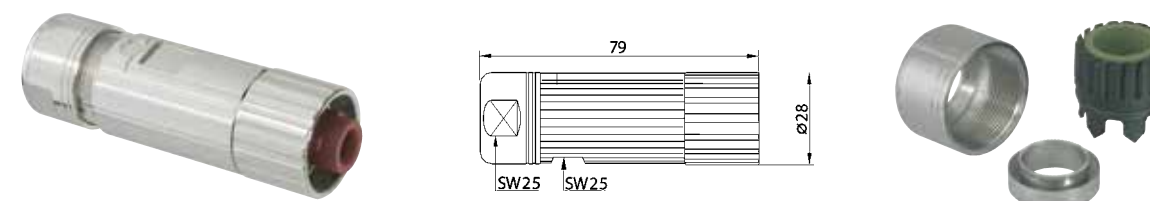


Image exemplary.

Part no.	Insulation body	Female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179669	P type 1-pole	1x8.0	10.0			9.5-14.5	E+10

### Power coupling [1-pole], nickel-plated (Metal construction, EMC shielding)

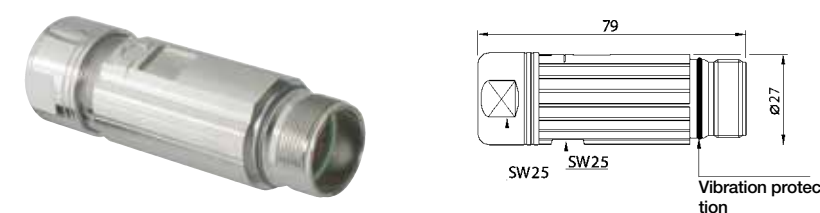


Image exemplary.

Part no.	Insulation body	Female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Female crimping [mm]	Crimping area [mm <sup>2</sup> ]	Clamping area* [mm]	Crimping tool + insert
MAT0179670	E type 1-pole	1x8.0	10.0	2x1.6		9.5-14.5	E+10

\* Crown clamp





...the connector you are searching for is not included in the connectors catalogue?

We help you! Whether for your own assembly line, the mating connector for readycable® or as a replacement part for your customers.



Circular connectors e.g. in size M23



Sub-D signal connectors



Rectangular connectors, C148, Y-Tec® or plug 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/labeling possible on each package
- Price: benefit from the consolidated demand of our customers
- Purchasing: only 1 order number, everything from a single source
- QA: only one incoming inspection
- Internal logistics: only one storage location, fast identification

Talk to us! We advise you!



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Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

Crimping tool for SERIES A and B



**Hand crimping tool**  
for Ø 1 mm contacts  
up to core cross section 1 mm<sup>2</sup>  
complete with positioning insert

**A**

MAT01710294



**Positioning insert**  
for Ø 0.6 mm  
contacts

MAT0179467

Crimping tool for SERIES M17



**Hand crimping tool**  
for Ø 0.6 mm contacts  
up to core cross section 0.5 mm<sup>2</sup>  
complete with positioning insert

**B**

MAT0178919

Alternative crimping tool for A or C



**4-thorn crimping tool**  
for core cross section Ø 0.14 mm<sup>2</sup> - 6.0 mm<sup>2</sup>  
  
delivered with locator  
**On request**

MAT01713970

Crimping tool for SERIES A, B, C and M17



**Hand crimping tool**  
for Ø 1 mm and Ø 2 mm contacts  
up to core cross section 4 mm<sup>2</sup>  
inclusive of positioning carrier

**C**

MAT0175736



**Positioning insert**  
for Ø 1 mm contacts

MAT0178195



**Positioning insert**  
for Ø 2 mm contacts

MAT0178196



**Positioning insert**  
for Ø 1 mm and Ø 2 mm  
contacts

MAT0177855



**Positioning insert**  
for Ø 2 mm contacts

MAT01714573



**Positioning insert**  
for Ø 1.5 mm contacts

MAT01714574



**Positioning insert**  
for Ø 0.5 - 2.5 mm  
contacts

MAT0178920



**Positioning insert**  
for Ø 1.6 mm contacts

MAT0177853



**Positioning insert**  
for Ø 1.6 mm contacts

MAT01714575



**Positioning insert**  
for Ø 1.0 mm contacts  
Y-Tec

MAT01724301

Crimping tool for SERIES C



**Hand crimping tool**  
for Ø 3.6 mm contacts  
up to core cross section 16 mm<sup>2</sup>  
inclusive of positioning carrier

**D**

MAT0179194



**Positioning insert**  
for Ø 3.6 mm contacts

MAT0179195

Crimping tool for SERIES C



**Pneumatic crimping tool**  
for Ø 3.6 mm and  
Ø 2.0 mm contacts  
Core cross section 1.5 - 16 mm<sup>2</sup>

Crimping insert for pneumatic crimping tool



<b>Contact</b>	<b>Pin</b> Ø 2.0 mm <b>Socket</b> Ø 3.6 mm	<b>Pin</b> Ø 3.6 mm <b>Socket</b> Ø 3.6 mm	<b>Pin</b> Ø 3.6 mm <b>Socket</b> Ø 3.6 mm	<b>Pin</b> Ø 3.6 mm <b>Socket</b> Ø 3.6 mm
<b>Crimp area</b>	1.5/2.5 mm <sup>2</sup> 1.5/2.5 mm <sup>2</sup>	4.0/6.0 mm <sup>2</sup>	10.0 mm <sup>2</sup>	16.0 mm <sup>2</sup>

Locator for pneumatic crimping tool



<b>Contact</b>	<b>Pin</b> Ø 2.0 mm <b>Socket</b> Ø 2.0 mm	<b>Pin</b> Ø 3.6 mm <b>Socket</b> Ø 3.6 mm	<b>Pin</b> Ø 3.6 mm <b>Socket</b> Ø 3.6 mm
<b>Crimp area</b>	1.5/2.5 mm <sup>2</sup> 1.5/2.5 mm <sup>2</sup>	1.5 - 10.0 mm <sup>2</sup>	1.5 - 16.0 mm <sup>2</sup>

Crimping insert for SERIES S and D



**Battery-powered crimping tool, B131-C**

MAT0177854



**Crimping jaws**  
up to 10 mm<sup>2</sup>, 16 mm<sup>2</sup>

MAT01713679



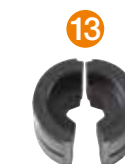
**Crimping jaws**  
up to 25 mm<sup>2</sup>

MAT01713678



**Crimping jaws**  
up to 35 mm<sup>2</sup>

MAT01713677



**Crimping jaws**  
up to 50 mm<sup>2</sup>

MAT01713676

## FCT | Connectors SUB-D

Signal connector  
SUB-D standard [9 to 44-pole]

## Types

- Connector, standard and angular connector

## Number of poles insulation body

- Standard 9, 15, 25
- High Density 15, 26, 44

## Technical data of the series S

Temperature range -4 °F to 212 °F (-35 °C to +100 °C)

## Electrical data

Max. continuous nominal current 5 A  
 Testing voltage (L-L) 1200 V  
 Contact resistance  $10^{16} \Omega/\text{cm}$   
 Insertion cycles 50

## Used materials

Housing Zinc die-casting, nickel-plated  
 Insulation body Glass fibre reinforced polyester  
 Contacts Copper alloy, flash gold-plated

## FCT | Connectors SUB-D



Size 1 9-pole - HD15-pole  
Order no.

MAT01716504



Solder contact pin  
9-pole standard

Metal hood, straight



Size 1 9-pole - HD15-pole  
Order no.

MAT01716505

Solder contact socket  
9-pole standard

Metal hood, straight



Size 1 9-pole - HD15-pole  
Order no.

MAT01716506

Solder contact pin  
HighDensity 15-pole

Metal hood, straight



Size 1 9-pole - HD15-pole  
Order no.

MAT01716507

Solder contact socket  
HighDensity 15-pole

Metal hood, straight



Size 1 9-pole - HD15-pole  
Order no.

MAT01716508

Solder contact pin  
9-pole standard

Metal hood, angled



Size 1 9-pole - HD15-pole  
Order no.

MAT01716509

Solder contact socket  
9-pole standard

Metal hood, angled



Size 1 9-pole - HD15-pole  
Order no.

MAT01716510

Solder contact pin  
HighDensity 15-pole

Metal hood, angled



Size 1 9-pole - HD15-pole  
Order no.

MAT01716511

Solder contact socket  
HighDensity 15-pole

Metal hood, angled



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... no minimum order quantity ...

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## FCT | Connectors SUB-D



Size 2 15-pole - HD26-pole  
Order no.

**MAT01716512**



Solder contact pin  
15-pole standard

Metal hood, straight



Solder contact socket  
15-pole standard

Metal hood, straight

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716513**



Solder contact pin  
HighDensity 26-pole

Metal hood, straight

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716514**



Solder contact socket  
HighDensity 26-pole

Metal hood, straight

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716515**



Size 2 15-pole - HD26-pole  
Order no.

**MAT01716516**



Solder contact pin  
15-pole standard

Metal hood, angled



Solder contact socket  
15-pole standard

Metal hood, angled

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716517**



Solder contact pin  
HighDensity 26-pole

Metal hood, angled

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716518**



Solder contact socket  
HighDensity 26-pole

Metal hood, angled

Size 2 15-pole - HD26-pole  
Order no.

**MAT01716519**

## FCT | Connectors SUB-D



Size 3 25-pole - HD44-pole  
Order no.

**MAT01716520**



Solder contact pin  
25-pole standard

Metal hood, straight



Solder contact socket  
25-pole standard

Metal hood, straight

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716521**



Solder contact pin  
HighDensity 44-pole

Metal hood, straight

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716522**



Solder contact socket  
HighDensity 44-pole

Metal hood, straight

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716523**



Size 3 25-pole - HD44-pole  
Order no.

**MAT01716524**



Solder contact pin  
25-pole standard

Metal hood, angled



Solder contact socket  
25-pole standard

Metal hood, angled

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716525**



Solder contact pin  
HighDensity 44-pole

Metal hood, angled

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716526**



Solder contact socket  
HighDensity 44-pole

Metal hood, angled

Size 3 25-pole - HD44-pole  
Order no.

**MAT01716527**



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**Technical data**

Temperature range -4 °F to 248 °F (-20 °C to +120 °C)

**Electrical data**

Max. continuous nominal current 2.1 A (158 °F), power contacts

Insertion cycles 1,000

















## Delivery program Yamaichi Y-CONKIT

Delivery program	igus® Part No.	Number of poles	Protection class
<b>Housing PA66</b>			
Y-CONKIT 10	MAT01719769	4 (Ethernet)	IP20
Y-CONKIT 11	MAT0176641	4 (Ethernet) + 2 (Power)	IP20
<b>Housing Zinc die-casting</b>			
Y-CONKIT 17	MAT01719770	4 (Ethernet)	IP20
Y-CONKIT 15	MAT01719236	4 (Ethernet) + 2 (Power)	IP20
<b>Housing Plastic PBT, UL94V-0</b>			
Y-CONKIT 20	MAT01719771	4 (Ethernet)	IP67/68/69K
Y-CONKIT 21	MAT0176759	4 (Ethernet) + 2 (Power)	IP67/68/69K
<b>Housing Zinc die-casting</b>			
Y-CONKIT 40	MAT01719772	4 (Ethernet)	IP67/68/69K
Y-CONKIT 40-E	MAT01719773	4 (Ethernet)	IP67/68/69K
Y-CONKIT 41	MAT01717218	4 (Ethernet) + 2 (Power)	IP67/68/69K
Y-CONKIT 41-E	MAT01718801	4 (Ethernet) + 2 (Power)	IP67/68/69K

## Delivery program Yamaichi Y-CONKIT accessoires

















Delivery program	igus® Part No.
<b>Crimping tool</b>	
Y-ConTool-11	MAT0176447
<b>Cable dismantle tool</b>	
	MAT01719767
<b>Assembling aid</b>	
Y-ConTool-30	MAT01717349



HARTING Connectors sets, pin				
Part No.	Cable inlet	Insert	Pin insert HARTING Part No.	Housing HARTING Part No.
Han 6B connector housing, straight cable inlet				
<b>MAT90489802.U</b>	M20	6+PE	09330062601	19300061440
Han 6B connector housing, angled cable inlet				
<b>MAT90489804.U</b>	M20	6+PE	09330062601	19300061540
Han 10B connector housing, straight cable inlet				
<b>MAT90489806.U</b>	M25	10+PE	09330102601	19300101441
Han 10B connector housing, angled cable inlet				
<b>MAT90489808.U</b>	M25	10+PE	09330102601	19300101541
Han 16B connector housing, straight cable inlet				
<b>MAT90489810.U</b>	M25	16+PE	09330162601	19300161441
Han 16B connector housing, angled cable inlet				
<b>MAT90489812.U</b>	M25	16+PE	09330162601	19300161541
Han 24B connector housing, straight cable inlet				
<b>MAT90489814.U</b>	M32	24+PE	09330242601	19300241442
Han 24B connector housing, angled cable inlet				
<b>MAT90489816.U</b>	M32	24+PE	09330242601	19300241542

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HARTING Connector sets, socket				
Part No.	Cable inlet	Insert	Socket-inserts HARTING Part No.	Housing HARTING Part No.
Han 6B connector housing, straight cable inlet				
<b>MAT90489803.U</b>	M20	6+PE	09330062701	19300061440
Han 6B connector housing, angled cable inlet				
<b>MAT90489805.U</b>	M20	6+PE	09330062701	19300061540
Han 10B connector housing, straight cable inlet				
<b>MAT90489807.U</b>	M25	10+PE	09330102701	19300101441
Han 10B connector housing, angled cable inlet				
<b>MAT90489809.U</b>	M25	10+PE	09330102701	19300101541
Han 16B connector housing, straight cable inlet				
<b>MAT90489811.U</b>	M25	16+PE	09330162701	19300161441
Han 16B connector housing, angled cable inlet				
<b>MAT90489813.U</b>	M25	16+PE	09330162701	19300161541
Han 24B connector housing, straight cable inlet				
<b>MAT90489815.U</b>	M32	24+PE	09330242701	19300241442
Han 24B connector housing, angled cable inlet				
<b>MAT90489817.U</b>	M32	24+PE	09330242701	19300241542

... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)



# HARTING | Connector sets Premium (pin + socket)

HARTING Connector sets Premium, pin + socket						
Part No.	Cable inlet	Insert	Pin-insert HARTING Part No.	Socket-insert HARTING Part No.	Connector housing HARTING Part No.	Connector base HARTING Part No.
Han 6B connector housing and base, straight cable inlet						
<b>MAT90489818.U</b>	M20	6+PE	09330062601	09330062701	19300061440	19300061250
Han 6B connector housing and base, angled cable inlet						
<b>MAT90489819.U</b>	M20	6+PE	09330062601	09330062701	19300061540	19300061250
Han 10B connector housing and base, straight cable inlet						
<b>MAT90489820.U</b>	M25	10+PE	09330102601	09330102701	19300101441	19300101250
Han 10B connector housing and base, angled cable inlet						
<b>MAT90489821.U</b>	M25	10+PE	09330102601	09330102701	19300101541	19300101250
Han 16B connector housing and base, straight cable inlet						
<b>MAT90489822.U</b>	M25	16+PE	09330162601	09330162701	19300161441	19300161251
Han 16B connector housing and base, angled cable inlet						
<b>MAT90489823.U</b>	M25	16+PE	09330162601	09330162701	19300161541	19300161251
Han 24B connector housing and base, straight cable inlet						
<b>MAT90489824.U</b>	M32	24+PE	09330242601	09330242701	19300241442	19300241251
Han 24B connector housing and base, angled cable inlet						
<b>MAT90489825.U</b>	M32	24+PE	09330242601	09330242701	19300241542	19300241251

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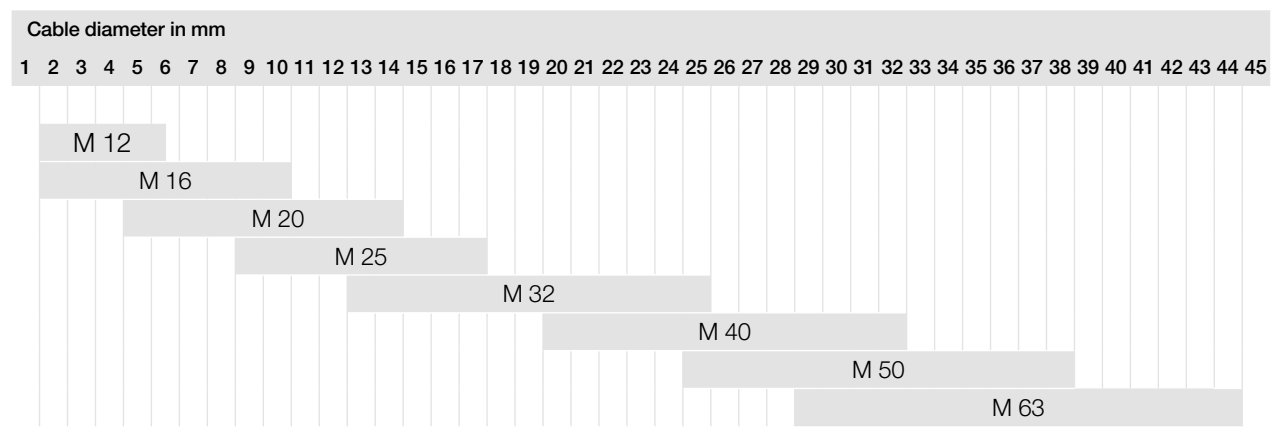
# HUMMEL | Cable glands HSK-K

**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  
**Continuous operating temperature** -40 °F to 212 °F (-40 °C to 100 °C)  
**Colour** gray (RAL 7035)



AG	ØK mm	GL mm	H mm	mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	3 - 6.5	8	21	15	5	1.209.1200.50	MAT0179492
M 12 x 1.5	2 - 5	8	21	15	5	1.209.1200.51	MAT01712319
M 16 x 1.5	4 - 8	8	22	19	5	1.209.1600.50	MAT0179493
M 16 x 1.5	2 - 6	8	22	19	5	1.209.1600.51	MAT01712320
M 16 x 1.5	5 - 10	8	25	22	5	1.219.1600.50	MAT01712321
M 20 x 1.5	6 - 12	9	27	24	5	1.209.2000.50	MAT0179494
M 20 x 1.5	5 - 9	9	27	24	5	1.209.2000.51	MAT01712322
M 20 x 1.5	10 - 14	9	28	27	5	1.219.2000.50	MAT0179563
M 25 x 1.5	13 - 18	11	31	33	5	1.209.2500.50	MAT0179495
M 25 x 1.5	9 - 16	11	31	33	5	1.209.2500.51	MAT01712323
M 32 x 1.5	18 - 25	11	39	42	5	1.209.3200.50	MAT0179496
M 32 x 1.5	13 - 20	11	39	42	5	1.209.3200.51	MAT01712324
M 40 x 1.5	22 - 32	13	48	53	5	1.209.4000.50	MAT0179497
M 40 x 1.5	20 - 26	13	48	53	5	1.209.4000.51	MAT01712325
M 50 x 1.5	32 - 38	13	49	60	5	1.209.5000.50	MAT0179498
M 50 x 1.5	25 - 31	13	49	60	5	1.209.5000.51	MAT01712326
M 63 x 1.5	37 - 44	14	49	65 / 68	5	1.209.6300.50	MAT0179499
M 63 x 1.5	29 - 35	14	49	65 / 68	5	1.209.6300.51	MAT01712327

Customized offers  
**Offer service Fax 1-401-438-7270**



# HUMMEL | K-Counter nuts

**Material** SB / PA  
**Continuous operating temperature** -4 °F to -40 °F (-20 °C to 40 °C) (SB)  
 -40 °F to 212 °F (-40 °C to 100 °C) (PA)  
**Colour** gray (RAL 7035)



IG	H mm	mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	5	17	5	1.262.1200.50	MAT0179500
M 16 x 1.5	5	22	5	1.262.1600.50	MAT0179501
M 20 x 1.5	6	27	5	1.262.2000.50	MAT0179502
M 25 x 1.5	7	36	5	1.262.2500.50	MAT0179503
M 32 x 1.5	7	41	5	1.262.3200.50	MAT0179504
M 40 x 1.5	7	50	5	1.262.4000.50	MAT0179505
M 50 x 1.5	8	60	5	1.262.5000.50	MAT0179506
M 63 x 1.5	8	75	5	1.262.6300.50	MAT0179507

Customized offers  
**Offer service Fax 1-401-438-7270**

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

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

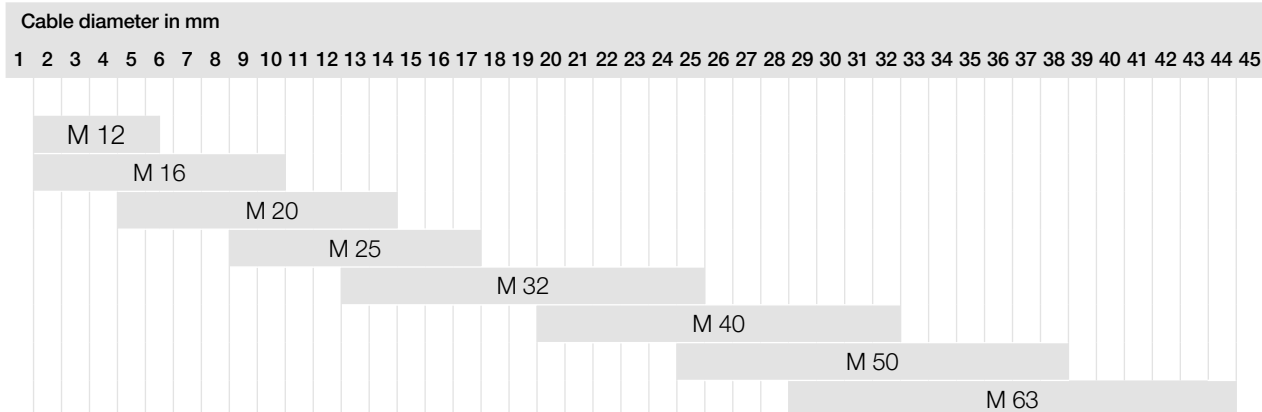
# HUMMEL | Cable glands HSK-M

**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 area only  
**Continuous operating temperature** -40 °F to 212 °F (-40 °C to 100 °C)



AG	ØK mm	GL mm	H mm	mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	3 - 6.5	6.5	19	14	5	1.609.1200.50	MAT0179476
M 12 x 1.5	2 - 5	6.5	19	14	5	1.609.1200.51	MAT01712328
M 16 x 1.5	4 - 8	6	21	17 / 19	5	1.609.1600.50	MAT0179477
M 16 x 1.5	2 - 6	6	21	17 / 19	5	1.609.1600.51	MAT01712329
M 16 x 1.5	5 - 10	6	22	20	5	1.609.1611.50	MAT01712330
M 20 x 1.5	6 - 12	6	23	22	5	1.609.2000.50	MAT0179478
M 20 x 1.5	5 - 9	6	23	22	5	1.609.2000.51	MAT01712331
M 20 x 1.5	10 - 14	6	24	24	5	1.609.2016.50	MAT0179562
M 25 x 1.5	13 - 18	7	26	30	5	1.609.2500.50	MAT0179479
M 25 x 1.5	9 - 16	7	26	30	5	1.609.2500.51	MAT01711769
M 32 x 1.5	18 - 25	8	31	40	5	1.609.3200.50	MAT0179480
M 32 x 1.5	13 - 20	8	31	40	5	1.609.3200.51	MAT01712332
M 40 x 1.5	22 - 32	8	37	50	5	1.609.4000.50	MAT0179481
M 40 x 1.5	20 - 26	8	37	50	5	1.609.4000.51	MAT01712333
M 50 x 1.5	32 - 38	9	37	57	5	1.609.5000.50	MAT0179482
M 50 x 1.5	25 - 31	9	37	57	5	1.609.5000.51	MAT01712334
M 63 x 1.5	37 - 44	10	38	64 / 68	5	1.609.6300.50	MAT0179483
M 63 x 1.5	29 - 35	10	38	64 / 68	5	1.609.6300.51	MAT01712335

Customized offers  
**Offer service Fax 1-401-438-7270**



# HUMMEL | M Counter nuts

**Material** Brass, nickel-plated



IG	H mm	mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	2.8	15	5	1.161.1200.50	MAT0179484
M 16 x 1.5	2.8	19	5	1.161.1600.50	MAT0179485
M 20 x 1.5	3.0	23	5	1.161.2000.50	MAT0179486
M 25 x 1.5	3.5	29	5	1.161.2500.50	MAT017948
M 32 x 1.5	4.0	36	5	1.161.3200.50	MAT0179488
M 40 x 1.5	4.5	45	5	1.161.4000.50	MAT0179489
M 50 x 1.5	5.5	55	5	1.161.5000.50	MAT0179490
M 63 x 1.5	6.0	70	5	1.161.6300.50	MAT0179491

Customized offers  
**Offer service Fax 1-401-438-7270**

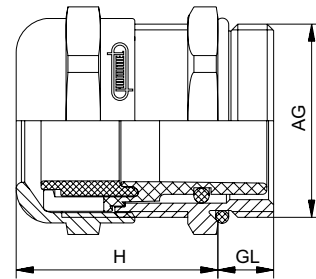
**... no minimum order quantity ...**

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)



# HUMMEL | Cable glands HSK-M-EMV

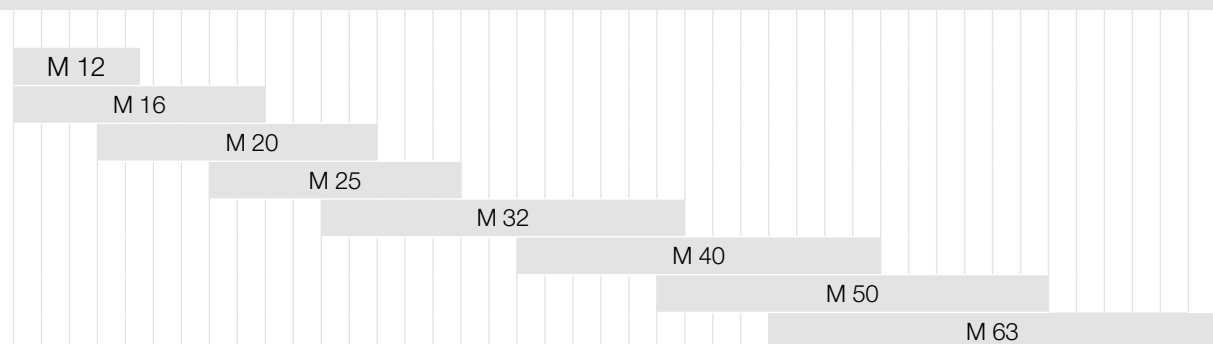
- Material** Brass, nickel-plated
- Clamping insert** PA
- Moulded seal** NBR
- O ring** NBR
- Protection class** IP 68 – 10 bar / IP 69K  
within the specified clamping area only
- Continuous operating temperature** -40 °F to 212 °F (-40 °C to 100 °C)



AG	ØK mm	GL mm	H mm	Ø mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	3 - 6.5	6.5	19	14	5	1.691.1200.50	MAT0179508
M 12 x 1.5	2 - 5	6.5	19	14	5	1.691.1200.51	MAT01712336
M 16 x 1.5	5 - 10	6	22	20	5	1.691.1600.50	MAT0179509
M 16 x 1.5	3 - 7	6	22	20	5	1.691.1600.51	MAT01712337
M 20 x 1.5	10 - 14	6	23	24	5	1.691.2000.50	MAT0179510
M 20 x 1.5	7 - 12	6	23	24	5	1.691.2000.51	MAT01712338
M 25 x 1.5	13 - 18	7	24	30	5	1.691.2500.50	MAT0179511
M 25 x 1.5	9 - 16	7	24	30	5	1.691.2500.51	MAT01712339
M 32 x 1.5	18 - 25	8	31	40	5	1.691.3200.50	MAT0179512
M 32 x 1.5	13 - 20	8	31	40	5	1.691.3200.51	MAT01712340
M 40 x 1.5	22 - 32	8	37	50	5	1.691.4000.50	MAT0179513
M 40 x 1.5	20 - 26	8	37	50	5	1.691.4000.51	MAT01712341
M 50 x 1.5	32 - 38	9	37	57	5	1.691.5000.50	MAT0179514
M 50 x 1.5	25 - 31	9	37	57	5	1.691.5000.51	MAT01712342
M 63 x 1.5	37 - 44	10	38	64 / 68	5	1.691.6300.50	MAT0179515
M 63 x 1.5	29 - 35	10	38	64 / 68	5	1.691.6300.51	MAT01712343

Cable diameter in mm

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45



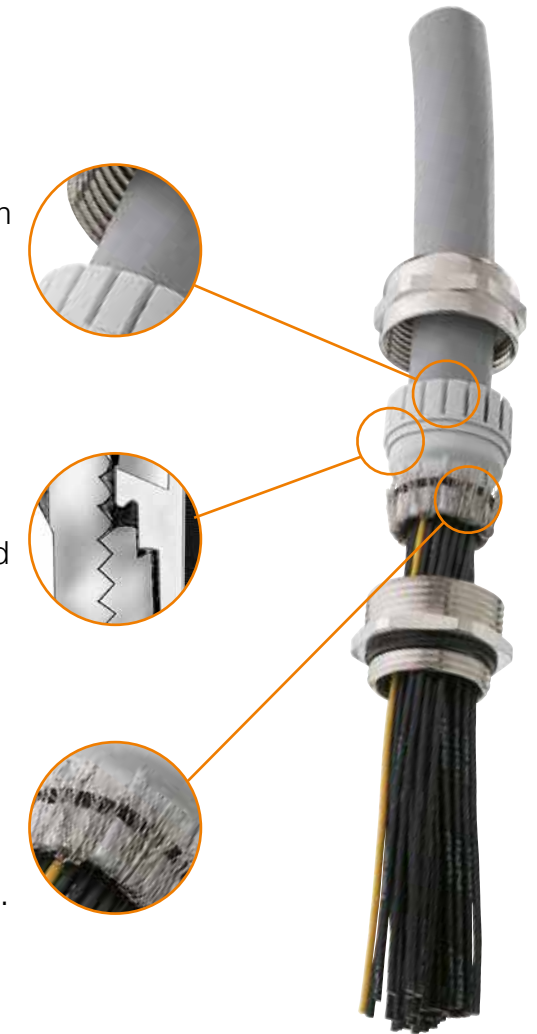
# HUMMEL | HSK-EMV Industry standard

## 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.

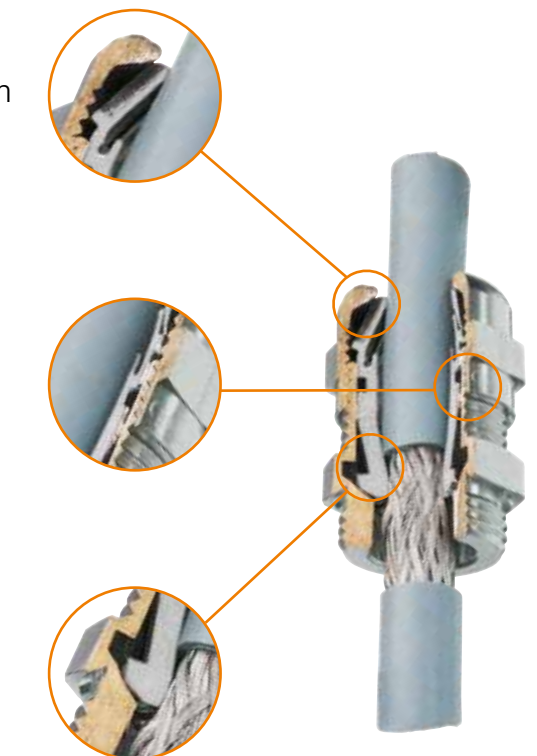


## HSK-M-EMV-D

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.

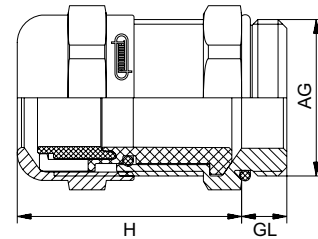


... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

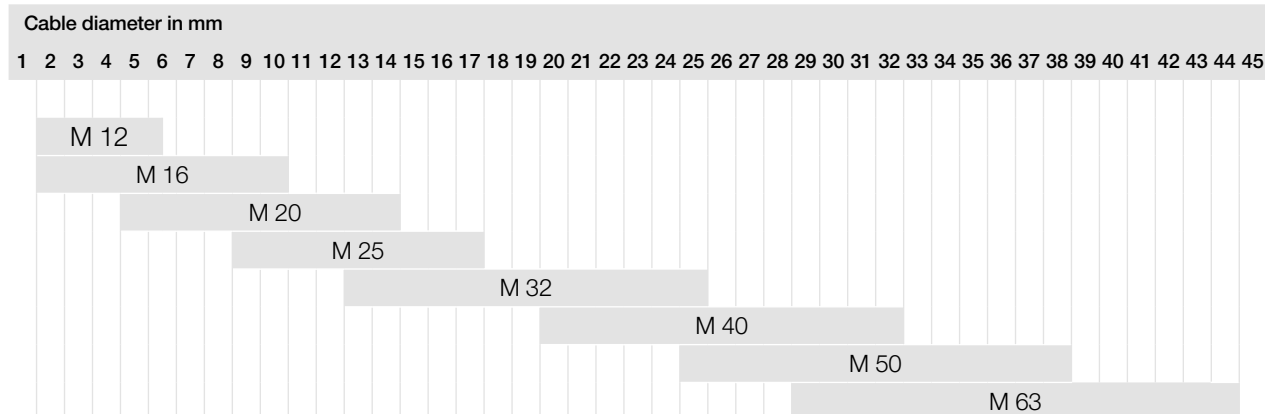
## HUMMEL | Cable glands HSK-M-EMV-D

<b>Material</b>	Brass, nickel-plated
<b>Clamping insert</b>	Metal coated 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 area only
<b>Continuous operating temperature</b>	-40 °F to 212 °F (-40 °C to 100 °C)



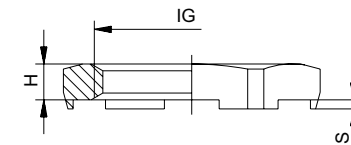
AG	Øk mm	GL mm	H mm	mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	3 - 6.5	6.5	25	14	5	1.631.1200.50	MAT0179524
M 16 x 1.5	5 - 10	6	32	20	5	1.631.1600.50	MAT0179525
M 20 x 1.5	10 - 14	6	33	24	5	1.631.2000.50	MAT0179526
M 25 x 1.5	13 - 18	7	39	30	5	1.631.2500.50	MAT0179527
M 32 x 1.5	18 - 25	8	45	40	5	1.631.3200.50	MAT0179528
M 40 x 1.5	24 - 32	8	51	50	5	1.631.4000.50	MAT0179529
M 50 x 1.5	32 - 38	9	57.5	57	5	1.631.5000.50	MAT0179530
M 63 x 1.5	37 - 44	10	52	64 / 68	5	1.631.6300.50	MAT0179531

Customized offers  
Offer service Fax 1-401-438-7270



## HUMMEL | EMV-Counter nuts

<b>Material</b>	Brass, nickel-plated
-----------------	----------------------



IG	H mm	mm	S mm	Pack size	Part No. gray	igus® Part No.
M 12 x 1.5	2.8	15	0.7	5	1.167.1200.50	MAT0179516
M 16 x 1.5	2.8	19	0.7	5	1.167.1600.50	MAT0179517
M 20 x 1.5	3.0	24	0.7	5	1.167.2000.50	MAT0179518
M 25 x 1.5	3.5	30	0.7	5	1.167.2500.50	MAT0179519
M 32 x 1.5	4.5	36	0.7	5	1.167.3200.50	MAT0179520
M 40 x 1.5	5.0	46	0.7	5	1.167.4000.50	MAT0179521
M 50 x 1.5	5.0	60	0.7	5	1.167.5000.50	MAT0179522
M 63 x 1.5	6.0	70	0.7	5	1.167.6300.50	MAT0179523

Customized offers  
Offer service Fax 1-401-438-7270

... no minimum order quantity ...

Service life calculation, configuration and more information at ► [www.chainflex.com](http://www.chainflex.com)

# igus<sup>®</sup> Chainfix

Strain reliefs





# igus® Chainfix- strain relief. Flexible and fast assembled.

Strain relief from igus® is specifically developed for use in E-Chains® and dynamic applications. The combination of Chainflex® cable materials and the plastic strain relief components of igus® Chainfix are designed to achieve long life of the cables and maximum holding power. For a wide variety of applications igus® Chainfix is the best solution in terms of costs and benefits. igus® Chainfix strain relief components are installed in applications around the world.



Available from stock. **Delivery time\*** from 24h or same day!

\*Delivery time refers the time until the product is shipped (after verifying technical feasibility)



3D-CAD, configurators, PDF, applications ► [www.igus.com/chainfix](http://www.igus.com/chainfix)

## Chainfix strain-relief systems | Overview

### Clamps, steel or stainless steel - For maximum tensile strength ► Page 760



Clamps, mating and double troughs, multi-clamps	Ø [in.]
CFX* Single, double, triple standard clamps	.24-1.65
CFXL* Single, double, triple clamps with wide base for maximum pull forces	.24-1.65
Saddle elements - Bottom and stacker saddles	.24-1.65
Chainfix Multi-Clamps*	.24-1.65

### C-profiles ► Page 766



Standard profile rails and profile rails for heavy-duty applications
Standard profile rails part no. CF-92-42KMA. (to be integrated into KMA bracket)
profile rails part no. CF-92-52G. With increased retention force (assembly before E-Chain®)

### Universal tiewrap clamps, screw or clip mounted ► Page 768



Chainfix tiewrap plates	Ø [in.]
Option 1A: Tiewrap plates as single part "Series 2000" + cable tiewraps	
Option 1B: Tiewrap plates as single part "Series 3000" + cable tiewraps	
Cable tiewraps as single part	max. 1.42

### Tiewrap plates, with clip-on connection for the profile rail ► Page 770



Chainfix tiewrap plates
Option 2: Tiewrap plates with clip-on connection for the profile rail
Option 3: Integrated strain relief for E2 e-tubes - Series R
Option 4: Tiewrap plates for fixed crossbars
Option 5: Tiewrap plates for opening crossbars

### Clips - High tensile strength, modular clip-on strain relief ► Page 772



Chainfix clips	Ø [in.]
Option 1: for all E-Chains® with profile rails and also suitable for assembly in the KMA mounting brackets	0.16-0.95
Option 2: Clip-on strain relief for opening crossbars	0.16-0.95

### Strain relief separators - with integrated teeth ► Page 774



Chainfix strain relief separator
Separator with integrated strain relief - for easy strain relief with cable ties

### Nuggets - for profile rails ► Page 776



Chainfix nuggets	Ø [in.]
Simple and universal cable attachment, for diameter with Ø .79 (20 mm) and Ø 1.18 (30 mm)	≤ 1.81
Clips onto standard profile rail	≤ 0.79

### Strain relief blocks - special strain reliefs for hoses ► Page 777



Blocks	Ø [in.]
CFB polymer strain relief connector system, many cables in a very confined space	.17-.55

\*Standard material: galvanised steel. Also available as stainless steel-version (material stainless steel: 1.4301/AISI 304)

# Chainfix | Select your strain relief system


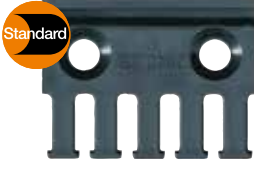







# Chainfix | Select your strain relief system

E-Chains® series	Clamps		Clip C-Profile <sup>1)</sup>	Chainfix Clip Crossbars <sup>1)</sup>	Nugget <sup>1)</sup>	Strain relief separator <sup>A)</sup>	Chainfix tiwrap plates							
	CFX	FXL**					Single part 2000 <sup>A)</sup>	Single part 3000 <sup>A)</sup>	Clip-on for C-profile <sup>A)</sup>	Fixed crossbar <sup>A)</sup>	Cross bar <sup>A)</sup>	For Triflex® <sup>A)</sup>	For Energy Tube	
Triflex®														
Easy Triflex®	X <sup>1)</sup>												E33X-XX-2	
Triflex®	X <sup>1)</sup>												33X-XX	
E-Z Chain®														
E/Z200	X <sup>1)</sup>						20XX-ZB				2050-Z			
E/Z26	X <sup>1)</sup>							30XX-ZB						
E/Z300	X <sup>1)</sup>							30XX-ZB						
E2/000														
1400/1500	X <sup>1)</sup>	X				21-1-Z	20XX-ZB							
1450/1480	X <sup>1)</sup>	X					20XX-ZB							
2400/2500	X <sup>1)</sup>	X				2020-Z	20XX-ZB				2050-Z			
2450/2480	X <sup>1)</sup>	X				2020-ZR	20XX-ZB							
2600/2700	X	X	X		X	262-Z		30XX-ZB	30XX-ZC	2050-Z	2050-Z			
2650/2680	X	X	X		X			30XX-ZB	30XX-ZC		2050-Z*			
3400/3500	X	X	X		X	301-Z		30XX-ZB	30XX-ZC	30XX-Z	30XX-ZS			
3450/3480	X	X	X		X	34501-Z		30XX-ZB	30XX-ZC		30XX-ZS*			
255							20XX-ZB							
E2														
R117/118	X <sup>1)</sup>	X <sup>1)</sup>					20XX-ZB							
R157/158	X <sup>1)</sup>	X <sup>1)</sup>				1585-01-Z								
R167/168	X <sup>1)</sup>	X <sup>1)</sup>				1685-01-Z								
R48	X <sup>1)</sup>	X <sup>1)</sup>				481-ZR	20XX-ZB							
R58	X <sup>1)</sup>	X <sup>1)</sup>											5850-Z	
R68	X <sup>1)</sup>	X <sup>1)</sup>											30XX-Z	
E4-1														
E4-21		X <sup>1)</sup>				T2103-Z								
E4-28/R4-28		X <sup>1)</sup>				28-Z / 28-ZT	20XX-ZB				2050-Z			
E4-32/H4-32/R4-32	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
E4-42/H4-42/R4-42	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
E4-56/H4-56/R4-56	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
E4-80/H4-80/R4-80	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
1640/R1608	X	X <sup>1)</sup>		X				30XX-ZB			45XX-ZS			
800	X	X <sup>1)</sup>						30XX-ZB						
840		X <sup>1)</sup>		X				30XX-ZB						
E4/00														
210		X <sup>1)</sup>				T2103-Z								
220/R760		X <sup>1)</sup>					20XX-ZB				2050-Z			
280/290/R770	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
380/390/R780	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
400/410/R880	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
600/601/R608	X	X <sup>1)</sup>		X				30XX-ZB						
640	X	X <sup>1)</sup>		X				30XX-ZB						
E4/4														
2828/2928/R7728	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
3838/3938/R7838	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
4040/4140/R8840	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
5050/5150/R9850	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
E4/light														
14040/14140/18840	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
14240/14340	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
14550/14650/19050	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
15050/15150/19850	X	X <sup>1)</sup>	X	X				30XX-ZB	30XX-ZC		45XX-ZS			
15250/15350	X	X <sup>1)</sup>	X					30XX-ZB	30XX-ZC		3850-ZS			
E6														
E6-29		X <sup>1)</sup>				E6-29-02-Z	20XX-ZB							
R6-29		X <sup>1)</sup>					20XX-ZB							
E6-35		X <sup>1)</sup>				E6-35-02-Z	20XX-ZB							
E6-40	X	X <sup>1)</sup>	X		X	E6-40-02-Z	20XX-ZB							
E6-52	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
R6-52	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC					
E6-62	X	X <sup>1)</sup>	X		X			30XX-ZB	30XX-ZC		3850-ZS			
E6-80L	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			
E6-80	X	X <sup>1)</sup>	X	X	X			30XX-ZB	30XX-ZC		45XX-ZS			

\*\*CFXL are always assembled in front of the E-Chain® - Not integrated into KMA mounting brackets with C-profile-host option!

= Recommended strain relief for selected E-Chain®  
\* Half e-tube only

1) you'll find on subsequent pages  
A) you'll find on the product page of each E-Chain® series

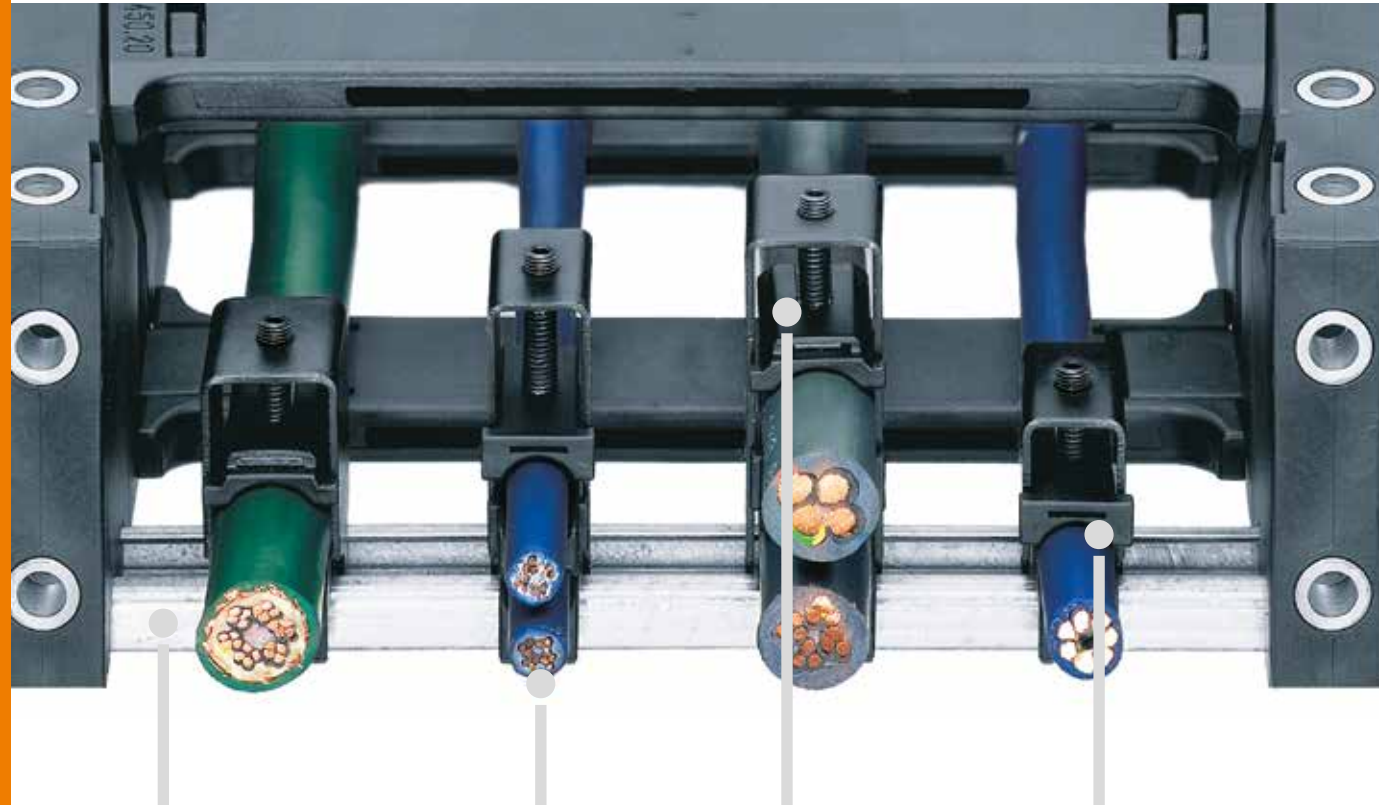
igus® Chainfix- strain relief system								
Parameters		CFX Clamps	Tiewrap plates screwed, clip-on	Clips for profile rails or clip-on	Nuggets Strain relief nuggets	Strain relief separators	CFB strain relief connector system	
	Recommended standard for the following E-Chains®:	<b>E4, E6, for all KMA* with profile rail</b> <small>Polymer metal mounting bracket</small>	<b>E-Z Chain®, E2/000, E2 e-tubes, E4, E6</b>	<b>E4, E6, for all KMA* with profile rail</b> <small>Polymer metal mounting bracket</small>	<b>For all KMAs* with profile rail, top-hat rails</b> <small>Polymer metal mounting bracket</small>	<b>E2/000, E2 e-tubes, E6, T3</b>	<b>E4, E6, for all KMA* with profile rail</b> <small>Polymer metal mounting bracket</small>	
	When to take this igus® strain relief system:	Standard for high accelerations, loads and demanding applications. For many cables, large cable Ø, stacked cables. For long travels, cranes, offshore, machine tools, high speed, hydraulic cables. If modularity is required.	Standard for many applications with medium acceleration. For unsupported, gliding, hanging and standing applications in general machinery and machine tools. In cables next to each other. Also available as single parts, for example for cabinets, etc.	Cost-effective, space-saving strain relief for many applications with medium accelerations. For stacked cables, or cables with the same diameters.	Cost-effective, fast strain relief for simple applications with low space requirements at medium accelerations. Also available as single parts for rigid linings, such as in cabinets, etc.	Combination of separator and strain relief, ideal for low space requirements. For applications with medium accelerations. For smaller cable diameter. Ideal for e-tubes. For machine tools and automation.	Space-saving, modular strain relief with many cables in confined spaces. For applications with high accelerations and loads, e.g. machine tools.	
	When not to take it:	No limitation	For large cable diameters	At high loads	At high loads	At high loads	No limitation	
<b>Features</b>								
Assembly time index		+	+	+ -	+ -	+	+ -	
Adjustable tensile strength		++	-	+ -	-	-	+	
Price Index		●●●	●●●	●●●	●●●	●●●	●●●	
Modularity		yes	yes	yes	yes	yes	yes (special fabrication)	
Dynamics		high to very high	high	medium	high	high	high to very high	
Tensile strength determination <sup>1)</sup> in lbs (N) with Chainflex® cables under various conditions		Cable tie wrap single      double		Cable tie wrap single      double		Cable tie wrap single      double		
dry, PUR		230 (1023)	21 (94)    37 (165)	15 (66)	81 (356)	25 (109)    29 (128)	129 (573)	
dry, PVC		200 (891)	102 (455)    135 (601)	16 (72)	90 (395)	76 (339)    65 (289)	74 (330)	
dry, TPE		355 (1580)	22 (97)    50 (224)	23 (103)	65 (286)	14 (64)    18 (82)	64 (285)	
Water <sup>2)</sup> , PUR		213 (947)	15 (65)    34 (150)	11 (51)	58 (255)	15 (65)    31 (139)	55 (245)	
Water <sup>2)</sup> , PVC		206 (917)	101 (447)    119 (528)	12 (55)	71 (312)	31 (136)    34 (151)	52 (233)	
Water <sup>2)</sup> , TPE		288 (1283)	21 (94)    28 (123)	19 (86)	39 (170)	11 (48)    22 (98)	40 (177)	
Oil <sup>3)</sup> , PUR		112 (500)	22 (96)    31 (137)	10 (45)	22 (95)	4 (19)    20 (89)	46 (203)	
Oil <sup>3)</sup> , PVC		197 (874)	88 (393)    141 (627)	13 (59)	91 (402)	33 (146)    71 (315)	50 (223)	
Oil <sup>3)</sup> , TPE		235 (1044)	14 (64)    20 (87)	14 (63)	20 (87)	17 (77)    7 (33)	37 (165)	

1) tested with igus® Chainflex® cables with the jacket materials PVC (CF7-15-12), PUR (CF5-05-25), TPE (CF9-10-25) and Ø 15 mm  
 2) Water, 60°C, 24 hrs. climatic chamber at 90% r.H.  
 3) Cables submerged in oil. Oil type: synthetic lubricating oil with Teflon

Price Index  
 ●●● Low price category  
 ●●● Medium price category  
 ●●● Highest price category  
 + + = best suitability  
 + = good suitability  
 + - = suitable  
 - = conditionally suitable

All clamps were tightened with 1Nm.  
 Cable tie wraps tightened by hand.





To be integrated into KMA mounting brackets

For up to three cables one over another

Reduced installation height, space saving

Excellent durability for dynamic applications

#### Chainfix clamps - mounted safely and even faster

- Integration with KMA mounting brackets and profile rail host-option
- Easy to read part no. and lateral marking of the correct installation direction
- Reduced installation height due to optimal housing height (compared to conventional clamps up to 15 mm)
- Space- and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easy fit on the profile rail
- Setscrews, tightened with Allen wrench, for easy installation
- Durability for dynamic applications through improved stacker elements: optimized stacker saddles, captive by retaining lugs
- The long contact surface of the stacker elements improves the clamp's stability
- The high rigidity of the stacker elements significantly increases the reliability
- Built-in ribs to the stacker elements - no disconnection of cables from the strain relief
- Optional: CFXL clamps with increased holding power for heavy-duty applications (CFXL clamps are always assembled **IN FRONT** of the E-Chain® - **CANNOT** be integrated into KMA mounting brackets with profile rail host-option!)

#### Product range and materials

- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw: blank (material 1.4301/AISI 304)
- Stacker elements: bottom saddle and stacker saddle (material igumid G)
- Profile rails: steel (material galvanised steel) or stainless steel (material 1.4301/AISI 304) available

#### 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 .39 (10 mm) from the top of the E-Chain®. As a consequence of this, 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 be safely used.



#### Please note!

- The cables should ideally be fixed at both ends of the E-Chain®. They definitely need to be attached at the moving end of the E-Chain®. **The minimum should be to be fixed to the moving end of the E-Chain®.**
- When using Chainfix clamps on profile rails in the mounting bracket for the Series: E4-32/H4-32/R4-32, 280/290 R770, 2828/2928/R7728 a shortened bottom saddle must be used. For shortened bottom saddles supplement part no. with index "K" = Example: Part No. CFX12-1**K**

#### For the following igus® series

##### E2/000

- 2400/2500/2450/2480

- 2600/2700/2650/2680

- 3400/3500/3450/3480

##### 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/light

- 14040/14140/18840

- 14240/14340

- 14550/14650/19050

- 15050/15150/19850

- 15250/15350

##### E4/00

- 280/290/R770

- 380/390/R780

- 400/410/R880

##### E4/4

- 2828/2928/R7728

- 3838/3938/R7838

- 4040/4140/R8840

- 5050/5150/R9850

##### E6

- E6-40

- E6-52 / R6-52

- E6-62

- E6-80L

- E6-80



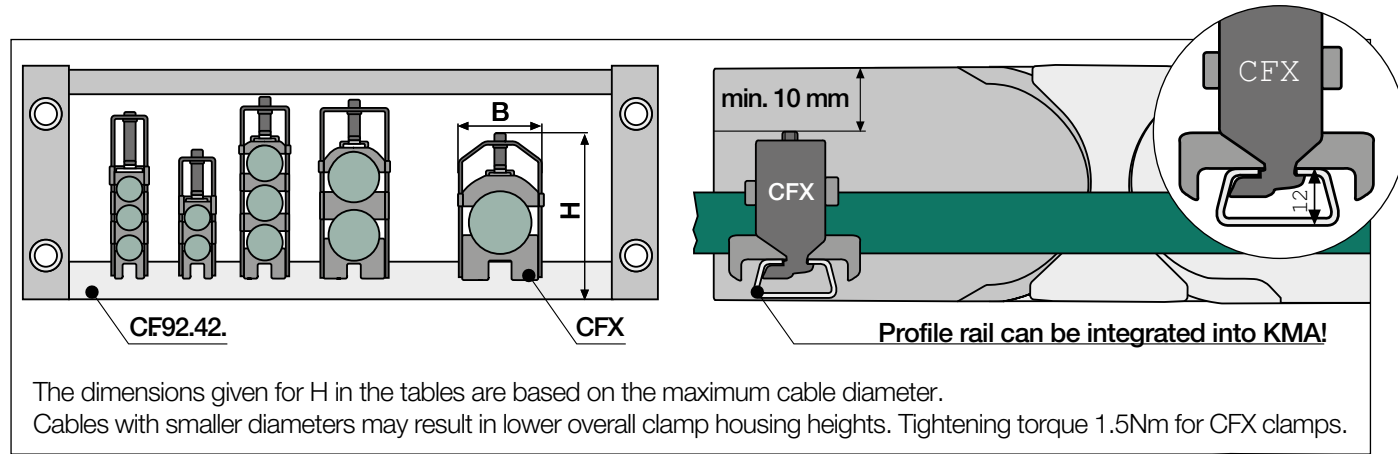
CFX - Chainfix housing with reduced height



KMA mounting bracket with integrated profile rail and Chainfix clamps



Saves both time and space during installation of igus® Chainfix clamps



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights. Tightening torque 1.5Nm for CFX clamps.

**CFX | Standard clamps with standard base**  
Suitable for profile rails CF-92-42KMA - Can be integrated into KMA with profile rail host-option!

**CFX - Single clamp housing, incl. bottom saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFX12-1	CFX12-1-E	.24-.47	06-12	.63	16	1.57	54	CFX26-1	CFX26-1-E	.87-1.02	22-26	1.18	30	2.64	67
CFX14-1	CFX14-1-E	.47-.55	12-14	.71	18	1.97	50	CFX30-1	CFX30-1-E	1.02-1.18	26-30	1.34	34	2.80	71
CFX16-1	CFX16-1-E	.55-.63	14-16	.79	20	2.05	52	CFX34-1	CFX34-1-E	1.18-1.34	30-34	1.50	38	2.95	75
CFX18-1	CFX18-1-E	.63-.71	16-18	.87	22	2.13	54	CFX38-1	CFX38-1-E	1.34-1.50	34-38	1.65	42	3.11	79
CFX20-1	CFX20-1-E	.71-.79	18-20	.94	24	2.20	56	CFX42-1	CFX42-1-E	1.50-1.65	38-42	1.81	46	3.27	83
CFX22-1	CFX22-1-E	.79-.87	20-22	1.02	26	2.28	58								

\*Material stainless steel: 1.4301/AISI 304

**CFX - Double clamp housing, incl. bottom and stacker saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFX12-2	CFX12-2-E	.24-.47	06-12	.63	16	2.83	72	CFX22-2	CFX22-2-E	.79-.87	20-22	1.02	26	3.54	90
CFX14-2	CFX14-2-E	.47-.55	12-14	.71	18	2.91	74	CFX26-2	CFX26-2-E	.87-1.02	22-26	1.18	30	4.29	109
CFX16-2	CFX16-2-E	.55-.63	14-16	.79	20	3.07	78	CFX30-2	CFX30-2-E	1.02-1.18	26-30	1.34	34	4.61	117
CFX18-2	CFX18-2-E	.63-.71	16-18	.87	22	3.23	82	CFX34-2	CFX34-2-E	1.18-1.34	30-34	1.50	38	4.92	125
CFX20-2	CFX20-2-E	.71-.79	18-20	.94	24	3.38	86								

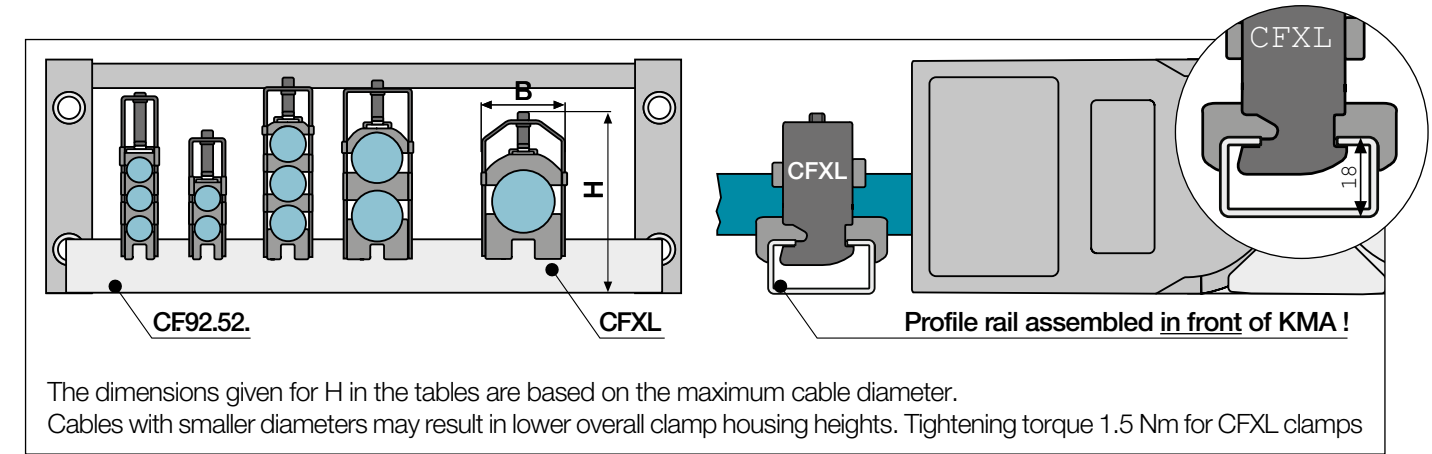
\*Material stainless steel: 1.4301/AISI 304

**CFX - Triple clamp housing, incl. bottom and stacker saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFX12-3	-	.24-.47	06-12	.63	16	3.94	100	CFX18-3	-	.63-.71	16-18	.87	22	4.25	108
CFX14-3	-	.47-.55	12-14	.71	18	3.78	96	CFX20-3	-	.71-.79	18-20	.94	24	4.49	114
CFX16-3	-	.55-.63	14-16	.79	20	4.02	102	CFX22-3	-	.79-.87	20-22	1.02	26	4.72	120

\*Material stainless steel: 1.4301/AISI 304

Suitable profile rails for CFX clamps part no. CF-92-42KMA ► Page 766



The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights. Tightening torque 1.5 Nm for CFXL clamps

**CFXL | Clamps with wide base for increased holding power**  
Suitable for profile rails CF-92-52G - profile rail assembled in front of KMA !- NO integration!

**CFXL - Single clamp housing, incl. bottom saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFXL12-1	CFXL12-1-E	.24-.47	06-12	.63	16	2.36	60	CFXL26-1	CFXL26-1-E	.87-1.02	22-26	1.18	30	2.87	73
CFXL14-1	CFXL14-1-E	.47-.55	12-14	.71	18	2.20	56	CFXL30-1	CFXL30-1-E	1.02-1.18	26-30	1.34	34	3.03	77
CFXL16-1	CFXL16-1-E	.55-.63	14-16	.79	20	2.28	58	CFXL34-1	CFXL34-1-E	1.18-1.34	30-34	1.50	38	3.19	81
CFXL18-1	CFXL18-1-E	.63-.71	16-18	.87	22	2.36	60	CFXL38-1	CFXL38-1-E	1.34-1.50	34-38	1.65	42	3.35	85
CFXL20-1	CFXL20-1-E	.71-.79	18-20	.94	24	2.44	62	CFXL42-1	CFXL42-1-E	1.50-1.65	38-42	1.81	46	3.50	89
CFXL22-1	CFXL22-1-E	.79-.87	20-22	1.02	26	2.52	64								

\*Material stainless steel: 1.4301/AISI 304

**CFXL - Double clamp housing, incl. bottom and stacker saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFXL12-2	CFXL12-2-E	.24-.47	06-12	.63	16	3.07	78	CFXL22-2	CFXL22-2-E	.79-.87	20-22	1.02	26	3.39	86
CFXL14-2	CFXL14-2-E	.47-.55	12-14	.71	18	3.15	80	CFXL26-2	CFXL26-2-E	.87-1.02	22-26	1.18	30	4.53	115
CFXL16-2	CFXL16-2-E	.55-.63	14-16	.79	20	3.31	84	CFXL30-2	CFXL30-2-E	1.02-1.18	26-30	1.34	34	4.84	123
CFXL18-2	CFXL18-2-E	.63-.71	16-18	.87	22	3.39	86	CFXL34-2	CFXL34-2-E	1.18-1.34	30-34	1.50	38	5.16	131
CFXL20-2	CFXL20-2-E	.71-.79	18-20	.94	24	3.62	92								

\*Material stainless steel: 1.4301/AISI 304

**CFXL - Triple clamp housing, incl. bottom and stacker saddles**

Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H	Part No.	Part No.	Ø	Ø	B <sup>+2</sup>	B <sup>+2</sup>	H	H
steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	steel	stainless steel*	[in.]	[mm]	[in.]	[mm]	[in.]	[mm]
CFXL12-3	-	.24-.47	06-12	.63	16	4.17	106	CFXL18-3	-	.63-.71	16-18	.87	22	4.49	114
CFXL14-3	-	.47-.55	12-14	.71	18	4.02	102	CFXL20-3	-	.71-.79	18-20	.94	24	4.72	120
CFXL16-3	-	.55-.63	14-16	.79	20	4.25	108	CFXL22-3	-	.79-.87	20-22	1.02	26	4.96	126

\*Material stainless steel: 1.4301/AISI 304

Suitable profile rails for CFXL clamps part no. CF-92-52G ► Page 766

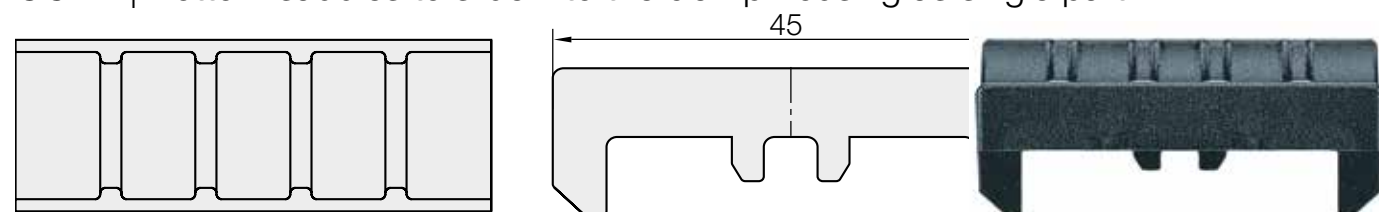


**Characteristics of igus® Chainfix clamps - stacker elements**

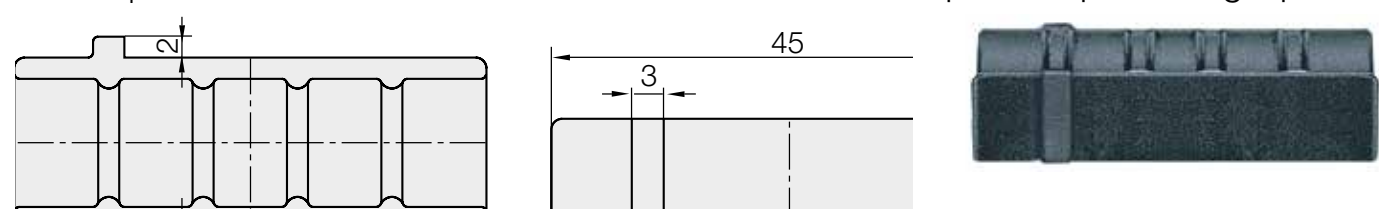
- Built-in ribs for security of cables in the strain relief
- Optimized double-trough, captive by ❶ locking spring and with ❷ spring groove for a simplified and precise installation
- Conventional stacker saddles
- Long contact surface improves the clamp's stability
- More secure due to high stiffness
- Suitable for CFX-and CFXL-clamps



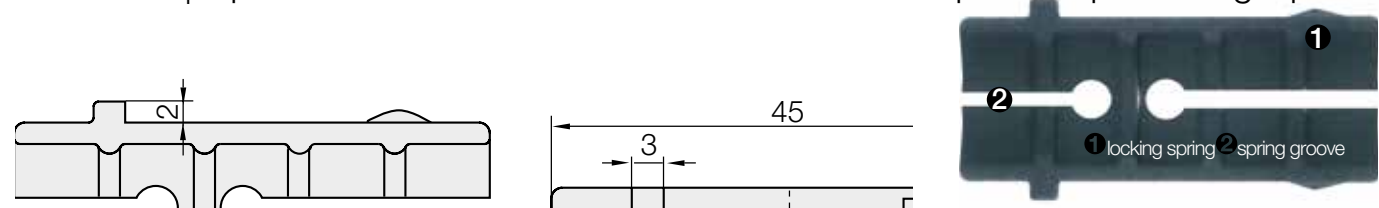
**CGXX** | Bottom saddles to slide into the clamp housing as single part



**CDXX** | Conventional stacker saddles for all double and triple clamps as single part



**CD-XX-C** | Optimized stacker saddles for all double and triple clamps as single part



P/N Clamp	Bottom Single Saddle	Stacker Double/triple Saddle	Cable Ø [in.]	Cable Ø [mm]	P/N Clamp	Bottom Single Saddle	Stacker Double/triple Saddle	Cable Ø [in.]	Cable Ø [mm]		
CFX/CFXL12-X	CG12	CD12	CD-12-C*	.24-.47	06-12	CFX/CFXL26-X	CG26	CD26	CD-26-C*	.87-1.02	22-26
CFX/CFXL14-X	CG14	CD14	CD-14-C*	.47-.55	12-14	CFX/CFXL30-X	CG30	CD30	CD-30-C*	1.02-1.18	26-30
CFX/CFXL16-X	CG16	CD16	CD-16-C*	.55-.63	14-16	CFX/CFXL34-X	CG34	CD34	CD-34-C*	1.18-1.34	30-34
CFX/CFXL18-X	CG18	CD18	CD-18-C	.63-.71	16-18	CFX/CFXL38-X	CG38	-	-	1.34-1.50	34-38
CFX/CFXL20-X	CG20	CD20	CD-20-C*	.71-.79	18-20	CFX/CFXL42-X	CG42	-	-	1.50-1.65	38-42
CFX/CFXL22-X	CG22	CD22	CD-22-C*	.79-.87	20-22						



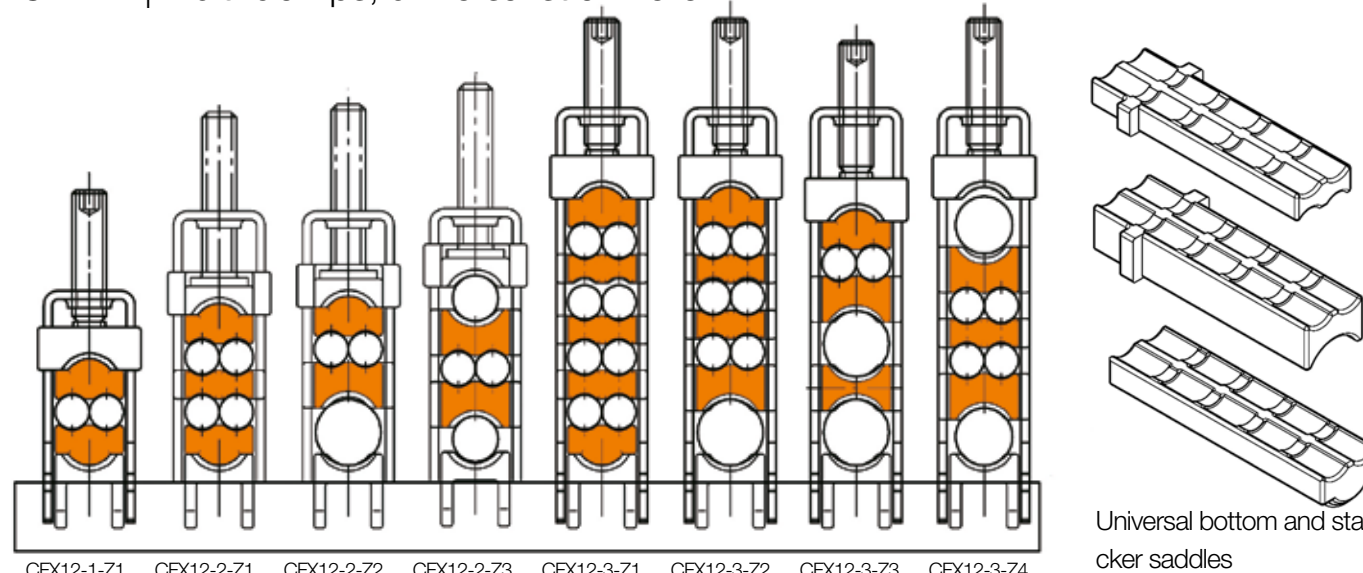
Please note: When using Chainfix clamps on profile rail in the mounting bracket for Series E4-32/H4-32/R4-32, 280/290/R770, 2828/2928/R7728, 28/29/R77 a shortened bottom saddle has to be used. For shortened bottom saddles supplement part no. with index "K" = Example: Part No. CFX12-1K

**Characteristics of igus® Chainfix multi-clamps**

- Now more flexible mounting options of the proven Chainfix strain relief elements with more components
- Universal strain relief - various assembly options
- Saves both time and space during installation
- Compact and modular
- For small outer diameters
- Cost-effective



**CFX12** | Multi-clamps, universal strain relief



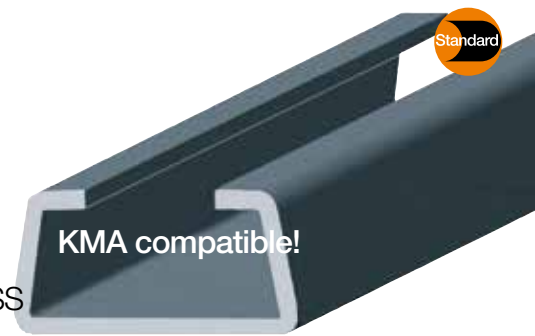
Part No. series	Part No. stacker saddles - single parts				For cables Ø max.	
					[in.]	[mm]
CFX12-1-Z1	X (2-piece)	-	-	-	.24	6
CFX12-2-Z1	X (2-piece)	X (1-piece)	-	-	.24	6
CFX12-2-Z2	X (1-piece)	-	X (1-piece)	-	.24 + .47	6 + 12
CFX12-2-Z3	-	-	X (2-piece)	-	.24 + .31	6 + 8
CFX12-3-Z1	X (2-piece)	X (3-piece)	-	-	.24	6
CFX12-3-Z2	X (1-piece)	X (2-piece)	X (1-piece)	-	.24 + .47	6 + 12
CFX12-3-Z3	X (1-piece)	-	X (1-piece)	X (1-piece)	.24 + .47	6 + 12
CFX12-3-Z4	-	X (1-piece)	X (2-piece)	-	.24 + .39	6 + 10

Standard material: galvanised steel. For the stainless steel version (material 1.4301/AISI 304) supplement part no. with Index "E" = example: part no. CFX-12-3.Z1-E

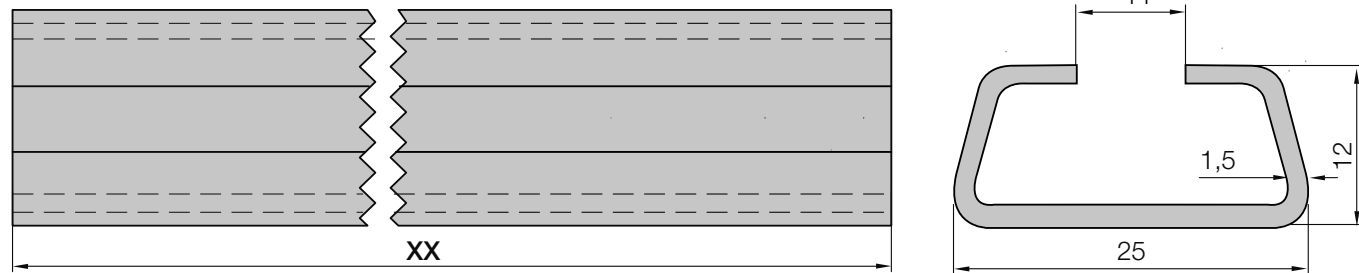


**Standard profile rails part no. CF-92-42KMA**

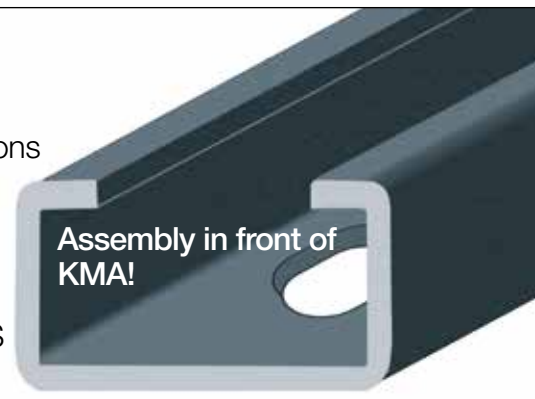
- For all igus® CFX clamps and KMA mounting brackets with host-option
- Standard material: galvanised steel part no. CF-92-42KMA
- Also available as stainless steel version  
(Material: 1.4301/AISI 304)  
Please add index **.SS**, example: Part No. CF-92-42-KMASS
- Length tolerances of  $\pm .39$  (1 mm) possible!

**Standard profile rail part no. CF-92-42KMA. | For conventional applications**

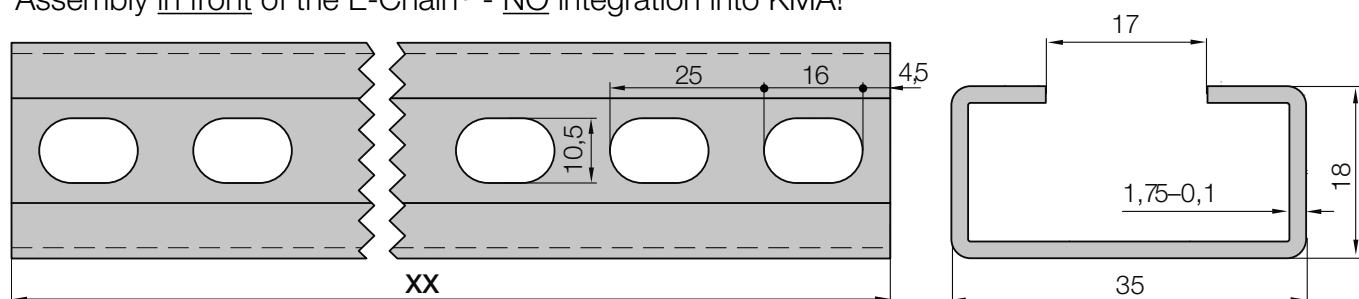
Can be integrated into KMA with profile rail host-option!

**Optional | For heavy-duty applications****C-profiles part no. CF-92-52G**

- For all igus® CFXL clamps
- With increased holding power - even for harsh applications
- Standard material galvanised steel part no. CF-92-52G-**XX** (XX = length in mm)
- Also available as stainless steel version  
(Material: 1.4301/AISI 304)  
Please add Index **.SS**, example: Part No. CF-92-52GSS
- Length tolerances of  $\pm .20$  (5 mm) possible!



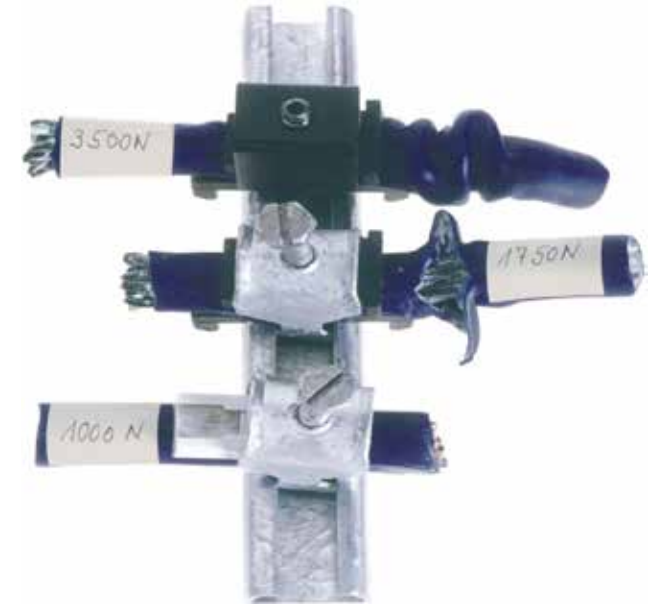
**C-profile part no. CF-92-52G.** With increased holding power for harsh applications  
Assembly in front of the E-Chain® - NO integration into KMA!



igus® tensile strength test with CFX clamps

**igus® strain relief devices are tested under practical conditions, taking various 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 of course plays a big role in the in-house tests. **Detailed information about the tests: Chainfix strain relief parameter overview ► Page 748**



igus® test: Comparison of three different strain reliefs - Result: Triple tensile strength of igus® Chainfix clamps in comparison with conventional products.



Tensile strength tests with Chainflex® cables



Tensile strength tests of igus® clamps with cable tiewraps

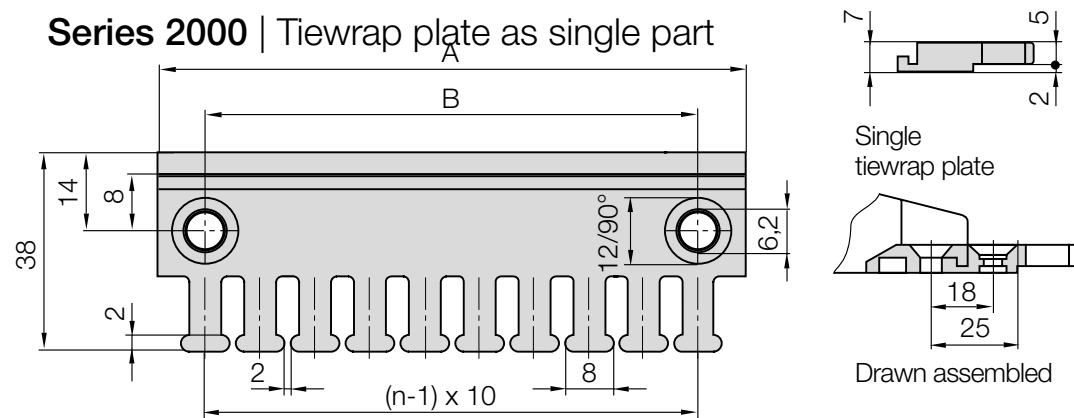
**Characteristics of igus® Chainfix tiewrap plates - Series 2000**

**Option 1A.: Tiewrap plates as single parts**

- Available as individual component
- Screwed on KMA\* with profile rail (\*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® E-Chain systems®



**Series 2000 | Tiewrap plate as single part**



**For the following igus® series**

- E-Z Chain®**
  - E200/Z200
- E2/000**
  - 1400/1500/1450/1480
  - 2400/2500/2450/2480
- E2 e-tubes**
  - R117/R118
  - R48
- E4-1**
  - E4-28
- E4/00**
  - 220 (2050.Z)
- E6**
  - E6-29/R6-29
  - E6-35
  - E6-40

Tiewrap plate	n Number of teeth	Dim. A		Dim. B		Dim. C		Center bore -- no / += yes
		[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	
2020-ZB	3	1.18	30	.59	15	-	-	
2030-ZB	4	1.57	40	.79	20	-	-	
2040-ZB	5	1.97	50	1.18	30	-	-	
2050-ZB	6	2.36	60	1.57	40	-	-	
2070-ZB	8	3.15	80	2.36	60	-	-	
2090-ZB (= 2030-ZB + 2040-ZB)	9	3.54	90	2.76	70	-	-	
2100-ZB	10	3.94	100	3.15	80	-	-	
2125-ZB (= 2050-ZB + 2050-ZB)	12	4.72	120	3.94	100	-	-	

**Cable tiewraps as single part**

Cable tiewraps (100-piece bag)	Width x length		Maximum Ø		Pull force resistance	
	[in.]	[mm]	[in.]	[mm]	[lbs]	[N]
CFB-001	.19 x 5.91	4.8 x 150	1.42	36	50	222

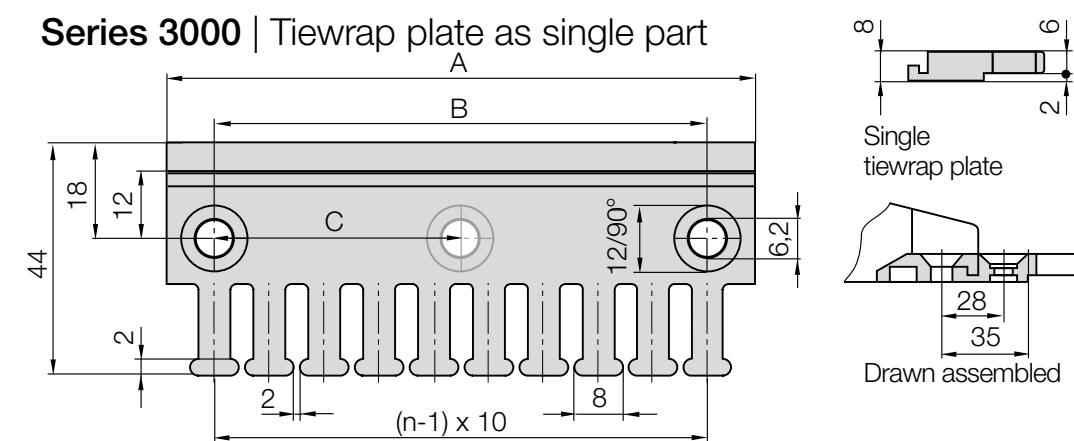
**Characteristics of igus® Chainfix tiewrap plates - Series 3000**

**Option 1B.: Tiewrap plates as individual parts**

- Available as individual component
- Screwed on KMA\* with profile rail (\*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® E-Chain systems®



**Series 3000 | Tiewrap plate as single part**



**For the following igus® series**

- E-Z Chain®**
  - E26/Z26
- E300/Z300**
- E2/000**
  - 2600/2700/2650/2680
  - 3400/3500/3450/3480
- 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
- 1640
- 800
- 840
- E4/light**
  - 14040/14140/18840
  - 14240/14340
  - 14550/14650/19050
  - 15050/15150/19850
- 15250/15350
- E4/00**
  - 280/290/R770
  - 380/390/R780
  - 400/410/R880
  - 600/601/R608
- 640
- E4/4**
  - 2828/2928/R7728
  - 3838/3938/R7828
  - 4040/4140/R8840
  - 5050/5150/R9850
- E6**
  - E6-52/R6-52
  - E6-62
  - E6-80L / E6-80

Tiewrap plate	Number of teeth	Dim. A		Dim. B		Dim. C		Center bore -- no / += yes
		[in.]	[mm]	[in.]	[mm]	[in.]	[mm]	
3050-ZB	5	1.97	50	1.18	30	-	-	
3075-ZB	7	2.95	75	2.16	55	-	-	
3100-ZB	10	3.94	100	3.15	80	-	-	
3115-ZB	11	4.53	115	3.74	95	-	-	
3125-ZB	12	4.92	125	4.13	105	-	-	
3150-ZB	15	5.91	150	5.12	130	-	-	
3175-ZB	17	6.89	175	6.10	155	-	-	
3200-ZB	20	7.87	200	7.09	180	3.54	90	+
3225-ZB	22	8.86	225	8.07	205	4.04	102.5	+
3250-ZB	25	9.84	250	9.06	230	4.53	115	+

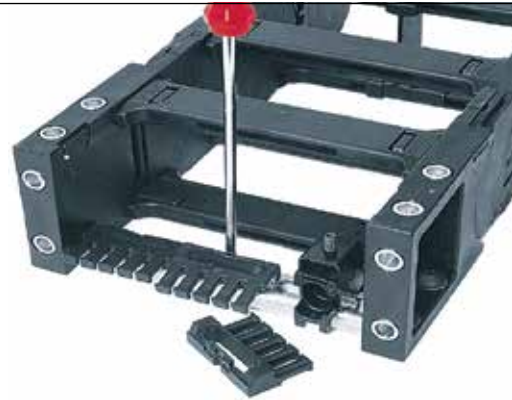
**Cable tiewraps as single part**

Cable tiewraps (100-piece bag)	Width x length		Maximum Ø		Pull force resistance	
	[in.]	[mm]	[in.]	[mm]	[lbs]	[N]
CFB-001	.19 x 5.91	4.8 x 150	1.42	36	50	222



**Characteristics of igus® Chainfix tiewrap plates****Option 2: With clip-on connection for the profile rails**

- Can be clipped into the KMA profile rail
- Easy to assemble without any screws
- Easy to remove with screwdriver
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® E-Chain systems®

**Option 2** | Tiewrap plate with clip-on connection for profile rail

For all mounting brackets with C-profile connectivity!

Part No.	Width		Number of teeth
	[in.]	[mm]	
3050-ZC	1.97	50	5
3075-ZC	2.95	75	7

**Characteristics of igus® Chainfix tiewrap plates****Option 3: Integrated strain relief for E2 e-tubes - Series R**

- Strain relief is hidden completely in the Energy Tube
- Easy to assemble without any screws
- Single part for the manufacturing of switchgear cabinets or for the assembly of machines
- Accessory for igus® E-Chain systems®

**Option 3** | Tiewrap plate for E2 Energy tubes of series R

For the following igus® series  
► See table

Part No.	Width		Number of teeth	For series
	[in.]	[mm]		
3050-Z	1.97	50	5	R68
3075-Z	2.95	75	7	R68
5850-Z	1.81	46	4	R58



Available from stock. **Delivery time\*** from 24 hrs or same day!

\*Delivery time refers the time until the product is shipped (after verifying technical feasibility)

**Characteristics of igus® Chainfix tiewrap plates****Option 4: For fixed crossbars or option 5: For opening crossbars**

- Can be fitted to fixed and opening crossbars
- In case of many harnessed cables
- Strain relief on two levels
- If the KMA is too small for the profile rail
- Easy to assemble without any screws
- Accessory for igus® E-Chain systems®

**Option 4** | Tiewrap plate for fixed crossbars

For the following igus® series  
► See table

Part No.	Width		Number of teeth	For series
	[in.]	[mm]		
2050-Z	2.36	60	6	E/Z200, 2400/2500, 2600/2700
3050-Z	1.97	50	5	3400/3500
3075-Z	2.91	74	7	3400/3500

**Option 5** | Tiewrap plate for opening crossbars

For the following igus® series  
► See table

Part No.	Width		Number of teeth	For series
	[in.]	[mm]		
2050-Z	2.36	60	6	E4/H4/R4-28, 220, 2650
3035-ZS	1.38	35	3	3400/3500
3050-ZS	1.97	50	5	3400/3500
3075-ZS	2.95	75	7	3400/3500
3850-ZS	1.89	48	5	E4/H4/R4-32, E4/H4/R4-42, 280/290/R770, 380/390/R780, 2828/2928/R7728, 3838/3938/R7838, 14240/14340, 15250/15350, E6-52, E6-62
4550-ZS	1.89	48	5	E4/H4/R4-56, E4/H4/R4-80, 400/410/R880, 4040/4140/R8840, 5050/5150/R9850, 14040/14140/18840, 14550/14650/19050, 15050/15150/19850, E6-80L, E6-80, 1640/1608
4575-ZS	2.91	74	7	E4/H4/R4-56, E4/H4/R4-80, 400/410/R880, 4040/4140/R8840, 5050/5150/R9850, 14040/14140/18840, 14550/14650/19050, 15050/15150/19850, E6-80L, E6-80, 1640/1608



Available from stock. **Delivery time\*** from 24 hrs or same day!

\*Delivery time refers the time until the product is shipped (after verifying technical feasibility)



**Characteristics of the igus® Chainfix clips**  
**Option 1: Modular clip-on strain relief for profile rail**

- Available for all igus® E-Chains® with profile rails
- Also suitable for assembly in the KMA mounting brackets
- Polymer, for cable diameters ranging from .16-.94 (4-24 mm)
- Quick assembly without any tools
- 2 to 3 layers on top of one another possible
- Each layer can be detached and changed later on



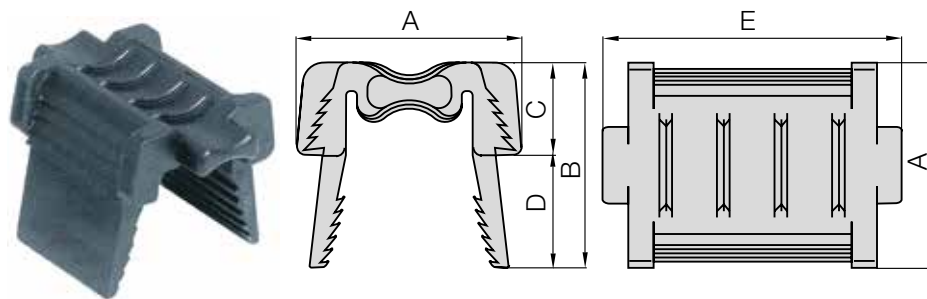
**Option 1 |** Clip-on strain relief for the profile rail



For all mounting brackets with C-profile connectivity!

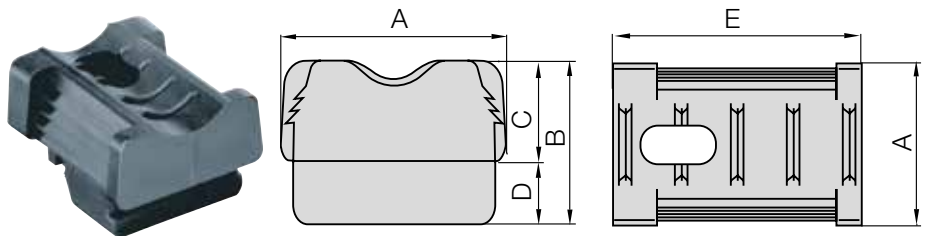
**Clamp - Part No. CFC-XX-M**

Ø Cable	Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
[in.] [mm]	clamp	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]
.16-.31	04-08 CFC-08-M	.57 14.5	.51 13	.22 5.5	.29 7.5	1.18 30
.31-.47	08-12 CFC-12-M	.93 23.7	.94 24	.39 10	.55 14	1.42 36
.47-.63	12-16 CFC-16-M	1.28 32.4	1.28 32.5	.54 13.6	.74 18.9	1.65 42
.63-.79	16-20 CFC-20-M	1.70 43.2	1.54 39.1	.69 17.6	.45 11.5	1.77 45
.79-.94	20-24 CFC-24-M	2.13 54	1.93 49	.87 22	1.06 27	1.97 50



**Bottom part - Part No. CFC-XX-C**

Ø Cable	Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
[in.] [mm]	clamp	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]
.16-.31	04-08 CFC-08-C	.57 14.5	.49 12.5	.22 5.5	.28 7	.94 24
.31-.47	08-12 CFC-12-C	.93 23.8	.71 18	.39 11	.28 7	1.10 28
.47-.63	12-16 CFC-16-C	1.28 32.4	.93 23.6	.54 13.6	.39 10	1.26 32
.63-.79	16-20 CFC-20-C	1.70 43.2	.97 24.6	.69 17.6	.28 7	1.42 36
.79-.94	20-24 CFC-24-C	2.13 54	1.14 29	.87 22	.28 7	1.54 39



**Characteristics of the igus® Chainfix clips**  
**Option 2: Clip-on strain relief for opening crossbars**

- Available for all igus® E-Chains® with opening crossbars Part No. 450-XX.
- Polymer, for cable diameters ranging from .31-.47 (8-12 mm)
- Quick assembly without any tools
- 2 to 3 layers on top of one another possible
- Each layer can be detached and changed later on



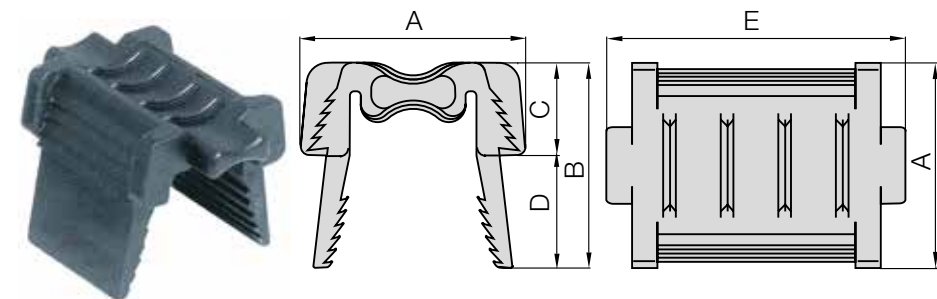
**Option 2 |** Clip-on strain relief for opening crossbars



For the following igus® series

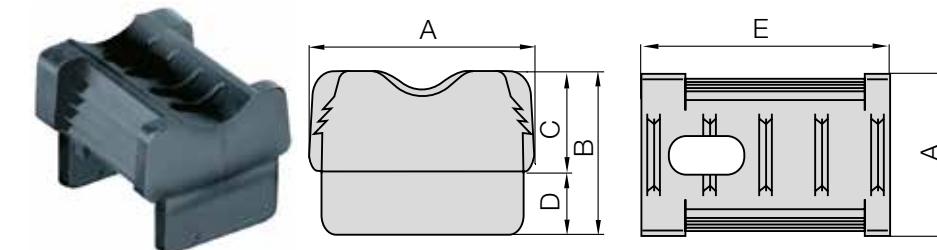
**Clamp - Part No. CFC-XX-M**

Ø Cable	Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
[in.] [mm]	clamp	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]
.31-.47	08-12 CFC-12-M	.93 23.7	.94 24	0.39 10	.55 14	1.42 36



**Bottom part - Part No. CFC-XX-B**

Ø Cable	Part No.	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E
[in.] [mm]	clamp	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]	[in.] [mm]
.31-.47	08-12 CFC-12-B	.94 23.8	.83 21	.51 13	.32 8	1.50 38



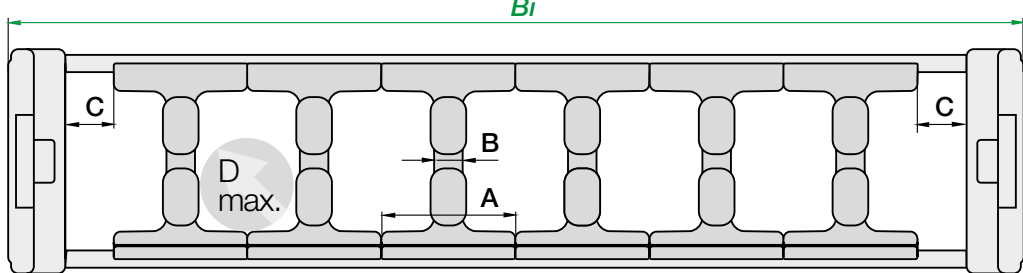
- E4-1**
  - E4-56/H4-56/R4-56
  - E4-80/H4-80/R4-80
  - 1640
  - 840
- E4/light**
  - 14040/14140
  - 14550/14650
  - 15050/15150
- E4/00**
  - 400/410
  - 640
- E4/4**
  - 4040/4140
  - 5050/5150
- E6**
  - E6-80L
  - E6-80

**Characteristics of igus® strain relief separators**  
**Separator with integrated strain relief teeth**

- For use in the first or last E-Chain® link
- For restricted space conditions
- Accessory for igus® E-Chain systems®
- Easy to assemble without any screws
- The number of teeth depends on the selection of the cables (diameter, type) and the available space



**Strain relief separator | With integrated teeth**



For series	Part No. strain relief separator	Number of teeth	Dim. A [in.] [mm]	Dim. B [in.] [mm]	Dim. C [in.] [mm]	Dim. D [in.] [mm]
1400/1500	▶ 21-1-Z	2	.39 10	.16 4	- -	.24 6
2400/2500	▶ 2020-Z	2	.39 10	.16 4	- -	.24 6
2450/2480	▶ 2020-ZR	2	.39 10	.16 4	- -	.24 6
2600/2700	▶ 262-Z	3	.39 10	.16 4	- -	.24 6
3400/3500	▶ 301-Z	3	.70 18	.16 4	- -	.55 14
3450/3800	▶ 34501-Z	3	.55 14	.16 4	- -	.39 10
R157/R158	▶ 1585-01-Z	3	.87 22	.16 4	- -	.71 18
R167/R168	▶ 1685-01-Z	4	.87 22	.16 4	- -	.71 18
R48	▶ 481-ZR	2	.39 10	.14 3.5	.39 10	.26 6.5
E4-21	▶ T2103-Z	2	.31 8	.16 4	.039 1	.16 4
E4-28	▶ 28-Z	2	.39 10	.16 4	- -	.24 6
R4-28	▶ 28-ZT	2	.39 10	.16 4	.59 15	.24 6
T3-29	▶ E6-29-02-Z	2	.31 8	.16 4	.039 1	.16 4
E6-29/E61-29	▶ E6-29-02-Z	2	.31 8	.16 4	.039 1	.16 4
E6-35	▶ E6-35-02-Z	3	.31 8	.16 4	.039 1	.16 4
E6-40	▶ E6-40-02-Z	3	.51 13	.16 4	- -	.31 8

For the following igus® series

**E2/000**

- 1400/1500
- 2400/2500
- 2450/2480
- 2600/2700
- 3400/3500
- 3450/3480

**E2 e-tubes**

- R157/R158
- R167/R168
- R48

**E4-1**

- E4-21
- E4-28/R4-28

**T3**

- T3-29

**E6**

- E6-29
- E6-35
- E6-40

**E6-1**

- E61-29



Strain relief separators are assembled either at the first or last E-Chain® link. For an intermediate strain relief they can alternatively be assembled in the E-Chain®

**Strain relief separators | Product range overview**

		<b>1400/1500</b> E2/000 E-Chains® unassembled 21-1-Z assembled 21-1-Z-1			<b>R157/R158</b> E2 e-tubes unassembled 1585-01-Z assembled 1586-01-Z
		<b>2400/2500</b> E2/000 E-Chains® unassembled 2020-Z assembled 2120-Z			<b>R167/R168</b> E2 e-tubes unassembled 1685-01-Z assembled 1686-01-Z
		<b>2450/2480</b> E2/000 e-tubes unassembled 2020-ZR assembled 2120-ZR			<b>R48</b> E2 e-tubes unassembled 481-ZR assembled 482-ZR
		<b>2600/2700</b> E2/000 E-Chains® unassembled 262-Z assembled 263-Z			<b>E4-21</b> E4-1 E-Chains® unassembled T2103-Z assembled T2113-Z
		<b>3400/3500</b> E2/000 E-Chains® unassembled 301-Z assembled 311-Z			<b>T3-29</b> T3 E-Chains® unassembled E6-29-02-Z assembled E6-29-12-Z
		<b>3450/3480</b> E2/000 e-tubes unassembled 34501-Z assembled 34511-Z			<b>E6-29/E61-29</b> E6/E6-1 E-Chains® unassembled E6-29-02-Z assembled E6-29-12-Z
		<b>E4-28</b> E4-1 E-Chains® unassembled 28-Z assembled 28-Z-1			<b>E6-35</b> E6 E-Chains® unassembled E6-35-02-Z assembled E6-35-12-Z
		<b>R4-28</b> E4-1 e-tubes unassembled 28-ZT assembled 28-ZT-1			<b>E6-40</b> E6 E-Chains® unassembled E6-40-02-Z assembled E6-40-12-Z



**Characteristics of igus® Chainfix Nuggets****Option 1: Profile rail and option 2: top rail**

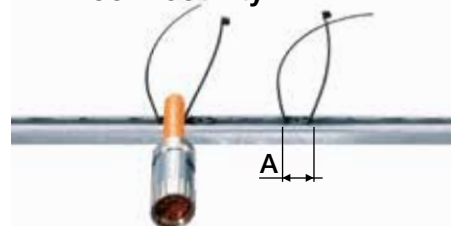
- Option 1: Universal cable fixation in profile rail
- Option 2: Clip onto a top rail
- Simple strain relief - harnessed cable tiewraps
- Very small space requirement
- Easy to assemble without any screws and tools
- Adjustable to every E-Chain® filling

**Option 1 | Chainfix nuggets for profile rail**

For C-profiles	Part No. nugget	Ø Cable		Dim. A	
		max. [in.]	max. [mm]	[in.]	[mm]
92-42.../92-42...E	CFN-20	.79	20	.43	10.8
92-52.../92-52...E	CFN-30-52	1.18	30	.65	16.4



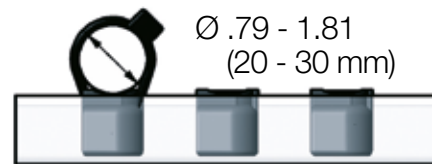
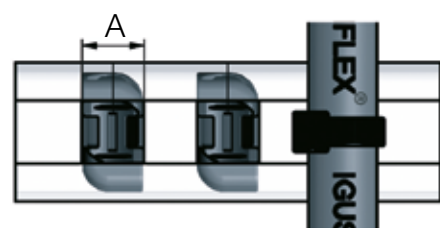
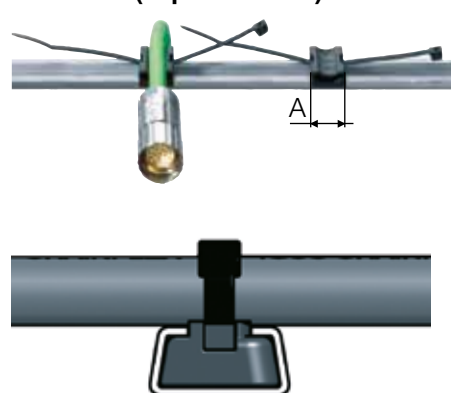
For all mounting brackets with C-profile connectivity!

**Option 2 | Chainfix nuggets for top-hat rail**

For top hat rail	Part No. nugget	Ø Cable		Dim. A	
		max. [in.]	max. [mm]	[in.]	[mm]
Top hat rail 35	CFN.20.N35	.79	20	.79	20.0



For standard rails 35 (top-hat rails) !



Ø .79 - 1.81  
(20 - 30 mm)

**Characteristics of the special strain relief system for hoses igus® blocks**

- Modular, space-saving system
- No hose damage
- Combination of hoses and cables possible
- Hose diameters from .17 to .55 (4.3 to 14 mm)
- Easy to assemble without any screws and tools
- Adjustable to every E-Chain® filling

**Block | Strain relief for hoses**

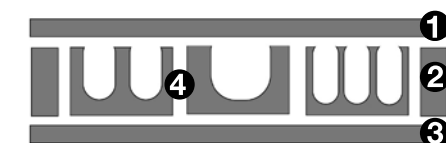
Part No. block modules	Hose Ø		Number of hoses	Width	
	[in.]	[mm]		[in.]	[mm]
CFS 4.3	.17	4.3	4 - 12	1.08	27.5
CFS 6	.24	6	3 - 6	1.08	27.5
CFS 9	.35	9	2	1.08	27.5
CFS 55.9	.35	9	5	2.16	55.0
CFS 10	.39	10	2	1.08	27.5
CFS 12	.47	12	2	1.08	27.5
CFS 14	.55	14	1	1.08	27.5

Part No. base plate	Part No. cover plate	Width	
		[in.]	[mm]
CFS U75	CFS P75	2.95	75
CFS U102.5	CFS P102,5	4.04	102.5
CFS U130	CFS P130	5.12	130
CFS U185	CFS P185	7.28	185
CFS U212	CFS P212	8.34	212.5
CFS U240	CFS P240	9.45	240
CFS U295	CFS PD295	11.16	295

Part No. spacer	Height	
	[in.]	[mm]
CFS D 16	.63	16
CFS D 12	.47	12
CFS D295	.63	16



Please contact us!



- 1 Cover plate
- 2 Spacers
- 3 Base plate
- 4 Grid-dimensions modules  
W = 1.08 in. (27.5 mm),  
H = .63 (16 mm)

The modules accommodate hoses from .17 to .55 (4.3 to 14 mm), 3 x .17 (3 x 4.3 mm) hoses can be fitted on top of each in module CFS 4-3 and 2 hoses can be fitted directly on top of each other in one notch using module CFS 6. The modules have a width of 1.08 (27.5 mm), are inserted into the base plate and then fastened in position with M4 countersunkhead screws. The exception is module CFS 55-9 which offers the capacity for 5 x .35 (5 x 9 mm) hoses with twice the width. The base plate and cover plate are available in widths ranging from 2.95 to 9.45 (75 to 240 mm). The height of the spacers and modules is .63 (16 mm). Several layers can be installed directly above one another.

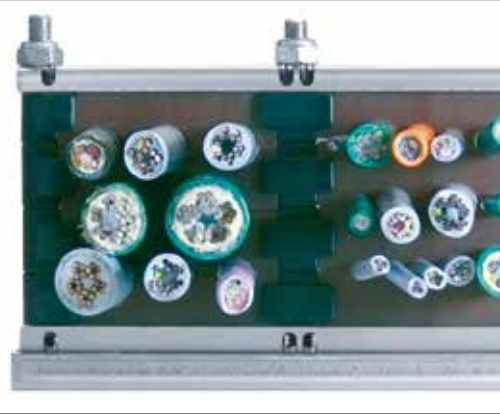


Delivery time upon request, in case of customer-specific fabrication!

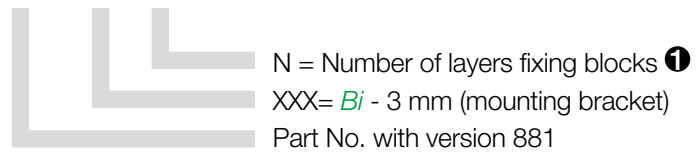


**Characteristics of the modular igus® CFB: Polymer strain relief connector system to be mounted onto the profile rail**

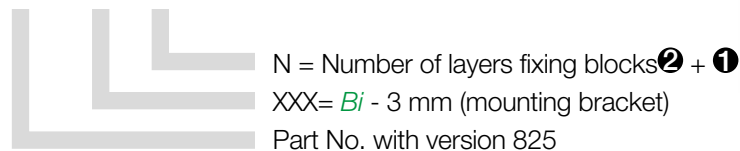
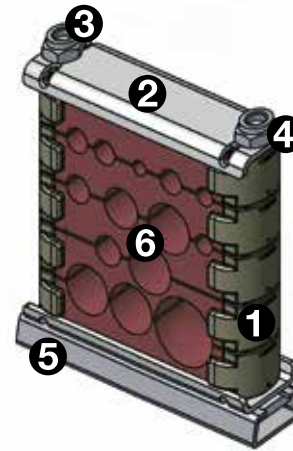
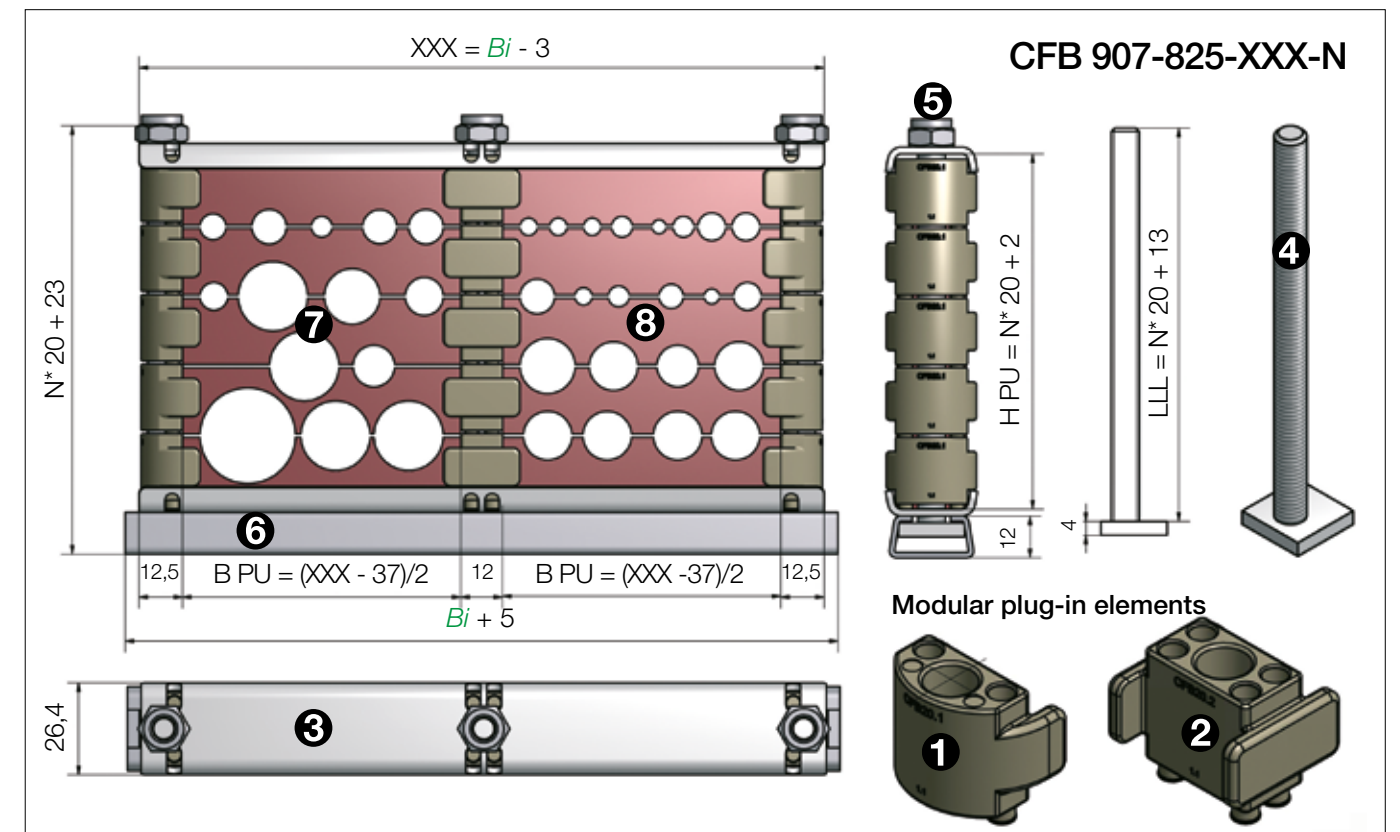
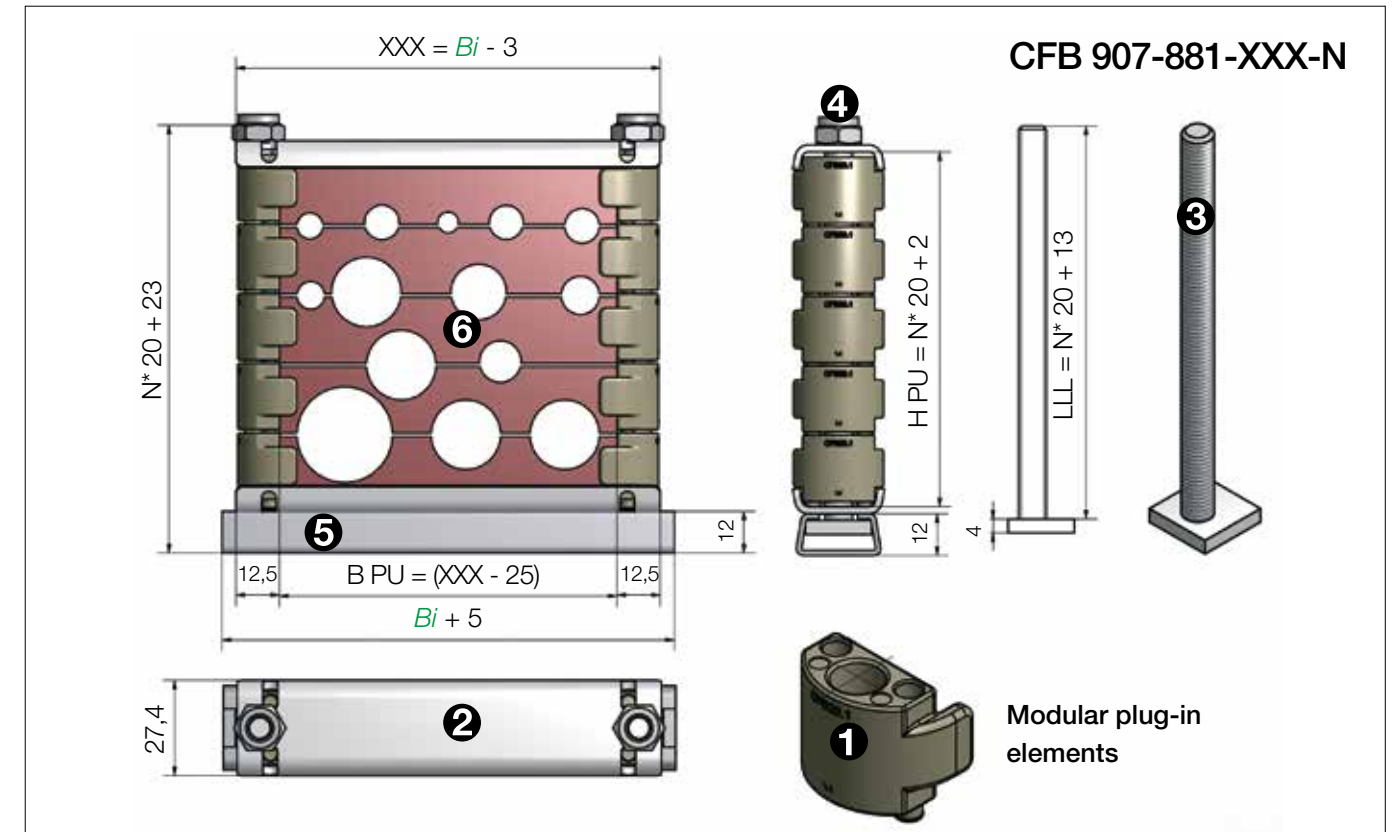
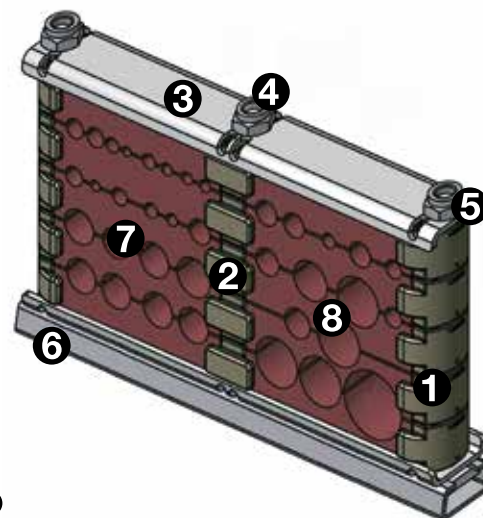
- Customized strain relief solutions can be offered
- 2 variations available
- Fast assembly by standard screw connection
- Can be mounted in the mounting bracket or in front of the E-Chain®
- Customized production from 1 piece
- Low priced and effective

**CFB 907-881 | Polymer strain relief connector system**

Parts list	Part No.	Number
❶ Outer fixing block	CFB20-1	N x 2
❷ Clamping bar	907-881-1-XXX	2
❸ Threaded bolt with plate	907-825-2-LLL	2
❹ Hexagon nut M8	MAT 0040012	2
❺ Profile rail (part of KMA)	92-42-KMA	1
❻ Strain relief block	customized	1

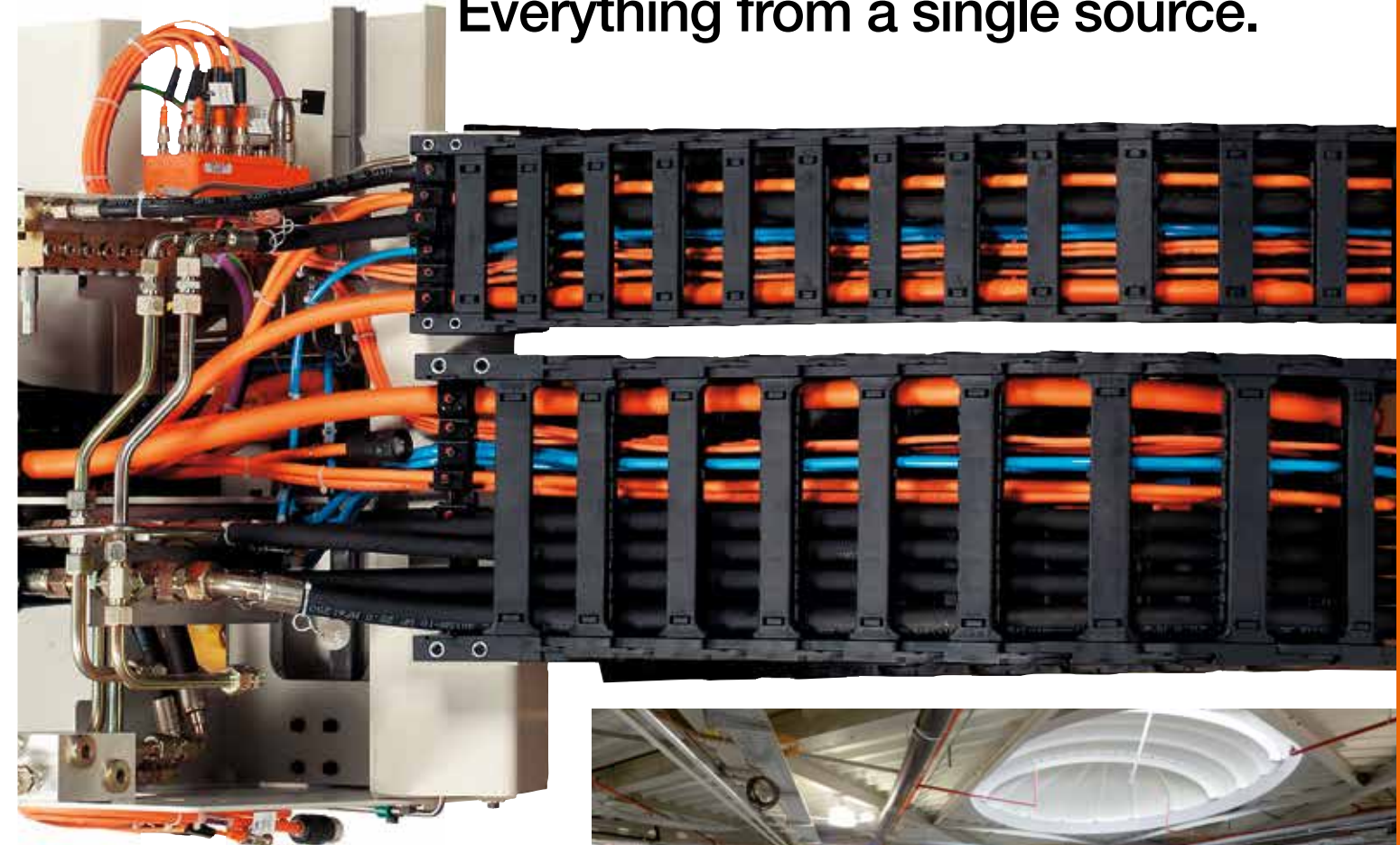
**Order key**  
**907-881-XXX-N**
**CFB 907.825 | Polymer strain relief connector system**

Parts list	Part No.	Number
❶ Outer fixing block	CFB20-1	N x 2
❷ Inner fixing block	CFB20-2	N
❸ Clamping bar	907-825-1-XXX	2
❹ Threaded bolt with plate	907-825-2-LLL	3
❺ Hexagon nut M8	MAT 0040012	3
❻ Profile rail (part of KMA)	92-42-KMA	1
❼ Strain relief block	customized	1
❽ Strain relief block	customized	1

**Order key**  
**907-825-XXX-N**

**Please contact us!**  
 Individual designing

**Please contact us!**  
 Individual designing

**Delivery time upon request**

# igus<sup>®</sup> ReadyChain<sup>®</sup> & ReadyCable

Ready-to-install energy supply systems.  
Cables with connectors.  
Minimize process costs.  
Everything from a single 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-related production

### ReadyChains® - Increase your capacities and cash flow quickly with igus®

- Lower the overhead costs
- Cut your throughput times from days to hours
- Respond flexibly to order variations
- Utilize igus® manufacturing capacities and our know-how in cable assembly

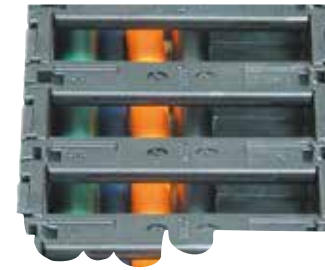


From one off to mass production

### Reduce the number of suppliers and orders by 75%

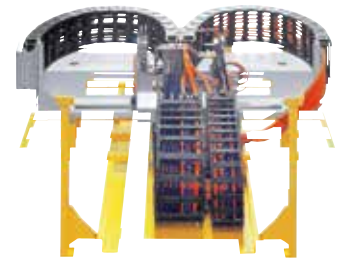
- One order, one invoice, one delivery
- A partner for minimal machine downtimes
- All ReadyChain® components are subject to an extensive quality control and function testing

## You determine the degree of harnessing

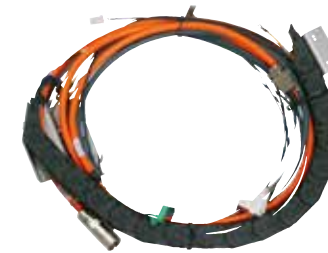


### Any degree of harnessing is possible

We harness from simple e-chainsystems® with inserted chainflex® cables to complex systems. These systems may include all cables and hoses (pneumatic, hydraulic) patch plugs, inner partitions, connecting elements and connecting parts as requested.



## You determine the batch size



### Any batch size possible

Up-to-date production processes, custom-build or serial production. Fast and cost-effective delivery.



From batch size 1 ..... to serial production

## You determine the travel



### Choosing the travel

ReadyChains® offers the whole spectrum of possible travels of the igus® e-chains®. We harness anything from extremely short to long travels. Safe transportation guarantees damage-free delivery of all lengths.

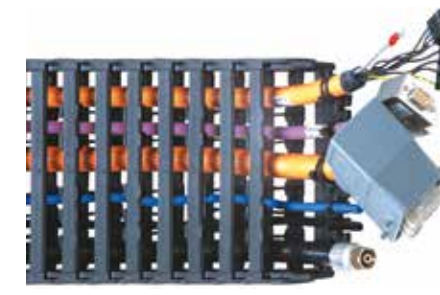


From short ..... to long travel

## Standardized ReadyChain®-packages facilitate your entry



ReadyChain® "Basic"



ReadyChain® "Standard"



ReadyChain® "Premium"



600 orders/week, more than 32,300 ft<sup>2</sup> of floorspace, "chain-cable guarantee" since 1989... 3 shifts, 13 project engineers, 160 employees dedicated only to harnessing



In the igus® ReadyChain® factory, we assemble customized e-chainsystems®. All under one roof. All from one source.



Up-to-date production processes, custom-build or serial production



Customised cable assembling



12 ReadyChain® factories worldwide



Full Service: from system acceptance to assembly

**1 Everything from a single source**

The ReadyChain® includes pre-harnessed, customised energy chain systems®. The "plug in and ready" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting 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 situation on site. Changes in mass production can be undertaken easily. By the latching mechanism, additional components can also be easily attached to the rack subsequently.

**3 Sustainable use**

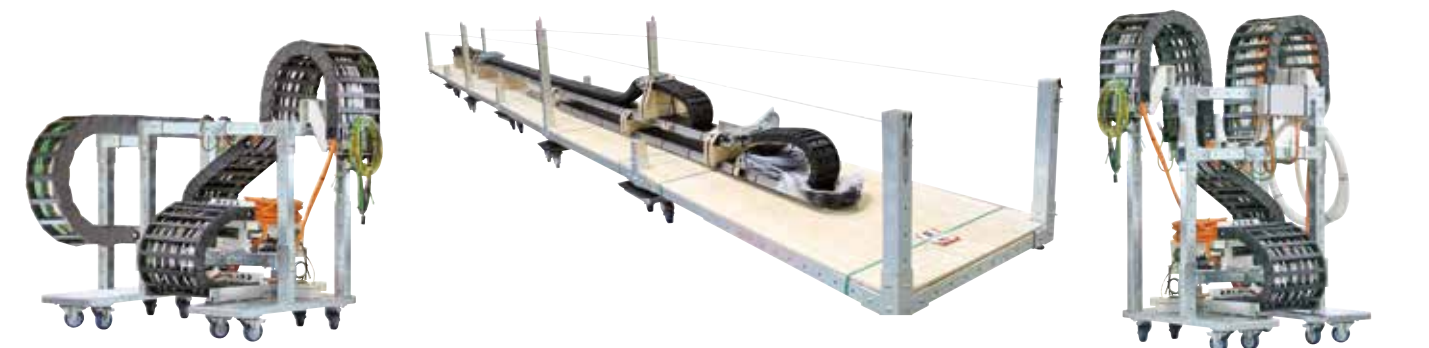
The components of the ReadyChain® rack are galvanized and thus designed for a long life. Each rack is constructed within a few hours. The individual elements can be reused at any time removing the need to dispose of custom made parts - as with conventional welded transport racks.

Save 80% at prototyping. Assembly transport rack for ready-to-install energy supply systems.



**4 Precise fitting "Plug & Play"**

All interfaces and attachments are designed in such a way that the installation of the e-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.





igus® Connectors



Round plug connector kit

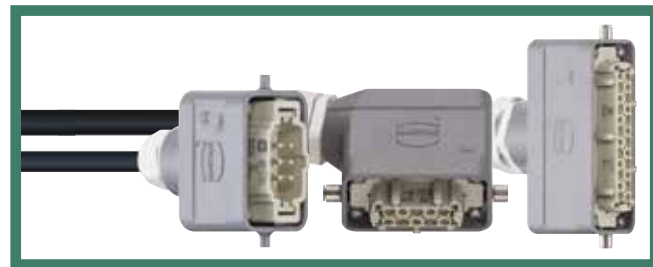


D-sub in the service kit



Tools and accessories

igus® ReadyCable



Control cables with industrial connectors



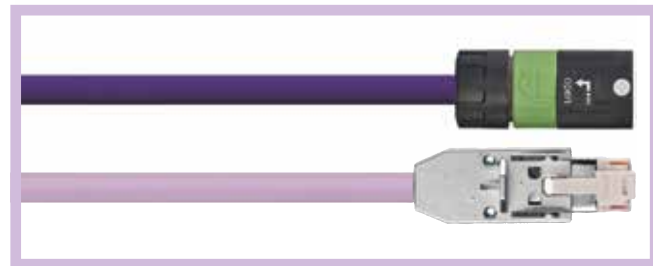
Harnessed hose packages and cables for robots



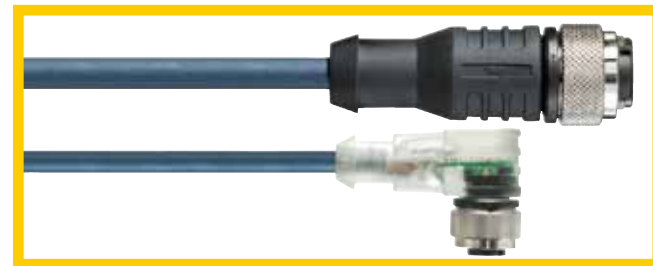
Drive technology: More than 4,000 cables



Catalog standards: Video-/vision-/bus technology



Catalog standards: Network/Ethernet/FOC/Field bus



Catalog standards: Initiator cables up to 4 x d



ReadyChain® service

- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule



System acceptance on your machine



ReadyChain® service

- Component selection
- Interface optimizations
- Documentation
- Integrated project management
- Cost optimization



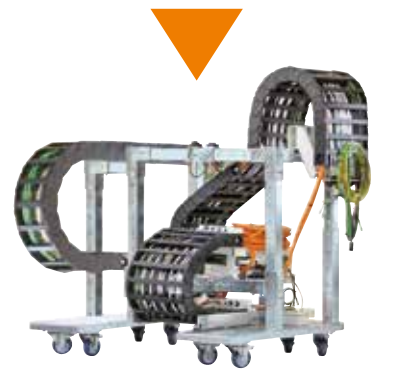
Project planning



ReadyChain® Skype service\*

- Initial acceptance from your work place
- Build your prototype with an igus® project engineer, live in your meeting
- Your requests for changes 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 own installation
- Transparent, fixed price



Installation on site



Capacity for 600,000 assembled cables a year... more than 18,000 test programs ... 1,800 test adapters



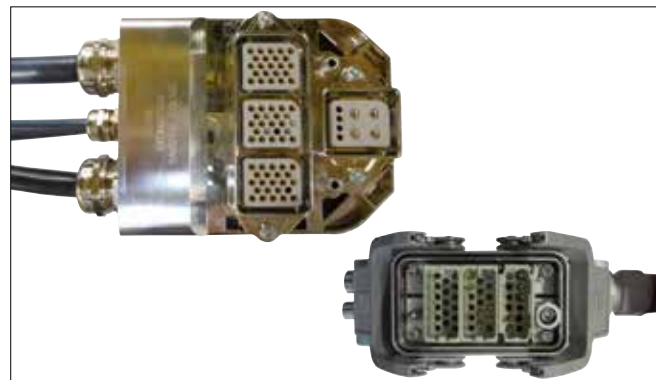
Process reliability ... Crimp force monitored ... automated ... time-optimized ...



Computer-based high-voltage testing and inspection of all assembled cables



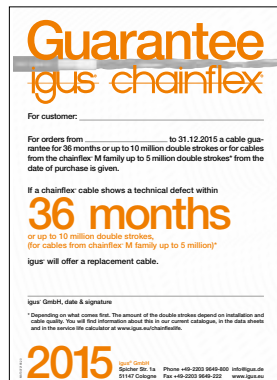
Modern machinery - automatic stripper-crimper



Special cable assemblies



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 meter of cables on stock

... harnessing



3,500 connector components



Hundreds of meters of guide troughs



29,600 ft² test lab - more than 8,000 tests every year



Quickly within reach



Numerous strain relief solutions



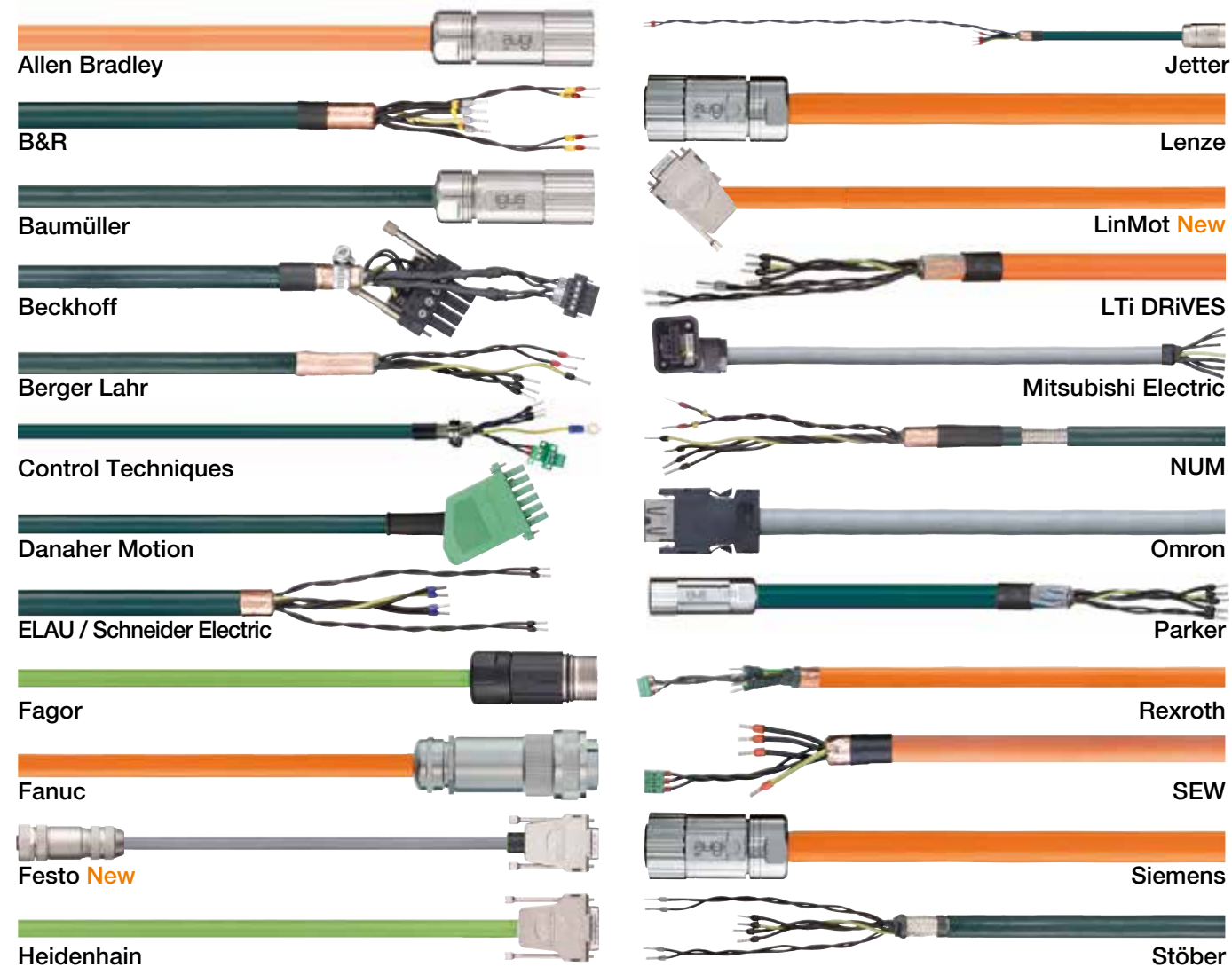
More than 8,000 cables per week



Just in time supply



## ReadyCable - harnessed cables in 24-48h



- igus® offers more than 4,000 harnessed cables online
- Servo, Motor and Signal/Encoder cables according to 24 manufacturers standards
- No cutting costs, no surcharges for small quantities and packaging
- Cable length accurate to the inch per customer spec
- Smallest bending radius from 7.5 x d
- Reduce storage costs and increase cashflow
- Available in 24h



**QuickPin 2.0**  
Connector-cable configurator  
integrated directly in EPLAN P8.  
[www.igus.com/quickpin](http://www.igus.com/quickpin)

## ReadyCable M - Injection-molded cables



As individual as your project - injection-molded connectors from igus®

- Various sizes: M8, M12, M23, M40, USB 3.0 etc.
- Sizes M23+M40 with SpeedTec® quickrelease fastener
- Angled versions
- According to UL/CSA standard
- Individual customer logo possible
- ESD material for ATEX-areas
- Tamper-proof
- Tight according to IP66/67 already before the molding process
- 360° shielded
- Space and weight saving



Professionally injection molded - molding M23



Harnessed to your specifications



100% tested: test field



100% tested: digital continuity test





Technical data and schedules/ user information/ contact

## Designing with igus®

Cables and hoses - General rules for cables and hoses in E-Chains®	794
Cables and hoses - Separation in E-Chain®	795
Cables and hoses - Further information on the separation of cables	796
Electrical round cables	797
Electrical round cables - Information on assembly and strain relief of electrical round cables	798
Pneumatic hoses	799

## Data and schedules

DIN 47100 color code/ Copper wire dimensions according to AWG numbers	800
Load-carrying capacity of cables	801
Chemical resistance	802

## Information

Approvals and standards	806
Configure and order products online, igus® & eplan	808
Catalogs and brochures	811
igus® at www.igus.com	812
Table of contents according to part number	813

## Contact igus®

International map	822
North American Locations	832

How to use the catalog	20
<b>Exclusive!</b> Chainflex® guarantee	22
Chainflex® cables classification / What does the Chainflex® "class"(ification) mean?	26
Catalog improvement – Query and suggestions	Cover back
Definition of the icons used in the catalog	Cover back





**Rules for:**

- Maximum cable diameters
- Separation
- Bend radius

## General rules for cables and hoses in E-Chains®

### Data and energy supply in all forms within an Energy Chain System®

The key advantage of an igus® Energy Chain System® is the safe accommodation of various forms of data cables and energy suppliers 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 Cable/hose 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® is allowed to 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



Orderly 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 electrical round 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. You may talk to us about this.

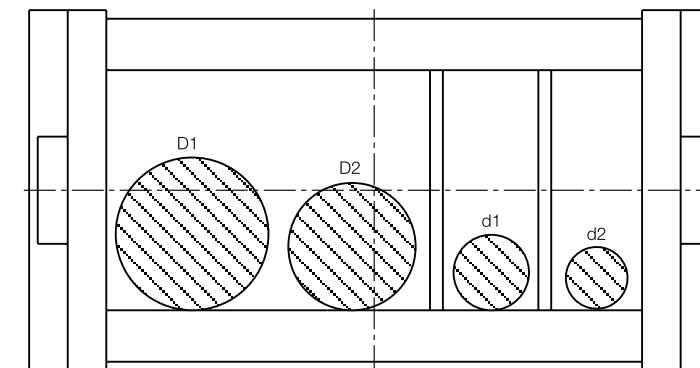


Electrical cables need at least 10% clearance space all around, hydraulic hoses need 20%

The maximum conduit diameter is specified for each series on 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**.



$D1 + D2 > 1.2 \times hi$        $d1 + d2 \leq 1.2 \times hi$

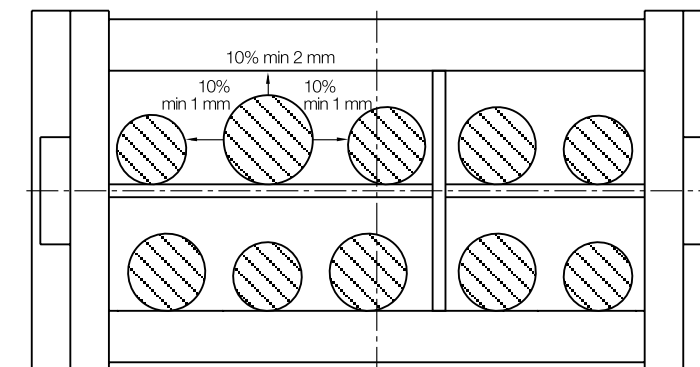
### Expressed in rules, this means:

#### 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:

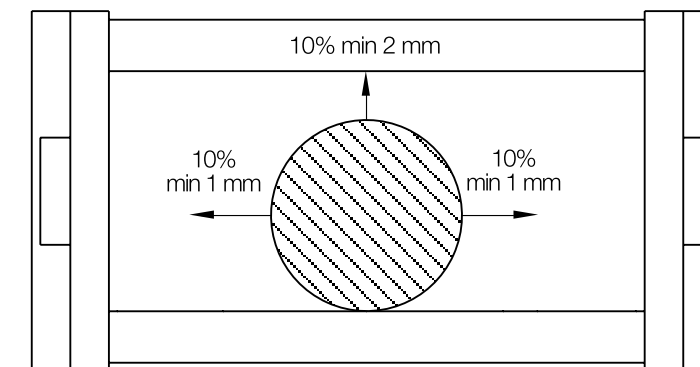
if  $d1 + d2 \leq 1.2 \times$  E-Chain® inner height, a vertical separator or a horizontal shelf must be used to reduce the inner height. Thereby preventing the entanglement of d1 and d2.



$d1 + d2 \leq 1.2 \times hi$

### 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 "all around" 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 1.64 ft/s (0.5 m/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 "all around"
Electrical round 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 along the width of the E-Chain®.
- Cables with different outer jacket materials must not be allowed to stick together. If necessary, they must be laid separately. All igus® Chainflex® cables can be combined with each and all other brands of cables.
- The cables should always be fixed at the moving end. The fixed end should always involve strain relief. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses. (i.e. 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

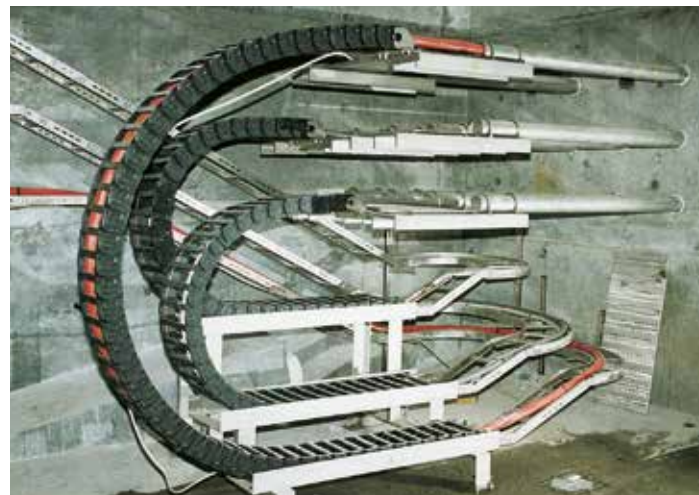
- The bend radius of your E-Chain® depends on the thickest or stiffest cable or hose in your application.
- The bend radii of the E-Chains® should be adjusted to the recommendations of the cable or hose manufacturer. The selection of a larger radius than the minimum will positively affect service life.
- The specification of minimum bend radii for cables refers to use at normal temperatures. Other bend radii may be recommended like the ones seen in our guarantee charts within each chapter. 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  $4 \times d$  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-ChainSystems® - 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 780

## Design parameters | Electrical round cables

### Electrical round 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
- 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® experimental laboratory: constant development and testing of Chainflex® electrical round cables

For bus cables and Fiber 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 | Electrical round cables

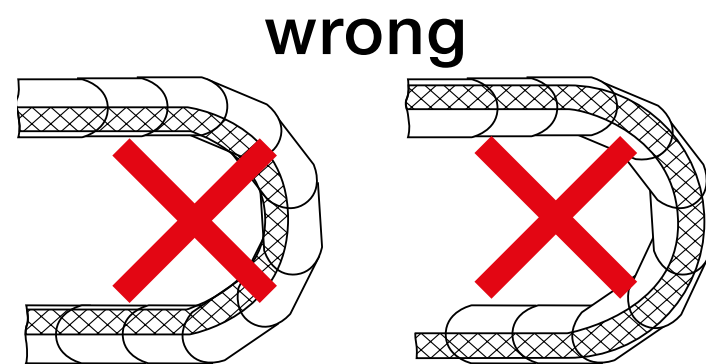
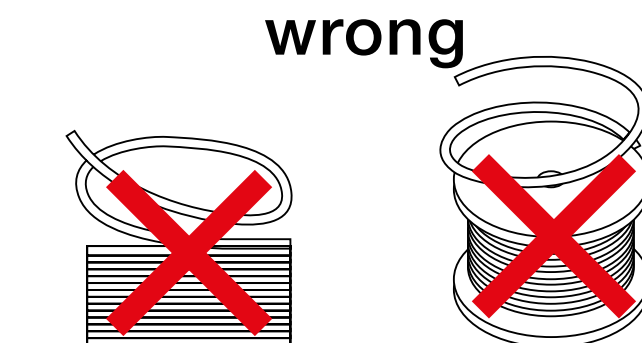
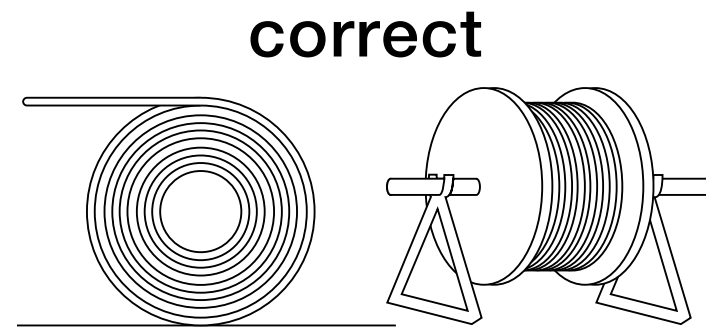
### Installation and strain relief of round electrical cables

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 placement 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).

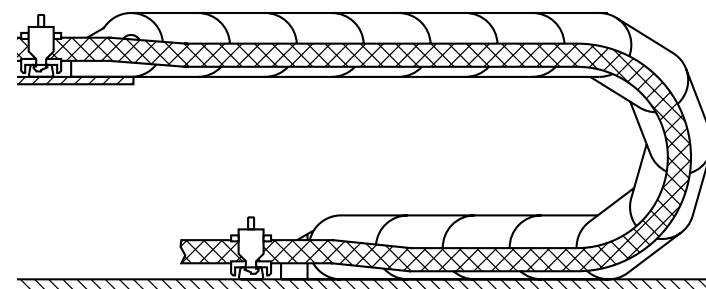
We will be pleased to provide you with recommendations for complete E-ChainSystems:

„ReadyChain®: chain-cable harnessing“.

► ReadyChain® from page 839



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-Chainsystem® with several pneumatic and hydraulic hoses

The igus® product range also offers thermo polymer pneumatic hoses called "Chainflex® CFAir and CFCleanAir" ► page 406



## Information color code

### DIN 47100 color code (however, deviating from DIN: without color repetition after 44th core)\*

1 white	17 white-grey	33 green-red	49 white-green-black
2 brown	18 grey-brown	34 yellow-red	50 brown-green-black
3 green	19 white-pink	35 green-black	51 white-yellow-black
4 yellow	20 pink-brown	36 yellow-black	52 yellow-brown-black
5 grey	21 white-blue	37 grey-blue	53 white-grey-black
6 pink	22 brown-blue	38 pink-blue	54 grey-brown-black
7 blue	23 white-red	39 grey-red	55 white-pink-black
8 red	24 brown-red	40 pink-red	56 pink-brown-black
9 black	25 white-black	41 grey-black	57 white-blue-black
10 violet	26 brown-black	42 pink-black	58 brown-blue-black
11 grey-pink	27 grey-green	43 blue-black	59 white-red-black
12 red-blue	28 yellow-grey	44 red-black	60 brown-red-black
13 white-green	29 pink-green	45 white-brown-black	61 black-white
14 brown-green	30 yellow-pink	46 yellow-green-black	
15 white-yellow	31 green-blue	47 grey-pink-black	
16 yellow-brown	32 yellow-blue	48 red-blue-black	

\*Exception: 4-core cables are braided in the color sequence white, green, brown, yellow.

The first color indicates the basic color of the core insulation, and the second color indicates the color of the printed-on ring. In the case of three colors, the second and third colors are printed on the basic color.

### Copper wire dimensions according to AWG numbers

AWG/MCM No.	Diameter [mm]	Cross section [mm <sup>2</sup> ]	AWG/MCM 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			

## Information | Load-carrying capacity of cables

The values from the tables on the side of this page have been taken from the standard DIN VDE 0298, Part 4. These values have been simplified and only apply approximately. For each user, it is advisable to obtain and comply with the regulations that apply to each individual case of application (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 catalog. 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 sections, the load capacity in undisturbed operation is the determining factor, i.e. the use with permissible operating temperature or permissible maximum temperature on the conductor.

The load-bearing capacity according to table 1 on this page applies to operating-current-carrying conductors.

Normally, these are 2 loaded conductors in the case of 2-core and 3-core cables, as well as 3 loaded conductors 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 in case 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 mentioned for this large accumulation of cables. The installation type and the conversion factors must be looked up in table 3 according to each individual application.

**Table 3:** Conversion factors for multi-core cables with cable cross sections up to 10 mm<sup>2</sup>

Loaded Conductors	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 1:** Cables for fixed installation in energy-conducting chains and tubes

Insulation material	PVC	TPE
Chainflex® type	CF5, CF6, CF2, CF880, CF881, CF890, CF891 CF130 US CF140US	CF130.UL, CF140.UL, CF77.UL.D, CF78.UL, CF9, CF10, CF9.UL, CF10.UL, CF98, CF99, CF240, CF211, CF112, CF11, CF12, CF211, CF113.D, CF111.D, CF11.D, CF210.UL, CF21.UL, CF270.UL.D, CF27.D, CF30, CF31, CF34.UL.D, CF35.UL, CF37.D, CF38, CF300.UL.D, CFPE, CF310.UL, CF330.D, CF340, CFBRAID, CFROBOT, CFROBOT 6,7,9, CF884, CF894 CF885, CF886, CF895, CF896 CF887, CF897, CF220.UL.H, CF280.UL.H, CF430.D, CF440
Number of conductors	2 or 3	
Installation		

Nominal cross section of copper cable [mm <sup>2</sup> ]	AWG	Load-carrying capacity [A]	
		PVC insulation	TPE insulation
0.14	26	2.5	2.5
0.25	24	4	5
0.34	22	5	7
0.50	20	8	10
0.75	18	12	14
1	17	15	17
1.50	16	185	21
2.50	14	26	30
4	12	34	41
6	10	44	53
10	8	61	74
16	6	82	99
25	4	108	131
35	2	135	162
50	1	168	202
70	2/0	207	250
95	3/0	250	301
120	4/0	292	352
150	300	335	404
185	350	382	461

**Table 2:** Conversion factors in case of varying ambient temperatures

Ambient temperature [°C]	Conversion Factor	
	PVC insulation	TPE 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



Group	Chainflex® cable	Jacket material	1	2	3	4	Page
<b>Control cables</b>							
Control cable	CF880	PVC	1				66
Control cable	CF881	PVC	1				70
Control cable	CF130-UL	PVC	1				82
Control cable	CF140-UL	PVC	1				86
Control cable	CF5	PVC		2			90
Control cable	CF6	PVC		2			94
Control cable	CF77-UL-D	PUR			3		106
Control cable	CF78-UL	PUR			3		110
Control cable	CF2	PUR			3		114
Control cable	CF9	TPE				4	118
Control cable	CF10	TPE				4	122
Control cable	CF9-UL	TPE				4	126
Control cable	CF10-UL	TPE				4	130
Control cable	CF98	TPE				4	134
Control cable	CF99	TPE				4	136
<b>Data cables</b>							
Data cable	CF240	PVC		2			142
Data cable	CF240 -PUR	PUR			3		146
Data cable	CF211	PVC		2			150
Data cable	CF211-PUR	PUR			3		154
Data cable	CF112	PUR			3		162
Data cable	CF11	TPE				4	158
Data cable	CF12	TPE				4	166
Data cable	CFKoax	TPE				4	168
<b>Bus cables</b>							
Bus cable	CF888	PVC	1				180
Bus cable	CFBUS-PVC	PVC		2			182
Bus cable	CFBUS-PUR	PUR			3		190
Bus cable	CFBUS	TPE				4	194
Bus cable	CF11-LC	TPE				4	200
Bus cable	CF11-LC-D	TPE				4	204
Bus cable	CF14-CAT5	TPE				4	210
<b>Fiber optic cables</b>							
Fiber optic cable	CFLG88	PVC	1				220
Fiber optic cable	CFLK	PUR			3		218
Fiber optic cable	CFLG-LB-PUR	PUR			3		222
Fiber optic cable	CFLG-LB	TPE				4	226
Fiber optic cable	CFLG-G	TPE				4	230
<b>Measuring system cables</b>							
Measuring system cable	CF884	PVC	1				240
Measuring system cable	CF211	PVC		2			244
Measuring system cable	CF111-D	TPE				4	254
Measuring system cable	CF113-D	PUR			3		260
Measuring system cable	CF11-D	TPE				4	268

Group	1	2	3	4
<b>Inorganic chemicals</b>				
<b>Aqueous solutions, neutral</b>				
Water	+	+	+	+
Common salt (10%)	+	+	+	+
Glauber's salt (10%)	+	+	+	+
<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%)	+	+	+	+
Potassium permanganate (2%)	+	+	+	+
<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
Sodium hydroxide (10%)	0	0	0	+
Caustic potash, concentrated	-	-	-	0
Caustic potash (10%)	0	0	0	+
Ammonia, concentrated	0	0	0	+
Ammonia (10%)	+	+	+	+
<b>Organic chemicals / 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	+	+
Diesel fuel	-	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	+	+	+
Olive oil	0	+	+	+
Soya bean oil	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

Group	chainflex® cable	Jacket material	①	②	③	④	Page
<b>Servo cables</b>							
Servo cable	CF887	PVC	1				280
Servo cable	CF210-UL	PVC		2			282
Servo cable	CF220-UL-H	PVC		2			286
Servo cable	CF21-UL	PVC		2			290
Servo cable	CF270-UL-D	PUR			3		296
Servo cable	CF280-UL-H	PUR			3		300
Servo cable	CF27-D	PUR			3		304
<b>Motor cables</b>							
Motor cables	CF885	PVC	1				314
Motor cables	CF886	PVC	1				316
Motor cables	CF30	PVC		2			318
Motor cables	CF31	PUR		2			322
Motor cables	CF270-UL-D	TPE			3		330
Motor cables	CF34-UL-D	TPE				4	338
Motor cables	CF35-UL	TPE				4	342
Motor cables	CF37-D	TPE				4	346
Motor cables	CF38	TPE				4	348
Motor cables	CF300-UL-D	TPE				4	360
Motor cables	CFPE	TPE				4	362
Motor cables	CF310-UL	TPE				4	364
Motor cables	CF330-D	TPE				4	366
Motor cables	CF340	TPE				4	368
Motor cables	CF430-D	TPE				4	370
Motor cables	CF440	TPE				4	372
<b>Twistable cables</b>							
Twistable cable	CF77-UL-D	PUR			3		382
Twistable cable	CFROBOT2	PUR			3		386
Twistable cable	CFROBOT3	PUR			3		388
Twistable cable	CFROBOT4	PUR			3		390
Twistable cable	CFROBOT5	TPE				4	394
Twistable cable	CFROBOT6	PUR			3		396
Twistable cable	CFROBOT7	PUR			3		398
Twistable cable	CFROBOT	TPE				4	402
Twistable cable	CFROBOT8	PUR				4	404
Twistable cable	CFROBOT9	PUR				4	408
<b>Special cables</b>							
Special cable	CFTHERMO	PUR			3		414
Special cable	CFFLAT	TPE				4	418
Special cable	CFBRAID	TPE				4	420
Special cable	CFSPECIAL-182	PUR			3		422
Special cable	CFSPECIAL-414	PUR			3		424
Special cable	CFSPECIAL-792	PUR			3		426

Group	①	②	③	④
<b>Inorganic chemicals</b>				
<b>Aqueous solutions, neutral</b>				
Water	+	+	+	+
Common salt (10%)	+	+	+	+
Glauber's salt (10%)	+	+	+	+
<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%)	+	+	+	+
Potassium permanganate (2%)	+	+	+	+
<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
Sodium hydroxide (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	+	+
Diesel fuel	-	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	+	+	+
Olive oil	0	+	+	+
Soya bean oil	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

## Information approbation and approvals

The following describes the typical Approvals and Standards that Chainflex® cables carry. The table of contents and respective catalog page details the actual approval.



This is an Underwriters Laboratory designation that indicates compliance to the AWM (Appliance Wire Material) standard 758. This describes cables intended for internal and external wiring components. An AWM cable is useful when obtaining a UL listing on an overall product.



This mark is the same as except approved for use in Canada and the United States. In accordance with Canadian AWM Standard C22.2 No.210 and UL AWM Standard 758 respectively.



Cables that bear this mark are in compliance to a specific Article of the National Electrical Code. For example UL 1277 Tray Cable fulfills the requirements of Article 336 of the 2002 NEC. Listed products are intended for use within residential, commercial and industrial structures



This is the mark of the Canadian Standards Association. Many Chainflex types carry CSA AWM approvals. The Canadian AWM designates compliance to CSA Standard C22.2 No. 210. These products are intended for the internal and external wiring of electronic equipment. Typical markings on cable include the following. EX "CSA AWM I/II A/B 80°C 300V FT1" Optional markings for oil resistance and wet ratings may apply.

**Class I:** Internal

A - Where not subject to mechanical abuse  
B - Where may be subject to mechanical abuse

**Class II:** External

A - Where not subject to mechanical abuse  
B - Where may be subject to mechanical abuse

The cable must also pass a flame test typically as described below:  
FT1 - Vertical Flame Test CSA 22.2

**No. 3:** In general a Bunsen burner applies flame at base of 18" specimen. Cotton is placed below specimen. Flame is applied 5 times more for 15 seconds FT4 - Vertical Flame Test CSA 22.2 No. 3: In general a propane burner (70,000 BTU/HR) applies flame at one end of 8 foot cable lengths arranged in open steel trays.

## Information approbation and approvals



Developed by VDW – Association of German Machine Tool Manufacturers. It describes a comprehensive total concept for the standardization and decentralization of the electrical and fluid-technical installation of machines and plants.



**European Conformity** – The CE mark on a cable designates that the product complies with relevant European health, safety and environmental protection legislations. 2014/35/EG





## 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, the connection and other desired product properties as well as the number of cores and the cross-section, the nominal voltage and type of the E-Chain® for your application. Select the bending radius, the maximum and minimum operating temperature ❶, torsion, maximum speed and acceleration, as well as the travel ❷. 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.com/quickcable](http://www.igus.com/quickcable)



## Design and calculate E-Chains®

QuickChain 100



This tool will help you to plan your E-Chain®, from cables to energy supply systems.

Please determine the filling requirements and enter the weight first ❶ – or just select the igus® Chainflex® cables ❷. Then select the type of installation and set speed, acceleration, and stroke/cycles per hour ❸. Choose the length of the travel and the inner diameter of the chain ❹. To find the chain that fits your needs best, select the conditions to which your E-Chain® will be exposed (if applicable) ❺.

In the next step, select the correct E-Chain® and the desired performance features. If you need help while filling the E-Chain®, from here you can go directly to the "QuickFill" shelving configurator.

► [www.igus.com/quickchain100](http://www.igus.com/quickchain100)



## Connector-cable configurator

QuickPin 2.0



This tool makes your electrical design much easier.

Begin by selecting the appropriate cable ❶. Enter a description of the cable and its length ❷. Select the connection type ❸ and configure the connector by selecting the manufacturer (if available) and other variables. Then you can assign the cores and pins. Define the assignment of the connections manually, whereby you are guided in the selection by the numbers on the connector, or choose the automatic option ❹.

In the next steps, you can select the other connections, connectors and the length of cable reinforcement. Or order directly and create an ePLAN P8 macro for the future configuration of your cables.

► [www.igus.com/quickpin](http://www.igus.com/quickpin)



## Calculate service life of cables

QuickLife



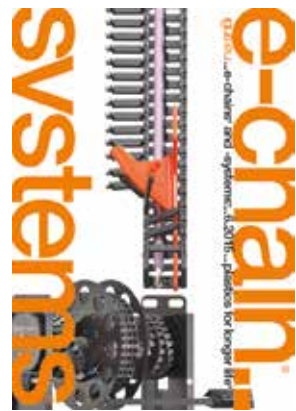
Calculate the service life of your required cable online with a few clicks. Enter the name of your system and select cable type, series and part number ❶. Enter the system information ❷ of your Energy Chain® and select whether you have an unsupported or gliding application.

By clicking on "Calculate" ❸ you will be shown the results ❹.

► [www.igus.com/cf-lifetime](http://www.igus.com/cf-lifetime)

You can also download all catalogs and brochures in our download area at [www.igus.com/downloads](http://www.igus.com/downloads)

### Print media Catalogs:



#### E-Chains® and E-ChainSystems®

The standard catalog for E-Chains® and E-ChainSystems® an 1,400 pages.

- 90,000 products from stock
- Colored chapters for better orientation
- **New** products , e.g. e-spool, twisterband, E4.1 light can be ordered
- **Optimised overview**, readability and ordering tools
- **Detailed product information**
- Many links to online tools and configurators



#### Polymer plain bearings and ball bearings

The standard catalog for plain bearings, self-aligning bearings and linear bearings and systems on 1,280 pages.

- 10,400 products from stock
- Colored chapters for better orientation
- Many new products, e.g. drylin® axes with motor, new iglidur® materials and line extensions
- **Optimised overview**, readability and ordering tools
- **Detailed product information**
- Many links to online tools and configurators



#### igus® webguide – the "TV magazine" for technicians

The WebGuide is the first technical printed catalog that is entirely designed as a quick selection, and on selection of the desired product leads straight to the internet.

- Clear and easy
- It combines the advantages of a printed catalog with the manifold possibilities of the Internet
- Price indicated for almost every product in the catalog
- Get inspired by the QR code which show you application examples
- The catalog Quicklinks ([www.igus.co.uk/web/...](http://www.igus.co.uk/web/...)) lead you directly to suitable product range, where you can configure, compare, generate CAO data, etc.
- Quick overview and simple comparison of all igus® product groups
- Handy DIN A5 format

The entire igus® product range as well as service and latest news can be found on the internet at [www.igus.com](http://www.igus.com)

Special information of Chainflex® can be found on the internet at [www.chainflex.com](http://www.chainflex.com)

### Energy Chain Systems®



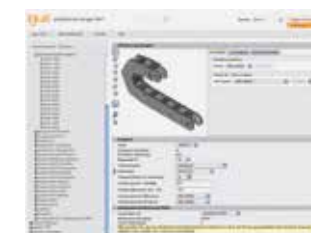
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Quick product selection and all important related information.



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Fast and easy design of E-Chains®, with free download of 3D product drawings.



Design and calculate your E-Chain® by simply entering the parameters and environment of your application.

### Polymer plain bearings



igidur® plain bearings. 35 materials, all features and applications.



Everything about self-adjusting and maintenance free igubal® plain bearings.



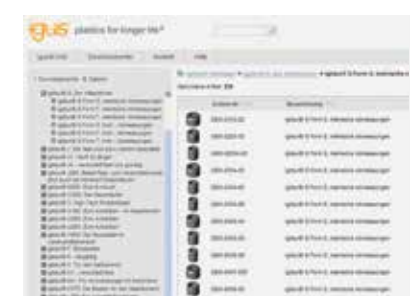
Information, quick selection and ordering related to the drylin® linear bearings.



Find the right linear bearing in 4 simple steps with the drylin® selection system and service life calculation.



Many application examples with iglidur®, igubal® and drylin®.



Efficient design tools, free download of 3D product drawings.



igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Control cable CF2</b>		CF6-05-09	94	CF9-10-25	118
CF2-01-04	114	CF6-05-12	94	CF9-15-02	118
CF2-01-08	114	CF6-05-18	94	CF9-15-04	118
CF2-01-12	114	CF6-05-24	94	CF9-15-05	118
CF2-01-18	114	CF6-05-25	94	CF9-15-07	118
CF2-01-24	114	CF6-07-03	94	CF9-15-12	118
CF2-01-36	114	CF6-07-04	94	CF9-15-18	118
CF2-01-48	114	CF6-07-05	94	CF9-15-25	118
CF2-02-04	114	CF6-07-07	94	CF9-15-36	118
CF2-02-08	114	CF6-07-12	94	CF9-25-04	118
CF2-02-18	114	CF6-07-18	94	CF9-25-05	118
CF2-02-24	114	CF6-07-24	94	CF9-25-07	118
CF2-02-48	114	CF6-07-25	94	CF9-25-12	118
<b>Control cable CF5</b>		CF6-10-03	94	CF9-25-16	118
CF5-02-36	90	CF6-10-04	94	CF9-25-18	118
CF5-03-15	90	CF6-10-05	94	CF9-25-25	118
CF5-03-18	90	CF6-10-07	94	CF9-40-04	118
CF5-03-25	90	CF6-10-12	94	CF9-60-04	118
CF5-05-02	90	CF6-10-18	94	CF9-60-05	118
CF5-05-03	90	CF6-10-24	94	CF9-100-04	118
CF5-05-05	90	CF6-10-25	94	CF9-160-04	118
CF5-05-07	90	CF6-15-03	94	CF9-350-04	118
CF5-05-12	90	CF6-15-04	94	<b>Control cable CF9-UL</b>	
CF5-05-18	90	CF6-15-05	94	CF9-UL-02-02	126
CF5-05-25	90	CF6-15-07	94	CF9-UL-02-03-INI	126
CF5-05-30	90	CF6-15-12	94	CF9-UL-02-04	126
CF5-07-03	90	CF6-15-18	94	CF9-UL-02-06	126
CF5-07-04	90	CF6-15-25	94	CF9-UL-02-07	126
CF5-07-05	90	CF6-15-36	94	CF9-UL-02-08	126
CF5-07-07	90	CF6-25-04	94	CF9-UL-02-12	126
CF5-07-12	90	<b>Control cable CF9</b>		CF9-UL-03-04-INI	126
CF5-07-18	90	CF9-02-02	118	CF9-UL-03-05-INI	126
CF5-07-25	90	CF9-02-03-INI	118	CF9-UL-03-06	126
CF5-07-36	90	CF9-02-06	118	CF9-UL-03-08	126
CF5-07-42	90	CF9-02-07	118	CF9-UL-05-02	126
CF5-10-03	90	CF9-02-08	118	CF9-UL-05-03	126
CF5-10-04	90	CF9-02-12	118	CF9-UL-05-04	126
CF5-10-05	90	CF9-02-18	118	CF9-UL-05-05	126
CF5-10-07	90	CF9-02-20	118	CF9-UL-05-07	126
CF5-10-12	90	CF9-03-04-INI	118	CF9-UL-05-12	126
CF5-10-18	90	CF9-03-05-INI	118	CF9-UL-05-18	126
CF5-10-25	90	CF9-03-06	118	CF9-UL-05-25	126
CF5-15-03	90	CF9-03-08	118	CF9-UL-05-36	126
CF5-15-04	90	CF9-03-16-07-03-INI	118	CF9-UL-07-05	126
CF5-15-05	90	CF9-05-02	118	CF9-UL-07-07	126
CF5-15-07	90	CF9-05-03	118	CF9-UL-07-12	126
CF5-15-12	90	CF9-05-04	118	CF9-UL-07-20	126
CF5-15-18	90	CF9-05-05	118	CF9-UL-07-25	126
CF5-15-25	90	CF9-05-07	118	CF9-UL-10-03	126
CF5-15-36	90	CF9-05-12	118	CF9-UL-10-04	126
CF5-25-04	90	CF9-05-18	118	CF9-UL-10-05	126
CF5-25-05	90	CF9-05-25	118	CF9-UL-10-12	126
CF5-25-07	90	CF9-05-36	118	CF9-UL-10-18	126
CF5-25-12	90	CF9-07-04	118	CF9-UL-10-25	126
CF5-25-18	90	CF9-07-05	118	CF9-UL-15-04	126
CF5-25-25	90	CF9-07-07	118	CF9-UL-15-05	126
<b>Control cable CF6</b>		CF9-07-12	118	CF9-UL-15-07	126
CF6-02-04	94	CF9-07-20	118	CF9-UL-15-12	126
CF6-02-24	94	CF9-07-25	118	CF9-UL-15-18	126
CF6-02-25	94	CF9-10-03	118	CF9-UL-15-25	126
CF6-03-05	94	CF9-10-04	118	CF9-UL-25-04	126
CF6-05-02	94	CF9-10-05	118	CF9-UL-25-05	126
CF6-05-05	94	CF9-10-12	118	CF9-UL-25-07	126
CF6-05-07	94	CF9-10-18	118	CF9-UL-25-12	126



## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF9-UL-25-16	126	CF10-UL-10-03	130	CF11-034-D	268
CF9-UL-25-18	126	CF10-UL-10-04	130	CF11-035-D	268
CF9-UL-25-25	126	CF10-UL-10-05	130	CF11-038-D	268
CF9-UL-40-04	126	CF10-UL-10-07	130	CF11-040-D	268
CF9-UL-60-04	126	CF10-UL-10-12	130	<b>Bus cable CF11-LC</b>	
<b>Control cable CF10</b>		CF10-UL-10-18	130	CF11-02-03-02-IB-S	200
CF10-01-12	122	CF10-UL-10-25	130	CF11-02-03-02-10-03-IB-S	200
CF10-01-18	122	CF10-UL-15-04	130	CF11-05-01-02-LC	200
CF10-02-04	122	CF10-UL-15-05	130	CF11-05-02-02-LC	200
CF10-02-08	122	CF10-UL-15-07	130	CF11-02-02-02-PBA-LC	200
CF10-02-12	122	CF10-UL-15-12	130	<b>Bus cable CF11-LC-D</b>	
CF10-02-24	122	CF10-UL-15-18	130	CF11-02-01-02-PBA-LC-D	204
CF10-02-25	122	CF10-UL-25-04	130	CF11-02-02-15-04-PBA-LC-D	204
CF10-03-05-INI	122	CF10-UL-25-07	130	CF11-02-02-02-LC-D	204
CF10-05-04	122	CF10-UL-25-12	130	CF11-05-01-02-LC-D	204
CF10-05-05	122	CF10-UL-40-04	130	<b>Data cable CF12</b>	
CF10-05-07	122	<b>Data cable CF11</b>		CF12-02-02-02	162
CF10-05-12	122	CF11-01-04-02	158	CF12-02-03-02	162
CF10-05-18	122	CF11-01-18-02	158	CF12-02-04-02	162
CF10-05-25	122	CF11-02-01-02	158	CF12-02-05-02	162
CF10-07-04	122	CF11-02-02-02	158	CF12-05-03-02	162
CF10-07-05	122	CF11-02-03-02	158	CF12-05-04-02	162
CF10-07-07	122	CF11-02-04-02	158	CF12-05-05-02	162
CF10-07-12	122	CF11-02-05-02	158	CF12-05-06-02	162
CF10-07-20	122	CF11-02-06-02	158	CF12-05-08-02	162
CF10-07-24	122	CF11-02-09-02	158	CF12-05-10-02	162
CF10-07-25	122	CF11-02-10-02	158	CF12-05-14-02	162
CF10-10-02	122	CF11-02-14-02	158	CF12-10-06-02	162
CF10-10-03	122	CF11-03-08-02	158	<b>Bus cable CF14US</b>	
CF10-10-04	122	CF11-05-04-02	158	CF14US-02-04-02	208
CF10-10-05	122	CF11-05-06-02	158	CF14US-02-04-02-UV	208
CF10-10-07	122	CF11-05-08-02	158	<b>Bus cable CF14-CAT5</b>	
CF10-10-12	122	CF11-07-03-02	158	CF14-01-04-02-CAT5	210
CF10-10-18	122	CF11-10-04-02	158	CF14-02-02-02-CAT5	210
CF10-10-24	122	CF11-15-06-02	158	CF14-02-04-02-CAT5	210
CF10-10-25	122	CF11-25-03-02	158	CF14-02-05-02-CAT5	210
CF10-15-04	122	<b>Measuring system cable CF11-D</b>		<b>Servo cable CF21-UL</b>	
CF10-15-05	122	CF11-001-D	268	CF21-07-05-02-01-UL	290
CF10-15-07	122	CF11-002-D	268	CF21-15-15-02-01-UL	290
CF10-15-12	122	CF11-003-D	268	CF21-25-15-02-01-UL	290
CF10-15-18	122	CF11-004-D	268	CF21-40-15-02-01-UL	290
CF10-25-04	122	CF11-005-D	268	CF21-60-15-02-01-UL	290
CF10-25-07	122	CF11-006-D	268	CF21-100-15-02-01-UL	290
CF10-25-12	122	CF11-007-D	268	CF21-160-15-02-01-UL	290
CF10-40-04	122	CF11-008-D	268	CF21-250-15-02-01-UL	290
CF10-40-05	122	CF11-009-D	268	CF21-350-15-02-01-UL	290
<b>Control cable CF10-UL</b>		CF11-010-D	268	CF21-07-03-02-02-UL	290
CF10-UL-02-04	130	CF11-011-D	268	CF21-10-07-02-02-UL	290
CF10-UL-02-08	130	CF11-012-D	268	CF21-15-07-02-02-UL	290
CF10-UL-02-12	130	CF11-013-D	268	CF21-25-15-02-02-UL	290
CF10-UL-02-24	130	CF11-014-D	268	CF21-40-15-02-02-UL	290
CF10-UL-05-04	130	CF11-015-D	268	CF21-60-15-02-02-UL	290
CF10-UL-05-05	130	CF11-016-D	268	CF21-100-15-02-02-UL	290
CF10-UL-05-12	130	CF11-017-D	268	CF21-160-15-02-02-UL	290
CF10-UL-05-18	130	CF11-018-D	268	CF21-250-15-02-02-UL	290
CF10-UL-05-25	130	CF11-019-D	268	CF21-350-15-02-02-UL	290
CF10-UL-07-03	130	CF11-021-D	268	<b>Motor cable CF27-D</b>	
CF10-UL-07-04	130	CF11-022-D	268	CF27-07-04-D	334
CF10-UL-07-05	130	CF11-025-D	268	CF27-10-04-D	334
CF10-UL-07-07	130	CF11-027-D	268	CF27-15-04-D	334
CF10-UL-07-12	130	CF11-029-D	268	CF27-25-04-D	334
CF10-UL-07-20	130	CF11-031-D	268	CF27-500-04-D	334
CF10-UL-07-25	130	CF11-032-D	268		
CF10-UL-10-02	130	CF11-033-D	268		

## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Servo cable CF27-D</b>		CF34-UL-40-04-D	338	CF77-UL-05-07-D	106
CF27-07-05-02-01-D	304	CF34-UL-60-04-D	338	CF77-UL-05-12-D	106
CF27-15-10-02-01-D	304	CF34-UL-60-05-D	338	CF77-UL-05-18-D	106
CF27-15-15-02-01-D	304	CF34-UL-100-04-D	338	CF77-UL-05-25-D	106
CF27-25-10-02-01-D	304	CF34-UL-100-05-D	338	CF77-UL-05-30-D	106
CF27-25-15-02-01-D	304	CF34-UL-160-04-D	338	CF77-UL-07-03-D	106
CF27-40-15-02-01-D	304	CF34-UL-160-05-D	338	CF77-UL-07-04-D	106
CF27-60-15-02-01-D	304	CF34-UL-250-04-D	338	CF77-UL-07-05-D	106
CF27-100-15-02-01-D	304	CF34-UL-60-04-O-PE-D	338	CF77-UL-07-07-D	106
CF27-160-15-02-01-D	304	CF34-UL-100-04-O-PE-D	338	CF77-UL-07-12-D	106
CF27-250-15-02-01-D	304	CF34-UL-160-04-O-PE-D	338	CF77-UL-07-18-D	106
CF27-350-15-02-01-D	304	CF34-UL-500-03-O-PE-D	338	CF77-UL-07-20-D	106
CF27-07-03-02-02-D	304	<b>Motor cable CF35-UL</b>		CF77-UL-07-25-D	106
CF27-10-07-02-02-D	304	CF35-UL-05-04	342	CF77-UL-07-36-D	106
CF27-15-07-02-02-D	304	CF35-UL-07-04	342	CF77-UL-07-42-D	106
CF27-25-15-02-02-D	304	CF35-UL-15-04	342	CF77-UL-10-02-D	106
CF27-40-15-02-02-D	304	CF35-UL-25-04	342	CF77-UL-10-03-D	106
CF27-60-15-02-02-D	304	CF35-UL-40-04	342	CF77-UL-10-04-D	106
CF27-100-15-02-02-D	304	CF35-UL-60-04	342	CF77-UL-10-05-D	106
CF27-160-15-02-02-D	304	CF35-UL-100-04	342	CF77-UL-10-07-D	106
CF27-250-15-02-02-D	304	CF35-UL-160-04	342	CF77-UL-10-12-D	106
CF27-350-15-02-02-D	304	CF35-UL-250-04	342	CF77-UL-10-18-D	106
CF27-15-05-04-D	304	CF35-UL-60-03-O-PE	342	CF77-UL-10-25-D	106
CF27-25-05-04-D	304	CF35-UL-100-03-O-PE	342	CF77-UL-10-42-D	106
CF27-40-05-04-D	304	CF35-UL-160-03-O-PE	342	CF77-UL-15-03-D	106
CF27-60-05-04-D	304	CF35-UL-250-03-O-PE	342	CF77-UL-15-04-D	106
CF27-07-04-D	304	CF35-UL-350-03-O-PE	342	CF77-UL-15-05-D	106
CF27-10-04-D	304	CF35-UL-500-03-O-PE	342	CF77-UL-15-07-D	106
CF27-15-04-D	304	<b>Motor cable CF37-D</b>		CF77-UL-15-12-D	106
CF27-25-04-D	304	CF37-15-04-D	346	CF77-UL-15-18-D	106
CF27-500-04-D	304	CF37-25-04-D	346	CF77-UL-15-25-D	106
<b>Motor cable CF30</b>		CF37-40-04-D	346	CF77-UL-15-36-D	106
CF30-15-04	318	CF37-60-04-D	346	CF77-UL-15-42-D	106
CF30-25-04	318	CF37-60-05-D	346	CF77-UL-25-03-D	106
CF30-25-05	318	CF37-100-04-D	346	CF77-UL-25-04-D	106
CF30-40-04	318	CF37-100-05-D	346	CF77-UL-25-05-D	106
CF30-40-05	318	CF37-160-04-D	346	CF77-UL-25-07-D	106
CF30-60-04	318	CF37-160-05-D	346	CF77-UL-25-12-D	106
CF30-60-05	318	CF37-250-04-D	346	CF77-UL-40-04-D	106
CF30-100-04	318	CF37-60-04-O-PE-D	346	CF77-UL-40-05-D	106
CF30-100-05	318	CF37-100-04-O-PE-D	346	CF77-UL-60-05-D	106
CF30-160-04	318	CF37-160-04-O-PE-D	346	CF77-UL-100-05-D	106
CF30-160-05	318	CF37-500-03-O-PE-D	346	CF77-UL-160-05-D	106
CF30-250-04	318	<b>Motor cable CF38</b>		CF77-UL-250-05-D	106
CF30-350-04	318	CF38-05-04	348	<b>Control cable CF78-UL</b>	
CF30-500-04	318	CF38-07-04	348	CF78-UL-05-04	110
<b>Motor cable CF31</b>		CF38-15-04	348	CF78-UL-05-05	110
CF31-15-04	322	CF38-25-04	348	CF78-UL-05-07	110
CF31-25-04	322	CF38-40-04	348	CF78-UL-05-09	110
CF31-25-05	322	CF38-60-04	348	CF78-UL-05-12	110
CF31-40-04	322	CF38-100-04	348	CF78-UL-05-18	110
CF31-40-05	322	CF38-160-04	348	CF78-UL-05-25	110
CF31-60-04	322	CF38-250-04	348	CF78-UL-07-03	110
CF31-60-05	322	CF38-60-03-O-PE	348	CF78-UL-07-04	110
CF31-100-04	322	CF38-100-03-O-PE	348	CF78-UL-07-05	110
CF31-100-05	322	CF38-160-03-O-PE	348	CF78-UL-07-07	110
CF31-160-04	322	CF38-250-03-O-PE	348	CF78-UL-07-12	110
CF31-250-04	322	CF38-350-03-O-PE	348	CF78-UL-07-18	110
CF31-350-04	322	CF38-500-03-O-PE	348	CF78-UL-07-36	110
CF31-500-04	322	<b>Control cable CF77-UL-D</b>		CF78-UL-07-42	110
CF31-700-04	322	CF77-UL-02-04-D	106	CF78-UL-10-03	110
<b>Motor cable CF34-UL-D</b>		CF77-UL-03-04-INI	106	CF78-UL-10-04	110
CF34-UL-15-04-D	338	CF77-UL-05-04-D	106	CF78-UL-10-05	110
CF34-UL-25-04-D	338	CF77-UL-05-05-D	106	CF78-UL-10-07	110

## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF78-UL-10-12	110	CF111-035-D	254	CF130US-15-04	74
CF78-UL-10-18	110	CF111-040-D	254	CF130US-15-05	74
CF78-UL-10-25	110	<b>Data cable CF112</b>		CF130US-15-07	74
CF78-UL-15-03	110	CF112-02-02-02	162	CF130US-15-10	74
CF78-UL-15-04	110	CF112-02-03-02	162	CF130US-15-12	74
CF78-UL-15-05	110	CF112-02-04-02	162	CF130US-15-18	74
CF78-UL-15-07	110	CF112-02-05-02	162	CF130US-15-22	74
CF78-UL-15-12	110	CF112-02-06-02	162	CF130US-15-25	74
CF78-UL-15-18	110	CF112-05-02-02	162	CF130US-15-33	74
CF78-UL-15-25	110	CF112-05-03-02	162	CF130US-25-04	74
CF78-UL-15-36	110	CF112-05-04-02	162	CF130US-25-07	74
CF78-UL-15-42	110	CF112-05-05-02	162	CF130US-25-10	74
CF78-UL-25-04	110	CF112-05-06-02	162	CF130US-25-12	74
CF78-UL-25-05	110	<b>Measuring system cable CF113-D</b>		CF130US-40-04	74
CF78-UL-25-07	110	CF113-001-D	252	CF130US-60-04	74
CF78-UL-25-12	110	CF113-002-D	252	CF130US-60-05	74
CF78-UL-40-04	110	CF113-003-D	252	<b>Control cable CF130-UL</b>	
<b>Control cable CF98</b>		CF113-004-D	252	CF130-02-03-UL	82
CF98-01-02	134	CF113-005-D	252	CF130-02-04-UL	82
CF98-01-03	134	CF113-006-D	252	CF130-02-06-UL	82
CF98-01-04	134	CF113-007-D	252	CF130-02-07-UL	82
CF98-01-07	134	CF113-008-D	252	CF130-02-12-UL	82
CF98-01-08	134	CF113-009-D	252	CF130-02-20-UL	82
CF98-02-03-INI	134	CF113-010-D	252	CF130-02-25-UL	82
CF98-02-04	134	CF113-011-D	252	CF130-02-30-UL	82
CF98-02-07	134	CF113-012-D	252	CF130-03-02-UL	82
CF98-02-08	134	CF113-013-D	252	CF130-03-05-UL	82
CF98-03-03	134	CF113-014-D	252	CF130-05-02-UL	82
CF98-03-04-INI	134	CF113-015-D	252	CF130-05-03-UL	82
CF98-03-07	134	CF113-016-D	252	CF130-05-04-UL	82
CF98-03-08	134	CF113-017-D	252	CF130-05-05-UL	82
CF98-05-04	134	CF113-018-D	252	CF130-05-07-UL	82
<b>Control cable CF99</b>		CF113-019-D	252	CF130-05-12-UL	82
CF99-01-02	136	CF113-021-D	252	CF130-05-18-UL	82
CF99-01-03	136	CF113-022-D	252	CF130-05-25-UL	82
CF99-01-04	136	CF113-025-D	252	CF130-07-02-UL	82
CF99-01-07	136	CF113-027-D	252	CF130-07-03-UL	82
CF99-01-08	136	CF113-028-D	252	CF130-07-04-UL	82
CF99-02-03-INI	136	CF113-029-D	252	CF130-07-05-UL	82
CF99-02-04	136	CF113-031-D	252	CF130-07-07-UL	82
CF99-02-07	136	CF113-032-D	252	CF130-07-12-UL	82
CF99-02-08	136	CF113-033-D	252	CF130-07-18-UL	82
CF99-03-03	136	CF113-034-D	252	CF130-07-25-UL	82
CF99-03-04-INI	136	CF113-035-D	252	CF130-07-36-UL	82
CF99-03-08	136	CF113-036-D	252	CF130-07-42-UL	82
<b>Measuring system cable CF111-D</b>		CF113-037-D	252	CF130-10-02-UL	82
CF111-001-D	254	CF113-038-D	252	CF130-10-03-UL	82
CF111-002-D	254	CF113-040-D	252	CF130-10-04-UL	82
CF111-004-D	254	<b>Control cable CF130US</b>		CF130-10-05-UL	82
CF111-006-D	254	CF130US-05-02	74	CF130-10-07-UL	82
CF111-009-D	254	CF130US-05-03	74	CF130-10-12-UL	82
CF111-010-D	254	CF130US-05-04	74	CF130-10-18-UL	82
CF111-011-D	254	CF130US-05-05	74	CF130-10-25-UL	82
CF111-014-D	254	CF130US-05-07	74	CF130-15-02-UL	82
CF111-015-D	254	CF130US-05-12	74	CF130-15-03-UL	82
CF111-020-D	254	CF130US-05-18	74	CF130-15-04-UL	82
CF111-021-D	254	CF130US-05-25	74	CF130-15-05-UL	82
CF111-022-D	254	CF130US-07-04	74	CF130-15-07-UL	82
CF111-024-D	254	CF130US-07-05	74	CF130-15-12-UL	82
CF111-026-D	254	CF130US-07-07	74	CF130-15-18-UL	82
CF111-027-D	254	CF130US-07-12	74	CF130-15-25-UL	82
CF111-028-D	254	CF130US-07-18	74	CF130-15-36-UL	82
CF111-032-D	254	CF130US-07-25	74	CF130-15-42-UL	82
CF111-033-D	254	CF130US-15-03	74	CF130-25-03-UL	82

## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF130-25-04-UL	82	CF140-15-03-UL	86	CF211-PUR-05-05-02	154
CF130-25-07-UL	82	CF140-15-04-UL	86	CF211-PUR-05-06-02	154
CF130-25-12-UL	82	CF140-15-05-UL	86	CF211-PUR-05-08-02	154
CF130-40-03-UL	82	CF140-15-07-UL	86	CF211-PUR-05-10-02	154
CF130-60-04-UL	82	CF140-15-12-UL	86	CF211-PUR-05-14-02	154
CF130-60-05-UL	82	CF140-15-18-UL	86	<b>Measuring system cable CF211</b>	
CF130-100-05-UL	82	CF140-15-25-UL	86	CF211-001	244
CF130-160-05-UL	82	CF140-15-36-UL	86	CF211-002	244
CF130-250-05-UL	82	CF140-15-42-UL	86	CF211-004	244
<b>Control cable CF140US</b>		CF140-25-03-UL	86	CF211-006	244
CF140US-05-02	78	CF140-25-04-UL	86	CF211-009	244
CF140US-05-03	78	<b>Servo cable CF210-UL</b>		CF211-010	244
CF140US-05-04	78	CF210-UL-15-15-02-01	282	CF211-011	244
CF140US-05-05	78	CF210-UL-25-15-02-01	282	CF211-014	244
CF140US-05-07	78	CF210-UL-40-15-02-01	282	CF211-015	244
CF140US-05-12	78	CF210-UL-60-15-02-01	282	CF211-016	244
CF140US-05-18	78	CF210-UL-15-07-02-02	282	CF211-017	244
CF140US-05-25	78	CF210-UL-25-15-02-02	282	CF211-018	244
CF140US-07-04	78	CF210-UL-40-15-02-02	282	CF211-019	244
CF140US-07-05	78	CF210-UL-60-15-02-02	282	CF211-020	244
CF140US-07-07	78	CF210-UL-H01-07-03-02-01	282	CF211-022	244
CF140US-07-12	78	CF210-UL-H01-10-07-02-01	282	CF211-024	244
CF140US-07-18	78	CF210-UL-H01-15-07-02-01	282	CF211-027	244
CF140US-07-25	78	CF210-UL-H01-25-10-02-01	282	CF211-028	244
CF140US-15-03	78	CF210-UL-H01-40-10-02-01	282	CF211-032	244
CF140US-15-04	78	<b>Data cable CF211</b>		CF211-033	244
CF140US-15-05	78	CF211-02-01-02	150	CF211-036	244
CF140US-15-07	78	CF211-02-02-02	150	CF211-037	244
CF140US-15-12	78	CF211-02-03-02	150	CF211-038	244
CF140US-15-18	78	CF211-02-04-02	150	CF211-039	244
CF140US-15-22	78	CF211-02-05-02	150	<b>Hybrid Servo cable CF220-UL-H</b>	
CF140US-15-25	78	CF211-02-06-02	150	CF220-UL-H100-07-04	286
CF140US-15-33	78	CF211-02-08-02	150	CF220-UL-H101-10-04	286
CF140US-25-04	78	CF211-02-10-02	150	CF220-UL-H101-15-04	286
CF140US-25-07	78	CF211-02-14-02	150	CF220-UL-H102-25-04	286
CF140US-25-12	78	CF211-03-03-02	150	CF220-UL-H200-25-07	286
CF140US-25-18	78	CF211-03-08-02	150	CF220-UL-H501-15-04	286
CF140US-40-04	78	CF211-03-10-02	150	CF220-UL-H502-40-04	286
CF140US-60-04	78	CF211-05-01-02	150	CF220-UL-H601-25-05	286
CF140US-60-05	78	CF211-05-02-02	150	<b>Data cable CF240</b>	
<b>Control cable CF140-UL</b>		CF211-05-03-02	150	CF240-01-03	142
CF140-02-12-UL	86	CF211-05-04-02	150	CF240-01-04	142
CF140-03-05-UL	86	CF211-05-05-02	150	CF240-01-05	142
CF140-05-03-UL	86	CF211-05-06-02	150	CF240-01-07	142
CF140-05-05-UL	86	CF211-05-08-02	150	CF240-01-14	142
CF140-05-18-UL	86	CF211-05-10-02	150	CF240-01-18	142
CF140-05-36-UL	86	CF211-05-14-02	150	CF240-01-24	142
CF140-07-03-UL	86	<b>Data cable CF211-PUR</b>		CF240-02-03	142
CF140-07-04-UL	86	CF211-PUR-02-01-02	154	CF240-02-04	142
CF140-07-05-UL	86	CF211-PUR-02-02-02	154	CF240-02-05	142
CF140-07-07-UL	86	CF211-PUR-02-03-02	154	CF240-02-07	142
CF140-07-12-UL	86	CF211-PUR-02-04-02	154	CF240-02-08	142
CF140-07-18-UL	86	CF211-PUR-02-05-02	154	CF240-02-14	142
CF140-07-25-UL	86	CF211-PUR-02-06-02	154	CF240-02-18	142
CF140-07-36-UL	86	CF211-PUR-02-08-02	154	CF240-02-24	142
CF140-07-42-UL	86	CF211-PUR-02-10-02	154	CF240-03-02	142
CF140-10-02-UL	86	CF211-PUR-02-14-02	154	CF240-03-03	142
CF140-10-03-UL	86	CF211-PUR-03-03-02	154	CF240-03-04	142
CF140-10-04-UL	86	CF211-PUR-03-08-02	154	CF240-03-05	142
CF140-10-05-UL	86	CF211-PUR-03-10-02	154	CF240-03-07	142
CF140-10-07-UL	86	CF211-PUR-05-01-02	154	CF240-03-10	142
CF140-10-12-UL	86	CF211-PUR-05-02-02	154	CF240-03-14	142
CF140-10-18-UL	86	CF211-PUR-05-03-02	154	CF240-03-18	142
CF140-10-25-UL	86	CF211-PUR-05-04-02	154	CF240-03-24	142

## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Data cable CF240-PUR</b>		CF270-UL-H01-07-03-02-01-D	296	CF340-100-01	368
CF240-PUR-01-03	146	CF270-UL-H01-10-07-02-01-D	296	CF340-160-01	368
CF240-PUR-01-04	146	CF270-UL-H01-15-07-02-01-D	296	CF340-250-01	368
CF240-PUR-01-05	146	CF270-UL-H01-25-10-02-01-D	296	CF340-350-01	368
CF240-PUR-01-07	146	CF270-UL-H01-40-10-02-01-D	296	CF340-500-01	368
CF240-PUR-01-14	146	<b>Hybrid Servo cable CF280-UL-H</b>		CF340-700-01	368
CF240-PUR-01-18	146	CF280-UL-H100-07-04-D	300	CF340-950-01	368
CF240-PUR-02-03	146	CF280-UL-H101-10-04-D	300	CF340-1200-01	368
CF240-PUR-02-04	146	CF280-UL-H101-15-04-D	300	CF340-1500-01	368
CF240-PUR-02-05	146	CF280-UL-H102-25-04-D	300	CF340-1850-01	368
CF240-PUR-02-07	146	CF280-UL-H102-60-04-D	300	<b>Motor cable CF430-D</b>	
CF240-PUR-02-08	146	CF280-UL-H200-15-07-D	300	CF430-500-01-D	370
CF240-PUR-02-14	146	CF280-UL-H200-25-07-D	300	CF430-700-01-D	370
CF240-PUR-02-18	146	CF280-UL-H201-15-04-D	300	CF430-950-01-D	370
CF240-PUR-03-03	146	CF280-UL-H201-25-04-D	300	CF430-1200-01-D	370
CF240-PUR-03-04	146	CF280-UL-H203-15-04-D	300	CF430-1500-01-D	370
CF240-PUR-03-05	146	CF280-UL-H203-25-04-D	300	CF430-1850-01-D	370
CF240-PUR-03-07	146	CF280-UL-H204-15-04-D	300	<b>Motor cable CF440</b>	
CF240-PUR-03-14	146	CF280-UL-H206-60-04-D	300	CF440-500-01	372
CF240-PUR-03-18	146	CF280-UL-H501-15-04-D	300	CF440-700-01	372
<b>Motor cable CF270-UL-D</b>		CF280-UL-H502-40-04-D	300	CF440-950-01	372
CF270-UL-15-04-D	330	CF280-UL-H601-25-05	300	CF440-1200-01	372
CF270-UL-25-04-D	330	<b>Motor cable CF300-UL-D</b>		CF440-1500-01	372
CF270-UL-40-04-D	330	CF300-UL-40-01-D	360	CF440-1850-01	372
CF270-UL-60-04-D	330	CF300-UL-60-01-D	360	<b>Control cable CF880</b>	
CF270-UL-100-04-D	330	CF300-UL-100-01-D	360	CF880-05-02	66
CF270-UL-160-04-D	330	CF300-UL-160-01-D	360	CF880-05-03	66
CF270-UL-250-04-D	330	CF300-UL-250-01-D	360	CF880-05-04	66
CF270-UL-350-04-D	330	CF300-UL-350-01-D	360	CF880-05-05	66
<b>Servo cable CF270-UL-D</b>		CF300-UL-500-01-D	360	CF880-05-07	66
CF270-UL-15-15-02-01-D	296	CF300-UL-700-01-D	360	CF880-05-12	66
CF270-UL-25-15-02-01-D	296	CF300-UL-950-01-D	360	CF880-05-18	66
CF270-UL-40-15-02-01-D	296	CF300-UL-1200-01-D	360	CF880-05-25	66
CF270-UL-60-15-02-01-D	296	CF300-UL-1500-01-D	360	CF880-07-02	66
CF270-UL-100-15-02-01-D	296	CF300-UL-1850-01-D	360	CF880-07-03	66
CF270-UL-160-15-02-01-D	296	<b>Motor cable CF310-UL</b>		CF880-07-04	66
CF270-UL-250-15-02-01-D	296	CF310-UL-25-01	364	CF880-07-05	66
CF270-UL-07-03-02-02-D	296	CF310-UL-40-01	364	CF880-07-07	66
CF270-UL-10-07-02-02-D	296	CF310-UL-60-01	364	CF880-07-12	66
CF270-UL-15-07-02-02-D	296	CF310-UL-100-01	364	CF880-07-18	66
CF270-UL-25-15-02-02-D	296	CF310-UL-160-01	364	CF880-07-25	66
CF270-UL-40-15-02-02-D	296	CF310-UL-250-01	364	CF880-10-02	66
CF270-UL-60-15-02-02-D	296	CF310-UL-350-01	364	CF880-10-03	66
CF270-UL-100-15-02-02-D	296	CF310-UL-500-01	364	CF880-10-04	66
CF270-UL-160-15-02-02-D	296	CF310-UL-700-01	364	CF880-10-05	66
CF270-UL-250-15-02-02-D	296	CF310-UL-950-01	364	CF880-10-07	66
CF270-UL-350-15-02-02-D	296	CF310-UL-1200-01	364	CF880-10-12	66
CF270-UL-15-10-03-01-D	296	CF310-UL-1500-01	364	CF880-10-18	66
CF270-UL-25-10-03-01-D	296	CF310-UL-1850-01	364	CF880-10-25	66
CF270-UL-60-05-04-D	296	<b>Motor cable CF330-D</b>		CF880-15-02	66
CF270-UL-15-04-D	296	CF330-60-01-D	366	CF880-15-03	66
CF270-UL-25-04-D	296	CF330-100-01-D	366	CF880-15-04	66
CF270-UL-40-04-D	296	CF330-160-01-D	366	CF880-15-05	66
CF270-UL-60-04-D	296	CF330-250-01-D	366	CF880-15-07	66
CF270-UL-100-01-D	296	CF330-350-01-D	366	CF880-15-12	66
CF270-UL-160-01-D	296	CF330-500-01-D	366	CF880-15-18	66
CF270-UL-250-01-D	296	CF330-700-01-D	366	CF880-15-25	66
CF270-UL-350-01-D	296	CF330-950-01-D	366	CF880-25-03	66
CF270-UL-500-01-D	296	CF330-1200-01-D	366	CF880-25-04	66
CF270-UL-700-01-D	296	CF330-1500-01-D	366	CF880-25-05	66
CF270-UL-100-04-D	296	CF330-1850-01-D	366	CF880-25-07	66
CF270-UL-160-04-D	296	<b>Motor cable CF340</b>		CF880-25-12	66
CF270-UL-250-04-D	296	CF340-40-01	368	CF880-25-25	66
CF270-UL-350-04-D	296	CF340-60-01	368		

## Information | Table of contents according to part number

igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
<b>Control cable CF881</b>		CF885-PE-40-01	354	CF890-15-25	98
CF881-05-02	70	CF885-PE-60-01	354	CF890-25-04	98
CF881-05-03	70	CF885-PE-100-01	354	CF890-25-04	98
CF881-05-04	70	CF885-PE-160-01	354	CF890-25-05	98
CF881-05-05	70	CF885-PE-250-01	354	CF890-25-07	98
CF881-05-07	70	CF885-PE-350-01	354	CF890-25-12	98
CF881-05-12	70	CF885-PE-500-01	354	CF891-25-25	98
CF881-05-18	70	CF885-PE-700-01	354	<b>Control cable CF891</b>	
CF881-05-25	70	<b>Motor cable CF886</b>		CF891-05-02	102
CF881-07-02	70	CF886-15-04	316	CF891-05-03	102
CF881-07-03	70	CF886-25-04	316	CF891-05-04	102
CF881-07-04	70	CF886-40-04	316	CF891-05-05	102
CF881-07-05	70	CF886-60-04	316	CF891-05-07	102
CF881-07-07	70	CF886-100-04	316	CF891-05-12	102
CF881-07-12	70	CF886-160-04	316	CF891-05-18	102
CF881-07-18	70	CF886-40-01	356	CF891-05-25	102
CF881-07-25	70	CF886-60-01	356	CF891-07-02	102
CF881-10-02	70	CF886-100-01	356	CF891-07-03	102
CF881-10-03	70	CF886-160-01	356	CF891-07-04	102
CF881-10-04	70	CF886-250-01	356	CF891-07-05	102
CF881-10-05	70	CF886-350-01	356	CF891-07-07	102
CF881-10-07	70	CF886-500-01	356	CF891-07-12	102
CF881-10-12	70	CF886-700-01	356	CF891-07-18	102
CF881-10-18	70	CF886-950-01	356	CF891-07-25	102
CF881-10-25	70	<b>Servo cable CF887</b>		CF891-10-02	102
CF881-15-02	70	CF887-15-15-02-01	280	CF891-10-03	102
CF881-15-03	70	CF887-15-15-02-02	280	CF891-10-04	102
CF881-15-04	70	CF887-25-15-02-01	280	CF891-10-05	102
CF881-15-05	70	CF887-40-15-02-01	280	CF891-10-07	102
CF881-15-07	70	<b>Bus cable CF888</b>		CF891-10-12	102
CF881-15-12	70	CF888-001	180	CF891-10-18	102
CF881-15-18	70	CF888-045	180	CF891-10-25	102
CF881-15-25	70	<b>Control cable CF890</b>		CF891-15-02	102
CF881-25-03	70	CF890-05-02	98	CF891-15-03	102
CF881-25-04	70	CF890-05-03	98	CF891-15-04	102
CF881-25-05	70	CF890-05-04	98	CF891-15-05	102
CF881-25-07	70	CF890-05-05	98	CF891-15-07	102
CF881-25-12	70	CF890-05-07	98	CF891-15-12	102
CF881-25-25	70	CF890-05-12	98	CF891-15-18	102
<b>Measuring system cable CF884</b>		CF890-05-18	98	CF891-15-25	102
CF884-001	240	CF890-05-25	98	CF891-25-04	102
CF884-006	240	CF890-07-02	98	CF891-25-05	102
CF884-011	240	CF890-07-03	98	CF891-25-07	102
CF884-015	240	CF890-07-04	98	CF891-25-12	102
CF884-022	240	CF890-07-05	98	CF891-25-25	102
CF884-028	240	CF890-07-07	98	<b>Measuring system cable CF894</b>	
<b>Motor cable CF885</b>		CF890-07-12	98	CF894-001	250
CF885-15-04	314	CF890-07-18	98	CF894-006	250
CF885-25-04	314	CF890-07-25	98	CF894-009	250
CF885-40-04	314	CF890-10-02	98	CF894-011	250
CF885-60-04	314	CF890-10-03	98	CF894-015	250
CF885-100-04	314	CF890-10-04	98	CF894-022	250
CF885-160-04	314	CF890-10-05	98	CF894-028	250
CF885-40-01	352	CF890-10-07	98	<b>Motor cable CF895</b>	
CF885-60-01	352	CF890-10-12	98	CF895-15-04	326
CF885-100-01	352	CF890-10-18	98	CF895-25-04	326
CF885-160-01	352	CF890-10-25	98	CF895-40-04	326
CF885-250-01	352	CF890-15-02	98	CF895-60-04	326
CF885-350-01	352	CF890-15-03	98	CF895-100-04	326
CF885-500-01	352	CF890-15-04	98	CF895-160-04	326
CF885-700-01	352	CF890-15-05	98	<b>Motor cable CF896</b>	
CF885-950-01	352	CF890-15-07	98	CF896-15-04	328
<b>Motor cable CF885-PE</b>		CF890-15-12	98	CF896-25-04	328
CF885-PE-25-01	354	CF890-15-18	98	CF896-40-04	328



igus® Part No.	Page	igus® Part No.	Page	igus® Part No.	Page
CF896-60-04	328	CFBUS-PVC-050	182	CFPE-40-01	354
CF896-100-04	328	CFBUS-PVC-050	182	CFPE-60-01	354
CF896-160-04	328	CFBUS-PVC-056	182	CFPE-100-01	354
<b>Servo cable CF897</b>		CFBUS-PVC-060	182	CFPE-160-01	354
CF897-15-15-02-01	294	CFBUS-PVC-068	182	CFPE-250-01	354
CF897-15-15-02-02	294	<b>Motor cable CFCRANE</b>		CFPE-350-01	354
CF897-25-15-02-01	294	CFCRANE-1x25/16-6/10kV	374	CFPE-500-01	354
CF897-40-15-02-01	294	CFCRANE-1x35/16-6/10kV	374	CFPE-700-01	354
<b>Bus cable CF898</b>		CFCRANE-1x50/16-6/10kV	374	CFPE-950-01	354
CF898-001	186	CFCRANE-1x70/16-6/10kV	374	<b>Twistable cable CFROBOT</b>	
CF898-045	186	CFCRANE-1x95/16-6/10kV	374	CFROBOT-035	402
CF898-080	186	CFCRANE-1x120/16-6/10kV	374	CFROBOT-036	402
CF898-081	186	<b>Special cable CFFLAT</b>		CFROBOT-037	402
CF898-082	186	CFFLAT-25-01	418	CFROBOT-038	402
CF898-083	186	CFFLAT-40-01	418	CFROBOT-039	402
<b>Special cable CFBRAID</b>		<b>Coax cable CFKoax</b>		<b>Twistable cable CFROBOT2</b>	
CFBRAID-25-08	420	CFKoax1-01	168	CFROBOT2-07-04-C	386
CFBRAID-25-08-C	420	CFKoax1-05	168	CFROBOT2-07-05-C	386
<b>Bus cable CFBUS</b>		CFKoax2-01	168	CFROBOT2-07-07-C	386
CFBUS-001	194	CFKoax3-01	168	CFROBOT2-07-12-C	386
CFBUS-002	194	<b>Fiber optic cable (FOC) chainflex® CFLG88</b>		CFROBOT2-07-18-C	386
CFBUS-003	194	CFLG88-2-62,5/125	220	<b>Twistable cable CFROBOT3</b>	
CFBUS-010	194	CFLG88-2-50/125	220	CFROBOT3-02-04-02	388
CFBUS-011	194	<b>Fiber optic cable (FOC) chainflex® CFLG-LB</b>		CFROBOT3-02-08-02	388
CFBUS-020	194	CFLG-2LB-2CU-50/125	226	CFROBOT3-02-06-02	388
CFBUS-021	194	CFLG-2LB-50/125	226	CFROBOT3-05-05-02	388
CFBUS-030	194	CFLG-2LB-62,5/125	226	<b>Twistable cable CFROBOT4</b>	
CFBUS-031	194	CFLG-2LB-62,5/125	226	CFROBOT4-001	390
CFBUS-035	194	CFLG-2LB-200/230	226	CFROBOT4-002	390
CFBUS-040	194	CFLG-4LB-50/125	226	CFROBOT4-006	390
CFBUS-041	194	CFLG-4LB-62,5/125	226	CFROBOT4-009	390
CFBUS-042	194	CFLG-6LB-50/125	226	CFROBOT4-015	390
CFBUS-044	194	CFLG-6LB-62,5/125	226	CFROBOT4-028	390
CFBUS-045	194	CFLG-12LB-62,5/125	226	<b>Twistable cable CFROBOT5</b>	
CFBUS-049	194	CFLG-12LB-50/125	226	CFRobot5-500	394
CFBUS-050	194	<b>Fiber optic cable (FOC) chainflex® CFLG-LB-PUR</b>		CFRobot5-501	394
CFBUS-052	194	CFLG-2LB-PUR-62,5/125	222	<b>Twistable cable CFROBOT6</b>	
CFBUS-055	194	CFLG-4LB-PUR-62,5/125	222	CFROBOT6-100-03	396
CFBUS-060	194	CFLG-6LB-PUR-62,5/125	222	CFROBOT6-160-03	396
CFBUS-065	194	CFLG-12LB-PUR-62,5/125	222	CFROBOT6-250-03	396
CFBUS-066	194	CFLG-2LB-PUR-50/125	222	CFROBOT6-350-03	396
CFBUS-070	194	CFLG-4LB-PUR-50/125	222	<b>Twistable cable CFROBOT7</b>	
<b>Bus cable CFBUS-PUR</b>		CFLG-6LB-PUR-50/125	222	CFROBOT7-15-03-C	398
CFBUS-PUR-001	190	CFLG-6LB-PUR-9/125	222	CFROBOT7-25-03-C	398
CFBUS-PUR-021	190	CFLG-12LB-PUR-50/125	222	CFROBOT7-15-04-C	398
CFBUS-PUR-022	190	CFLG-2LB-CU2-PUR-62,5/125	222	CFROBOT7-25-04-C	398
CFBUS-PUR-035	190	CFLG-2LB-CU2-PUR-50/125	222	CFROBOT7-60-04-C	398
CFBUS-PUR-040	190	CFLG-2LB-CU4-PUR- 62,5/125	222	CFROBOT7-15-15-02-02-C	398
CFBUS-PUR-045	190	<b>Fiber optic cable (FOC) chainflex® CFLG-G</b>		CFROBOT7-25-15-02-02-C	398
CFBUS-PUR-049	190	CFLG-6G-62,5/125-TC	230	CFROBOT7-40-02-02-04-C	398
CFBUS-PUR-050	190	CFLG-12G-62,5/125-TC	230	<b>Twistable cable CFROBOT8</b>	
CFBUS-PUR-052	190	CFLG-6G-50/125-TC	230	CFROBOT8-001	404
CFBUS-PUR-056	190	CFLG-12G-50/125-TC	230	CFROBOT8-022	404
CFBUS-PUR-060	190	CFLG-6G-12E-9/125-TC	230	CFROBOT8-045	404
CFBUS-PUR-068	190	<b>Fiber optic cable (FOC) chainflex® CFLK</b>		CFROBOT8-049	404
<b>Bus cable CFBUS-PVC</b>		CFLK-L1-01	218	CFROBOT8-050	404
CFBUS-PVC-001	182	CFLK-L1-02	218	CFROBOT8-052	404
CFBUS-PVC-021	182	<b>Motor cable CFPE</b>		CFROBOT8-060	404
CFBUS-PVC-022	182	CFPE-15-01	354	<b>Twistable cable CFROBOT9</b>	
CFBUS-PVC-035	182	CFPE-25-01	354	CFROBOT9-001	408
CFBUS-PVC-040	182			CFROBOT9-002	408
CFBUS-PVC-045	182			CFROBOT9-003	408
CFBUS-PVC-049	182			CFROBOT9-004	408
				CFROBOT9-005	408

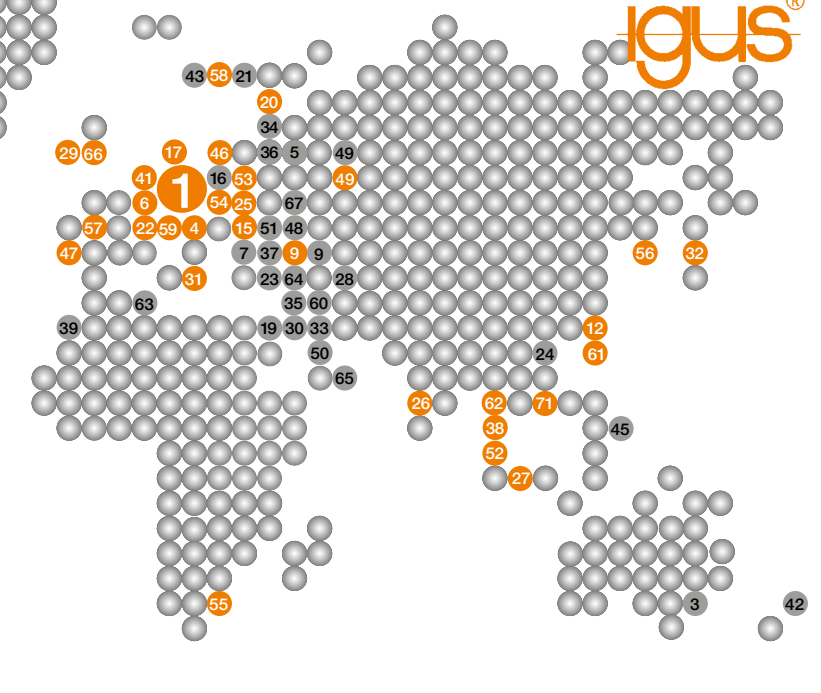
igus® Part No.	Page
CFROBOT9-006	408
CFROBOT9-007	408
CFROBOT9-010	408
<b>Special cable CFSPECIAL-182</b>	
CFSPECIAL-182-001	422
CFSPECIAL-182-045	422
<b>Special cable CFSPECIAL-414</b>	
CFSPECIAL-414-02-04	424
CFSPECIAL-414-02-06	424
CFSPECIAL-414-02-08	424
CFSPECIAL-414-03-04	424
CFSPECIAL-414-03-06	424
CFSPECIAL-414-03-08	424
<b>Special cable CFSPECIAL-792</b>	
CFSPECIAL-792-011	426
CFSPECIAL-792-012	426
<b>Special cable CFTHERMO</b>	
CFTHERMO-J-001	414
CFTHERMO-K-001	414
CFTHERMO-K-002	414
CFTHERMO-T-002	414

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