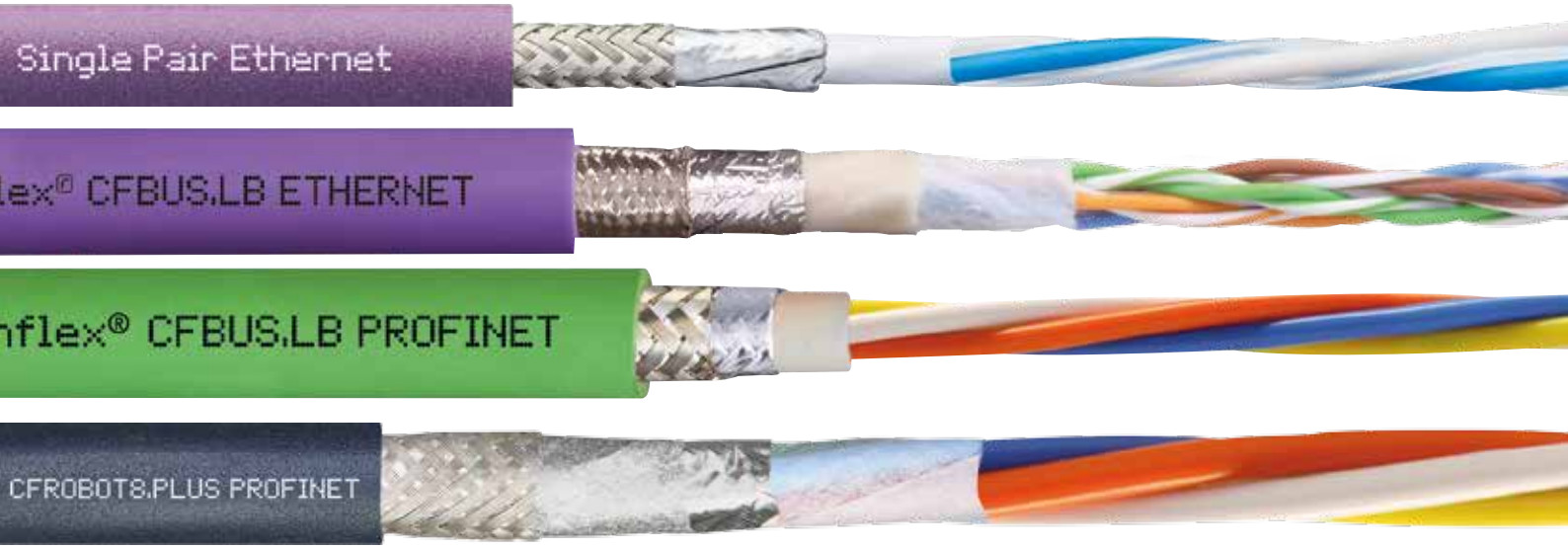
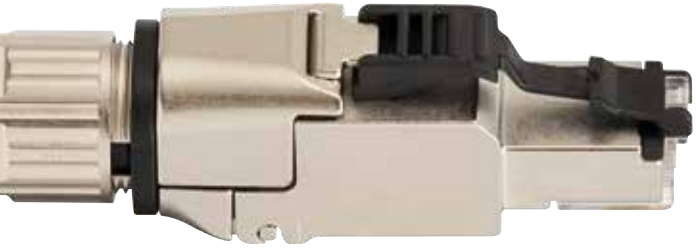
Ethernet

Cables up to CAT7 ...
... now also with Single Pair Ethernet





CC-Link IE Field

EtherCAT®

PROFINET®

SPE

www.igus.eu/ethernet

chainflex®

cable works

Cost down ...
... Service life up

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 a wide range of products both sold by the metre and also a wide variety of ready-to-connect cables with connectors. All chainflex® cables come with a **36 month guarantee** and up to 10 million double strokes as standard, giving you peace-of-mind and confidence.

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

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

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

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

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

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

Also visit our Ethernet website:

www.chainflex.eu/ethernet

The cheapest Ethernet cable that is guaranteed to work.

The selection table for the largest range of flexible Ethernet cables

Electrical 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 ± 360°/m	High tensile 50 m freely hanging	For rail vehicles
CAT7 10 GBit 600 MHz		NEW chainflex® CFBUS.PVC.052		NEW chainflex® CFBUS.PUR.052	chainflex® CFBUS.052		chainflex® CFROBOT8.052		
CAT6A 10 GBit 500 MHz		NEW chainflex® CFBUS.PVC.050		NEW chainflex® CFBUS.PUR.050	chainflex® CFBUS.050		chainflex® CFROBOT8.050		
CAT6 1 GBit 250 MHz		NEW chainflex® CFBUS.PVC.049		NEW chainflex® CFBUS.PUR.049	chainflex® CFBUS.049	chainflex® CFBUS.LB.049	chainflex® CFROBOT8.049		chainflex® CFSPECIAL.484.049
CAT5e 1 GBit 100 MHz	NEW chainflex® CF888.045	NEW chainflex® CFBUS.PVC.045	NEW chainflex® CF898.045	NEW chainflex® CFBUS.PUR.045	chainflex® CFBUS.045	chainflex® CFBUS.LB.045	CFROBOT8.045 CFROBOT8.PLUS.045	chainflex® CFSPECIAL.182.045	
NEW SPE CAT5e 1 GBit 600 MHz				NEW chainflex® CFBUS.PUR.042					Single Pair Ethernet for e-chains®
Profinet 100 MBit 100 MHz	NEW chainflex® CF888.060	NEW chainflex® CFBUS.PVC.060	NEW chainflex® CF898.060	NEW chainflex® CFBUS.PUR.060	chainflex® CFBUS.060	chainflex® CFBUS.LB.060	CFROBOT8.060 CFROBOT8.PLUS.060		
CAT5 100 MBit 100 MHz		NEW chainflex® CFBUS.PVC.040		NEW chainflex® CFBUS.PUR.040	chainflex® CFBUS.040	chainflex® CFBUS.LB.040			

Mechanical Performance

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

In the area of mechanical engineering, a strong trend in recent years has been a continuous increase in the need for more and faster data. Fieldbuses such as Profibus and CC-Link in Ethernet derivates such as Profinet and CC-Link IE have been developed further in order to enable improved performance in machines. The situation is similar in the case of the Ethernet types. Whereas CAT5 used to be the standard and a quantum leap was achieved with CAT5e, everyone is now talking about CAT6A and CAT7 for the future. This is not only true with regard to building infrastructure but is also in the case of machine and robot cabling.

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

This is most evident in the case of the connector. It is now the size of an M8 round connector and is therefore considerably smaller than the frequently used RJ45. As regards the cable, we have reduced the diameter by 25% and have now also arrived in the range of a proximity switch cable. This creates installation space in the narrow energy chains, which also have to become smaller - a change that will please every engineering customer.

Our benchmark is our challenge. As a clear service life together with a guarantee is always indicated for all cables in the igus® catalogue, thorough testing is needed in this case as well. This equally applies to the new member of the family, of course: CFBUS.PUR.042 is guaranteed to last for 10 million double strokes and 36 months.

Enjoy this new technological innovation.

New

Bus cable | PVC | chainflex® CF888

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

Now with 300 V UL appoval

Dynamic information

Bend radius	e-chain® linear	minimum 15 x d
	flexible	minimum 12 x d
	fixed	minimum 8 x d
Temperature	e-chain® linear	+5 °C up to +70 °C
	flexible	-5 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-15 °C up to +70 °C (following DIN EN 50305)
v max.	unsupported	3 m/s
a max.		20 m/s²
Travel distance		Unsupported travel distances up to 10 m, Class 1

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Example image

Class 3.1.1.1

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 4 ±360°

Properties and approvals

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)
UL/CSA	Style 11602 and 20601, 300 V, 80 °C
NFPA	Following NFPA 79-2018, 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

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

Bus cable | PVC | chainflex® CF888

Class 3.1.1.1

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 4	±360°

CF888
PVC
15 x d

Example image

Part No.	Number of cores and conductor nominal cross section	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
Ethernet/CAT5e								
CF888.045	(4x(2x0.14))C	7.5	25	66	**CF888.045**	100	(4x(2x0.14))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Profinet								
CF888.060 [2] [13]	(4x0.34)C	7.0	25	56	**CF888.060** [2] [13]	100	(4x0.34)C	white, orange, blue, yellow (Star-quad)

[2] The chainflex® types marked with [2] are cables designed as a star-quad.
[13] Colour outer jacket: Yellow-green (similar to 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: CF888.045 – to your desired length (0.5 m steps)
chainflex® series .045 Code Bus type

Online order ▶ www.chainflex.eu/CF888

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

Technical note on bus cableschainflex® 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.

New

Bus cable | PVC | chainflex® CFBUS.PVC

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

Now with 300 V UL appoval

Example image

Dynamic information

Bend radius	**e-chain® linear**	minimum 12.5 x d
	flexible	minimum 10 x d
	fixed	minimum 7 x d
Temperature	**e-chain® linear**	+5 °C up to +70 °C
	flexible	-5 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-15 °C up to +70 °C (following DIN EN 50305)
v max.	**unsupported**	3 m/s
	gliding	2 m/s
a max.	30 m/s²	
Travel distance	Unsupported travels and up to 20 m for gliding applications, Class 3	

Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
Core insulation	According to bus specification.
Core structure	According to bus specification.
Core identification	According to bus specification. ▶ Product range table
Overall shield	Bending-resistant braiding made of tinned copper wires. Coverage approx. 55 % linear, approx. 80 % optical
Outer jacket	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

Nominal voltage	50 V
Testing voltage	500 V

Class 4.3.2.1

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 4 ±360°

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-4-1), Class 2
Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
UL-Listed	**CFBUS.PVC.045-CFBUS.PVC.049:** CMX, 75°C
UL/CSA	Style 11602 and 20601, 300 V, 80 °C
NFPA	Following NFPA 79-2018, chapter 12.9
CLPA	**CFBUS.PVC.045:** CC-Link IE Field, Reference no. 153 **CFBUS.PVC.049:** CC-Link IE Field, Reference no. 154
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 CF240.02.24 - tested by IPA according to standard DIN EN ISO 14644-1
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]
+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

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

Bus cable | PVC | chainflex® CFBUS.PVC

New

Class 4.3.2.1

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 4 ±360°

CFBUS.PVC
PVC
12.5 x d

Example image

	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
	Ethernet/CAT5								
EtherCAT	**CFBUS.PVC.040** [2]	(4x0.25)C	6.5	29	68	**CFBUS.PVC.040** [2]	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
	Ethernet/CAT5e								
CC-Link IE Field	**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
	Ethernet/CAT6								
CC-Link IE Field	**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
	Ethernet/CAT6A								
	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
	Ethernet/CAT7								
	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
PROFINET	**Profinet**								
EtherCAT	**CFBUS.PVC.060** [2] [6]	(4x0.38)C	7.0	33	67	**CFBUS.PVC.060** [2] [6]	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

The chainflex® types marked with [2] are cables designed as a star-quad.
[6] 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

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.

New

Bus cable | iguPUR | chainflex® CF898

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

Now with 300 V UL appoval

Example image

Dynamic information

Bend radius	e-chain® linear	minimum 15 x d
	flexible	minimum 12 x d
	fixed	minimum 8 x d
Temperature	e-chain® linear	-20 °C up to +70 °C
	flexible	-40 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	unsupported	3 m/s
a max.		20 m/s²
Travel distance		Unsupported travel distances up to 10 m, Class 1

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Class 3.1.3.1

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 4 ±360°

Properties and approvals

UV resistance	Medium
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1, VW-1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
UL/CSA	Style 11602 and 21161, 300 V, 80 °C
NFPA	Following NFPA 79-2018, 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]
-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

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

Bus cable | iguPUR | chainflex® CF898

Class 3.1.3.1

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 4 ±360°	

CF898
iguPUR
15 x d

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
Ethernet/CAT5e								
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
Profinet								
CF898.060 [6]	(4x0.34)C	7.0	25	58	**CF898.060** [6]	100	(4x0.34)C	white, orange, blue, yellow (Star-quad)

[6] 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

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.

New

Bus cable | PUR | chainflex® CFBUS.PUR

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

Single Pair Ethernet for e-chains®

Example image

Dynamic information

Bend radius	e-chain® linear	minimum 12.5 x d
	flexible	minimum 10 x d
	fixed	minimum 7 x d
Temperature	e-chain® linear	-20 °C up to +70 °C
	flexible	-40 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	unsupported	3 m/s
	gliding	2 m/s
a max.	30 m/s²	
Travel distance	Unsupported travels and up to 20 m for gliding applications, Class 3	

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Properties and approvals

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

Class 4.3.3.1

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 4 ±360°

CFBUS.PUR
PUR
12.5 x d

Offshore	MUD-resistant following NEK 606 - status 2009
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-Listed	**CFBUS.PUR.045-CFBUS.PUR.049:** CMX, 75°C
UL/CSA	Style 11602 and 20233, 300 V, 80 °C **CFBUS.PUR.H01.049:** Style 10493 (1.5 mm²), 11602 (0.15 mm²) and 20233, 300 V, 80 °C **CFBUS.PUR.H01.060:** Style 10493 (1.5 mm²), 11602 (0.38 mm²) and 20233, 300 V, 80 °C
NFPA	Following NFPA 79-2018, chapter 12.9
CLPA	**CFBUS.PUR.045:** CC-Link IE Field, Reference no. 151 **CFBUS.PUR.049:** CC-Link IE Field, Reference no. 152
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

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

Bus cable | PUR | chainflex® CFBUS.PUR

New

Class 4.3.3.1

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 4	±360°

CFBUS.PUR
PUR
12.5 x d

Example image

	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
	Ethernet/CAT5								
EtherCAT	**CFBUS.PUR.040** 2)	(4x0.25)C	6.5	29	67	**CFBUS.PUR.040** 2)	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
New	**Single Pair Ethernet/CAT5e**								
SPE	**CFBUS.PUR.042**	(2x0.15)C	5.5	12	33	**CFBUS.PUR.042**	100	(2x0.15)C	white/blue
	Ethernet/CAT5e								
CC-Link IE Field	**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
	Ethernet/CAT6								
CC-Link IE Field	**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	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
								4x1.5	black, brown, Grey, blue
	Ethernet/CAT6A								
	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
	Ethernet/CAT7								
	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
PROFINET / EtherCAT	**Profinet**								
	CFBUS.PUR.060 2) 6)	(4x0.38)C	7.0	33	64	**CFBUS.PUR.060** 2) 6)	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	white, orange, blue, yellow (Star-quad)
								4x1.5	black, brown, Grey, blue

The chainflex® types marked with 2) are cables designed as a star-quad.
6) 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

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

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

Bend radius	**e-chain® linear**	-35 °C up to +70 °C
	flexible	-45 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	**e-chain® linear**	-35 °C up to +70 °C
	flexible	-45 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	**unsupported**	10 m/s
	gliding	6 m/s
a max.	100 m/s²	
Travel distance	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
Core insulation	According to bus specification.
Core structure	According to bus specification.
Core identification	According to bus specification. ▶ Product range table
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	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

Nominal voltage	50 V
Testing voltage	500 V (following DIN EN 50289-1-3)

Example image

Class 6.6.4.1

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 4 ±360°

Properties and approvals

UV resistance	Medium
Oil resistance	Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
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)
UL/CSA	Style 10138 and 21235, 300 V, 80 °C **CFBUS.045-CFBUS.049:** Style 11632 and 21218, 600 V, 80 °C
NFPA	Following NFPA 79-2018, chapter 12.9
CLPA	**CFBUS.045:** CC-Link IE Field, Reference no. 130 **CFBUS.049:** CC-Link IE Field, Reference no. 137
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 CF34.UL.25.04.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]	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070	CFBUS .001-.049	CFBUS .050-.070
	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

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

Bus cable | TPE | chainflex® CFBUS

Class 6.6.4.1

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 4	±360°

CFBUS
TPE
10 x d

Example image

	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
	Ethernet/CAT5/PoE								
EtherCAT	**CFBUS.040**	(4x0.25)C	7.0	33	64	**CFBUS.040**	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
	Ethernet/CAT5e/PoE								
CC-Link IE Field	**CFBUS.045**	(4x(2x0.15))C	8.5	41	86	**CFBUS.045**	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
	Ethernet/CAT6/PoE								
CC-Link IE Field	**CFBUS.049**	(4x(2x0.15))C	8.5	42	86	**CFBUS.049**	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
	Ethernet/CAT6A/PoE								
	CFBUS.050 [4]	(4x(2x0.15)C)C	10.5	82	135	**CFBUS.050** [4]	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
	Ethernet/CAT7/PoE								
	CFBUS.052 [4]	(4x(2x0.15)C)C	10.5	89	137	**CFBUS.052** [4]	100	(4x(2x0.15)C)C	white/blue, white/orange, white/green, white/brown
PROFINET	**Profinet**								
EtherCAT	**CFBUS.060** [2) 6)]	(4x0.38)C	7.5	39	73	**CFBUS.060** [2) 6)]	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

The chainflex® types marked with [2)] are cables designed as a star-quad.
[4)] manufactured without inner jacket
[6)] 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

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

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

Bend radius	**e-chain® linear**	minimum 7.5 x d
	flexible	minimum 6 x d
	fixed	minimum 4 x d
Temperature	**e-chain® linear**	-35 °C up to +70 °C
	flexible	-50 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-55 °C up to +70 °C (following DIN EN 50305)
v max.	**unsupported**	10 m/s
	gliding	6 m/s
a max.	100 m/s²	
Travel distance	Unsupported travel distances and up to 400 m and more for gliding applications, Class 6	

Cable structure

Conductor	Stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
Core insulation	According to bus specification.
Core structure	According to bus specification.
Core identification	According to bus specification. ▶ Product range table
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	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

Nominal voltage	50 V
Testing voltage	500 V (following DIN EN 50289-1-3)

Example image

Class 7.6.4.1

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 4 ±360°

Properties and approvals

UV resistance	Medium
Oil resistance	Oil resistant (following DIN EN 60811-404), bio-oil resistant (following VDMA 24568 with Plantocut 8 S-MB tested by DEA), Class 4
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
Halogen-free	Following DIN EN 60754
CLPA	**CFBUS.LB.045:** CC-Link IE Field, Reference no. 131 **CFBUS.LB.049:** CC-Link IE Field, Reference no. 138
EAC	Certificate No. RU C-DE.ME77.B.02806 (TR ZU)
Lead-free	Following 2011/65/EC (RoHS-II)
Clean room	According to ISO Class 1. The outer jacket material of this series complies with CF9.15.07 - tested by IPA according to standard DIN EN ISO 14644-1
DESINA	According to VDW, DESINA standardisation
CE	Following 2014/35/EU

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

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

Bus cable | TPE | chainflex® CFBUS.LB

Class 7.6.4.1

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 4 ±360°	

CFBUS.LB
TPE
7.5 x d

Example image

	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave imped-ance approx. [Ω]	Core group	Colour code
	Ethernet/CAT5								
EtherCAT	**CFBUS.LB.040**	(4x0.25)C	7.0	33	64	**CFBUS.LB.040**	100	(4x0.25)C	white, green, brown, yellow (Star-quad)
	Ethernet/CAT5e								
CC-Link IE Field	**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
	Ethernet/CAT6								
CC-Link IE Field	**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
PROFINET	**Profinet**								
EtherCAT	**CFBUS.LB.060** [2) 6)]	(4x0.38)C	7.5	39	64	**CFBUS.LB.060** [2) 6)]	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

The chainflex® types marked with [2)] are cables designed as a star-quad.
[6)] 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

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

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

Bend radius	e-chain® twisted	minimum 10 x d
	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	e-chain® twisted	-25 °C up to +70 °C
	flexible	-40 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	twisted	180 °/s
a max.	twisted	60 °/s²
Travel distance	Robots and 3D movements, Class 1	
Torsion	± 180°, with 1 m cable length, Class 3	

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Example image

Class 6.1.3.3

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** 4 ±360°

CFROBOT8 PUR 10 x d

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
UL/CSA	Style 1589 and 20236, 30 V, 80 °C
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 CF27.07.05.02.01.D - tested by IPA according to standard DIN EN ISO 14644-1
CE	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

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

Bus cable | PUR | chainflex® CFROBOT8

Class 6.1.3.3

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** 4	±360°

CFROBOT8
PUR
10 x d

Example image

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]	Part No.	Characteristic wave impedance approx. [Ω]	Core group	Colour code
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
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								
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

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.PLUS

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

Bend radius	e-chain® twisted	min. 10 x d
	flexible	min. 8 x d
	fixed	min. 5 x d
Temperature	e-chain® twisted	-25 °C up to +70 °C
	flexible	-40 °C up to +70 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +70 °C (following DIN EN 50305)
v max.	twisted	360 °/s
a max.	twisted	60 °/s²
Travel distance	Robots and multi-axis movements, Class 1	
Torsion	Torsion ±360°, with 1 m cable length, Class 4	

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Example image

EPLAN download, configurators ▶ www.igus.co.uk/

Class 6.1.3.4

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 **4** ±360°

CFROBOT8. PLUS PUR 10 x d

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Flame retardant	According to IEC 60332-1-2, CEI 20-35, FT1
Silicone-free	Free from silicone which can affect paint adhesion (following PV 3.10.7 – status 1992)
UL/CSA	Style 1589 and 20236, 30 V, 80 °C
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
CE	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	±330	±240	±150
-15/+60	±360	±270	±180
+60/+70	±330	±240	±150

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

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 ±360°, with 1 m cable length, Class 4
- Indoor and outdoor applications, UV-resistant
- robots, Handling, spindle drives

Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
CFROBOT8.PLUS.045	(4x(2x0.15))C	7.5	32	60
CFROBOT8.PLUS.060 EtherCAT	(4x0.38)C	7.0	32	64

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.	Charact. wave imped. approx. [Ω]	Core group	Colour code
CFROBOT8.PLUS.045	100	(4x(2x0.15))C	white-green/green, white-orange/orange, white-blue/blue, white-brown/brown
CFROBOT8.PLUS.060	100	(4x0.38)C	white, blue, yellow, orange

Bus cable | PUR | chainflex® CFSPECIAL.182

Example image

- 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

Bend radius	e-chain® linear	minimum 10 x d
	flexible	minimum 8 x d
	fixed	minimum 5 x d
Temperature	e-chain® linear	-25 °C up to +80 °C
	flexible	-40 °C up to +80 °C (following DIN EN 60811-504)
	fixed	-50 °C up to +80 °C (following DIN EN 50305)
v max.	unsupported	10 m/s
	gliding	6 m/s
a max.	100 m/s²	
Travel distance	For hanging applications up to 50 m	

Cable structure

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

Electrical information

Nominal voltage	50 V
Testing voltage	500 V

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 50363-10-2), Class 3
Offshore	MUD-resistant following NEK 606 - status 2009
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 10138 and 20233, 300 V, 80 °C
NFPA	Following NFPA 79-2018, chapter 12.9
Lead-free	Following 2011/65/EC (RoHS-II)
CE	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 [mm²]	Outer diameter (d) max. [mm]	Copper index [kg/km]	Weight [kg/km]
Ethernet/CAT5				
CFSPECIAL.182.045	(4x(2x0.15))C	10.0	41	138
Profinet				
CFSPECIAL.182.060 [6] EtherCAT	(4x0.38)C	8.5	36	121

[6] 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
Ethernet/CAT5			
CFSPECIAL.182.045	100	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Profinet			
CFSPECIAL.182.060	100	(4x0.38)C	white, orange, blue, yellow (Star-quad)

Bus cables for rail vehicles | chainflex® CFSPECIAL.484

Example image

- 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

Bend radius	e-chain® linear	minimum 12.5 x d
	flexible	minimum 10 x d
	fixed	minimum 7 x d
Temperature	e-chain® linear	-20 °C up to +80 °C
	flexible	-25 °C up to +80 °C (following DIN EN 60811-504)
	fixed	-30 °C up to +80 °C (following DIN EN 50305)
v max.	unsupported	10 m/s
a max.		20 m/s²
Travel distance		For unsupported travels up to 5 m

Cable structure

Conductor	Fine-wire stranded conductor in especially bending-resistant version consisting of bare copper wires (following DIN EN 60228).
Core insulation	According to bus specification.
Core structure	According to bus specification.
Core identification	According to bus specification.
Inner jacket	TPE mixture adapted to suit the requirements in e-chains®.
Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage approx. 70 % linear, approx. 90 % optical
Outer jacket	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

Nominal voltage	50 V
Testing voltage	500 V

Properties and approvals

UV resistance	High
Oil resistance	Oil-resistant (following DIN EN 60811-2-1), Class 3
Flame retardant	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)
Halogen-free	Following DIN EN 60754
Lead-free	Following 2011/65/EC (RoHS-II)
CE	Following 2014/35/EU
Toxicity	Low toxicity according to EN 50305-9.2
Smoke gas density	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
Ethernet/CAT6				
CFSPECIAL.484.049	(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
Ethernet/CAT6		
CFSPECIAL.484.049	(4x(2x0.15))C	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown

Network
Harnessed Ehternet cables

Harnessed Ethernet cables | CAT5

* Technical information on the cable quality:

PVC OIL	PUR	TPE
Page 8	Page 16	Page 20+24

Harnessed Ethernet cables, CAT5, to your required length				
Cable quality	**Part No.**	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [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:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	PUR-SPECIAL	TPE
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Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [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

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

Network
Ethernet
CAT5e

Harnessed Ethernet cables | CAT5e

* Technical information on the cable quality:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	PUR-SPECIAL	TPE
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Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
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
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

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

New

Harnessed Ethernet cables | CAT5e

* Technical information on the cable quality:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	PUR-SPECIAL	TPE
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Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
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
HARTING CAT6A connector Socket/Pin (M12 x-coded)				
Neu **PVC**	**CAT9121014**	(4x(2x0.14))C	7.5	15
Neu **PVC OIL**	**CAT9321014**	(4x(2x0.15))C	7.5	12.5
Neu **iguPUR**	**CAT9221014**	(4x(2x0.14))C	7.5	15
Neu **PUR**	**CAT9421014**	(4x(2x0.15))C	7.5	12.5
Neu **PUR-ROBOT**	**CAT9621014**	4x(2x0.15)C	9.5	10
Neu **TPE**	**CAT9521014**	(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

Network
Ethernet
CAT5e

Harnessed Ethernet cables | CAT5e

* Technical information on the cable quality:

PVC OIL	PUR	PUR-ROBOT	TPE
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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 [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Harting CAT5 connector				
TPE	**CAT9040001**	(4x0.25)C	7.0	10
Harting CAT5e connector				
PVC OIL	**CAT9340020**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240020**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440020**	4x(2x0.14)C	9.5	10
TPE	**CAT9040020**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector				
PVC OIL	**CAT9340060**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240060**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440060**	4x(2x0.14)C	9.5	10
TPE	**CAT9040060**	(4x(2x0.15))C	8.5	10
Phoenix Contact CAT5e connector				
PVC OIL	**CAT9340100**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240100**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440100**	4x(2x0.14)C	9.5	10
TPE	**CAT9040100**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector in Hummel housing				
PVC OIL	**CAT9340140**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240140**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440140**	4x(2x0.14)C	9.5	10
TPE	**CAT9040140**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector in Hummel housing				
PVC OIL	**CAT9340180**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240180**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440180**	4x(2x0.14)C	9.5	10
TPE	**CAT9040180**	(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:

PVC OIL	PUR	PUR-ROBOT	TPE
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Harnessed Ethernet cables, CAT5e Cross-Over, 8-pole, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Harting CAT5e connector				
PVC OIL	**CAT9340040**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240040**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440040**	4x(2x0.14)C	9.5	10
TPE	**CAT9040040**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector				
PVC OIL	**CAT9340080**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240080**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440080**	4x(2x0.14)C	9.5	10
TPE	**CAT9040080**	(4x(2x0.15))C	8.5	10
Phoenix Contact CAT5e connector				
PVC OIL	**CAT9340120**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240120**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440120**	4x(2x0.14)C	9.5	10
TPE	**CAT9040120**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector in Hummel housing				
PVC OIL	**CAT9340160**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240160**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440160**	4x(2x0.14)C	9.5	10
TPE	**CAT9040160**	(4x(2x0.15))C	8.5	10
Yamaichi CAT5 connector in Hummel housing				
PVC OIL	**CAT9340200**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240200**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440200**	4x(2x0.14)C	9.5	10
TPE	**CAT9040200**	(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

Network
Ethernet
CAT5e

Harnessed Ethernet cables | CAT5e

* Technical information on the cable quality:

PVC OIL	PUR	PUR-ROBOT	TPE
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Harnessed Ethernet cables, CAT5e, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Connection cable				
Hirose CAT5e-/ Intercontec connector				
PVC OIL	**CAT9340800**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240800**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440800**	4x(2x0.14)C	9.5	10
TPE	**CAT9040800**	(4x(2x0.15))C	8.5	10
Extension cable				
Intercontec connector				
PVC OIL	**CAT9340810**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240810**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440810**	4x(2x0.14)C	9.5	10
TPE	**CAT9040810**	(4x(2x0.15))C	8.5	10
Termination cable				
Intercontec-/ Hirose CAT5e connector				
PVC OIL	**CAT9340820**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9240820**	(4x(2x0.15))C	7.5	12.5
PUR-ROBOT	**CAT9440820**	4x(2x0.14)C	9.5	10
TPE	**CAT9040820**	(4x(2x0.15))C	8.5	10

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

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

Harnessed Ethernet cables | CAT5e

PVC with Hirose connectors

* Technical information on the cable quality:
PVC OIL
Page 8

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 [mm²]	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

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Harnessed Ethernet cables | CAT5e

PUR with Hirose connectors

* Technical information on the cable quality:
PUR
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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 [mm²]	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
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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 Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm²]	Outer diameter [mm]	Minimum bend radius
Product range straight (PUR-ROBOT) 8 poles					
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
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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 Part No.	Harnessing with connector combination		Number of cores and conductor nominal cross section [mm²]	Outer diameter [mm]	Minimum bend radius
Product range straight (TPE) 8 poles					
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					
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 | CAT6

* Technical information on the cable quality:

PVC OIL	PUR	TPE
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Harnessed Ethernet cables, CAT6, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Telegärtner CAT6A connector				
PVC OIL	**CAT9331002**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9431002**	(4x(2x0.15))C	7.5	12.5
TPE	**CAT9531002**	(4x(2x0.15))C	8.5	10
Harting CAT6 connector				
PVC OIL	**CAT9331003**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9431003**	(4x(2x0.15))C	7.5	12.5
TPE	**CAT9531003**	(4x(2x0.15))C	8.5	10
Telegärtner CAT6 connector				
PVC OIL	**CAT9331004**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9431004**	(4x(2x0.15))C	7.5	12.5
TPE	**CAT9531004**	(4x(2x0.15))C	8.5	10
Telegärtner CAT6 connector (RJ45/M12 x-coded)				
PVC OIL	**CAT9331005**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9431005**	(4x(2x0.15))C	7.5	12.5
TPE	**CAT9531005**	(4x(2x0.15))C	8.5	10
Telegärtner CAT6/CAT6A connector				
PVC OIL	**CAT9331006**	(4x(2x0.15))C	7.5	12.5
PUR	**CAT9431006**	(4x(2x0.15))C	7.5	12.5
TPE	**CAT9531006**	(4x(2x0.15))C	8.5	10

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

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

Network
Ethernet
CAT6

Harnessed Ethernet cables | CAT6

* Technical information on the cable quality:

PVC OIL	PUR	TPE
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Harnessed Ethernet cables, CAT6, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Phoenix Contact CAT6A connector				
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
Phoenix Contact CAT6A connector (M12 x-coded)				
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:

TPE
Page 20+24

Harnessed Ethernet cables, CAT6, 8-pole, to your required length				
Cable quality	**Part No.**	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Straight				
Hirose CAT6A connector				
TPE	**CAT9040600**	(4x(2x0.15)C)C	10.5	12.5
Metz RJ45 E-DAT IP67 connector				
TPE	**CAT9040640**	(4x(2x0.15)C)C	10.5	12.5
Harting CAT6A connector				
TPE	**CAT9040680**	(4x(2x0.15)C)C	10.5	12.5
Cross-Over				
Hirose CAT6A connector				
TPE	**CAT9040620**	(4x(2x0.15)C)C	10.5	12.5
Metz RJ45 E-DAT IP67 connector				
TPE	**CAT9040660**	(4x(2x0.15)C)C	10.5	12.5
Harting CAT6A connector				
TPE	**CAT9040700**	(4x(2x0.15)C)C	10.5	12.5
M12 x-coded				
Telegärtner CAT6A connector				
TPE	**CAT9040720**	(4x(2x0.15)C)C	10.5	12.5
Telegärtner CAT6A connector				
TPE	**CAT9040760**	(4x(2x0.15)C)C	10.5	12.5

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

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

Harnessed Ethernet cables | CAT6A

* Technical information on the cable quality:

PVC OIL	**PUR**	**PUR-ROBOT**	**TPE**
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Harnessed Ethernet cables, CAT6A, to your required length				
Cable quality	**Part No.**	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Telegärtner CAT6A connector				
PUR-ROBOT	**CAT9641001**	4x(2x0.15)C	10.5	10
TPE	**CAT9541001**	(4x(2x0.15)C)C	10.5	12.5
Harting CAT6A connector				
PUR-ROBOT	**CAT9641002**	4x(2x0.15)C	10.5	10
TPE	**CAT9541002**	(4x(2x0.15)C)C	10.5	12.5
Telegärtner CAT6A connector				
PVC OIL	**CAT9341016**	4x(2x0.20)C	9.5	12.5
PUR	**CAT9441016**	4x(2x0.20)C	9.5	12.5
PUR-ROBOT	**CAT9641015**	4x(2x0.15)C	10.5	10
TPE	**CAT9541015**	(4x(2x0.15)C)C	10.5	12.5
Telegärtner CAT6A connector (RJ45/M12 x-coded)				
PVC OIL	**CAT9341017**	4x(2x0.20)C	9.5	12.5
PUR	**CAT9441017**	4x(2x0.20)C	9.5	12.5
PUR-ROBOT	**CAT9641016**	4x(2x0.15)C	10.5	10
TPE	**CAT9541016**	(4x(2x0.15)C)C	10.5	12.5
Telegärtner CAT6A connector				
PVC OIL	**CAT9341018**	4x(2x0.20)C	9.5	12.5
PUR	**CAT9441018**	4x(2x0.20)C	9.5	12.5
PUR-ROBOT	**CAT9641017**	4x(2x0.15)C	10.5	10
TPE	**CAT9541017**	(4x(2x0.15)C)C	10.5	12.5

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

New

Harnessed Ethernet cables | CAT6A

* Technical information on the cable quality:

PVC OIL	PUR	PUR-ROBOT	TPE
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Harnessed Ethernet cables, CAT6A, to your required length

	Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
	Phoenix Contact CAT6A connector (M12 x-coded)				
	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
	HARTING CAT6A connector Socket/Pin (M12 x-coded)				
New	**PVC OIL**	**CAT9341019**	4x(2x0.20)C	9.5	12.5
New	**PUR**	**CAT9441019**	4x(2x0.20)C	9.5	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 | CAT7

* Technical information on the cable quality:

PUR-ROBOT	TPE
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Harnessed Ethernet cables, CAT7, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Telegärtner CAT6A connector				
PUR-ROBOT	**CAT9651002**	4x(2x0.15)C	10.5	10
TPE	**CAT9551002**	(4x(2x0.15)C)C	10.5	12.5
Harting CAT6A connector				
PUR-ROBOT	**CAT9651003**	4x(2x0.15)C	10.5	10
TPE	**CAT9551003** [1]	(4x(2x0.15)C)C	10.5	12.5
Harting CAT6A connector				
PUR-ROBOT	**CAT9651004**	4x(2x0.15)C	10.5	10
TPE	**CAT9551004**	(4x(2x0.15)C)C	10.5	12.5
Telegärtner CAT6A/ Telegärtner CAT6A, angled				
PUR-ROBOT	**CAT9651005**	4x(2x0.15)C	10.5	10
TPE	**CAT9551005**	(4x(2x0.15)C)C	10.5	12.5
Phoenix Contact CAT6A connector (M12 x-coded)				
PUR-ROBOT	**CAT9651009**	4x(2x0.15)C	10.5	10
TPE	**CAT9551009**	(4x(2x0.15)C)C	10.5	12.5
Module PS-Tera/ Connector PS-Tera				
PUR-ROBOT	**CAT9651010**	4x(2x0.15)C	10.5	10
TPE	**CAT9551010**	(4x(2x0.15)C)C	10.5	12.5
Connector PS-Tera/ Connector PS-Tera				
PUR-ROBOT	**CAT9651011**	4x(2x0.15)C	10.5	10
TPE	**CAT9551011**	(4x(2x0.15)C)C	10.5	12.5

[1] 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

New

Industrial Ethernet molded

* Technical information on the cable quality:

PVC OIL	PUR
Page 8	Page 16

Industrial Ethernet molded, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Minimum bend radius [x d]
M8 socket straight/ M8 pin straight				
PVC OIL	**MAT904125450**	(4x0.25)C	6.5	12.5
PUR	**MAT904125410**	(4x0.25)C	6.5	12.5
M8 pin straight/ M8 pin straight				
PVC OIL	**MAT904125451**	(4x0.25)C	6.5	12.5
PUR	**MAT904125411**	(4x0.25)C	6.5	12.5
M8 socket angled/ open cable end				
PVC OIL	**MAT904125452**	(4x0.25)C	6.5	12.5
PUR	**MAT904125412**	(4x0.25)C	6.5	12.5
M8 socket straight/ RJ45 straight				
PVC OIL	**MAT904125453**	(4x0.25)C	6.5	12.5
PUR	**MAT904125413**	(4x0.25)C	6.5	12.5
M12 d-coded pin straight/ M12 d-coded pin straight				
PVC OIL	**MAT904125454**	(4x0.25)C	6.5	12.5
PUR	**MAT904125414**	(4x0.25)C	6.5	12.5
M12 d-coded pin angled/ open cable end				
PVC OIL	**MAT904125455**	(4x0.25)C	6.5	12.5
PUR	**MAT904125415**	(4x0.25)C	6.5	12.5
M12 d-coded pin straight/ open cable end				
PVC OIL	**MAT904125456**	(4x0.25)C	6.5	12.5
PUR	**MAT904125416**	(4x0.25)C	6.5	12.5

Special production cables: delivery time upon request!
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
Harnessing **RJ45 at both ends** ▶ TIA56A

Industrial Ethernet molded

* Technical information on the cable quality:

PVC OIL	PUR
Page 8	Page 16

Industrial Ethernet molded, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Minimum bend radius [x d]
M12 d-coded pin straight/ RJ45 straight				
PVC OIL	**MAT904125457**	(4x0.25)C	6.5	12.5
PUR	**MAT904125417**	(4x0.25)C	6.5	12.5
M12 d-coded pin angled/ RJ45 straight				
PVC OIL	**MAT904125458**	(4x0.25)C	6.5	12.5
PUR	**MAT904125418**	(4x0.25)C	6.5	12.5
M12 d-coded pin straight/ M8 pin straight				
PVC OIL	**MAT904125459**	(4x0.25)C	6.5	12.5
PUR	**MAT904125419**	(4x0.25)C	6.5	12.5
RJ45 straight/ RJ45 straight				
PVC OIL	**MAT904125460**	(4x0.25)C	6.5	12.5
PUR	**MAT904125420**	(4x0.25)C	6.5	12.5
RJ45 straight/ open cable end				
PVC OIL	**MAT904125461**	(4x0.25)C	6.5	12.5
PUR	**MAT904125421**	(4x0.25)C	6.5	12.5
M12 d-coded socket straight/ M12 d-coded pin straight				
PVC OIL	**MAT904125462**	(4x0.25)C	6.5	12.5
PUR	**MAT904125422**	(4x0.25)C	6.5	12.5
M12 d-coded socket straight/ M12 d-coded pin angled				
PVC OIL	**MAT904125463**	(4x0.25)C	6.5	12.5
PUR	**MAT904125423**	(4x0.25)C	6.5	12.5

Special production cables: delivery time upon request!
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
Harnessing **RJ45 at both ends** ▶ TIA56A

Harnessed Profinet cables

* Technical information on the cable quality:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	TPE
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Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Yamaichi Profinet connector				
PVC	**CAT9161001**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361001**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261001**	(4x0.34)C	7.0	15
PUR	**CAT9461001**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661001**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561001**	(4x0.38)C	7.5	10
Harting Profinet connector				
PVC	**CAT9161002**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361002**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261002**	(4x0.34)C	7.0	15
PUR	**CAT9461002**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661002**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561002**	(4x0.38)C	7.5	10
Harting Profinet connector				
PVC	**CAT9161003**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361003**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261003**	(4x0.34)C	7.0	15
PUR	**CAT9461003**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661003**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561003**	(4x0.38)C	7.5	10
Telegärtner Profinet connector				
PVC	**CAT9161004**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361004**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261004**	(4x0.34)C	7.0	15
PUR	**CAT9461004**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661004**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561004**	(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

Network
Profinet

Harnessed Profinet cables

* Technical information on the cable quality:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	TPE
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Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Telegärtner Profinet connector				
PVC	**CAT9161005**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361005**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261005**	(4x0.34)C	7.0	15
PUR	**CAT9461005**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661005**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561005**	(4x0.38)C	7.5	10
Telegärtner Profinet connector/ M12 Profinet connector (x-coded)				
PVC	**CAT9161006**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361006**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261006**	(4x0.34)C	7.0	15
PUR	**CAT9461006**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661006**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561006**	(4x0.38)C	7.5	10
Telegärtner M12 Profinet connector (x-coded)				
PVC	**CAT9161007**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361007**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261007**	(4x0.34)C	7.0	15
PUR	**CAT9461007**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661007**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561007**	(4x0.38)C	7.5	10
Telegärtner and Binder Profinet connector (d-coded)				
PVC	**CAT9161008**	(4x0.34)C	7.0	15
PVC OIL	**CAT9361008**	(4x0.38)C	7.0	12.5
iguPUR	**CAT9261008**	(4x0.34)C	7.0	15
PUR	**CAT9461008**	(4x0.38)C	7.0	12.5
PUR-ROBOT	**CAT9661008**	(2x(2x0.34))C	8.5	10
TPE	**CAT9561008**	(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:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	TPE
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Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Telegärtner and Binder Profinet connector (RJ45/M12 d-coded)				
PVC	CAT9161009			
PVC OIL	CAT9361009			
iguPUR	CAT9261009	(4x0.34)C	7.0	15
PUR	CAT9461009	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661009	(2x(2x0.34))C	8.5	10
TPE	CAT9561009	(4x0.38)C	7.5	10
Phoenix Contact Profinet connector				
PVC	CAT9161012	(4x0.34)C	7.0	15
PVC OIL	CAT9361012	(4x0.38)C	7.0	12.5
iguPUR	CAT9261012	(4x0.34)C	7.0	15
PUR	CAT9461012	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661012	(2x(2x0.34))C	8.5	10
TPE	CAT9561012	(4x0.38)C	7.5	10
Phoenix Contact Profinet connector (x-coded)				
PVC	CAT9161014	(4x0.34)C	7.0	15
PVC OIL	CAT9361014	(4x0.38)C	7.0	12.5
iguPUR	CAT9261014	(4x0.34)C	7.0	15
PUR	CAT9461014	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661014	(2x(2x0.34))C	8.5	10
TPE	CAT9561014	(4x0.38)C	7.5	10
Siemens Profinet connector				
PVC	CAT9161015	(4x0.34)C	7.0	15
PVC OIL	CAT9361015	(4x0.38)C	7.0	12.5
iguPUR	CAT9261015	(4x0.34)C	7.0	15
PUR	CAT9461015	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661015	(2x(2x0.34))C	8.5	10
TPE	CAT9561015	(4x0.38)C	7.5	10

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

Network
Profinet

Harnessed Profinet cables

* Technical information on the cable quality:

PVC	PVC OIL	iguPUR	PUR	PUR-ROBOT	TPE
Page 4	Page 8	Page 12	Page 16	Page 28	Page 20+24

Harnessed Profinet cables, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Outer diameter (d) max. [mm]	Minimum bend radius [x d]
Siemens Profinet connector				
PVC	CAT9161016	(4x0.34)C	7.0	15
PVC OIL	CAT9361016	(4x0.38)C	7.0	12.5
iguPUR	CAT9261016	(4x0.34)C	7.0	15
PUR	CAT9461016	(4x0.38)C	7.0	12.5
PUR-ROBOT	CAT9661016	(2x(2x0.34))C	8.5	10
TPE	CAT9561016	(4x0.38)C	7.5	10

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

New

Industrial Profinet molded

* Technical information on the cable quality:

PVC OIL	PUR
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Industrial Profinet molded, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Minimum bend radius [x d]
M8 socket straight/ M8 pin straight				
PVC OIL	MAT904125470	(4x0.38)C	7.0	12.5
PUR	MAT904125430	(4x0.38)C	7.0	12.5
M8 pin straight/ M8 pin straight				
PVC OIL	MAT904125471	(4x0.38)C	7.0	12.5
PUR	MAT904125431	(4x0.38)C	7.0	12.5
M8 socket angled/ open cable end				
PVC OIL	MAT904125472	(4x0.38)C	7.0	12.5
PUR	MAT904125432	(4x0.38)C	7.0	12.5
M8 socket straight/ RJ45 straight				
PVC OIL	MAT904125473	(4x0.38)C	7.0	12.5
PUR	MAT904125433	(4x0.38)C	7.0	12.5
M12 d-coded pin straight/ M12 d-coded pin straight				
PVC OIL	MAT904125474	(4x0.38)C	7.0	12.5
PUR	MAT904125434	(4x0.38)C	7.0	12.5
M12 d-coded pin angled/ open cable end				
PVC OIL	MAT904125475	(4x0.38)C	7.0	12.5
PUR	MAT904125435	(4x0.38)C	7.0	12.5
M12 d-coded pin straight/ open cable end				
PVC OIL	MAT904125476	(4x0.38)C	7.0	12.5
PUR	MAT904125436	(4x0.38)C	7.0	12.5

Special production cables: delivery time upon request!
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
Harnessing **RJ45 at both ends** ▶ TIA56A

Network
Profinet

Industrial Profinet molded

* Technical information on the cable quality:

PVC OIL	PUR
Page 8	Page 16

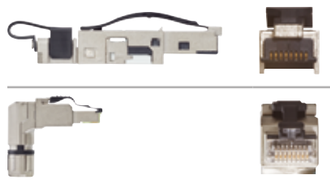
Industrial Profinet molded, to your required length

Cable quality	Part No.	Number of cores and conductor nominal cross section [mm²]	Ø [mm]	Minimum bend radius [x d]
M12 d-coded pin straight/ RJ45 straight				
PVC OIL	MAT904125477	(4x0.38)C	7.0	12.5
PUR	MAT904125437	(4x0.38)C	7.0	12.5
M12 d-coded pin angled/ RJ45 straight				
PVC OIL	MAT904125478	(4x0.38)C	7.0	12.5
PUR	MAT904125438	(4x0.38)C	7.0	12.5
M12 d-coded pin straight/ M8 pin straight				
PVC OIL	MAT904125479	(4x0.38)C	7.0	12.5
PUR	MAT904125439	(4x0.38)C	7.0	12.5
RJ45 straight/ RJ45 straight				
PVC OIL	MAT904125480	(4x0.38)C	7.0	12.5
PUR	MAT904125440	(4x0.38)C	7.0	12.5
RJ45 straight/ open cable end				
PVC OIL	MAT904125481	(4x0.38)C	7.0	12.5
PUR	MAT904125441	(4x0.38)C	7.0	12.5
M12 d-coded socket straight/ M12 d-coded pin straight				
PVC OIL	MAT904125482	(4x0.38)C	7.0	12.5
PUR	MAT904125442	(4x0.38)C	7.0	12.5
M12 d-coded socket straight/ M12 d-coded pin angled				
PVC OIL	MAT904125483	(4x0.38)C	7.0	12.5
PUR	MAT904125443	(4x0.38)C	7.0	12.5

Special production cables: delivery time upon request!
Note: The given outer diameters are maximum values and may tend toward lower tolerance limits.
Harnessing **RJ45 at both ends** ▶ TIA56A

Connectors for network technology | Overview

Network Connectors

	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
	MAT01733150	Telegärtner	max. 7.0	IP20	-	-	-	-	PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
									TPE	CFBUS.049*	8.5	(4x(2x0.15))C
									PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)C
	**MAT0176370**	Yamaichi	-	IP20	8	Hand tool needed	CAT6	0.14-0.25	PVC	CFBUS.PVC.049	7.5	(4x(2x0.15))C
	MAT0176371	Yamaichi	max. 7.5	IP20	-	-	-	-	PUR	CFBUS.PUR.049	7.5	(4x(2x0.15))C
									TPE	CFBUS.049*	8.5	(4x(2x0.15))C
	MAT0176372	Yamaichi	-	-	-	-	-	-	PUR-Robot	CFROBOT8.049*	8.5	4x(2x0.14)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
	**MAT01733547**	Datwyler	max. 8.9	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15)C)C
									PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15)C)C
									TPE	CFBUS.052*	10.5	(4x(2x0.15)C)C
									PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C
	**MAT01733548**	Datwyler	max. 6.3	IP20	8	Cutting clamps	CAT7A	0.15-0.34	PVC	CFBUS.PVC.052*	9.5	(4x(2x0.15)C)C
									PUR	CFBUS.PUR.052*	9.5	(4x(2x0.15)C)C
									TPE	CFBUS.052*	10.5	(4x(2x0.15)C)C
									PUR-Robot	CFROBOT8.052*	10.5	4x(2x0.15)C
	**MAT0179875**	Binder	6.0-8.0	IP67	4	Screw clamps	CAT5/ Profinet	max. 0.75	PVC	CF888.060	7	(4x0.38)C
									PVC	CFBUS.PVC.040	6.5	(4x0.25)C
									PVC	CFBUS.PVC.060	7	(4x0.38)C
									iguPUR	CF898.060	7	(4x0.38)C
									PUR	CFBUS.PUR.040	6.5	(4x0.25)C
									PUR	CFBUS.PUR.060	7	(4x0.38)C
									TPE	CFBUS.040	7	(4x0.25)C
									TPE	CFBUS.060	7.5	(4x0.38)C
									PUR-Robot	CFROBOT8.060*	8.5	(2x(2x0.34))C

All connectors are 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.

Connectors for network technology | Overview

Network Connectors

	igus® Part-No.	Manufacturer	Cable diameter [mm]	Protection class	Number of contacts	Connection type	Bus type	Conductor cross section [mm²]	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

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