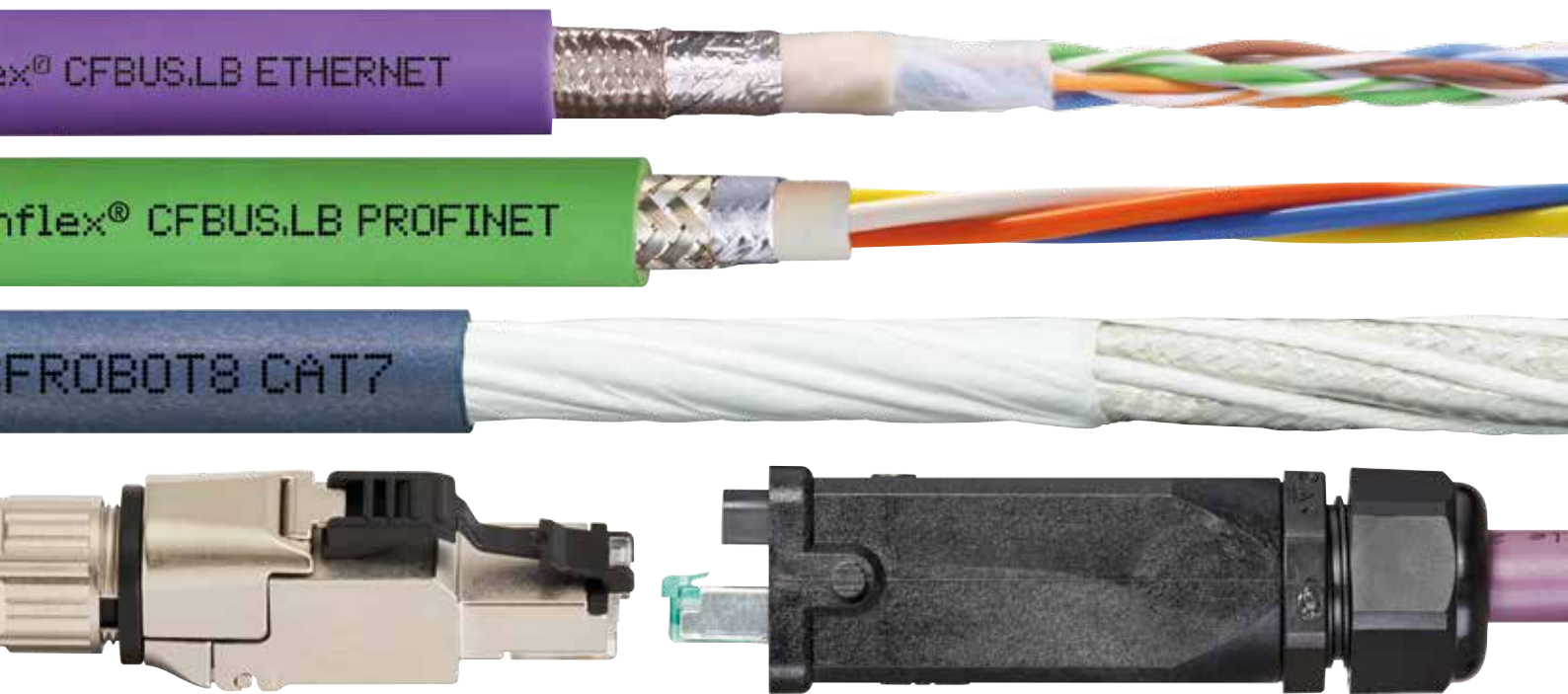


# Ethernet

Cables up to CAT7



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

chainflex<sup>®</sup>  
cable works

# Cost down ...

For all data volumes and types of movement ...

## Networking your machine with chainflex® Ethernet cables.

In this excerpt from our catalogue 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 metre and a wide variety of cables with connectors. That you obtain all cables with a guarantee of 36 months and up to 10 million double strokes is natural for chainflex and for you, a matter of great safety.

We support you in three aspects in the crosslinking 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 trendsetting 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.



**Andreas Muckes**  
Head of Product Management chainflex®  
Phone: +49 2203 9649-7714  
E-Mail: amuckes@igus.de

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.

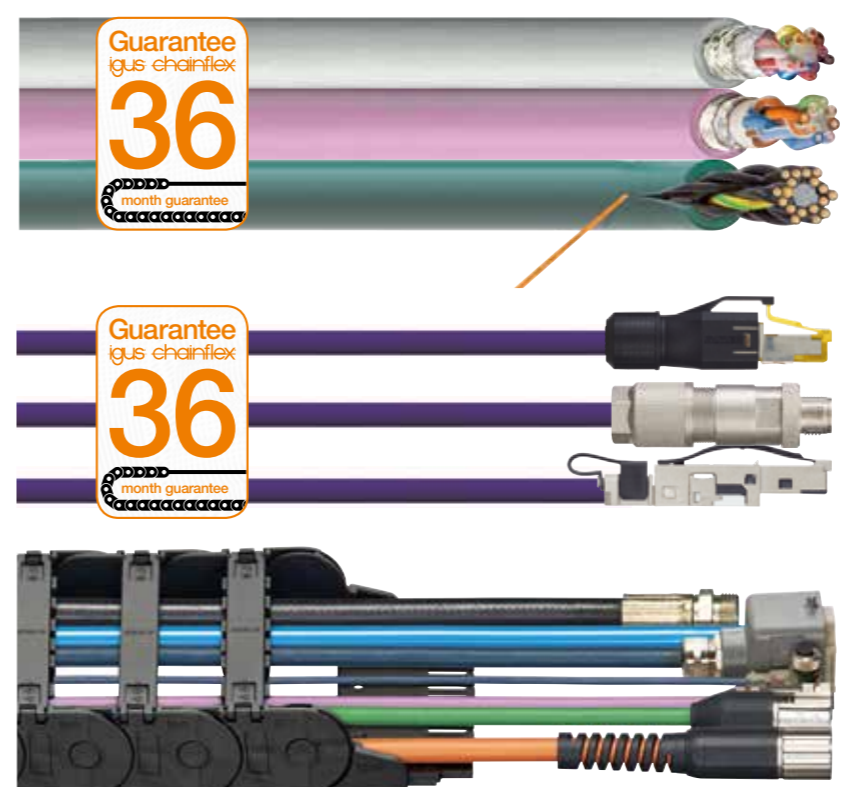
Our online tools also enable you to reduce process costs. igus® delivers from stock in 24-48 hours! Also, see our website.

[www.chainflex.eu/ethernet](http://www.chainflex.eu/ethernet)

# ... Service life up

The cheapest Ethernet cable that is guaranteed to work.  
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 7.5 x d	Torsion ± 180°/m	High tensile 50 m freely hanging	For rail vehicles
<b>CAT7</b> 10 GBit 600 MHz		chainflex® CFBUS.PVC.052 Page 8		chainflex® CFBUS.PUR.052 Page 16	chainflex® CFBUS.052 Page 20		chainflex® CFROBOT8.052 Page 28		
<b>CAT6A</b> 10 GBit 500 MHz		chainflex® CFBUS.PVC.050 Page 8		chainflex® CFBUS.PUR.050 Page 16	chainflex® CFBUS.050 Page 20		chainflex® CFROBOT8.050 Page 28		
<b>CAT6</b> 1 GBit 250 MHz		chainflex® CFBUS.PVC.049 Page 8	NEW	chainflex® CFBUS.PUR.049 Page 16	chainflex® CFBUS.049 Page 20	NEW	chainflex® CFBUS.LB.049 Page 24	chainflex® CFROBOT8.049 Page 28	chainflex® CFSPECIAL. 484.049 Page 33
<b>CAT5e</b> 1 GBit 100 MHz	chainflex® CF888.045 Page 5	chainflex® CFBUS.PVC.045 Page 8	chainflex® CF888.045 Page 12	chainflex® CFBUS.PUR.045 Page 16	chainflex® CFBUS.045 Page 20	chainflex® CFBUS.LB.045 Page 24	chainflex® CFROBOT8.045 Page 28	chainflex® CFSPECIAL. 182.045 Page 31	
<b>Profinet</b> 100 MBit 100 MHz	chainflex® CF888.060 Page 5	chainflex® CFBUS.PVC.060 Page 8	chainflex® CF888.060 Page 12	chainflex® CFBUS.PUR.060 Page 16	chainflex® CFBUS.060 Page 20	chainflex® CFBUS.LB.060 Page 24	chainflex® CFROBOT8.060 Page 28	chainflex® CFSPECIAL. 182.060 Page 31	
<b>CAT5</b> 100 MBit 100 MHz		chainflex® CFBUS.PVC.040 Page 8		chainflex® CFBUS.PUR.040 Page 16	chainflex® CFBUS.040 Page 20	chainflex® CFBUS.LB.040 Page 24			



### Highly flexible chainflex® cables

- ▶ 1,354 cables from stock
- ▶ Tested, and in seven jacket materials
- ▶ No cutting charges, from 1 m
- ▶ 36 months or 10 million double strokes guarantee\*
- ▶ Approvals and certificates

### Harnessed cables readycable®

- ▶ New: More than 400 harnessed Ethernet cables
- ▶ In seven jacket materials
- ▶ 36 months or 10 million double stroke guarantee\*
- ▶ Shipped in 24h\*\*
- ▶ To your required length, with centimetre accuracy

### Assembled e-chainsystems® readychain®

- ▶ Customised and ready to connect according to your specifications
- ▶ From the basic solution to complex systems
- ▶ Optionally with assembly rack
- ▶ From batch size 1 to series production
- ▶ Assembly service by experts

\* Whichever is first. Up to 5 million double strokes for the highly affordable chainflex® M cables. The number of double strokes depends on installation and cable quality. This is described in the current catalogue, in the data sheets and in the service life calculator at [www.igus.eu/chainflexlife](http://www.igus.eu/chainflexlife).  
\*\* Delivery time means time until shipping of goods.

# Bus cable | PVC | chainflex® CF888

**36** 5 million Double strokes guaranteed **15 x d** Bend radius, e-chain® **10 m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 15 x d
	<b>fixed</b>	minimum 12 x d
	<b>e-chain® linear flexible</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	+5 °C up to +70 °C
	<b>fixed</b>	-5 °C up to +70 °C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3 m/s
<b>a max.</b>		20 m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travel distances up to 10 m, Class 1

### Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ► Product range table
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60 % optical
<b>Outer jacket</b>	Low-adhesion PVC mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001)

### Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V

### Properties and approvals

<b>Flame retardant</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 1598 and 2571, 30 V, 80 °C

Example image

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400 m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 3.1.1.1

- NFFPA** Following NFFPA 79-2012, chapter 12.9
- EAC** Certificate No. RU C-DE.ME77.B.01559 (TR ZU)
- CTP** Certificate No. C-DE.PB49.B.00449 (Fire protection)
- Lead-free** Following 2011/65/EC (RoHS-II)
- CE** Following 2014/35/EU

### Guaranteed service life (details see chainflex® catalogue, page 22-23)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	17.5	18.5	19.5
+15/+60	15	16	17
+60/+70	17.5	18.5	19.5

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

### Typical application areas

- For flexing applications, Class 3
- Especially for unsupported travels, Class 1
- Without influence of oil, Class 1
- No torsion, Class 1
- Preferably indoor applications
- Wood/stone processing, Packaging industry, supply systems, Handling, adjusting equipment

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
<b>Ethernet/CAT5e</b>				
<b>CF888.045</b>	(4x(2x0.14))C	7.5	25	66
<b>Profinet</b>				
<b>CF888.060</b> <sup>2) 6)</sup>	(4x0.34)C	7.0	25	56

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)  
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
**G** = with green-yellow earth core **x** = without earth core

Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5e</b>			
<b>CF888.045</b>	100	(4x(2x0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
<b>CF888.060</b> <sup>2) 6)</sup>	100	(4x0.34)C	white, orange, blue, yellow (Star-quad)

# Bus cable | PVC | chainflex® CFBUS.PVC

**36** 10 million

Double strokes guaranteed


**12.5 x d**

Bend radius, e-chain®


**20 m**

Travel distance, e-chain®

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

## Dynamic information

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

## Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ► Product range table
	<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
	<b>Outer jacket</b>	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-4-1). Colour: Red lilac (similar to RAL 4001)

## Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V

 Basic requirements  
 Travel distance  
 Oil resistance  
 Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	±180°				

## Class 4.3.2.1

### Properties and approvals

	<b>UV resistance</b>	Medium
	<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-4-1), Class 2
	<b>Flame retardant</b>	According to IEC 60332-1-2, 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 1598 and 2571, 30 V, 80 °C
	<b>NFPA</b>	Following NFPA 79-2012, chapter 12.9
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.01218 (TR ZU)
	<b>CTP</b>	Certificate No. C-DE.PB49.B.00416 (Fire protection)
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. The outer jacket material of this series complies with CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1
	<b>CE</b>	Following 2014/35/EU

### Guaranteed service life (details see chainflex® catalogue, page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	15	16	17
+15/+60	12.5	13.5	14.5
+60/+70	15	16	17

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

### Typical application areas

- For medium duty applications, Class 4
- Unsupported travel distances and up to 20 m for gliding applications, Class 3
- Light oil influence, Class 2
- No torsion, Class 1
- Preferably indoor applications, but also outdoor ones at temperatures > 5 °C
- machining units/packaging machines, Handling, indoor cranes




igus® chainflex® CFBUS.PVC.049

Example image


Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>EtherCAT</b> → CFBUS.PVC.040 <sup>2)</sup>	(4x0.25)C	6.5	29	68	CFBUS.PVC.040 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
<b>EtherCAT5e</b> New CFBUS.PVC.045	(4x(2x0.15))C	7.5	33	67	CFBUS.PVC.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>EtherCAT6</b> New CFBUS.PVC.049	(4x(2x0.15))C	7.5	34	67	CFBUS.PVC.049	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>EtherCAT6A</b> CFBUS.PVC.050	4x(2x0.20)C	9.5	65	120	CFBUS.PVC.050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>EtherCAT7</b> CFBUS.PVC.052	(4x(2x0.15)C)C	9.5	89	136	CFBUS.PVC.052	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
<b>Profinet</b> <b>EtherCAT</b> → CFBUS.PVC.060 <sup>2) 6)</sup>	(4x0.38)C	7.0	33	67	CFBUS.PVC.060 <sup>2) 6)</sup>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.

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

 **Order example: CFBUS.PVC.052 – to your required length (0.5 m steps)**  
CFBUS.PVC chainflex® series .052 Code Bus type

 Online order ► [www.chainflex.eu/CFBUS.PVC](http://www.chainflex.eu/CFBUS.PVC)

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

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.



# Bus cable | iguPUR | chainflex® CF898

**36** 5 million Double strokes guaranteed

**15 x d** Bend radius, e-chain®

**10 m** Travel distance, e-chain®

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

### Dynamic information

<b>Bend radius</b>	<b>e-chain® linear</b>	minimum 15 x d
	<b>flexible</b>	minimum 12 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear</b>	-20 °C up to +70 °C
	<b>flexible</b>	-40 °C up to +70 °C (following DIN EN 60811-504)
	<b>fixed</b>	-50 °C up to +70 °C (following DIN EN 50305)
<b>v max.</b>	<b>unsupported</b>	3 m/s
<b>a max.</b>		20 m/s <sup>2</sup>
<b>Travel distance</b>		Unsupported travel distances up to 10 m, Class 1

### Cable structure

<b>Conductor</b>	Conductor consisting of bare copper wires (according to DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ▶ Product range table
<b>Overall shield</b>	Braiding made of tinned copper wires. Coverage approx. 60 % optical
<b>Outer jacket</b>	Low-adhesion iguPUR mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001)

### Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V

## Class 3.1.3.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame retardant</b>	According to IEC 60332-1-2, 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 1598 and 20236, 80 V, 80 °C
<b>NFPA</b>	Following NFPA 79-2012, chapter 12.9
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.01559 (TR ZU)
<b>CTP</b>	Certificate No. C-DE.PB49.B.00449 (Fire protection)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>CE</b>	Following 2014/35/EU

### Guaranteed service life (details see chainflex® catalogue, page 22-23)

Double strokes*	1 million	3 million	5 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	17.5	18.5	19.5
-10/+60	15	16	17
+60/+70	17.5	18.5	19.5

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

### Typical application areas

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



igus® chainflex® CF898.045

Example image

## Bus cable | iguPUR | chainflex® CF898


## Class 3.1.3.1

igus® chainflex® CF898.045


Example image

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5e</b>								
CF898.045	(4x(2x0.14))C	7.5	25	62	CF898.045	100	(4x(2x0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>								
EtherCAT → CF898.060 <sup>6)</sup>	(4x0.34)C	7.0	25	58	CF898.060 <sup>6)</sup>	100	(4x0.34)C	white, orange, blue, yellow (Star-quad)

<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core

 **Order example: CF898.045 – to your required length (0.5 m steps)**  
CF898 chainflex® series .045 Code Bus type

 Online order ► [www.chainflex.eu/CF898](http://www.chainflex.eu/CF898)

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

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.



# Bus cable | PUR | chainflex® CFBUS.PUR

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

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d
	<b>fixed</b>	minimum 10 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-20 °C up to +70 °C
	<b>fixed</b>	-40 °C up to +70 °C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	3 m/s
<b>a max.</b>	<b>gliding</b>	2 m/s
<b>Travel distance</b>	Unsupported travels and up to 20 m for gliding applications, Class 3	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ▶ Product range table
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Red lilac (similar to RAL 4001)

## Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V

## 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

Example image

igus® chainflex® CFBUS.PUR.049

Basic requirements	low	1	2	3	4	5	6	7	highest
Travel distance	unsupported	1	2	3	4	5	6	≥ 400 m	
Oil resistance	none	1	2	3	4	highest			
Torsion	none	1	2	3	±180°				

## Class 4.3.3.1

- Flame retardant** According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
- Silicone-free** Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
- Halogen-free** Following DIN EN 60754
- UL/CSA** Style 1598 and 20236, 30 V, 80 °C  
**CFBUS.PUR.H01.049:** Style 10493 (1.5 mm<sup>2</sup>), 11602 (0.15 mm<sup>2</sup>) and 20233, 300 V, 80 °C  
**CFBUS.PUR.H01.060:** Style 10493 (1.5 mm<sup>2</sup>), 11602 (0.38 mm<sup>2</sup>) and 20233, 300 V, 80 °C
- NFPA** Following NFPA 79-2012, chapter 12.9
- DNV-GL** Type approval certificate No. 61 937-14 HH
- EAC** Certificate No. RU C-DE.ME77.B.01218 (TR ZU)
- CTP** Certificate No. C-DE.PB49.B.00416 (Fire protection)
- CEI** Following CEI 20-35
- Lead-free** Following 2011/65/EC (RoHS-II)
- Clean room** According to ISO Class 1. The outer jacket material of this series complies with CF77.UL.05.12.D - tested by IPA according to standard DIN EN ISO 14644-1
- DESINA** According to VDW, DESINA standardisation
- CE** Following 2014/35/EU

## Guaranteed service life (details see chainflex® catalogue, page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-20/-10	15	16	17
-10/+60	12.5	13.5	14.5
+60/+70	15	16	17

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

## Typical application areas

- For medium duty applications, Class 4
- Unsupported travel distances and up to 20 m for gliding applications, Class 3
- Almost unlimited resistance to oil, Class 3
- No torsion, Class 1
- Indoor and outdoor applications without direct solar radiation
- Machining units/machine tools, low temperature applications





igus® chainflex® CFBUS.PUR.049

Example image


Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>Ethernet/CAT5</b>								
<b>EtherCAT</b> → CFBUS.PUR.040 <sup>2)</sup>	(4x0.25)C	6.5	29	67	CFBUS.PUR.040 <sup>2)</sup>	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
<b>Ethernet/CAT5e</b>								
<b>New</b> CFBUS.PUR.045	(4x(2x0.15))C	7.5	33	66	CFBUS.PUR.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT6</b>								
<b>New</b> CFBUS.PUR.049	(4x(2x0.15))C	7.5	34	66	CFBUS.PUR.049	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
CFBUS.PUR.H01.049	((4x(2x0.15))C+4x1.5)C	12.5	126	207	CFBUS.PUR.H01.049	100	(4x(2x0.15))C 4x1.5	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown black, brown, Grey, blue
<b>Ethernet/CAT6A</b>								
CFBUS.PUR.050	4x(2x0.20)C	9.5	65	118	CFBUS.PUR.050	100	4x(2x0.20)C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Ethernet/CAT7</b>								
CFBUS.PUR.052	(4x(2x0.15)C)C	9.5	89	129	CFBUS.PUR.052	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
<b>Profinet</b>								
<b>EtherCAT</b> → CFBUS.PUR.060 <sup>2) 6)</sup>	(4x0.38)C	7.0	33	64	CFBUS.PUR.060 <sup>2) 6)</sup>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)
CFBUS.PUR.H01.060	((4x0.38)C+4x1.5)C	11.5	121	199	CFBUS.PUR.H01.060	100	(4x0.38)C 4x1.5	white, orange, blue, yellow (Star-quad) black, brown, Grey, blue

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.

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

 **Order example: CFBUS.PUR.045 – to your required length (0.5 m steps)**  
CFBUS.PUR chainflex® series .045 Code Bus type

 Online order ► [www.chainflex.eu/CFBUS.PUR](http://www.chainflex.eu/CFBUS.PUR)

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

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.



# Bus cable | TPE | chainflex® CFBUS

**36** 10 million Double strokes guaranteed

**10 x d** Bend radius, e-chain®

**400 m** Travel distance, e-chain®

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

## Dynamic information

	<b>Bend radius</b>	<b>e-chain® linear</b>	-35 °C up to +70 °C
		<b>flexible</b>	-45 °C up to +70 °C (following DIN EN 60811-504)
		<b>fixed</b>	-50 °C up to +70 °C (following DIN EN 50305)
		<b>flexible</b>	minimum 8 x d
		<b>fixed</b>	minimum 5 x d
	<b>Temperature</b>	<b>e-chain® linear</b>	-35 °C up to +70 °C
		<b>flexible</b>	-45 °C up to +70 °C (following DIN EN 60811-504)
		<b>fixed</b>	-50 °C up to +70 °C (following DIN EN 50305)
	<b>v max.</b>	<b>unsupported</b>	10 m/s
		<b>gliding</b>	6 m/s
	<b>a max.</b>		100 m/s <sup>2</sup>
	<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

## Cable structure

	<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
	<b>Core insulation</b>	According to bus specification.
	<b>Core structure</b>	According to bus specification.
	<b>Core identification</b>	According to bus specification. ▶ Product range table
	<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
	<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
	<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001)

## Electrical information

	<b>Nominal voltage</b>	50 V
	<b>Testing voltage</b>	500 V (following DIN EN 50289-1-3)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	±180°				

# 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 retardant</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>	▶ Product range table
	<b>NFPA</b>	Following NFPA 79-2012, chapter 12.9
	<b>DNV-GL</b>	Type approval certificate No. 61 937-14 HH
	<b>EAC</b>	Certificate No. RU C-DE.ME77.B.01218 (TR ZU)
	<b>CTP</b>	Certificate No. C-DE.PB49.B.00416 (Fire protection)
	<b>CEI</b>	Following CEI 20-35
	<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
	<b>Clean room</b>	According to ISO Class 1. The outer jacket material of this series complies with CF34.UL.25.04.D - tested by IPA according to standard DIN EN ISO 14644-1
	<b>DESINA</b>	According to VDW, DESINA standardisation
	<b>CE</b>	Following 2014/35/EU

## Guaranteed service life (details see chainflex® catalogue, page 22-23)

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

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

## Typical application areas

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

igus® chainflex® CFBUS.049

Example image



# Bus cable | TPE | chainflex® CFBUS

## Class 6.6.4.1

igus® chainflex® CFBUS.049



Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>EtherCAT</b> CFBUS.040	(4x0.25)C	7.0	33	64	<b>CFBUS.040</b>	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
<b>New</b> Ethernet/CAT5e/PoE CFBUS.045	(4x(2x0.15))C	8.5	41	86	<b>CFBUS.045</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>New</b> Ethernet/CAT6/PoE CFBUS.049	(4x(2x0.15))C	8.5	42	86	<b>CFBUS.049</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Ethernet/CAT6A/PoE CFBUS.050 <sup>4)</sup>	(4x(2x0.15)C)C	10.5	82	135	<b>CFBUS.050<sup>4)</sup></b>	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
Ethernet/CAT7/PoE CFBUS.052 <sup>4)</sup>	(4x(2x0.15)C)C	10.5	89	137	<b>CFBUS.052<sup>4)</sup></b>	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
<b>Profinet</b> CFBUS.060 <sup>2) 6)</sup>	(4x0.38)C	7.5	39	73	<b>CFBUS.060<sup>2) 6)</sup></b>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

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

<sup>4)</sup> manufactured without inner jacket

<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)

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

- Order example: CFBUS.045 – to your required length (0.5 m steps)**  
CFBUS chainflex® series .045 Code Bus type
- Online order ► [www.chainflex.eu/CFBUS](http://www.chainflex.eu/CFBUS)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

**Technical note on bus cables**  
chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.



# Bus cable | TPE | chainflex® CFBUS.LB

**36** 10 million Double strokes guaranteed

**7.5 x d** Bend radius, e-chain®

**400 m** Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 7.5 x d
	<b>fixed</b>	minimum 6 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-35 °C up to +70 °C
	<b>fixed</b>	-50 °C up to +70 °C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10 m/s
<b>a max.</b>	<b>gliding</b>	6 m/s
<b>Travel distance</b>	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ▶ Product range table
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
<b>Outer jacket</b>	Low-adhesion, extremely abrasion-resistant and highly flexible TPE mixture, adapted to suit the requirements in e-chains®. Colour: Red lilac (similar to RAL 4001)

## Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V (following DIN EN 50289-1-3)

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	±180°				

## Class 7.6.4.1

### Properties and approvals

<b>UV resistance</b>	Medium
<b>Oil resistance</b>	Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
<b>Silicone-free</b>	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
<b>Halogen-free</b>	Following DIN EN 60754
<b>EAC</b>	Certificate No. RU C-DE.ME77.B.02806 (TR ZU)
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>Clean room</b>	According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
<b>DESINA</b>	According to VDW, DESINA standardisation
<b>CE</b>	Following 2014/35/EU

### Guaranteed service life (details see chainflex® catalogue, page 22-23)

Double strokes*	5 million	7.5 million	10 million
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	10	11	12
-25/+60	7.5	8.5	9.5
+60/+70	10	11	9.5

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

### Typical application areas

- For heaviest duty applications, Class 7
- Unsupported travel distances and up to 400 m and more for gliding applications, Class 6
- Almost unlimited resistance to oil, also with bio-oils, Class 4
- No torsion, Class 1
- Indoor and outdoor applications without direct solar radiation
- Storage and retrieval units for high-bay warehouses, Machining units/machine tools, quick handling, Clean room, semiconductor insertion, indoor cranes, low temperature applications

igus® chainflex® CFBUS.LB.049

Example image

igus® chainflex® CFBUS.LB.049

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>EtherCAT</b> CFBUS.LB.040	(4x0.25)C	7.0	33	64	CFBUS.LB.040	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
<b>New</b> Ethernet/CAT5e CFBUS.LB.045	(4x(2x0.15))C	8.5	41	86	CFBUS.LB.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>New</b> Ethernet/CAT6 CFBUS.LB.049	(4x(2x0.15))C	8.5	42	86	CFBUS.LB.049	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>New</b> Profinet CFBUS.LB.060 <sup>2) 6)</sup>	(4x0.38)C	7.5	39	64	CFBUS.LB.060 <sup>2) 6)</sup>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

The chainflex® types marked with <sup>2)</sup> are cables designed as a star-quad.  
<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)  
**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
**G** = with green-yellow earth core **x** = without earth core

- Order example: CFBUS.LB.045 – to your required length (0.5 m steps)**  
CFBUS.LB chainflex® series .045 Code Bus type
- Online order ► [www.chainflex.eu/CFBUS.LB](http://www.chainflex.eu/CFBUS.LB)
- Delivery time 24hrs or today.  
Delivery time means time until goods are shipped.

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.



# Bus cable | PUR | chainflex® CFROBOT8

**36** 10 million  
Double strokes guaranteed

**10 x d**  
Bend radius, e-chain®

**3D movements**  
Travel distance, e-chain®

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

## Dynamic information

<b>Bend radius</b>	<b>e-chain® twisted</b> minimum 10 x d <b>flexible</b> minimum 8 x d <b>fixed</b> minimum 5 x d
<b>Temperature</b>	<b>e-chain® twisted</b> -25 °C up to +70 °C <b>flexible</b> -40 °C up to +70 °C (following DIN EN 60811-504) <b>fixed</b> -50 °C up to +70 °C (following DIN EN 50305)
<b>v max.</b>	<b>twisted</b> 180 °/s
<b>a max.</b>	<b>twisted</b> 60 °/s <sup>2</sup>
<b>Travel distance</b>	Robots and 3D movements, Class 1
<b>Torsion</b>	± 180°, with 1 m cable length, Class 3

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification. ► Product range table
<b>Intermediate layer</b>	Foil taping over the external layer.
<b>Overall shield</b>	Torsion resistant tinned braided copper shield. Coverage approx. 80 % optical
<b>Outer jacket</b>	Low-adhesion, halogen-free, highly abrasion resistant PUR mixture, adapted to suit the requirements in e-chains® (following DIN EN 50363-10-2). Colour: Steel-blue (similar to RAL 5011)

## Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V

Basic requirements  
Travel distance  
Oil resistance  
Torsion

low	1	2	3	4	5	6	7	highest
unsupported	1	2	3	4	5	6	≥ 400 m	
none	1	2	3	4	highest			
none	1	2	3	±180°				

CFROBOT8  
PUR  
10 x d

## Class 6.1.3.3

### Properties and approvals

<b>UV resistance</b>	High
<b>Oil resistance</b>	Oil-resistant (following DIN EN 50363-10-2), Class 3
<b>Flame retardant</b>	According to IEC 60332-1-2, 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>	Certificate No. RU C-DE.ME77.B.01218 (TR ZU)
<b>CTP</b>	Certificate No. C-DE.PB49.B.00416 (Fire protection)
<b>CEI</b>	Following CEI 20-35
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>Clean room</b>	According to ISO Class 1. The outer jacket material of this series complies with CF27.07.05.02.01.D - tested by IPA according to standard DIN EN ISO 14644-1
<b>CE</b>	Following 2014/35/EU

### Guaranteed service life (details see chainflex® catalogue, page 22-23)

Cycles*	5 million	7.5 million	10 million
Temperature, from/to [°C]	Torsion max. [°/m]	Torsion max. [°/m]	Torsion max. [°/m]
-25/-15	±150	±90	±30
-15/+60	±180	±120	±60
+60/+70	±150	±90	±30

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

### Typical application areas

- For heaviest duty applications with torsion movements, Class 6
- Especially for robots and 3D movements, Class 1
- Almost unlimited resistance to oil, also with bio-oils, Class 3
- Torsion ± 180°, with 1 m cable length, Class 3
- Indoor and outdoor applications, UV-resistant
- Robots, handling, spindle drives



igus® chainflex® CFROBOT8


Example image

igus® chainflex® CFROBOT8


Example image

Part No.	Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
<b>New</b> Ethernet/CAT5e CFROBOT8.045	4x(2x0.14)C	9.5	48	90	CFROBOT8.045	100	4x(2x0.14)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
<b>New</b> Ethernet/CAT6 CFROBOT8.049	4x(2x0.14)C	9.5	49	90	CFROBOT8.049	100	4x(2x0.14)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Ethernet/CAT6A CFROBOT8.050	4x(2x0.15)C	10.5	51	124	CFROBOT8.050	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Ethernet/CAT7 CFROBOT8.052	4x(2x0.15)C	10.5	52	126	CFROBOT8.052	100	4x(2x0.15)C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
Profinet EtherCAT <sup>®</sup> CFROBOT8.060	(2x(2x0.34))C	8.5	34	68	CFROBOT8.060	100	(2x(2x0.34))C	white/blue, yellow/orange

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

 **Order example: CFROBOT8.052 – to your required length (0.5 m steps)**  
CFROBOT8 chainflex® series .052 Code Bus type

 Online order ► [www.chainflex.eu/CFROBOT8](http://www.chainflex.eu/CFROBOT8)

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

**Technical note on bus cables**

chainflex® bus cables have been specially developed and tested for continuously moving use in e-chains®. Depending on the material used for the outer jacket and on the underlying construction principle, the bus cables are designed for different mechanical requirements and resistance to different media. The cables have been electrically designed in such a way that, on the one hand, the electrical requirements of the respective bus specification are reliably met and, on the other, there is a high degree of EMC reliability. It is also ensured that the electrical values remain stable over the long term in spite of constant movement. The overall quality of transmission in a complete bus communication system, however, is not solely dependent on the cable used. What is also essential is that all components (electronic parts, connecting system and cable) are precisely matched to each other and that the maximum transmission lengths, which are dependent on the respective system, are adhered to with regard to the data transmission rates needed. A cable is thus not solely responsible for the reliable transmission of signals. igus® advises you when you are designing your bus system to take all these factors into account and, with its extensive tests, helps you to ensure the process reliability of your system from the very beginning.





# Bus cable | PUR | chainflex® CFSPECIAL.182

- For increased tensile load
- PUR outer jacket
- Shielded
- Oil resistant and coolant-resistant
- Flame retardant
- PVC and halogen-free
- Notch-resistant
- Hydrolysis and microbe-resistant

## Dynamic information

<b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 10 x d
	<b>fixed</b>	minimum 8 x d
<b>Temperature</b>	<b>e-chain® linear flexible</b>	-25 °C up to +80 °C
	<b>fixed</b>	-40 °C up to +80 °C (following DIN EN 60811-504)
<b>v max.</b>	<b>unsupported</b>	10 m/s
<b>a max.</b>	<b>gliding</b>	6 m/s
<b>Travel distance</b>	For hanging applications up to 50 m	

## Cable structure

<b>Conductor</b>	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
<b>Core insulation</b>	According to bus specification.
<b>Core structure</b>	According to bus specification.
<b>Core identification</b>	According to bus specification.
<b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
<b>Overall shield</b>	Bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
<b>Reinforcement</b>	High tensile-strength aramid braid embedded in the outer jacket.
<b>Outer jacket</b>	<b>1. outer jacket:</b> PUR mixture adapted to suit the requirements in e-chains®. <b>Reinforcement:</b> High tensile-strength aramid braid embedded in the outer jacket. <b>2. outer jacket:</b> Low-adhesion, halogen-free PUR mixture, highly abrasion- and bending-resistant, adapted to suit the requirements in hanging applications (following DIN EN 50363-10-2). Colour: Jet black (similar to RAL 9005)

## Electrical information

<b>Nominal voltage</b>	50 V
<b>Testing voltage</b>	500 V

## 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 retardant</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 10138 and 20233, 300 V, 80 °C
<b>NFPA</b>	Following NFPA 79-2012, chapter 12.9
<b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
<b>CE</b>	Following 2014/35/EU

## Typical application areas

- For increased tensile load
- Almost unlimited resistance to oil, Class
- For hanging applications up to 50 m
- Storage and retrieval units for high-bay warehouses, hanging control units, Elevators

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight
	[mm²]	[mm]	[kg/km]	[kg/km]
<b>Ethernet/CAT5</b>				
<b>CFSPECIAL.182.045</b>	(4x(2x0.15))C	10.0	41	138
<b>Profinet</b>				
<b>CFSPECIAL.182.060</b> <sup>6)</sup>	(4x0.38)C	8.5	36	121

<sup>6)</sup> Colour outer jacket: Yellow-green (RAL 6018)

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

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

Part No.	Characteristic wave impedance approx.	Core group	Colour code
	[Ω]		
<b>Ethernet/CAT5</b>			
<b>CFSPECIAL.182.045</b>	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
<b>Profinet</b>			
<b>CFSPECIAL.182.060</b>	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)



Example image













# Bus cables for rail vehicles | chainflex® CFSPECIAL.484

- For heaviest duty applications in rail vehicles
- Special outer jacket
- PVC and halogen-free
- Oil-resistant
- Flame retardant
- Self-extinguishing
- Low toxicity
- Low gas density



## Dynamic information

 <b>Bend radius</b>	<b>e-chain® linear flexible</b>	minimum 12.5 x d
	<b>fixed</b>	minimum 7 x d
 <b>Temperature</b>	<b>e-chain® linear flexible</b>	-20 °C up to +80 °C
	<b>fixed</b>	-25 °C up to +80 °C (following DIN EN 60811-504)
 <b>v max.</b>	<b>unsupported</b>	10 m/s
 <b>a max.</b>		20 m/s <sup>2</sup>
 <b>Travel distance</b>		For unsupported travels up to 5 m









## Cable structure

 <b>Conductor</b>	Fine-wire stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
 <b>Core insulation</b>	According to bus specification.
 <b>Core structure</b>	According to bus specification.
 <b>Core identification</b>	According to bus specification.
 <b>Inner jacket</b>	TPE mixture adapted to suit the requirements in e-chains®.
 <b>Overall shield</b>	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
 <b>Outer jacket</b>	Special mixture adapted to suit the requirements in e-chains® (following DIN EN 50264-1 EM 104). Colour: Jet black (similar to RAL 9005)

## Electrical information

 <b>Nominal voltage</b>	50 V
 <b>Testing voltage</b>	500 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 retardant</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)
 <b>Halogen-free</b>	Following DIN EN 60754
 <b>Lead-free</b>	Following 2011/65/EC (RoHS-II)
 <b>CE</b>	Following 2014/35/EU
 <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.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Copper index	Weight
<b>Ethernet/CAT6</b>				
<b>CFSPECIAL.484.049</b>	(4x(2x0.15))C	8.5	44	88

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

Part No.	Core group	Colour code
<b>Ethernet/CAT6</b>		
<b>CFSPECIAL.484.049</b>	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown



chainflex® CFSPECIAL.484.049

Example image



## Harnessed Ethernet cables | CAT5

\* Technical information on the cable quality:

PVC OIL	PUR	TPE
Page 6	Page 14	Page 18+22

Harnessed Ethernet cables, CAT5, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Harting CAT5 connector



PVC OIL	CAT9311001	(4x0.25)C	6.5	12.5
PUR	CAT9411001	(4x0.25)C	6.5	12.5
TPE	CAT9511001	(4x0.25)C	7.0	10

### Harting CAT5 connector with housing



PVC OIL	CAT9311002	(4x0.25)C	6.5	12.5
PUR	CAT9411002	(4x0.25)C	6.5	12.5
TPE	CAT9511002	(4x0.25)C	7.0	10

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

Harnessing RJ45 at both ends ► TIA56A  
Harnessing one end RJ45/one end M12 x-coded ► TIA56B

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>PUR-SPECIAL TPE</b> Page 30 Page 18+22
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Harnessed Ethernet cables, CAT5e, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Telegärtner CAT6A connector



PVC	CAT9121002	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321002	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221002	(4x(2x0.14))C	7.5	15
PUR	CAT9421002	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621002	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721001	(4x(2x0.15))C	10.0	10
TPE	CAT9521002	(4x(2x0.15))C	8.5	10

### Harting CAT6A connector



PVC	CAT9121003	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321003	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221003	(4x(2x0.14))C	7.5	15
PUR	CAT9421003	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621003	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721002	(4x(2x0.15))C	10.0	10
TPE	CAT9521003	(4x(2x0.15))C	8.5	10

### Telegärtner CAT6A connector



PVC	CAT9121004	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321004	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221004	(4x(2x0.14))C	7.5	15
PUR	CAT9421004	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621004	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721003	(4x(2x0.15))C	10.0	10
TPE	CAT9521004	(4x(2x0.15))C	8.5	10

### Telegärtner CAT6/CAT6A connector



PVC	CAT9121005	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321005	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221005	(4x(2x0.14))C	7.5	15
PUR	CAT9421005	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621005	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721004	(4x(2x0.15))C	10.0	10
TPE	CAT9521005	(4x(2x0.15))C	8.5	10

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



## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>PUR-SPECIAL TPE</b> Page 30 Page 18+22
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Harnessed Ethernet cables, CAT5e, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Telegärtner CAT6 connector (RJ45/M12 x-coded)



PVC	CAT9121006	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321006	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221006	(4x(2x0.14))C	7.5	15
PUR	CAT9421006	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621006	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721005	(4x(2x0.15))C	10.0	10
TPE	CAT9521006	(4x(2x0.15))C	8.5	10

### Telegärtner CAT6A connector (M12 x-coded)



PVC	CAT9121007	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321007	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221007	(4x(2x0.14))C	7.5	15
PUR	CAT9421007	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621007	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721006	(4x(2x0.15))C	10.0	10
TPE	CAT9521007	(4x(2x0.15))C	8.5	10

### Phoenix Contact CAT6A connector



PVC	CAT9121010	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321010	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221010	(4x(2x0.14))C	7.5	15
PUR	CAT9421010	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621010	4x(2x0.14)C	9.5	10
TPE	CAT9521010	(4x(2x0.15))C	8.5	10

### Phoenix Contact CAT6A connector (M12 x-coded)



PVC	CAT9121013	(4x(2x0.14))C	7.5	15
PVC OIL	CAT9321013	(4x(2x0.15))C	7.5	12.5
iguPUR	CAT9221013	(4x(2x0.14))C	7.5	15
PUR	CAT9421013	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	CAT9621013	4x(2x0.14)C	9.5	10
PUR-SPECIAL	CAT9721011	(4x(2x0.15))C	10.0	10
TPE	CAT9521013	(4x(2x0.15))C	8.5	10

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

Harnessing RJ45 at both ends ▶ TIA56A  
 Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B



## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC OIL</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 6	Page 14	Page 26	Page 18+22

### Harnessed Ethernet cables, CAT5e Straight, 4 and 8-pole, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

#### Harting CAT5 connector



<b>TPE</b>	<b>CAT9040001</b>	(4x0.25)C	7.0	10
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#### Harting CAT5e connector



<b>PVC OIL</b>	<b>CAT9340020</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240020</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440020</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040020</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector



<b>PVC OIL</b>	<b>CAT9340060</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240060</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440060</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040060</b>	(4x(2x0.15))C	8.5	10

#### Phoenix Contact CAT5e connector



<b>PVC OIL</b>	<b>CAT9340100</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240100</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440100</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040100</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector in Hummel housing



<b>PVC OIL</b>	<b>CAT9340140</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240140</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440140</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040140</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector in Hummel housing



<b>PVC OIL</b>	<b>CAT9340180</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240180</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440180</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040180</b>	(4x(2x0.15))C	8.5	10

**Note:** The given outer diameters are maximum values and may tend toward lower tolerance limits.  
G = with green-yellow earth core x = without earth core  
Harnessing **RJ45 at both ends** ▶ TIA56A  
Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC OIL</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 6	Page 14	Page 26	Page 18+22

### Harnessed Ethernet cables, CAT5e Cross-Over, 8-pole, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

#### Harting CAT5e connector



<b>PVC OIL</b>	<b>CAT9340040</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240040</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440040</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040040</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector



<b>PVC OIL</b>	<b>CAT9340080</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240080</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440080</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040080</b>	(4x(2x0.15))C	8.5	10

#### Phoenix Contact CAT5e connector



<b>PVC OIL</b>	<b>CAT9340120</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240120</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440120</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040120</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector in Hummel housing



<b>PVC OIL</b>	<b>CAT9340160</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240160</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440160</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040160</b>	(4x(2x0.15))C	8.5	10

#### Yamaichi CAT5 connector in Hummel housing



<b>PVC OIL</b>	<b>CAT9340200</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240200</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440200</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040200</b>	(4x(2x0.15))C	8.5	10

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

Harnessing **RJ45 at both ends** ▶ TIA56A  
Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

# Harnessed Ethernet cables | CAT5e

## PVC with Hirose connectors

\* Technical information on the cable quality:

**PVC OIL**

Page 6

Connector 1	Connector 2	Connector 3	Connector 4	Connector 5
L angle curve lower	L angle curve above	T angle curve outer	T angle curve inward	straight



### Product range Straight (PVC) 8 poles

Product range Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter [mm]	Minimum bend radius
CAT9340380	1	2	(4x(2x0.15))C	7.0	12.5
CAT9340540	1	3	(4x(2x0.15))C	7.0	12.5
CAT9340560	1	4	(4x(2x0.15))C	7.0	12.5
CAT9340320	1	5	(4x(2x0.15))C	7.0	12.5
CAT9340360	2	1	(4x(2x0.15))C	7.0	12.5
CAT9340340	2	2	(4x(2x0.15))C	7.0	12.5
CAT9340500	2	3	(4x(2x0.15))C	7.0	12.5
CAT9340520	2	4	(4x(2x0.15))C	7.0	12.5
CAT9340300	2	5	(4x(2x0.15))C	7.0	12.5
CAT9340440	3	3	(4x(2x0.15))C	7.0	12.5
CAT9340480	3	4	(4x(2x0.15))C	7.0	12.5
CAT9340400	3	5	(4x(2x0.15))C	7.0	12.5
CAT9340460	4	4	(4x(2x0.15))C	7.0	12.5
CAT9340420	4	5	(4x(2x0.15))C	7.0	12.5

### Product range Cross-Over (PVC) 8 poles

CAT9340390	1	2	(4x(2x0.15))C	7.0	12.5
CAT9340550	1	3	(4x(2x0.15))C	7.0	12.5
CAT9340570	1	4	(4x(2x0.15))C	7.0	12.5
CAT9340330	1	5	(4x(2x0.15))C	7.0	12.5
CAT9340370	2	1	(4x(2x0.15))C	7.0	12.5
CAT9340350	2	2	(4x(2x0.15))C	7.0	12.5
CAT9340510	2	3	(4x(2x0.15))C	7.0	12.5
CAT9340530	2	4	(4x(2x0.15))C	7.0	12.5
CAT9340310	2	5	(4x(2x0.15))C	7.0	12.5
CAT9340450	3	3	(4x(2x0.15))C	7.0	12.5
CAT9340490	3	4	(4x(2x0.15))C	7.0	12.5
CAT9340410	3	5	(4x(2x0.15))C	7.0	12.5
CAT9340470	4	4	(4x(2x0.15))C	7.0	12.5
CAT9340430	4	5	(4x(2x0.15))C	7.0	12.5

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

# Harnessed Ethernet cables | CAT5e

## PUR with Hirose connectors

\* Technical information on the cable quality:

**PUR**

Page 14

Connector 1	Connector 2	Connector 3	Connector 4	Connector 5
L angle curve lower	L angle curve above	T angle curve outer	T angle curve inward	straight



### Product range Straight (PVC) 8 poles

Product range Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter [mm]	Minimum bend radius
CAT9240380	1	2	(4x(2x0.15))C	7.0	12.5
CAT9240540	1	3	(4x(2x0.15))C	7.0	12.5
CAT9240560	1	4	(4x(2x0.15))C	7.0	12.5
CAT9240320	1	5	(4x(2x0.15))C	7.0	12.5
CAT9240360	2	1	(4x(2x0.15))C	7.0	12.5
CAT9240340	2	2	(4x(2x0.15))C	7.0	12.5
CAT9240500	2	3	(4x(2x0.15))C	7.0	12.5
CAT9240520	2	4	(4x(2x0.15))C	7.0	12.5
CAT9240300	2	5	(4x(2x0.15))C	7.0	12.5
CAT9240440	3	3	(4x(2x0.15))C	7.0	12.5
CAT9240480	3	4	(4x(2x0.15))C	7.0	12.5
CAT9240400	3	5	(4x(2x0.15))C	7.0	12.5
CAT9240460	4	4	(4x(2x0.15))C	7.0	12.5
CAT9240420	4	5	(4x(2x0.15))C	7.0	12.5

### Product range Cross-Over (PUR) 8 poles

CAT9240390	1	2	(4x(2x0.15))C	7.0	12.5
CAT9240550	1	3	(4x(2x0.15))C	7.0	12.5
CAT9240570	1	4	(4x(2x0.15))C	7.0	12.5
CAT9240330	1	5	(4x(2x0.15))C	7.0	12.5
CAT9240370	2	1	(4x(2x0.15))C	7.0	12.5
CAT9240350	2	2	(4x(2x0.15))C	7.0	12.5
CAT9240510	2	3	(4x(2x0.15))C	7.0	12.5
CAT9240530	2	4	(4x(2x0.15))C	7.0	12.5
CAT9240310	2	5	(4x(2x0.15))C	7.0	12.5
CAT9240450	3	3	(4x(2x0.15))C	7.0	12.5
CAT9240490	3	4	(4x(2x0.15))C	7.0	12.5
CAT9240410	3	5	(4x(2x0.15))C	7.0	12.5
CAT9240470	4	4	(4x(2x0.15))C	7.0	12.5
CAT9240430	4	5	(4x(2x0.15))C	7.0	12.5

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

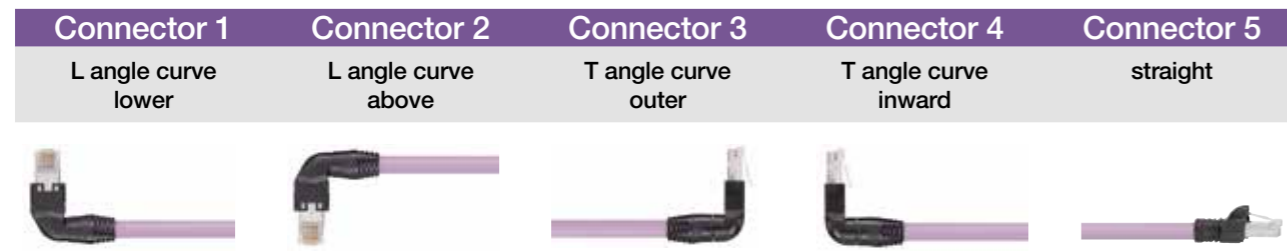
Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

## Harnessed Ethernet cables | CAT5e PUR-ROBOT with Hirose connectors

\* Technical information on the cable quality:

### PUR-ROBOT

Page 26



Product range straight (PUR-ROBOT) 8 poles					
Product range Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter [mm]	Minimum bend radius

CAT9440380	1	2	(4x(2x0.15)C)	8.5	10
CAT9440540	1	3	(4x(2x0.15)C)	8.5	10
CAT9440560	1	4	(4x(2x0.15)C)	8.5	10
CAT9440320	1	5	(4x(2x0.15)C)	8.5	10
CAT9440360	2	1	(4x(2x0.15)C)	8.5	10
CAT9440340	2	2	(4x(2x0.15)C)	8.5	10
CAT9440500	2	3	(4x(2x0.15)C)	8.5	10
CAT9440520	2	4	(4x(2x0.15)C)	8.5	10
CAT9440300	2	5	(4x(2x0.15)C)	8.5	10
CAT9440440	3	3	(4x(2x0.15)C)	8.5	10
CAT9440480	3	4	(4x(2x0.15)C)	8.5	10
CAT9440400	3	5	(4x(2x0.15)C)	8.5	10
CAT9440460	4	4	(4x(2x0.15)C)	8.5	10
CAT9440420	4	5	(4x(2x0.15)C)	8.5	10

Product range Cross-Over (PUR-ROBOT) 8 poles					
--	--	--	--	--	--

CAT9440390	1	2	(4x(2x0.15)C)	8.5	10
CAT9440550	1	3	(4x(2x0.15)C)	8.5	10
CAT9440570	1	4	(4x(2x0.15)C)	8.5	10
CAT9440330	1	5	(4x(2x0.15)C)	8.5	10
CAT9440370	2	1	(4x(2x0.15)C)	8.5	10
CAT9440350	2	2	(4x(2x0.15)C)	8.5	10
CAT9440510	2	3	(4x(2x0.15)C)	8.5	10
CAT9440530	2	4	(4x(2x0.15)C)	8.5	10
CAT9440310	2	5	(4x(2x0.15)C)	8.5	10
CAT9440450	3	3	(4x(2x0.15)C)	8.5	10
CAT9440490	3	4	(4x(2x0.15)C)	8.5	10
CAT9440410	3	5	(4x(2x0.15)C)	8.5	10
CAT9440470	4	4	(4x(2x0.15)C)	8.5	10
CAT9440430	4	5	(4x(2x0.15)C)	8.5	10

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

## Harnessed Ethernet cables | CAT5e TPE with Hirose connectors

\* Technical information on the cable quality:

### TPE

Page 18+22



Product range straight (TPE) 8 poles					
Product range Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm <sup>2</sup> ]	Outer diameter [mm]	Minimum bend radius

CAT9040380	1	2	(4x(2x0.15))C	8.0	12.5
CAT9040540	1	3	(4x(2x0.15))C	8.0	12.5
CAT9040560	1	4	(4x(2x0.15))C	8.0	12.5
CAT9040320	1	5	(4x(2x0.15))C	8.0	12.5
CAT9040360	2	1	(4x(2x0.15))C	8.0	12.5
CAT9040340	2	2	(4x(2x0.15))C	8.0	12.5
CAT9040500	2	3	(4x(2x0.15))C	8.0	12.5
CAT9040520	2	4	(4x(2x0.15))C	8.0	12.5
CAT9040300	2	5	(4x(2x0.15))C	8.0	12.5
CAT9040440	3	3	(4x(2x0.15))C	8.0	12.5
CAT9040480	3	4	(4x(2x0.15))C	8.0	12.5
CAT9040400	3	5	(4x(2x0.15))C	8.0	12.5
CAT9040460	4	4	(4x(2x0.15))C	8.0	12.5
CAT9040420	4	5	(4x(2x0.15))C	8.0	12.5

Product range Cross-Over (TPE) 8 poles					
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CAT9040390	1	2	(4x(2x0.15))C	8.0	12.5
CAT9040550	1	3	(4x(2x0.15))C	8.0	12.5
CAT9040570	1	4	(4x(2x0.15))C	8.0	12.5
CAT9040330	1	5	(4x(2x0.15))C	8.0	12.5
CAT9040370	2	1	(4x(2x0.15))C	8.0	12.5
CAT9040350	2	2	(4x(2x0.15))C	8.0	12.5
CAT9040510	2	3	(4x(2x0.15))C	8.0	12.5
CAT9040530	2	4	(4x(2x0.15))C	8.0	12.5
CAT9040310	2	5	(4x(2x0.15))C	8.0	12.5
CAT9040450	3	3	(4x(2x0.15))C	8.0	12.5
CAT9040490	3	4	(4x(2x0.15))C	8.0	12.5
CAT9040410	3	5	(4x(2x0.15))C	8.0	12.5
CAT9040470	4	4	(4x(2x0.15))C	8.0	12.5
CAT9040430	4	5	(4x(2x0.15))C	8.0	12.5

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

## Harnessed Ethernet cables | CAT5e

\* Technical information on the cable quality:

<b>PVC OIL</b>	<b>PUR</b>	<b>PUR-ROBOT</b>	<b>TPE</b>
Page 6	Page 14	Page 26	Page 18+22

Harnessed Ethernet cables, CAT5e, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Connection cable</b>				
<b>Hirose CAT5e-/ Intercontec connector</b>				
<b>PVC OIL</b>	<b>CAT9340800</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240800</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440800</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040800</b>	(4x(2x0.15))C	8.5	10
<b>Extension cable</b>				
<b>Intercontec connector</b>				
<b>PVC OIL</b>	<b>CAT9340810</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240810</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440810</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040810</b>	(4x(2x0.15))C	8.5	10
<b>Termination cable</b>				
<b>Intercontec-/ Hirose CAT5e connector</b>				
<b>PVC OIL</b>	<b>CAT9340820</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9240820</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR-ROBOT</b>	<b>CAT9440820</b>	4x(2x0.14)C	9.5	10
<b>TPE</b>	<b>CAT9040820</b>	(4x(2x0.15))C	8.5	10

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

Harnessing **RJ45 at both ends** ▶ TIA56A  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

## Harnessed Ethernet cables | CAT6

\* Technical information on the cable quality:

<b>PVC OIL</b>	<b>PUR</b>	<b>TPE</b>
Page 6	Page 14	Page 18+22

Harnessed Ethernet cables, CAT6, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Telegärtner CAT6A connector</b>				
<b>PVC OIL</b>	<b>CAT9331002</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9431002</b>	(4x(2x0.15))C	7.5	12.5
<b>TPE</b>	<b>CAT9531002</b>	(4x(2x0.15))C	8.5	10
<b>Harting CAT6 connector</b>				
<b>PVC OIL</b>	<b>CAT9331003</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9431003</b>	(4x(2x0.15))C	7.5	12.5
<b>TPE</b>	<b>CAT9531003</b>	(4x(2x0.15))C	8.5	10
<b>Telegärtner CAT6 connector</b>				
<b>PVC OIL</b>	<b>CAT9331004</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9431004</b>	(4x(2x0.15))C	7.5	12.5
<b>TPE</b>	<b>CAT9531004</b>	(4x(2x0.15))C	8.5	10
<b>Telegärtner CAT6 connector (RJ45/M12 x-coded)</b>				
<b>PVC OIL</b>	<b>CAT9331005</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9431005</b>	(4x(2x0.15))C	7.5	12.5
<b>TPE</b>	<b>CAT9531005</b>	(4x(2x0.15))C	8.5	10
<b>Telegärtner CAT6/CAT6A connector</b>				
<b>PVC OIL</b>	<b>CAT9331006</b>	(4x(2x0.15))C	7.5	12.5
<b>PUR</b>	<b>CAT9431006</b>	(4x(2x0.15))C	7.5	12.5
<b>TPE</b>	<b>CAT9531006</b>	(4x(2x0.15))C	8.5	10

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

Harnessing **RJ45 at both ends** ▶ TIA56A  
 Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

## Harnessed Ethernet cables | CAT6

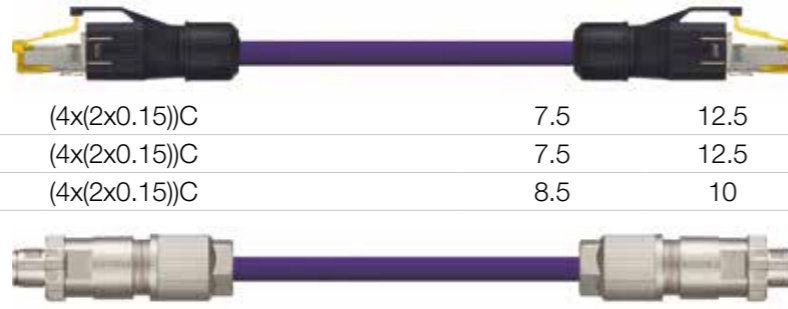
\* Technical information on the cable quality:

<b>PVC OIL</b>	<b>PUR</b>	<b>TPE</b>
Page 6	Page 14	Page 18+22

Harnessed Ethernet cables, CAT6, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Phoenix Contact CAT6A connector</b>				
PVC OIL	CAT9331009	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431009	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531009	(4x(2x0.15))C	8.5	10
<b>Phoenix Contact CAT6A connector (M12 x-coded)</b>				
PVC OIL	CAT9331012	(4x(2x0.15))C	7.5	12.5
PUR	CAT9431012	(4x(2x0.15))C	7.5	12.5
TPE	CAT9531012	(4x(2x0.15))C	8.5	10

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B



## Harnessed Ethernet cables | CAT6

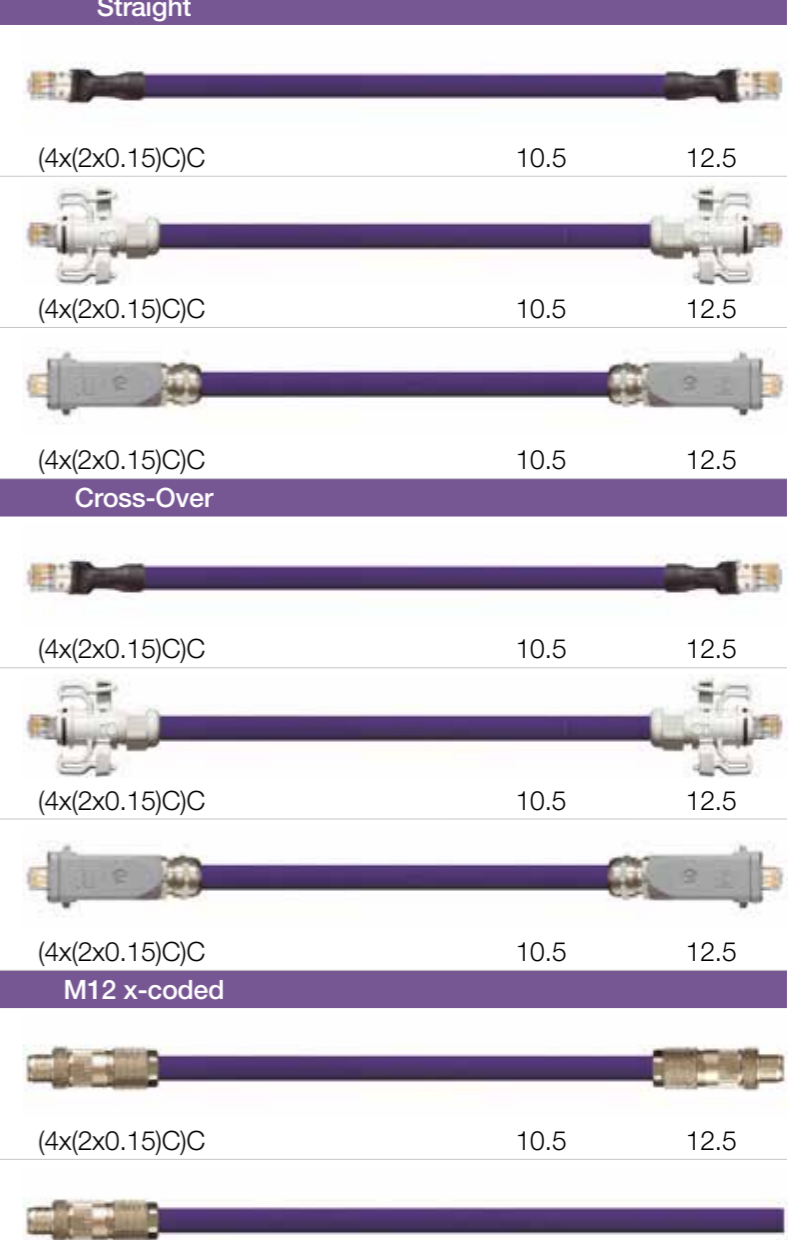
\* Technical information on the cable quality:

<b>TPE</b>
Page 18+22

Harnessed Ethernet cables, CAT6, 8-pole, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Straight</b>				
<b>Hirose CAT6A connector</b>				
TPE	CAT9040600	(4x(2x0.15))C	10.5	12.5
<b>Metz RJ45 E-DAT IP67 connector</b>				
TPE	CAT9040640	(4x(2x0.15))C	10.5	12.5
<b>Harting CAT6A connector</b>				
TPE	CAT9040680	(4x(2x0.15))C	10.5	12.5
<b>Cross-Over</b>				
<b>Hirose CAT6A connector</b>				
TPE	CAT9040620	(4x(2x0.15))C	10.5	12.5
<b>Metz RJ45 E-DAT IP67 connector</b>				
TPE	CAT9040660	(4x(2x0.15))C	10.5	12.5
<b>Harting CAT6A connector</b>				
TPE	CAT9040700	(4x(2x0.15))C	10.5	12.5
<b>M12 x-coded</b>				
<b>Telegärtner CAT6A connector</b>				
TPE	CAT9040720	(4x(2x0.15))C	10.5	12.5
<b>Telegärtner CAT6A connector</b>				
TPE	CAT9040760	(4x(2x0.15))C	10.5	12.5

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B





## Harnessed Ethernet cables | CAT6A

\* Technical information on the cable quality:

PVC OIL    PUR    PUR-ROBOT    TPE  
Page 6    Page 14    Page 26    Page 18+22

Harnessed Ethernet cables, CAT6A, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Telegärtner CAT6A connector</b>				
PUR-ROBOT	CAT9641001	4x(2x0.15)C	10.5	10
TPE	CAT9541001	(4x(2x0.15)C)C	10.5	12.5
<b>Harting CAT6A connector</b>				
PUR-ROBOT	CAT9641002	4x(2x0.15)C	10.5	10
TPE	CAT9541002	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner CAT6A connector</b>				
New PVC OIL	CAT9341016	4x(2x0.20)C	9.5	12.5
New PUR	CAT9441016	4x(2x0.20)C	9.5	12.5
New PUR-ROBOT	CAT9641015	4x(2x0.15)C	10.5	10
New TPE	CAT9541015	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner CAT6A connector (RJ45/M12 x-coded)</b>				
New PVC OIL	CAT9341017	4x(2x0.20)C	9.5	12.5
New PUR	CAT9441017	4x(2x0.20)C	9.5	12.5
New PUR-ROBOT	CAT9641016	4x(2x0.15)C	10.5	10
New TPE	CAT9541016	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner CAT6A connector</b>				
New PVC OIL	CAT9341018	4x(2x0.20)C	9.5	12.5
New PUR	CAT9441018	4x(2x0.20)C	9.5	12.5
New PUR-ROBOT	CAT9641017	4x(2x0.15)C	10.5	10
New TPE	CAT9541017	(4x(2x0.15)C)C	10.5	12.5
<b>Phoenix Contact CAT6A connector (M12 x-coded)</b>				
PVC OIL	CAT9341010	4x(2x0.20)C	9.5	12.5
PUR	CAT9441010	4x(2x0.20)C	9.5	12.5
PUR-ROBOT	CAT9641009	4x(2x0.15)C	10.5	10
TPE	CAT9541009	(4x(2x0.15)C)C	10.5	12.5

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

## Harnessed Ethernet cables | CAT7

\* Technical information on the cable quality:

PUR-ROBOT    TPE  
Page 26    Page 18+22

Harnessed Ethernet cables, CAT7, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]
<b>Telegärtner CAT6A connector</b>				
PUR-ROBOT	CAT9651002	4x(2x0.15)C	10.5	10
TPE	CAT9551002	(4x(2x0.15)C)C	10.5	12.5
<b>Harting CAT6A connector</b>				
PUR-ROBOT	CAT9651003	4x(2x0.15)C	10.5	10
TPE	CAT9551003 <sup>1)</sup>	(4x(2x0.15)C)C	10.5	12.5
<b>Harting CAT6A connector</b>				
PUR-ROBOT	CAT9651004	4x(2x0.15)C	10.5	10
TPE	CAT9551004	(4x(2x0.15)C)C	10.5	12.5
<b>Telegärtner CAT6A/ Telegärtner CAT6A, angled</b>				
PUR-ROBOT	CAT9651005	4x(2x0.15)C	10.5	10
TPE	CAT9551005	(4x(2x0.15)C)C	10.5	12.5
<b>Phoenix Contact CAT6A connector (M12 x-coded)</b>				
PUR-ROBOT	CAT9651009	4x(2x0.15)C	10.5	10
TPE	CAT9551009	(4x(2x0.15)C)C	10.5	12.5
<b>Module PS-Tera/ Connector PS-Tera</b>				
PUR-ROBOT	CAT9651010	4x(2x0.15)C	10.5	10
TPE	CAT9551010	(4x(2x0.15)C)C	10.5	12.5
<b>Connector PS-Tera/ Connector PS-Tera</b>				
PUR-ROBOT	CAT9651011	4x(2x0.15)C	10.5	10
TPE	CAT9551011	(4x(2x0.15)C)C	10.5	12.5

<sup>1)</sup> This cable must be stripped before the connector and covered with a shrink-on tube so that the patch plug can be fitted.

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>TPE</b> Page 18+22
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Yamaichi Profinet connector



<b>PVC</b>	<b>CAT9161001</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361001</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261001</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461001</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661001</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561001</b>	(4x0.38)C	7.5	10

### Harting Profinet connector



<b>PVC</b>	<b>CAT9161002</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361002</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261002</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461002</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661002</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561002</b>	(4x0.38)C	7.5	10

### Harting Profinet connector



<b>PVC</b>	<b>CAT9161003</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361003</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261003</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461003</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661003</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561003</b>	(4x0.38)C	7.5	10

### Telegärtner Profinet connector



<b>PVC</b>	<b>CAT9161004</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361004</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261004</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461004</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661004</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561004</b>	(4x0.38)C	7.5	10

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

Harnessing **RJ45 at both ends** ▶ TIA56A  
Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>TPE</b> Page 18+22
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Telegärtner Profinet connector



<b>PVC</b>	<b>CAT9161005</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361005</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261005</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461005</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661005</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561005</b>	(4x0.38)C	7.5	10

### Telegärtner Profinet connector/ M12 Profinet connector (x-coded)



<b>PVC</b>	<b>CAT9161006</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361006</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261006</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461006</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661006</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561006</b>	(4x0.38)C	7.5	10

### Telegärtner M12 Profinet connector (x-coded)



<b>PVC</b>	<b>CAT9161007</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361007</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261007</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461007</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661007</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561007</b>	(4x0.38)C	7.5	10

### Telegärtner and Binder Profinet connector (d-coded)



<b>PVC</b>	<b>CAT9161008</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361008</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261008</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461008</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661008</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561008</b>	(4x0.38)C	7.5	10

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

Harnessing **RJ45 at both ends** ▶ TIA56A  
Harnessing **one end RJ45/one end M12 x-coded** ▶ TIA56B

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>TPE</b> Page 18+22
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Telegärtner and Binder Profinet connector (RJ45/M12 d-coded)



<b>PVC</b>	<b>CAT9161009</b>			
<b>PVC OIL</b>	<b>CAT9361009</b>			
<b>iguPUR</b>	<b>CAT9261009</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461009</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661009</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561009</b>	(4x0.38)C	7.5	10

### Phoenix Contact Profinet connector



<b>PVC</b>	<b>CAT9161012</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361012</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261012</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461012</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661012</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561012</b>	(4x0.38)C	7.5	10

### Phoenix Contact Profinet connector (x-coded)



<b>PVC</b>	<b>CAT9161014</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361014</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261014</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461014</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661014</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561014</b>	(4x0.38)C	7.5	10

### Siemens Profinet connector



<b>PVC</b>	<b>CAT9161015</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361015</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261015</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461015</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661015</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561015</b>	(4x0.38)C	7.5	10

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

Harnessing RJ45 at both ends ▶ TIA56A  
Harnessing one end RJ45/one end M12 x-coded ▶ TIA56B

## Harnessed Profinet cables

\* Technical information on the cable quality:

<b>PVC</b> Page 4	<b>PVC OIL</b> Page 6	<b>iguPUR</b> Page 10	<b>PUR</b> Page 14	<b>PUR-ROBOT</b> Page 26	<b>TPE</b> Page 18+22
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Harnessed Profinet cables, to your required length				
Cable quality	Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[mm <sup>2</sup> ]	[mm]	[x d]

### Siemens Profinet connector



<b>PVC</b>	<b>CAT9161016</b>	(4x0.34)C	7.0	15
<b>PVC OIL</b>	<b>CAT9361016</b>	(4x0.38)C	7.0	12.5
<b>iguPUR</b>	<b>CAT9261016</b>	(4x0.34)C	7.0	15
<b>PUR</b>	<b>CAT9461016</b>	(4x0.38)C	7.0	12.5
<b>PUR-ROBOT</b>	<b>CAT9661016</b>	(2x(2x0.34))C	8.5	10
<b>TPE</b>	<b>CAT9561016</b>	(4x0.38)C	7.5	10

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

Harnessed Profinet cables with moulded M12 connectors, in fixed lengths					
Cable quality	Part No.	Cable length	Number of cores and conductor nominal cross section	Outer diameter (d) max.	Minimum bend radius
		[m]	[mm <sup>2</sup> ]	[mm]	[x d]

### M12 connector straight 4-pole, D-coded



<b>PVC OIL</b>	<b>BUS9041070</b>	3	(4x0.38)C	7.0	12.5
<b>PVC OIL</b>	<b>BUS9041071</b>	5	(4x0.38)C	7.0	12.5
<b>PUR</b>	<b>BUS9041170</b>	3	(4x0.38)C	7.0	12.5
<b>PUR</b>	<b>BUS9041171</b>	5	(4x0.38)C	7.0	12.5
<b>TPE</b>	<b>BUS9041270</b>	3	(4x0.38)C	7.5	10
<b>TPE</b>	<b>BUS9041271</b>	5	(4x0.38)C	7.5	10

### M12 connector straight 4-pole, D-coded















<b>PVC OIL</b>	<b>BUS9041072</b>	3	(4x0.38)C	7.0	12.5
<b>PVC OIL</b>	<b>BUS9041073</b>	5	(4x0.38)C	7.0	12.5
<b>PUR</b>	<b>BUS9041172</b>	3	(4x0.38)C	7.0	12.5
<b>PUR</b>	<b>BUS9041173</b>	5	(4x0.38)C	7.0	12.5
<b>TPE</b>	<b>BUS9041272</b>	3	(4x0.38)C	7.5	10
<b>TPE</b>	<b>BUS9041273</b>	5	(4x0.38)C	7.5	10

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

		igus® Part-No.	Manufacturer	Cable diameter [mm]	Protection class	Number of contacts	Connection method	Bus type	Conductor cross section [mm²]	Cable quality	matching chainflex® cables	Maximum cable diameter [mm]	Number of cores and conductor cross section
		MAT01717352	HARTING	4.5-9.0	IP20	8	Cutting clamps	CAT6	0.14-0.34	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.049	8.5	4x(2x0.14)C
		MAT01713662	HARTING	6.0-6.9	IP20	8	Hand tool needed	CAT6	0.09-0.25	PVC	CFBUS.PVC.049*	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049*	7.5	(4x(2x0.15))C
		MAT0176869	Phoenix Contact	4.5-8.0	IP20	8	Cutting clamps	CAT5e	0.14-0.25	PVC	CF888.045	7.5	(4x(2x0.15))C
										PVC	CFBUS.PVC.045	7.5	(4x(2x0.15))C
										iguPUR	CF898.045	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.045	7.5	(4x(2x0.15))C
										TPE	CFBUS.045*	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.045*	8.5	4x(2x0.14)C
		MAT01733149	Telegärtner	5.5-7.3	IP20	8	Hand tool needed	CAT6A CAT6	0.14-0.25	TPE	CFBUS.050*	10.5	4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
										PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
		MAT01733150	Telegärtner	max. 7.0	IP20	-	-	-	-	TPE	CFBUS.049*	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
		MAT0176370	Yamaichi	-	IP20	8	Hand tool needed	CAT6	0.14-0.25	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C
		MAT0176371	Yamaichi	max. 7.5	IP20	-	-	-	-	PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
		MAT0176372	Yamaichi	-	-	-	-	-	-	PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C
		MAT01717477	WEIDMÜLLER	5.5-8.5	IP20	8	Cutting clamps	Cat.6 (CAT6A acc. to datasheet)	0.14-0.34	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.049	8.5	4x(2x0.14)C
		MAT01730294	Telegärtner	5.5-10.0	IP20	8	Cutting clamps	CAT6A	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C
										TPE	CFBUS.050*	10.5	(4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
		MAT0173509	HARTING	6.0-7.0	IP20	4	Cutting clamps	CAT5/ Profinet	0.14-0.34	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060*	7.5	(4x0.38)C
										PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C
										PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15)C)C
		MAT01733547	Datwyler	max. 8.9	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15)C)C
										TPE	CFBUS.052*	10.5	(4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C
										PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15)C)C
		MAT01733548	Datwyler	max. 6.3	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15)C)C
										TPE	CFBUS.052*	10.5	(4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C
										PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15)C)C
		MAT0179875	Binder	6.0-8.0	IP67	4	Screw clamps	CAT5/ Profinet	max. 0.75	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C										

All connectors are compatible downward Please note the outer diameter of the cable and the conductor cross section

\* According to data sheet, the connectors do not match these cables but the cables can nevertheless be manually modified/tapered.

igus® Part-No.		Manufacturer	Cable diameter [mm]	Protection class	Number of contacts	Connection type	Bus type	Conductor cross section [mm <sup>2</sup> ]	Cable quality	matching chainflex® cables	Maximum cable diameter [mm]	Number of cores and conductor cross section	
		SpringTec 615 Connector	Intercontec	4.5-10.5 (Plastic clamp ring) 4.5-12 mm (Metal clamp ring)	IP67	12	Hand tool needed	CAT5e/ Profinet	0.05-0.75	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C										
		SpringTec 615 Coupling	Intercontec	4.5-10.5 (Plastic clamp ring) 4.5-12 mm (Metal clamp ring)	IP67	12	Hand tool needed	CAT5e/ Profinet	0.05-0.75	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C										
		MAT01733199	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/ Ethernet	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C
										TPE	CFBUS.050*	10.5	(4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
		MAT01733200	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/ Profinet	0.25-0.5	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060	8.5	(2x(2x0.34))C										
		MAT01734849	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/ Ethernet	0.14-0.34	PVC	CFBUS.PVC.050	9.5	4x(2x0.20)C
										PUR	CFBUS.PUR.050	9.5	4x(2x0.20)C
										TPE	CFBUS.050*	10.5	(4x(2x0.15)C)C
										PUR-Robot	CFROBOT8.050*	10.5	4x(2x0.15)C
		MAT01735081	Phoenix Contact	5.0-9.7	IP67	8	Cutting clamps	CAT6A/ Profinet	0.25-0.5	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
										TPE	CFBUS.040	7	(4x0.25)C
										TPE	CFBUS.060	7.5	(4x0.38)C
PUR-Robot	CFROBOT8.060	8.5	(2x(2x0.34))C										
		MAT01716619	Siemens	6.5-6.5	IP20	4	Cutting clamps	CAT5/ Profinet	0.14-0.38	PVC	CF888.060	7	(4x0.38)C
										PVC	CFBUS.PVC.040	6.5	(4x0.25)C
										PVC	CFBUS.PVC.060	7	(4x0.38)C
										iguPUR	CF898.060	7	(4x0.38)C
										PUR	CFBUS.PUR.040	6.5	(4x0.25)C
										PUR	CFBUS.PUR.060	7	(4x0.38)C
TPE	CFBUS.040	7	(4x0.25)C										
TPE	CFBUS.060*	7.5	(4x0.38)C										
		MAT01721074	Siemens	8.0-8.0	IP20	8	Cutting clamps	CAT6	0.14-0.25	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
										PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
										TPE	CFBUS.049*	8.5	(4x(2x0.15))C
										PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C

All connectors are compatible downward Please note the outer diameter of the cable and the conductor cross section

\* According to data sheet, the connectors do not match these cables but the cables can nevertheless be manually modified/tapered.

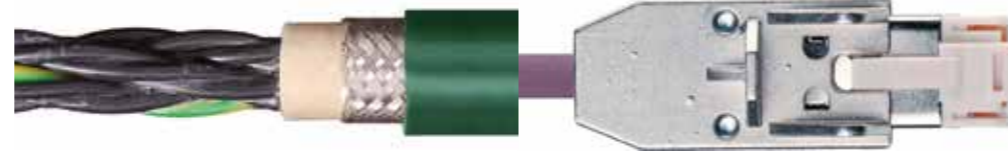
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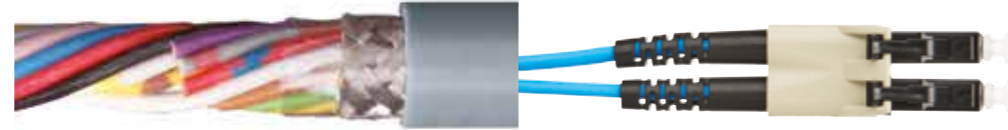
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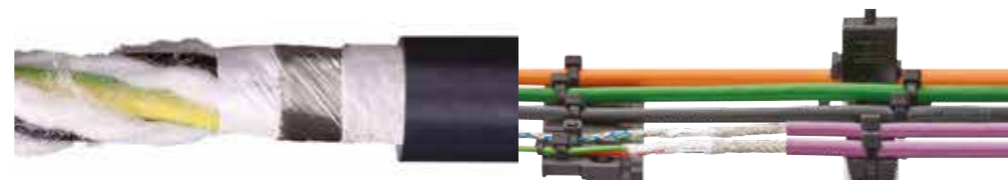
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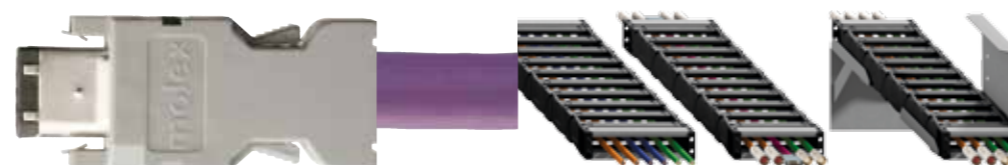
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