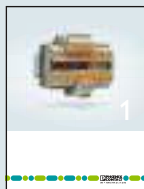




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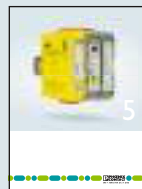
Sensor/actuator cabling and connectors

2019/2020



Terminal blocks

- Terminal blocks



Interface technology and switching devices

- Electronic switching devices and motor control
- Measurement and control technology
- Monitoring
- Relay modules
- System cabling for controllers



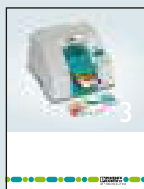
Sensor/actuator cabling and connectors

- Sensor/actuator cabling
- Cables and lines
- Connectors



Automation

- PLCnext Technology
- Industrial cloud computing
- Software
- PLCs and I/O systems
- Functional safety
- Industrial communication technology
- HMIs and industrial PCs
- Lighting and signaling



Marking systems, tools, and mounting material

- Marking and labeling
- Tools
- Installation and mounting material



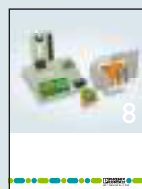
Charging technology for electromobility

- Charging technology for electromobility



Surge protection, power supplies, and device circuit breakers

- Surge protection and interference suppression filters
- Power supplies and UPS
- Protective devices



PCB terminal blocks and PCB connectors

Use our E-paper for quick product selection.

i Web code: #1517

Find out more with the web code

For detailed information, use the web codes provided in this brochure. Simply enter # and the four-digit number in the search field on our website.

i Web code: #1234 (example)

Or use the direct link:

phoenixcontact.net/webcode/#1234

You will find the latest information including all the new products directly in the product area of our website:

phoenixcontact.net/products

You can also use the Phoenix Contact catalog app interactively on your tablet.



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Screw connection

The screw connection is the most universal and globally accepted conductor connection technology. An important characteristic is the maintenance-free conductor contact. It is not necessary to retighten the connection screw.

All types of copper wires can be clamped without any pretreatment, thereby making gas-tight and permanent contact.

The wire protection, which protects the individual litz wires from damage, is located between the screw and the conductor.

The wire protection also performs a screw locking function to prevent release due to vibrations and temperature fluctuations.

Splicing protection can be implemented in the form of ferrules.

With a screw connection, several conductors may also be clamped under one screw.

The conductive parts of the screw connections are made from high-grade copper alloys that are resistant to stress cracking and corrosion.



Axial screw connection

With this method, the wire end to be contacted is guided into the connection area of the male or female contact.

A tapered mandrel (part of the contact) is then screwed into the flexible wire from the front. Radial pressure is applied to the strands of the litz wire, pressing them against the contact wall. This results in a gas-tight connection with long-term stability between the wire and contact. It is important that the specified tightening torque is observed.

The mandrel is pressed in using an Allen key which is applied to the front of the contact. This connection technology combines the advantages of screw and crimp connection.

The axial screw connection requires very little space, is easy to use, and only requires a standard Allen key.



Crimp connection

The crimp connection requires little space and is cost-effective in series production. For a reliable connection, it is essential that the wire cross section, the crimp contact, and the crimping tool are compatible. Since the crimping tools are subject to a certain degree of wear; the crimping process must be monitored during series production.

Crimp connections can be established with the aid of crimping pliers or crimping machines through specific deformation of the crimping area of the contact.

The requirements for crimp connections are defined in DIN EN 60352-2. The quality characteristics of a crimp connection are the tensile strength of the connection and crack-free deformation of the crimp contact. Crimping may not result in impermissible elongation of crimp contacts, as this would prevent them from latching correctly in the contact carrier.

The contact is released using an unlocking tool. Assembly tools are also available for very thin conductors.



Push-in connection for contact inserts

Flexible conductors with ferrules or rigid conductors can be quickly and easily inserted directly into the connection without tools. The contact spring is formed in such a way that it opens automatically when the conductor is pushed in. It thereby provides the required pressure force against the current bar for a gas-tight, vibration-proof, and shock-proof connection.

To release conductors or connect smaller cross sections, the spring is opened by means of the orange push button – this is done easily and without direct contact with live parts.

The conductive metals are made from high-grade copper alloys. All metal parts of the connection are made from corrosion-resistant materials.



Push-Lock connection for circular connectors

Flexible conductors without ferrules can be easily connected using the lever. The terminal point is completely opened by the color lever and remains in this open position. Even small cross sections are easy to insert. The lever must be closed for the connection to be made.

Wire rigid conductors and conductors with ferrules easily and without using tools by means of direct insertion. The contact point does not have to be opened first.

Opening the lever releases a connected conductor. The conductors can be removed with ease.

All metal parts of the connection are made from corrosion-resistant materials.



IDC displacement connection

The QUICKON connection is equipped with an IDC insulation displacement contact. The term "IDC" stands for Insulation Displacement Connection. With this connection method, an unprepared wire with insulation is positioned in front of the gap of the insulation displacement contact and then pushed into the blade gap through insulation displacement. In so doing, the wire insulation is severed and gas-tight contact is made between the wire and the contact. This reduces the time to make a connection by at least 60%.

The connection force is independent of the user and completely reliable provided the permissible conductor cross sections and connection conditions are observed. Rigid and flexible conductors can be rewired up to 10 times. However, the wire end should be cut off before connecting again.

QUICKON connections have proven themselves in numerous applications for Phoenix Contact over recent years, such as connectors, for COMBICON, and terminal blocks, through to CEE plug-in equipment from 0.14 to 6.0 mm².

Circular connectors



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M12 connectors, for assembly

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Sensor/actuator cabling and connectors

Illustrated product range overview

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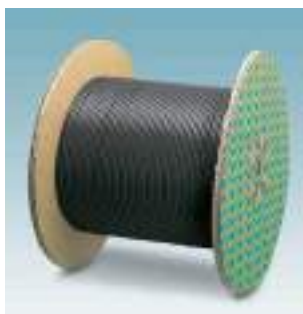
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Assembled cables with M8 or
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Assembled cables with RJ45 or
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Assembled cables with M8 or
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COMPLETE line

The comprehensive solution for the control cabinet

Easy planning, intuitive installation



COMPLETE line is a system comprising technologically leading and coordinated hardware and software products, consulting services, and system solutions that help you optimize your processes in control cabinet manufacturing. Engineering, purchasing, installation, and operation become significantly easier for you.

Your advantages at a glance:

- Intuitive handling, thanks to the uniform design, look, and function
- Time savings across the entire engineering process, thanks to consistent software support
- Reduced logistics costs with standardized accessories and reduced variety of parts
- Optimized processes in control cabinet manufacturing, thanks to custom services and innovative manufacturing solutions



Comprehensive product portfolio

With COMPLETE line, we offer a complete product portfolio of technologically leading products. These include:

- Controllers and I/O modules
- Power supplies and device circuit breakers
- Terminal blocks and distribution blocks
- Relay modules and motor starters
- Signal conditioners
- Safety technology
- Surge protection
- Heavy-duty connectors



Intuitive handling

Thanks to the simple, intuitive handling of the coordinated hardware components, you will save time during installation, startup, and maintenance. Push-in connection technology enables you to wire applications quickly – without using tools. The broad, technologically leading product portfolio will always provide you with the right product for standard or special applications.



Time savings across the entire engineering process

The PROJECT complete planning and marking software supports the entire control cabinet manufacturing process. The program features an intuitive user interface and enables the individual planning, automatic checking, and direct ordering of terminal strips.



Reduced logistics costs

Reduced variety of parts, thanks to standardized marking, bridging, and testing accessories. The COMPLETE line system coordinates products, design, and accessories enabling you to benefit from maximum reusability, thus reducing your logistics costs.



Optimized processes in control cabinet manufacturing

From engineering through to manufacturing, COMPLETE line supports you in making your control cabinet production as efficient as possible, thus creating a customized concept for optimizing your processes in control cabinet manufacturing.

Our terminal strip production helps you to flexibly manage peak order times or to supply your control cabinet production with fully assembled DIN rails just-in-time.



Additional information

Find out more about COMPLETE line and your comprehensive solutions for the control cabinet. Visit our website:

phoenixcontact.com/completeline



Circular connectors

The circular connector range from Phoenix Contact covers the entire scope of industrial applications. From M5 to M58, straight or angled, unshielded or shielded: our extensive portfolio always provides the right connector for your application.

Sensor/actuator connectors

Do you want to wire different cable lengths quickly on site? Our M12 connectors for assembly provide the best connection technology for every application:

- IDC insulation displacement connection
- Push-in connection
- Crimp connection
- Pierce connection
- Screw connection
- Solder connection

Shielded connectors for free assembly are available for more stringent requirements.

Sensor/actuator device connectors

In industrial applications, a wide range of requirements are placed on the sensor/actuator cabling. The products from Phoenix Contact are just as varied. You'll find the right device connector – whether in M5, M8 or M12 format, and for front or rear mounting. Customer-specific developments enable optimum adaptation to your individual device concept.

Signal, feedback, hybrid, and power connectors

The product portfolio for M17 to M58 connectors covers all common applications in industrial environments for signal, hybrid, and power plug-in connections up to 630 V/150 A. This also includes requirements relating to tightness of seal, vibration resistance, and shielding against EMI. A complete choice of plastic-molded connectors rounds off the circular connector range.

 Your web code: **#0368**

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Circular connectors

M8 sensor/actuator connectors

Insulation displacement connection



Connection cross section:
0.08 mm² ... 0.25 mm²,
3 and 4-pos.



Connection cross section:
0.25 mm² ... 0.5 mm²,
3 and 4-pos.



Technical data

	3-pos.	4-pos.
General data		
M8 circular connector in accordance with:	IEC 61076-2-104	
Degree of pollution	3	
Degree of protection	IP65 / IP67	
Connection method	Insulation displacement connection	
Cable diameter	2.5 mm ... 5 mm ±0.2 mm	
Connection cross section	0.08 mm ² ... 0.25 mm ²	
Electrical data		
Rated voltage	48 V AC / 60 V DC	30 V AC / 30 V DC
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU GF	
Flammability rating in accordance with UL 94	HB	
Temperature data		
Male connector/female connector	-25 ... 80	

Ordering data

Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	3-pos.		4-pos.	
Connector, color-coded and numbered connection area				
Female, straight	1441040	1	1441053	1
Male, straight	1441008	1	1441011	1



Technical data

	3-pos.	4-pos.
General data		
M8 circular connector in accordance with:	IEC 61076-2-104	
Degree of pollution	3	
Degree of protection	IP65 / IP67	
Connection method	Insulation displacement connection	
Cable diameter	2.5 mm ... 5 mm ±0.2 mm	
Connection cross section	0.25 mm ² ... 0.5 mm ²	
Electrical data		
Rated voltage	48 V AC / 60 V DC	30 V AC / 30 V DC
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU GF	
Flammability rating in accordance with UL 94	HB	
Temperature data		
Male connector/female connector	-25 ... 80	

Ordering data

Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	3-pos.		4-pos.	
Connector, color-coded and numbered connection area				
Female, straight	1441066	1	1441079	1
Male, straight	1441024	1	1441037	1

Screw connection

Unshielded,
3-, 4-pos.Shielded,
3-, 4-pos.

Technical data			
3-pos.		4-pos.	
IEC 61076-2-104			
3			
IP67			
Screw connection			
3.5 mm ... 5 mm			
0.14 mm² ... 0.5 mm²			
48 V AC / 60 V DC		30 V AC / 30 V DC	
4 A			
≥ 100 MΩ			
CuZn / Au			
PA			
HB			
-40 ... 85			
Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1506888	1	1506891	1
1501252	1	1501265	1
1407582	1	1407584	1
1407583	1	1407585	1
Accessories			
SACC-M 8-SET/2,2-3,5		1436945	5



Technical data			
3-pos.		4-pos.	
IEC 61076-2-104			
3			
IP67			
Screw connection			
3.5 mm ... 5.5 mm			
0.14 mm ² ... 0.5 mm ²			
48 V AC / 60 V DC		30 V AC / 30 V DC	
4 A			
≥ 100 MΩ			
CuZn / Au			
PA			
HB			
-40 ... 85			
Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1542907	1	1542910	1
1542884	1	1542897	1
Accessories			

Circular connectors

M8 sensor/actuator connectors

Solder connection



Unshielded,
3-, 4-pos.



Shielded,
3-, 4-pos.



Technical data			
	3-pos.	4-pos.	
General data			
M8 circular connector in accordance with:	IEC 61076-2-104		
Degree of pollution	3		
Degree of protection	IP67		
Connection method	Solder connection		
Cable diameter	3.5 mm ... 5 mm		
Connection cross section [mm²]	0.08 mm² ... 0.25 mm²		
Electrical data			
Rated voltage	48 V AC / 60 V DC	30 V AC / 30 V DC	
Rated current	4 A		
Insulation resistance	≥ 100 MΩ		
Material data			
Material contact/contact surface	CuZn / Au		
Contact carrier material	PA		
Flammability rating in accordance with UL 94	HB		
Temperature data			
Male connector/female connector	-40 ... 85		[°C]

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1529399	1	1513444	1
1699902	1	1554209	1
1681172	1	1681185	1
1681156	1	1681169	1

Accessories		
SACC-M 8-SET/2,2-3,5	1436945	5



Technical data			
	3-pos.	4-pos.	
General data			
M8 circular connector in accordance with:	IEC 61076-2-104		
Degree of pollution	3		
Degree of protection	IP67		
Connection method	Solder connection		
Cable diameter	3.5 mm ... 5 mm		
Connection cross section [mm²]	0.08 mm² ... 0.25 mm²		
Electrical data			
Rated voltage	48 V AC / 60 V DC	30 V AC / 30 V DC	
Rated current	4 A		
Insulation resistance	≥ 100 MΩ		
Material data			
Material contact/contact surface	CuZn / Au		
Contact carrier material	PA		
Flammability rating in accordance with UL 94	HB		
Temperature data			
Male connector/female connector	-40 ... 85		

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1436479	1	1436482	1
1436453	1	1436466	1
1506927	1	1506930	1
1506901	1	1506914	1

Accessories		
Pressure screw and seal, for cable diameters:		
2.5 mm ... 3.5 mm		

Notes:

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 337



Unshielded,
4-pos.



Technical data

	4-pos.	4-pos.
General data		
M12 circular connector in accordance with:	in accordance with IEC 61076-2-101	
Degree of pollution	3	
Degree of protection	IP65 / IP67	
Connection method	Insulation displacement connection	
Cable diameter	3.5 mm ... 6 mm	4 mm ... 8 mm
Connection cross section [mm ²]	0.14 mm ² ... 0.34 mm ²	0.34 mm ² ... 0.75 mm ²
Electrical data		
Rated voltage	125 V AC / 125 V DC	250 V AC / 250 V DC
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU	
Flammability rating in accordance with UL 94	V0	
Temperature data		
Male connector/female connector	-25 ... 80	

Ordering data

Description	Coding	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4-pos.		4-pos.	
Connector , with plastic knurl, color-coded and numbered connection area					
Female, straight	A - standard	1641701	1	1641756	1
Male, straight	A - standard	1641714	1	1641769	1
Connector , with metal knurl, color-coded and numbered connection area					
Female, straight	A - standard	1641688	1	1641772	1
Male, straight	A - standard	1641691	1	1641785	1
Connector , with stainless steel knurl, color-coded and numbered connection area					
Female, straight	A - standard	1440766	1	1440782	1
Male, straight	A - standard	1440753	1	1440779	1

Insulation displacement connection



Shielded,
4-, 5-, 8-pos.



Shielded,
4-, 5-, 8-pos.

EAC

Technical data		
4-pos.	5-pos.	8-pos.
in accordance with IEC 61076-2-101		
3		
IP65 / IP67		
Insulation displacement connection		
0.14 mm ² ... 0.75 mm ²		0.14 mm ² ... 0.5 mm ²
250 V AC / 250 V DC	48 V AC / 60 V DC	30 V AC / 30 V DC
4 A		2 A
≥ 100 MΩ		
CuSn / Ni/Au		
PA 6.6		
V0		
-40 ... 85		

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		5-pos.		8-pos.	

General data	
M12 circular connector in accordance with:	
Degree of pollution	
Degree of protection	
Connection method	
Connection cross section [mm ²]	
Electrical data	
Rated voltage	
Rated current	
Insulation resistance	
Material data	
Material contact/contact surface	
Contact carrier material	
Flammability rating in accordance with UL 94	
Temperature data	
Male connector/female connector	[°C]

EAC

Technical data		
4-pos.	5-pos.	8-pos.
	-	
	3	
	IP65 / IP67	
	Insulation displacement connection	
0.14 mm ² ... 0.75 mm ²		0.14 mm ² ... 0.5 mm ²
250 V AC / 250 V DC	48 V AC / 60 V DC	30 V AC / 30 V DC
4 A		2 A
	≥ 100 MΩ	
	CuSn / Ni/Au	
	PA 6.6	
	V0	
	-40 ... 85	

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		5-pos.		8-pos.	

Connector, shielded, with metal knurl, color-coded and numbered connection area,
cable diameter: 5 mm ... 9.7 mm

Female, straight	A - standard
Male, straight	A - standard

Cable connector, shielded, color-coded and numbered connection area,
cable diameter: 5 mm ... 9.7 mm

1413994	1	1413992	1	1414611	1
1413993	1	1413991	1	1414610	1

1414418	1	1414417	1	1414612	1

Circular connectors

M12 sensor/actuator connectors

Screw connection

Notes:

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 337



Plastic knurl,
4, 5-pos.



Metal knurl,
4, 5, 8-pos.



Technical data

General data	4-pos.	5-pos.
M12 circular connector in accordance with:	IEC 61076-2-101	
Degree of pollution	3	
Degree of protection	IP67	
Connection method	Screw connection	
Connection cross section [mm²]	0.25 mm² ... 0.75 mm²	
Electrical data	4-pos.	5-pos.
Rated voltage	250 V AC / 250 V DC	48 V AC / 60 V DC
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data	4-pos.	5-pos.
Material contact/contact surface	CuZn / CuSnZn	
Contact carrier material	PA	
Flammability rating in accordance with UL 94	HB	
Temperature data	4-pos.	5-pos.
Male connector/female connector	-40 ... 85	

Ordering data

Description	Coding

**Connector, with Pg7 screw connection,
cable diameter: 4 mm ... 6 mm**

Female, angled	A - standard
Male, angled	A - standard
Female, straight	A - standard
Male, straight	A - standard

**Connector, with Pg9 screw connection,
cable diameter: 6 mm ... 8 mm**

Female, angled	A - standard
Male, angled	A - standard
Female, straight	A - standard
Male, straight	A - standard

**Connector, with Pg11 screw connection,
cable diameter: 8 mm ... 10 mm**

Female, straight	A - standard
Male, straight	A - standard

**Power connector, with Pg11 screw connection,
cable diameter: 8 mm ... 10 mm, rated current:
up to 8 A (5th pos. max. 2 A) with 1.5 mm² wires/litz wires**

Female, angled	A - standard
Male, angled	A - standard
Female, straight	A - standard
Male, straight	A - standard

Accessories

**Pressure screw and seal, for connectors with
Pg7 screw connection, for cable diameters:**

2.5 mm ... 3.5 mm

SACC-M12-SET/2,5-3,5

1436505

5



Technical data

4-pos.		5-pos.		8-pos.	
		IEC 61076-2-101			
		3			
		IP67			
		Screw connection			
0.25 mm ² ... 0.75 mm ²				0.25 mm ² ... 0.5 mm ²	
250 V AC / 250 V DC		48 V AC / 60 V DC		30 V AC / 30 V DC	
4 A				2 A	
		≥ 100 MΩ			
CuZn / CuSnZn				CuZn / Au	
		PA			
		HB			
		-40 ... 85			

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.

1681143	1	1662984	1
1681101	1	1663129	1
1681127	1	1662968	1
1662528	1	1663116	1
		1681499	1
		1681473	1
1696439	1	1681486	1
1523230	1	1681460	1
		1513347	1
		1513334	1

1408991	1	1408993	1
1408990	1	1408992	1
1404416	1	1404418	1
1404415	1	1404417	1

Accessories

SACC-M12-SET/2,5-3,5	1436505	5

Notes:

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 337



**Metal knurl, 4, 5-pos.,
with SKINTOP® screw connection**



**Stainless steel knurl,
4, 5-pos.**



Technical data	
4-pos.	5-pos.
IEC 61076-2-101	
3	
IP67	
Screw connection	
0.25 mm ² ... 0.75 mm ²	
250 V AC / 250 V DC	48 V AC / 60 V DC
4 A	
≥ 100 MΩ	
CuZn / CuSnZn	
PA	
HB	
-20 ... 80	

Technical data	
4-pos.	5-pos.
IEC 61076-2-101	
3	
IP65/IP67/IP69K	
Screw connection	
0.25 mm ² ... 0.75 mm ²	
250 V AC / 250 V DC	48 V AC / 60 V DC
4 A	
≥ 100 MΩ	
CuZn / Au	
PA	
-	
-40 ... 85	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		5-pos.	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		5-pos.	

Description	Coding

**Connector, with Pg7 screw connection,
cable diameter: 4 mm ... 6 mm**

Female, angled	A - standard
Male, angled	A - standard
Female, straight	A - standard
Male, straight	A - standard

**Connector, with Pg9 screw connection,
cable diameter: 6 mm ... 8 mm**

Female, angled	A - standard
Male, angled	A - standard
Female, straight	A - standard
Male, straight	A - standard

Accessories	

Accessories		
SACC-M12-SFT/2 5-3.5	1436505	5

Pressure screw and seal, for connectors with Pg7 screw connection, for cable diameters:

2.5 mm ... 3.5 mm

Circular connectors

M12 sensor/actuator connectors

Screw connection, shielded

Notes:

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 337



**Metal housing,
4-, 5-, 8-pos.**



**Stainless steel housing,
5-pos.**



Technical data

	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector in accordance with:		IEC 61076-2-101	
Degree of pollution		3	
Degree of protection		IP67	
Connection method		Screw connection	
Connection cross section [mm²]	0.25 mm² ... 0.75 mm²		0.25 mm² ... 0.5 mm²
Electrical data			
Rated voltage	48 V AC / 60 V DC		30 V AC / 30 V DC
Rated current	4 A		2 A
Insulation resistance		≥ 100 MΩ	
Material data			
Material contact/contact surface		CuZn / Au	
Contact carrier material		PA	
Flammability rating in accordance with UL 94		HB	
Temperature data			
Male connector/female connector		-40 ... 85	

Ordering data

Description	Coding

Connector, cable diameter: 4 mm ... 6 mm

Male, angled	A - standard	1694279	1	1693429	1
Female, straight	A - standard	1694295	1	1694305	1
Male, straight	A - standard	1693830	1	1693416	1

Connector, cable diameter: 6 mm ... 8 mm

Female, angled	A - standard			1430433	1
Male, angled	A - standard			1694282	1
Female, straight	A - standard	1515170	1	1694318	1
Male, straight	A - standard	1501540	1	1694266	1

Connector, cable diameter: 6 mm ... 8.5 mm

Female, straight	A - standard			1508365	1
Male, straight	A - standard			1508352	1

Connector, cable diameter: 3 mm ... 5.5 mm

Female, straight	A - standard				
Male, straight	A - standard				

Connector, cable diameter: 5.5 mm ... 8.6 mm

Female, straight	A - standard				
Male, straight	A - standard				



Technical data

	5-pos.		
General data			
IEC 61076-2-101			
3			
IP65 / IP67 / IP69K			
Screw connection			
0.25 mm² ... 0.75 mm²			
Electrical data			
48 V AC / 60 V DC			
4 A			
≥ 100 MΩ			
Material data			
CuZn / Au			
PA			
V0			
Temperature data			
-40 ... 85			

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.

Connector, cable diameter: 4 mm ... 6 mm

Male, angled	A - standard	1694279	1	1693429	1
Female, straight	A - standard	1694295	1	1694305	1
Male, straight	A - standard	1693830	1	1693416	1

Connector, cable diameter: 6 mm ... 8 mm

Female, angled	A - standard			1430433	1
Male, angled	A - standard			1694282	1
Female, straight	A - standard	1515170	1	1694318	1
Male, straight	A - standard	1501540	1	1694266	1

Connector, cable diameter: 6 mm ... 8.5 mm

Female, straight	A - standard			1508365	1
Male, straight	A - standard			1508352	1

Connector, cable diameter: 3 mm ... 5.5 mm

Female, straight	A - standard				
Male, straight	A - standard				

Connector, cable diameter: 5.5 mm ... 8.6 mm

Female, straight	A - standard				
Male, straight	A - standard				

DUO connectors, screw connection

Notes:

Plastic knurl without wrench flats.

Metal knurl,
4-, 5-pos.Plastic and stainless steel knurl,
5-pos.

Technical data

	4-pos.	5-pos.
General data	IEC 61076-2-101	
M12 circular connector in accordance with:	3	
Degree of pollution	IP67	
Degree of protection	Screw connection	
Connection method	2x 2.1 mm ... 3 mm (when using the seal for small outer cable diameters)	
Cable diameter	2x 4 mm ... 5.2 mm (when using the seal for large outer cable diameters)	
Cable diameter	0.25 mm ² ... 0.75 mm ²	
Connection cross section [mm ²]		
Electrical data		
Rated voltage	250 V AC / 250 V DC	48 V AC / 60 V DC
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / CuSnZn	
Contact carrier material	PA	
Flammability rating in accordance with UL 94	-	
Temperature data		
Male connector/female connector	-40 ... 85	

Ordering data

Description	Coding	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4-pos.		5-pos.	
Connector , with metal knurl, for connecting two cables					
Male, straight	A - standard	1507052	1	1662748	1
Connector , with plastic knurl, for connecting two cables					
Female, straight	A - standard				
Male, straight	A - standard				
Male, angled	A - standard				
Connector , with stainless steel knurl, for connecting two cables					
Female, straight	A - standard				
Male, straight	A - standard				



Technical data

	Plastic knurl	Stainless steel knurl
General data	IEC 61076-2-101	
M12 circular connector in accordance with:	3	
Degree of pollution	IP67	
Degree of protection	Screw connection	
Connection method	2x 2.1 mm ... 3 mm (when using the seal for small outer cable diameters)	
Cable diameter	2x 4 mm ... 5.2 mm (when using the seal for large outer cable diameters)	
Cable diameter	0.25 mm ² ... 0.75 mm ²	
Connection cross section [mm ²]		
Electrical data		
Rated voltage	48 V AC / 60 V DC	
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / CuSnZn	CuZn / Au
Contact carrier material	PA	
Flammability rating in accordance with UL 94	-	
Temperature data		
Male connector/female connector	-40 ... 85	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Plastic knurl		Stainless steel knurl	
1694596	1		
1662285	1		
1531044	1		
		1403372	1
		1403371	1

Circular connectors

M12 sensor/actuator connectors

Solder and Piercecon® connection



Solder connection,
12-pos.



Piercecon® connection,
12, 17-pos.



		Technical data				Technical data				
		unshielded		shielded		12-pos.		17-pos.		
General data										
M12 circular connector in accordance with:		IEC 61076-2-101				IEC 61076-2-101				
Degree of pollution		3				3				
Degree of protection		IP67				IP67				
Connection method		Solder connection				Piercecon® fast connection				
Cable diameter		6 mm ... 8 mm				5.4 mm ... 8.2 mm				
Connection cross section [mm²]		0.08 mm² ... 0.25 mm²				0.14 mm² ... 0.14 mm²				
Electrical data										
Rated voltage		30 V AC / 30 V DC				30 V AC / 30 V DC				
Rated current		1.5 A (up to 40°C)				1.5 A				
Insulation resistance		> 10 GΩ				≥ 100 MΩ				
Material data										
Material contact/contact surface		CuZn / Au				CuZn / Ni/Au				
Contact carrier material		PA				PA				
Flammability rating in accordance with UL 94		HB				V0				
Temperature data										
Male connector/female connector		-40 ... 85				-25 ... 85				
		Ordering data				Ordering data				
Description		Coding	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
			unshielded		shielded		12-pos.		17-pos.	
Connector										
Female, angled		A - standard	1404423	1	1404413	1				
Male, angled		A - standard	1404421	1	1404412	1				
Female, straight		A - standard	1404420	1	1404411	1				
Male, straight		A - standard	1404419	1	1404410	1				
Connector, unshielded, color-coded connection area										
Female, straight		A - standard					1559631	1	1559644	1
Male, straight		A - standard					1559592	1	1559602	1

Crimp connection, shielded

new

PROFI[®]
NET

4-, 5-, 8-pos.

PROFI[®]
NETPush-pull locking,
4-, 5-, 8-pos.

EAC

Technical data		
4-pos.	5-pos.	8-pos.
IEC 61076-2-101		IEC 61076-2-109
M12		
3		
IP65 / IP67		
Crimp connection		
4.5 mm ... 7.5 mm		6.5 mm ... 10 mm
48 V AC / 60 V DC		
4 A		0.5 A
≥ 100 Ω		
PA 6.6		
Zinc die-cast, nickel-plated		
V0		
-40 ... 85		

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
Female, angled	D - data	1422849	1		
Male, angled	D - data	1422847	1		
Female, straight	D - data	1422848	1		
Male, straight	D - data	1422846	1		
Female, angled	A - standard	1422853	1		
Male, angled	A - standard	1422851	1		
Female, straight	A - standard	1422852	1		
Male, straight	A - standard	1422850	1		

Male, angled	X - data	1422845	1
Male, straight	X - data	1422844	1

Accessories			
CC1,0-TS-0,34F AU	1064041	100	
CC1,0-TS-1,00F AU	1423646	100	
CC1,0-TS-0,34M AU	1064040	100	
CC1,0-TS-1,00M AU	1423645	100	
CC0,6-TS-0,34M AU	1423643	100	
CRIMPFOX-TC MP	1212510	1	

EAC

Technical data		
4-pos.	5-pos.	8-pos.
	-	
	M12 push-pull	
	3	
	IP65 / IP67 / IP68 / IP69K	
	Crimp connection	
	4.5 mm ... 7.5 mm	6.5 mm ... 10 mm
	48 V AC / 60 V DC	
	4 A	0.5 A
	≥ 100 Ω	
	PA 6.6	
	PA 6.6	
	V0	
	-40 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
Female, angled	D - data	1021831	1		
Male, angled	D - data	1021830	1		
Female, straight	D - data				
Male, straight	D - data				
Female, angled	A - standard				
Male, angled	A - standard	1021816	1		
Female, straight	A - standard				
Male, straight	A - standard	1021815	1		

Male, angled	X - data	1021784	1
Male, straight	X - data	1021783	1

Accessories			
CC1,0-TS-0,34M AU	1064040	100	
CC1,0-TS-1,00M AU	1423645	100	
CC0,6-TS-0,34M AU	1423643	100	
CRIMPFOX-TC MP	1212510	1	

Circular connectors

Valve connectors

Valve connectors, type A, screw connection

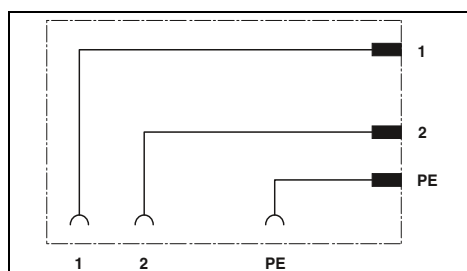


Without protective circuit



Protective circuit: varistor

ERC



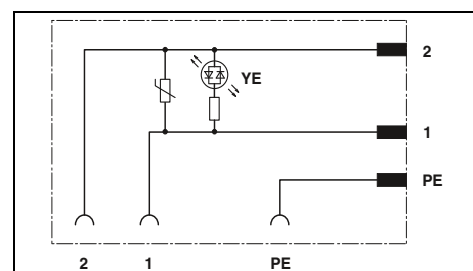
Technical data

General data	
Valve connector in accordance with:	EN 175301-803
Degree of pollution	3
Degree of protection	IP65
Connection method	Screw connection
Electrical data	
Rated current	10 A
Insulation resistance	> 2 GΩ
Material data	
Material contact valve connector	CuZn
Material contact surface valve connector	CuSn
Flammability rating in accordance with UL 94	HB
Temperature data	
Valve connectors	[-25 ... 60 °C]

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Valve connector , without protective circuit, rated voltage: 230 V			
3-pos.	SACC-VB-3CON-M16/A	1452123	1
4-pos.	SACC-VB-4CON-M16/A	1452136	1
Valve connector , with protective circuit, rated voltage:			
24 V			
110 V			
230 V			
Valve connector , 5-pos., type A for pressure switch, 2 LEDs, without protective circuit, M16 cable gland, rated voltage:			
24 V			
Valve connector , with protective circuit, rated voltage: 24 V, cable gland:			
Pg9			
M16			

ERC



Technical data

EN 175301-803
3
IP65
Screw connection
1.5 A
> 2 GΩ
CuZn
CuSn
HB
-25 ... 60

Ordering data

Type	Order No.	Pcs./Pkt.
SACC-VB-3CON-M16/A-1L-SV 24V	1452149	1
SACC-VB-3CON-M16/A-1L-SV 110V	1452152	1
SACC-VB-3CON-M16/A-1L-SV 230V	1452165	1



Protective circuit: varistor and rectifier

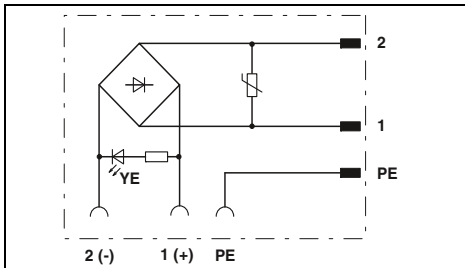


Pressure switch



Protective circuit: Z diode

ERC



Technical data

EN 175301-803
3
IP65
Screw connection

1.5 A
> 2 GΩ

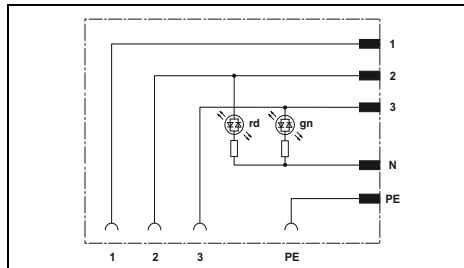
CuZn
CuSn
HB

-25 ... 60

Ordering data

Type	Order No.	Pcs./Pkt.
SACC-VB-3CON-M16/A-GVL 12/24V	1452178	1
SACC-VB-3CON-M16/A-GVL 110V	1452181	1
SACC-VB-3CON-M16/A-GVL 230V	1452194	1

ERC



Technical data

EN 175301-803
3
IP65
Screw connection

1.5 A
> 2 GΩ

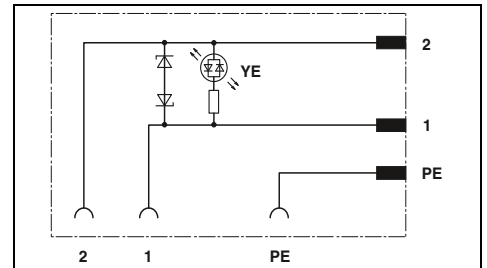
CuZn
CuSn
HB

-25 ... 60

Ordering data

Type	Order No.	Pcs./Pkt.
SACC-VB-5CON-M16/AD-2L 24V	1457908	1

ERC



Technical data

EN 175301-803
3
IP65
Screw connection

4 A
> 2 GΩ

CuSn
Ag
HB

-25 ... 60

Ordering data

Type	Order No.	Pcs./Pkt.
SACC-V-3CON-PG9/A-1L-S	1671137	1
SACC-V-3CON-M16/A-1L-S	1544714	1

Circular connectors

Valve connectors

Valve connectors, types B and BI, screw connection

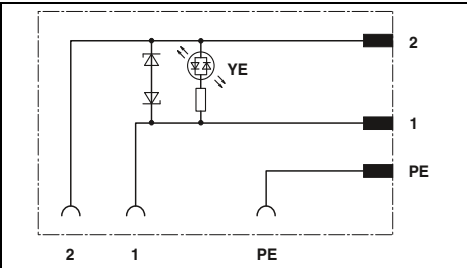


Protective circuit: Z diode

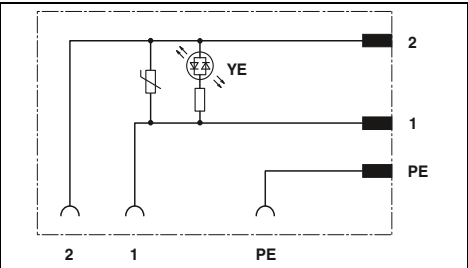


Protective circuit: varistor

ERC



ERC



General data
Valve connector in accordance with:
Degree of pollution
Degree of protection
Connection method
Electrical data
Rated current
Insulation resistance
Material data
Material contact surface valve connector
Material housing valve connector
Flammability rating in accordance with UL 94
Temperature data
Valve connectors

Technical data			
Type B		Type BI	
EN 175301-803		-	
		3	
		IP65	
		Screw connection	
		4 A	
		> 2 GΩ	
		Ag	
		PA	
		HB	
		-25 ... 60	

Description
Valve connector, 3-pos., with protective circuit, cable gland Pg9, rated voltage:
24 V
Valve connector, with protective circuit, yellow LED, rated voltage:
24 V
110 V
230 V

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Type B		Type BI	
1671153	1	1671140	1

Technical data			
Type B		Type BI	
EN 175301-803		-	
		3	
		IP65	
		Screw connection	
		1.5 A	
		> 2 GΩ	
		CuSn	
		PA	
		HB	
		-25 ... 60	

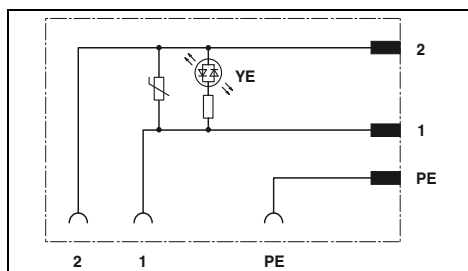
Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Type B		Type BI	
1452204	1	1452233	1
1452217	1	1452246	1
1452220	1	1452259	1

Valve connectors, type C and CI, screw connection



Protective circuit: varistor

EAC



Technical data

General data
Valve connector in accordance with:
Degree of pollution
Degree of protection
Connection method
Electrical data
Rated current
Insulation resistance
Material data
Material contact valve connector
Material contact surface valve connector
Flammability rating in accordance with UL 94
Temperature data
Valve connectors

[°C]

Type C	Type CI
EN 175301-803	-
3	
IP65	
Screw connection	
1.5 A	
> 2 GΩ	
CuZn	
CuSn	
HB	
-25 ... 60	

Ordering data

Description
Valve connector , with protective circuit, yellow LED, rated voltage:

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Type C		Type CI	
1452262	1	1452291	1
1452275	1	1452301	1
1452288	1	1452314	1

Circular connectors

M5 sensor/actuator device connectors, front mounting

M5 fastening thread,
with 0.5 m long litz wires

Notes:
Flat nut recommended for housing wall thicknesses < 2.5 mm.



M5,
3-, 4-pos.

ERC

		Technical data			
		3-pos.		4-pos.	
General data					
M5 circular connector in accordance with:		IEC 61076-2-105		IEC 61076-2-105	
Degree of pollution		3		3	
Degree of protection		IP67		IP67	
Connection method		Individual wires		Individual wires	
Electrical data					
Rated voltage		60 V		60 V	
Rated current		1 A		1 A	
Material data					
Material contact/contact surface		CuSn / Au		CuSn / Au	
Contact carrier material		PA 6.6		PA 6.6	
Flammability rating in accordance with UL 94		HB		HB	
Cable type		TPE litz wire		TPE litz wire	
Temperature data					
Male connector/female connector		-25 ... 85		-25 ... 85	
		[°C]			
Ordering data					
Description		Coding		Order No.	Pcs./Pkt.
				Order No.	Pcs./Pkt.
		3-pos.		4-pos.	
Device connector					
Female	A - standard	1530605	1	1530618	1
Male	A - standard	1530582	1	1530595	1
Accessories					
Flat nut, with: M5 thread		SACC-E-MU-M 5		1535901	100

**M8 fastening thread,
with 0.5 m long litz wires**

**M8,
3-, 4-, 5-pos.**

**M8,
6-, 8-pos.**


Technical data		
3-pos.	4-pos.	5-pos.
General data		
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104
Degree of pollution	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	50 V AC / 60 V DC	50 V AC / 60 V DC
Rated current	4 A	3 A
Material data		
Material contact/contact surface	Cu alloy / Au	Cu alloy / Au
Contact carrier material	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	HB	HB
Cable type	PVC litz wire	PVC litz wire
Temperature data		
Male connector/female connector	-25 ... 85	-25 ... 85

Ordering data		
Order No.	Pcs./ Pkt.	Order No.
3-pos.	4-pos.	5-pos.
1500350	1500363	1424233
1500334	1500347	1424234
1504071	1504071	



Technical data	
6-pos.	8-pos.
General data	
M8 circular connector in accordance with:	IEC 61076-2-104
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	30 V AC / 30 V DC
Rated current	2 A
Material data	
Material contact/contact surface	Cu alloy / Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	HB
Cable type	PVC litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data	
Order No.	Pcs./ Pkt.
6-pos.	8-pos.
1542677	1424231
1542664	1424232
1504071	

Description	Coding
Device connector	
Female	A - standard
Male	A - standard
Female	B - inverse
Male	B - inverse
Flat nut, with:	
M8 thread	

Circular connectors

M8 sensor/actuator device connectors, rear mounting

**M8, M10, M12 fastening thread,
with 0.5 m long litz wires**



3-, 4-pos.



6, 8-pos.



Technical data

General data	
M8 circular connector in accordance with:	
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	50 V AC / 60 V DC
Rated current	4 A
Material data	
Material contact/contact surface	Cu alloy / Au
Contact carrier material	PUR / PA 6.6
Flammability rating in accordance with UL 94	HB
Cable type	PVC litz wire
Temperature data	
Male connector/female connector	[-25 ... 85 °C]

3-pos.	4-pos.
IEC 61076-2-104	IEC 61076-2-104
3	3
IP67	IP67
Individual wires	Individual wires
50 V AC / 60 V DC	50 V AC / 60 V DC
4 A	4 A
Cu alloy / Au	Cu alloy / Au
PUR / PA 6.6	PUR / PA 6.6
HB	HB
PVC litz wire	PVC litz wire
-25 ... 85	-25 ... 85



Technical data

6-pos.	8-pos.
IEC 61076-2-104	IEC 61076-2-104
3	3
IP67	IP67
Individual wires	Individual wires
30 V AC / 30 V DC	30 V AC / 30 V DC
2 A	1.5 A
Cu alloy / Au	Cu alloy / Au
PUR / PA 6.6	PUR / PA 6.6
HB	HB
PVC litz wire	PVC litz wire
-25 ... 85	-25 ... 85

Ordering data

Description	Coding
Device connector, M8 fastening thread	
Male	A - standard
Device connector, M10 fastening thread	
Female	A - standard
Device connector, M12 fastening thread	
Female	A - standard

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1453478	1	1453481	1
1456080	1	1456093	1
1453449	1	1453452	1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
6-pos.		8-pos.	
1453494	1	1424230	1
1456103	1	1424229	1
1453465	1		

M12 sensor/actuator device connectors, front mounting

**Pg9 fastening thread,
with 0.5 m long litz wires**



4-, 5-, 8-pos.

can be positioned,
4-, 5-, 8-pos.

Technical data			
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA66	PA66	PA66
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
		4-pos.		5-pos.	

Device connector

Female	A - standard
Male	A - standard
Female	B - inverse
Male	B - inverse

Accessories		
Flat nut, with: Pg9 thread	SACC-E-MU-PG9	1504084 100



Technical data			
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA66	PA66	PA66
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
		4-pos.		5-pos.	

Female	A - standard	1693788	1	1671098	1	1513758	1
Male	A - standard	1693762	1	1671111	1	1513774	1
Female	B - inverse						
Male	B - inverse						

Accessories		
Flat nut, with: Pg9 thread	SACC-E-MU-PG9	1504084 100

Circular connectors

M12 sensor/actuator device connectors, front mounting

M12 push-pull locking, with 0.5 m litz wires

- Manufacturer-independent M12 push-pull locking system



4-pos.

new



5-pos.

new



Technical data

4-pos.

General data	
M12 circular connector in accordance with:	-
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	250 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

[°C]

Ordering data

4-pos.

Description	Coding
Device connector	
Female	A-coded
Female	D-coded

1027686

1



Technical data

5-pos.

General data	
M12 circular connector in accordance with:	-
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	60 V
Rated current	4 A
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

[°C]

Ordering data

5-pos.

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
1027683	1		

**M16 fastening thread,
with 0.5 m long litz wires**


4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1523434	1	1520039	1	1523476	1
1523450	1	1520055	1	1523492	1
1535202	1				
1551558	1				
		1520000	1		
		1520013	1		

Accessories		
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097 100



Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP65/IP67	IP65/IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
12-pos.		17-pos.			
Female	A - standard	1556252	1	1556294	1
Male	A - standard	1556265	1	1556304	1

Accessories		
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097 100

Circular connectors

M12 sensor/actuator device connectors, front mounting

M16 fastening thread,
with 0.5 m long litz wires,
can be positioned



can be positioned,
4-, 5-pos.



can be positioned,
8-pos.



Technical data

General data
M12 circular connector in accordance with:
Degree of pollution
Degree of protection
Connection method
Electrical data
Rated voltage
Rated current
Material data
Material contact/contact surface
Contact carrier material
Flammability rating in accordance with UL 94
Cable type
Temperature data
Male connector/female connector

4-pos.	5-pos.
IEC 61076-2-101	IEC 61076-2-101
3	3
IP67	IP67
Individual wires	Individual wires
250 V	60 V
4 A	4 A
CuZn / Ni/Au	CuZn / Ni/Au
PA 6.6	PA 6.6
V0	V0
TPE litz wire	TPE litz wire
-25 ... 85	-25 ... 85



Technical data

8-pos.
IEC 61076-2-101
3
IP67
Individual wires
30 V
2 A
CuZn / Ni/Au
PA 6.6
V0
TPE litz wire
-25 ... 85

Ordering data

Description	Coding
Device connector	
Female	A - standard
Male	A - standard
Female	D - data
Male	D - data
Female	B - inverse
Male	B - inverse

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		5-pos.	
1523447	1	1520042	1
1523463	1	1520068	1
1535215	1		
1552256	1		
		1519998	1
		1520026	1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8-pos.			
1523489	1		
1523502	1		

**XL device connectors,
M16 fastening thread,
with 0.5 m long litz wires**

- Tightening limitation
- Wrench size 19



4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1411568	1	1411571	1	1411573	1
1411577	1	1411579	1	1411581	1
1411569	1				
1411578	1				
		1411572	1		
		1411580	1		

Accessories		
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097 100



Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP65/IP67	IP65/IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			
Female	A - standard	1411574	1	1411576	1
Male	A - standard	1411582	1	1411583	1

Accessories		
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097 100

Circular connectors

M12 sensor/actuator device connectors, front mounting

M20 fastening thread,
with 0.5 m long litz wires

– Housing material: brass, nickel-plated



4-, 5-, 8-pos.



		Technical data					
		4-pos.		5-pos.		8-pos.	
General data		IEC 61076-2-101		IEC 61076-2-101		IEC 61076-2-101	
M12 circular connector in accordance with:		3		3		3	
Degree of pollution		IP67/IP69K		IP67/IP69K		IP67/IP69K	
Degree of protection		Individual wires		Individual wires		Individual wires	
Connection method							
Electrical data		250 V		60 V		30 V	
Rated voltage		4 A		4 A		2 A	
Rated current							
Material data		CuZn / Au		CuZn / Au		CuZn / Au	
Material contact/contact surface		PA 6.6		PA 6.6		PA 6.6	
Contact carrier material		V0		V0		V0	
Flammability rating in accordance with UL 94		TPE litz wire		TPE litz wire		TPE litz wire	
Cable type							
Temperature data		-25 ... 85		-25 ... 85		-25 ... 85	
Male connector/female connector		[°C]					
		Ordering data					
Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
		4-pos.		5-pos.		8-pos.	
Device connector							
Female	A - standard	1408436	1	1408454	1	1408453	1
Male	A - standard	1408451	1	1408446	1	1408442	1

Circular connectors

M12 sensor/actuator device connectors, front mounting

One-piece, 20 mm square flange,
with 0.5 m long litz wires

- 4x fixing hole, 3.2 mm
- With form seal for M3 screws



4-, 5-, 8-pos.



12-, 17-pos.



	Technical data		
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85



	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	1.5 A	1.5 A
Material data		
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Male connector/female connector	-25 ... 85	-25 ... 85

		Ordering data					
Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
		4-pos.		5-pos.		8-pos.	
Device connector							
Female	A - standard	1419797	1	1441655	1	1441697	1
Male	A - standard	1419784	1	1441642	1	1441684	1
Female	D - data	1441639	1				
Male	D - data	1441626	1				
Female	B - inverse			1441671	1		
Male	B - inverse			1441668	1		

		Ordering data	
		Order No.	Pcs./ Pkt.
Description	Coding	12-pos.	17-pos.
Female	A - standard	1441710	1
Male	A - standard	1441707	1
Female	D - data		1441736
Male	D - data		1441723
Female	B - inverse		
Male	B - inverse		

M12 sensor/actuator device connectors, front mounting

One-piece, 25 mm square flange, with 0.5 m long litz wires

- 4 x fixing hole, 2.7 mm
- With form seal for M2.5 screws



4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	

Female	A - standard	1420003	1	1440986	1	1441574	1
Male	A - standard	1419991	1	1440973	1	1441561	1
Female	D - data	1440960	1				
Male	D - data	1440957	1				
Female	B - inverse			1441558	1		
Male	B - inverse			1440999	1		



Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP67	IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			

Female	A - standard	1441590	1	1441613	1
Male	A - standard	1441587	1	1441600	1

Circular connectors

M12 sensor/actuator device connectors, front mounting

**Modular, 25 mm square flange,
pre-assembled**



**Flange housing,
housing bore holes 3.2 mm**



**With 0.5 m long litz wires,
assembled contact carrier
and insulating body**

ERC

Technical data

General data			
M12 circular connector in accordance with:	IEC 61076-2-101		
Degree of pollution	-		
Degree of protection	-		
Connection method	-		
Electrical data			
Rated voltage			
Rated current	-		
Material data			
Material contact/contact surface	- / -		
Contact carrier material	-		
Cable gland material	Zinc die-cast, nickel-plated		
Flammability rating in accordance with UL 94	-		
Cable type	-		
Temperature data			
Male connector/female connector	[°C]	-40 ... 85	

Ordering data

Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
Square flange housing, with O-ring		1419959	10				
Assembled contact carrier and insulating body, with 0.5 m litz wires and crimp contacts							
Male	A - standard						
Male	D - data						
Male	B - inverse						

ERC

Technical data

4-pos.	5-pos.	8-pos.
IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
3	3	3
IP67	IP67	IP67
Crimp contacts	Crimp contacts	Crimp contacts
250 V	60 V	30 V
4 A	4 A	2 A
CuZn / Au	CuZn / Au	CuZn / Au
PA 6.6	PA 6.6	PA 6.6
-	-	-
V0	V0	V0
TPE litz wire	TPE litz wire	TPE litz wire
-25 ... 85	-25 ... 85	-25 ... 85

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1440805	1	1440818	1	1457827	1
1440821	1	1440759	1		

**Modular, 25 mm square flange,
for free assembly**



**Flange housing,
housing bore holes 3.2 mm**



**Contact carriers and
insulating bodies for assembly**

ERC

Technical data			
General data			
M12 circular connector in accordance with:	IEC 61076-2-101		
Degree of pollution	-		
Degree of protection	-		
Connection method	-		
Electrical data			
Rated voltage			
Rated current	-		
Material data			
Contact carrier material	-		
Cable gland material	Zinc die-cast, nickel-plated		
Flammability rating in accordance with UL 94	-		
Temperature data			
Male connector/female connector	-40 ... 85		

Ordering data					
Description	Coding	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
Square flange housing, with O-ring		1419959	10		
Contact carrier and insulating bodies					
Male	A - standard				
Male	D - data				
Male	B - inverse				

Crimp contact, for 4- and 5-pos. contact carriers,
contact material: CuZn, surface: gold-plated,
connection cross section: 0.08 mm² ... 0.34 mm²

Contact Ø: 1.0 mm

Crimp contact, for 8-pos. contact carriers,
contact material: CuZn, surface: gold-plated,
connection cross section: 0.08 mm² ... 0.34 mm²

Contact Ø: 0.8 mm

Accessories		
Crimping pliers, for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool		
for turned contacts, four-mandrel crimping		

ERC

Technical data			
4-pos.	5-pos.	8-pos.	
IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	
3	3	3	
IP67	IP67	IP67	
Crimp contacts	Crimp contacts	Crimp contacts	
250 V	60 V	30 V	
4 A	4 A	2 A	
PA 6.6	PA 6.6	PA 6.6	
-	-	-	
V0	V0	V0	
-25 ... 85	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1440931	10	1419988	10	1440928	10
1440944	10	1440915	10		

1452356 100

1452356 100

1452372 100

Accessories		
CRIMPFOX-TC MP	1212510	1

Circular connectors

M12 sensor/actuator device connectors, rear mounting

**Pg9 fastening thread,
with 0.5 m long litz wires**



4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85



Technical data			
	12-pos.	17-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP67	IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1556621	1	1542729	1	1542732	1
1556618	1	1542703	1	1542716	1
1551529	1				
1551532	1				
		1543676	1		
		1543663	1		

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			
1430446	1	1430462	1		
1430459	1	1430475	1		

**M12 fastening thread,
with 0.5 m long litz wires**


4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1551875	1	1551888	1	1551914	1
1551901	1	1551891	1		



Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP67	IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			
Male	A - standard	1437122	1	1437135	1

**M16 fastening thread,
with 0.5 m long litz wires**


4-, 5-, 8-pos.



12-, 17-pos.



Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	

Female	A - standard	1419632	1	1419658	1	1419690	1
Male	A - standard	1419629	1	1419645	1	1419687	1
Female	D - data	1419616	1				
Male	D - data	1419603	1				
Female	B - inverse			1419674	1		
Male	B - inverse			1419661	1		



Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP65/IP67	IP65/IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	TPE litz wire	TPE litz wire	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			

Female	A - standard	1419713	1	1419739	1
Male	A - standard	1419700	1	1419726	1

Circular connectors

M12 sensor/actuator device connectors, rear mounting

**XL device connectors,
M16 fastening thread,
with 0.5 m long litz wires**

- Tightening limitation
- Wrench size 19



4-, 5-, 8-pos.



12-, 17-pos.



Technical data		
4-pos.	5-pos.	8-pos.
General data		
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3
Degree of protection	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	250 V	60 V
Rated current	4 A	4 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Male connector/female connector	-25 ... 85	-25 ... 85

Ordering data		
Order No.	Pcs./ Pkt.	Order No.
4-pos.	5-pos.	8-pos.
Female	A - standard	1411584
Male	A - standard	1411591
Female	D - data	1411585
Male	D - data	1411592
Female	B - inverse	1411587
Male	B - inverse	1411594



Technical data	
12-pos.	17-pos.
General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of pollution	3
Degree of protection	IP65/IP67
Connection method	Individual wires
Electrical data	
Rated voltage	30 V
Rated current	1.5 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA 6.6
Flammability rating in accordance with UL 94	V0
Cable type	TPE litz wire
Temperature data	
Male connector/female connector	-25 ... 85

Ordering data	
Order No.	Pcs./ Pkt.
12-pos.	17-pos.
Female	A - standard
Male	A - standard
Female	D - data
Male	D - data
Female	B - inverse
Male	B - inverse

**M16 fastening thread,
with assembled cable, shielded**

**PUR cable, 4-, 5-, 8-pos.,
shielded**

**PVC cable, 12-, 17-pos.,
shielded**

EAC

Technical data			
4-pos.	5-pos.	8-pos.	
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 6.6	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0	V0
Cable type	PUR halogen-free black	PUR halogen-free black	PUR halogen-free black
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
4-pos.		5-pos.		8-pos.	
1419302	1	1419328	1	1419357	1
1419399	1	1419409	1	1419425	1
1419315	1	1419331	1	1419344	1
1419386	1	1419412	1	1419438	1

EAC

Technical data			
12-pos.	17-pos.		
General data			
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	
Degree of pollution	3	3	
Degree of protection	IP67	IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	30 V	30 V	
Rated current	1.5 A	1.5 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA 6.6	PA 6.6	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	PVC black	PVC black	
Temperature data			
Male connector/female connector	-25 ... 85	-25 ... 85	

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
12-pos.		17-pos.			
Female	1442188	1	1442269	1	
Male	1442227	1	1442308	1	
Female	1442191	1	1442272	1	
Male	1442230	1	1442311	1	

Circular connectors

M12 sensor/actuator device connectors, rear mounting

Pg9 fastening thread, plastic,
with 0.5 m long litz wires



5-, 8-pos.

ERC

		Technical data			
		5-pos.	8-pos.		
General data					
M12 circular connector in accordance with:		IEC 61076-2-101	IEC 61076-2-101		
Degree of pollution		3	3		
Degree of protection		IP67	IP67		
Electrical data					
Rated voltage		60 V	30 V		
Rated current		4 A	2 A		
Material data					
Material contact/contact surface		CuZn / Au	CuZn / Au		
Contact carrier material		PA 6.6	PA 6.6		
Flammability rating in accordance with UL 94		HB	HB		
Temperature data					
Male connector/female connector		-25 ... 85	-25 ... 85		
		[°C]			
		Ordering data			
Description	Coding	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		5-pos.		8-pos.	
Device connector					
Female	A - standard	1436356	1	1436369	1

M16 fastening thread, control cabinet feed-through



4-, 5-, 8-pos.

EAC

		Technical data					
		4-pos.		5-pos.		8-pos.	
General data		IEC 61076-2-101		IEC 61076-2-101		IEC 61076-2-101	
M12 circular connector in accordance with:		3		3		3	
Degree of pollution		IP67		IP67		IP67	
Degree of protection							
Electrical data		60 V		60 V		30 V	
Rated voltage		4 A		4 A		2 A	
Rated current							
Material data		CuZn		CuZn		CuZn	
Contact material		Au		Au		Au	
Contact surface material		PA 6.6		PA 6.6		PA 6.6	
Contact carrier material		HB		HB		HB	
Flammability rating in accordance with UL 94							
Temperature data		-25 ... 85		-25 ... 85		-25 ... 85	
Male connector/female connector		[°C]					
		Ordering data					
Description		Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
		4-pos.		5-pos.		8-pos.	
Control cabinet feed-through, M16 fastening thread							
Male to female		A - standard		1551671	1	1551697	1
Male to female		B - inverse		1551684	1		
Female to female		D - data		1424326	1		

Sealing elements

During transport or when in the field, unused plug-in connections must be protected or sealed. Plastic or metal screw plugs, sealing caps, and sealing plugs can be used for this. IP65/IP67 and IP69K protection is achieved.



Description		Ordering data		
		Type	Order No.	Pcs./Pkt.
M5 screw plug for unused M5 sockets of sensor/actuator cables, boxes, and device connectors	①	PROT-M5	1533288	10
M8 screw plug for unused M8 sockets of sensor/actuator cables, boxes, and device connectors	②	PROT-M8	1682540	5
M12 screw plug for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	③	PROT-M12	1680539	5
M12 screw plug fast locking system for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	④	PROT-MS SCO	1553129	5
M12 sealing cap for unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	⑤	PROT-M12 FS	1560251	5
M12 screw plug, metal for unused M12 sockets of shielded sensor/actuator cables, boxes, and device connectors	⑥	PROT-M12 SH	1503302	5
Metal M12 sealing cap for unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	⑦	PROT-M12 FS-M	1430488	10
for unused M12 sockets		PROT-M12 MS-M	1414148	10
Stainless steel M12 screw plug for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	⑧	PROT-M12 FB	1555538	5
Closing cap for Pg9/ Pg11, to close unoccupied connections	⑨	Q-PROT 9/11	1670235	10
M16 screw plug With flat nut for oval housing cutouts	⑩	SACC-M16-SEALING PLUG SET	1453368	10

Sealing elements with holding band or fixing chain

All IP67 interfaces can be closed tightly using the screw plugs and sealing caps in the sizes M8, M12 and 7/8". The holding bands are fastened on the cable or the housing and are thus held captive.

The M12 metal protective cap with fixing chain is suitable for all male versions. It is used in harsh industrial environments or for EMC applications.



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Screw plug made from plastic with retaining strap, for sealing unused sockets ①			
M8 for SAC cables	PROT-M 8 MS-PA-CHAIN	1430860	10
M8 with 3 mm fastening eye	PROT-M 8 MS-PA-CHAIN-EYE-DM3	1441105	10
M8 with 12 mm fastening eye	PROT-M 8 MS-PA-CHAIN-EYE	1441095	10
M12 for SAC cables	PROT-M12 MS-PA-CHAIN	1430899	5
M12 with 15 mm fastening eye	PROT-M12 MS-PA-CHAIN-EYE-DM14	1456200	5
7/8" for SAC cables	PROT-MINMS-PA-CHAIN	1430925	10
Plastic sealing cap with holding band, for closing unoccupied connectors ②			
M8 for SAC cables	PROT-M 8 FS-PA-CHAIN	1430857	10
M8 with 8 mm fastening eye	PROT-M 8 FS-PA-CHAIN-EYE	1441082	10
M12 for SAC cables	PROT-M12 FS-PA-CHAIN	1430873	5
M12 with 12 mm fastening eye	PROT-M12 FS-PA-CHAIN-EYE-DM12	1456187	5
M12 with 15 mm fastening eye	PROT-M12 FS-PA-CHAIN-EYE-DM14	1456190	5
7/8" for SAC cables	PROT-MINFS-PA-CHAIN	1430912	10
Sealing cap made of metal with fixing chain and 16 mm fastening eye, for sealing: ③			
unused M12 male connectors	PROT-M12 FS-M-CHAIN	1430491	10
unused M12 female connectors	PROT-M12 MS-M-CHAIN	1414147	1

Accessories for device connectors

Special fixing nuts are available for the EMC-compliant installation of M12 device connectors for coated or painted housing surfaces. When tightened they cut through the surface coating and establish contact between the housing and the connector.

Alternatively, flat gaskets can be used to provide the seal between the housing panel and device connector. This means that the housing cutouts no longer need to be chamfered for thin panels.



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
EMC hexagonal nut with fine toothing, for all device connectors with: M12 fastening thread ①	SACC-M12-KD-NUT-SH	1440151	10
EMC hexagonal nut with fine toothing, for all device connectors with: M16 fastening thread ②	SACC-M16-KD-NUT-SH	1440164	10
Pg9 fastening thread ②	SACC-PG9-KD-NUT-SH	1440177	10
Flat gasket for all device connectors with: M16 fastening thread ③	SACC-M16-SEAL CLM	1430394	10
Pg9 fastening thread	SACC-PG9-SEAL CLM	1556320	10

Assembly tools for sensor/actuator cables

To achieve tight plug-in connections, we recommend using assembly tools. M12 and 7/8" circular connectors can be assembled using a torque screwdriver and plug attachment.

The benefits of the plug attachment become particularly clear when connecting the connectors to distributor boxes. Thanks to the open design, it enables quick adjustment and installation even when space is at a premium.

The version for M12 connectors with hexagonal high-grade steel knurl is also made from high-grade steel. This prevents the connector knurls from being contaminated by corrosive materials.

For greater flexibility, screwdrivers with adjustable torque are available. When used in conjunction with the adapter insert, the available nuts can also be accommodated.



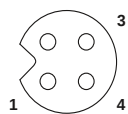
Description	
Torque screwdriver With a preset torque of 0.8 Nm and a 4 mm hexagonal drive	①
Nut for assembling 7/8" connectors, with a knurl diameter of 25 mm, with 4 mm hexagonal drive	②
Torque screwdriver With preset torque of 0.4 Nm and 4 mm hexagonal drive	③
Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive	④
Torque screwdriver , accuracy in accordance with standard EN ISO 6789 adjustable from 0.3 ... 1.2 Nm adjustable from 1.2 ... 3 Nm adjustable from 3 ... 6 Nm	⑤
Adapter insert For torque screwdrivers with adjustable torque, for accommodating plug attachments with 4 mm hexagonal drive	⑥

Ordering data			
Type	Order No.	Pcs./Pkt.	
TSD 08 SAC	1212597	1	
SAC BIT MIN-D25	1212512	1	
TSD 04 SAC	1208429	1	
SAC BIT M12-W14	1212513	1	
TSD-M 1,2NM	1212224	1	
TSD-M 3NM	1212225	1	
TSD-M 6NM	1212226	1	
TSD-M SAC-BIT ADAPTER	1212600	1	

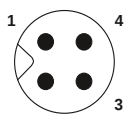
Circular connectors

Pin assignments

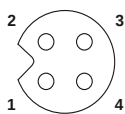
M5 device connectors



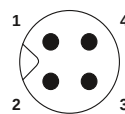
Female, 3-pos.



Male, 3-pos.



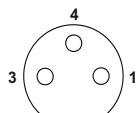
Female, 4-pos.



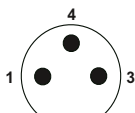
Male, 4-pos.

Pin	3-pos.		4-pos.	
1	BN		BN	
2	–		WH	
3	BU		BU	
4	BK		BK	

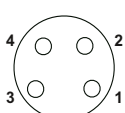
M8 device connectors



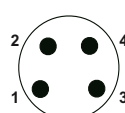
Female, 3-pos.



Male, 3-pos.

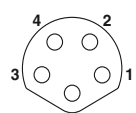


Female, 4-pos.

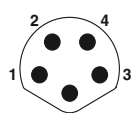


Male, 4-pos.

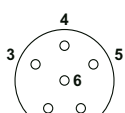
Pin	3-pos., A-coded		4-pos., A-coded	
1	BN		BN	
2	–		WH	
3	BU		BU	
4	BK		BK	



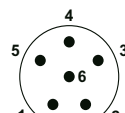
Female, 5-pos., B-coded



Male, 5-pos., B-coded

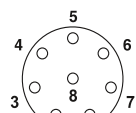


Female, 6-pos.

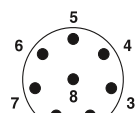


Male, 6-pos.

Pin	5-pos. B-coded		6-pos., A-coded	
1	GY		BN	
2	RD		WH	
3	WH		BU	
4	BK		BK	
5	BU		GY	
6			PK	



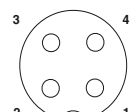
Female, 8-pos.



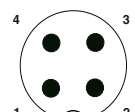
Male, 8-pos.

Pin	8-pos., A-coded	
1	WH	
2	BN	
3	GN	
4	YE	
5	GY	
6	PK	
7	BU	
8	RD	

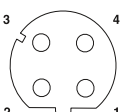
M12 device connectors



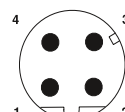
Female, 4-pos., A-coded



Male, 4-pos., A-coded

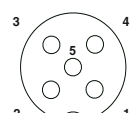


Female, 4-pos., D-coded

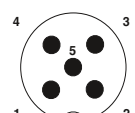


Male, 4-pos., D-coded

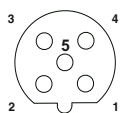
Pin	4-pos., A-coded		4-pos., D-coded	
1	BN		YE	
2	WH		WH	
3	BU		OG	
4	BK		BU	



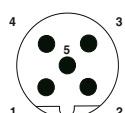
Female, 5-pos., A-coded



Male, 5-pos., A-coded

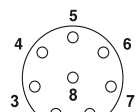


Female, 5-pos., B-coded

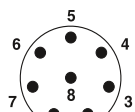


Male, 5-pos., B-coded

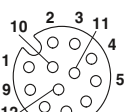
Pin	5-pos., A-coded		5-pos., B-coded	
1	BN		BN	
2	WH		WH	
3	BU		BU	
4	BK		BK	
5	GY		GY	



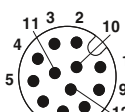
Female, 8-pos.



Male, 8-pos.



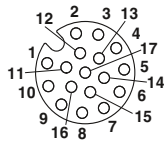
Female, 12-pos.



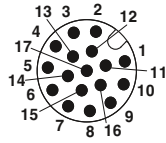
Male, 12-pos.

Pin	8-pos.		12-pos.	
1	WH		BN	
2	BN		BU	
3	GN		WH	
4	YE		GN	
5	GY		PK	
6	PK		YE	
7	BU		BK	
8	RD		GY	
9	–		RD	
10	–		VT	
11	–		GYPK	
12	–		RDBU	

M12 device connectors



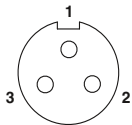
Female, 17-pos.



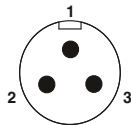
Male, 17-pos.

Pin	17-pos.	Pin	17-pos.
1	BN	9	RD
2	BU	10	VT
3	WH	11	GYPK
4	GN	12	RDBU
5	PK	13	WHGN
6	YE	14	BNGN
7	BK	15	WHYE
8	GY	16	YEEN
		17	WHGY

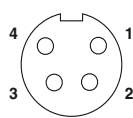
7/8" device connectors



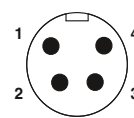
Female, 3-pos.



Male, 3-pos.

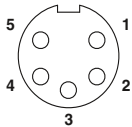


Female, 4-pos.

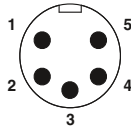


Male, 4-pos.

Pin	3-pos.	4-pos.
1	BK	BK
2	BN	BU
3	BU	BN
4	–	WH



Female, 5-pos.



Male, 5-pos.

Pin	5-pos.
1	BK
2	BU
3	GNYE
4	BN
5	WH

Mechanical and electrical data

Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 3.5 to 11 mm, shielded (M17 Compact) 5 to 12.5 mm, shielded (M17)
Type of locking:	M17 SPEEDCON fast locking system, cable connector With M17 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data			
Number of positions		8	17
Contacts		8	17
Contact Ø	[mm]	1	0.6
Litz wire cross section, turned crimp contacts	[mm²]	0.06 ... 1.0	0.06 ... 0.5
Litz wire cross section, C-HC punched-rolled crimp contacts	[mm²]	0.06 ... 0.56	–
Nominal current per contact at 25°C ¹⁾	[A]	8.0	3.6
Specifications in accordance with DIN EN 61984:2009			
Rated voltage	[V AC/DC]	60	60
Test/surge voltage	[kV AC]	1.5	1.5
Overvoltage category		III	III
Pollution degree ²⁾		3	3
Installation altitude	[m]	Up to 3000	Up to 3000
Cable clamping area ³⁾	Max. Ø [mm]	12.5	12.5

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering
(view of plug-in side)

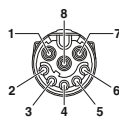
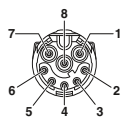
Number of positions

Male

Female

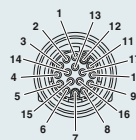
8-pos.

Crimp



17-pos.

Crimp



Note:

The connectors can be assembled with male or female contacts depending on the application.

For safety reasons, only use female contacts in the live part of the connector.

Selection guide

M17 signal connectors, 8- and 17-pos., crimp ranges: 0.06 mm² to 1.0 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

The connectors are delivered pre-assembled. The connectors can be furnished with the corresponding crimp contacts.

Every housing type can be assembled with male or female contacts. The connectors with knurled nuts can be equipped with the SPEEDCON fast locking system or with M17 x 1 coarse-pitch thread as an option. The connectors with external thread are fully compatible with standard threads and the SPEEDCON fast locking system.

The product chart provides an overview of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system, M17 Compact, see page 64.



M17, see page 66.



M17 x 1 standard locking, M17, see page 66.



Square mounting flange for M17 cable and coupler connectors for wall mounting, see page 179.



Shielded

Coupler connectors / panel feed-throughs

Coupler connector M17 Compact, see page 64.



Panel feed-through M17 Compact, see page 65.



M17, see page 67.



Shielded

Device connectors

Straight, M17 Compact, see page 65.



Straight, with central fastening thread, front mounting, M17, see page 69.



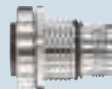
Angled, rotatable, M17, see page 68.



Straight, M17, see page 67.



Straight, with central fastening thread, rear mounting, M17, see page 69.



Shielded

Crimp contacts

Female contacts

Turned, see page 70.



All housings can be fitted with male or female crimp contacts

Male contacts

Turned, see page 70.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Tools/accessories

Crimping tools

Crimping pliers with digital display for turned crimp contacts, see page 177.



Tools/accessories

Unlocking tool for device connectors with contact carriers for snapping in from the device side, see page 179.



Color rings for individually marking the connectors, see page 180.



Circular connectors

M17 signal connectors

Cable connectors, M17 Compact

- High packing density in a compact product
- Individual marking of connectors with color rings



Cable connector, female assembly



Cable connector, male assembly

Description		Ordering data				Ordering data			
Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Cable connector, with contact carrier, without contacts		8-pos.		17-pos.		8-pos.		17-pos.	
3.5 mm ... 5.5 mm		1613370	1	1613288	1	1618641	1	1618682	1
5 mm ... 9.2 mm		1613371	1	1613324	1	1618648	1	1618683	1
9 mm ... 11.2 mm		1613372	1	1613325	1	1618649	1	1618684	1
Accessories		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Coupler connectors, M17 Compact

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings



Coupler connector, female assembly



Coupler connector, male assembly

Description		Ordering data				Ordering data			
Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Coupler connector, with contact carrier, without contacts		8-pos.		17-pos.		8-pos.		17-pos.	
3.5 mm ... 5.5 mm		1618724	1	1618756	1	1617799	1	1613497	1
5 mm ... 9.2 mm		1618725	1	1618757	1	1617813	1	1613896	1
9 mm ... 11.2 mm		1618726	1	1618758	1	1617830	1	1614532	1
Accessories		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Panel feed-throughs, M17 Compact

- Panel feed-throughs suitable for front and rear mounting
- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings
- **Flange dimensions**
25.7 mm x 25.7 mm



Panel feed-through,
female assembly



Panel feed-through,
male assembly

Description		Ordering data				Ordering data			
Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		8-pos.		17-pos.		8-pos.		17-pos.	
Panel feed-through, with contact carrier, without contacts									
	3.5 mm ... 5.5 mm	1618801	1	1618834	1	1617925	1	1617863	1
	5 mm ... 9 mm	1618802	1	1618835	1	1617929	1	1617872	1
	9 mm ... 11 mm	1618805	1	1618836	1	1617932	1	1617873	1
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Device connectors, M17 Compact, front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings
- **Flange dimensions:**
21.6 mm x 21.6 mm



Device connector, straight,
female assembly



Device connector, straight,
male assembly

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		8-pos.		17-pos.		8-pos.		17-pos.	
Device connector, with contact carrier, without contacts , contact insert for support on the device									
		1619039	1	1607654	1	1613286	1	1607636	1
Device connector, with contact carrier, without contacts , contact insert can be snapped in									
		1619038	1	1607653	1	1619037	1	1607634	1
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			
Unlocking tool for contact carriers		See page 179				See page 179			

Circular connectors

M17 signal connectors

Cable connectors, SPEEDCON fast locking system

- Individual marking of connectors with color rings



Cable connector,
female assembly



Cable connector,
male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8-pos.		17-pos.	

1619007	1	1607642	1
1619008	1	1607644	1
1619009	1	1624532	1

Accessories

For female contacts, see page 70 onwards
See page 180
See page 181

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8-pos.		17-pos.	

1618999	1	1607625	1
1619000	1	1607627	1
1619001	1	1624529	1

Accessories

For male contacts, see page 70 onwards
See page 180
See page 181

Description	Cable clamping area
Cable connector, with contact carrier, without contacts	
	5 mm ... 8 mm
	8 mm ... 10 mm
	10 mm ... 12.5 mm

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

Cable connectors, M17 standard locking

- Standard knurled nut compatible with mating connectors with SPEEDCON and M17 standard external thread
- Individual marking of connectors with color rings



Cable connector,
female assembly



Cable connector,
male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8-pos.		17-pos.	

1619003	1	1607641	1
1619004	1	1607643	1
1619005	1	1624531	1

Accessories

For female contacts, see page 70 onwards
See page 180
See page 181

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8-pos.		17-pos.	

1618995	1	1607624	1
1618996	1	1607626	1
1618997	1	1624528	1

Accessories

For male contacts, see page 70 onwards
See page 180
See page 181

Description	Cable clamping area
Cable connector, with contact carrier, without contacts	
	5 mm ... 8 mm
	8 mm ... 10 mm
	10 mm ... 12.5 mm

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

Coupler connectors

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings

Coupler connector,
female assemblyCoupler connector,
male assembly

Description		Ordering data				Ordering data			
Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		8-pos.		17-pos.		8-pos.		17-pos.	
Coupler connector , with contact carrier, without contacts									
5 mm ... 8 mm		1619015	1	1607647	1	1619011	1	1607630	1
8 mm ... 10 mm		1619016	1	1607649	1	1619012	1	1607631	1
10 mm ... 12.5 mm		1619017	1	1624533	1	1619013	1	1624530	1
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Device connectors,
straight, front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Contact insert for support on the device or can be snapped in
- Individual marking of connectors with color rings

Device connector, straight,
female assemblyDevice connector, straight,
male assembly

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		8-pos.		17-pos.		8-pos.		17-pos.	
Device connector , with contact carrier, without contacts, contact insert for support on the device									
Flange dimensions: 25.75 mm x 25.75 mm		1619197	1	1619206	1	1619196	1	1619202	1
Device connector , with contact carrier, without contacts, contact insert can be snapped in									
Flange dimensions: 25.75 mm x 25.75 mm		1619220	1	1619226	1	1619219	1	1619225	1
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			
Unlocking tool for contact carriers		See page 179				See page 179			

Circular connectors

M17 signal connectors

Device connectors,
angled, rotatable,
front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Housing can be freely rotated up to 308°
- Individual marking of connectors with color rings
- Flange versions for M2.5 or M3 fixing



Device connector, angled, rotatable,
female assembly



Device connector, angled, rotatable,
male assembly

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	8-pos.		17-pos.		8-pos.		17-pos.	
	Device connector, angled, rotatable, with contact carrier, without contacts							
Fixing with M2.5	1620440	1	1620442	1	1620439	1	1620441	1
Device connector, angled, rotatable, with contact carrier, without contacts								
Fixing with M3	1620455	1	1620457	1	1620456	1	1620458	1
Accessories				Accessories				
Crimp contacts	For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			

Device connectors, central fastening thread, front and rear mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Snapping in the contact carriers from the device side
- Individual marking of connectors with color rings



Device connector, central fixing,
female assembly



Device connector, central fixing,
male assembly

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	8-pos.		17-pos.		8-pos.		17-pos.	
Device connector, front mounting, M18 x 0.75 fastening thread, with contact carrier, without contacts	1619036	1	1613542	1	1618584	1	1613540	1
Device connector, rear mounting, M20 x 1.5 fastening thread, with contact carrier, without contacts	1619035	1	1613543	1	1619034	1	1613541	1
Description	Accessories				Accessories			
	Type	Order No.	Pcs./Pkt.		Type	Order No.	Pcs./Pkt.	
	ST-E2015151 RC-13041	1613831 1600417	10 10		ST-E2015151 RC-13041	1613831 1600417	10 10	
Crimp contacts	For female contacts, see page 70 onwards				For male contacts, see page 70 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			
Unlocking tool for contact carriers	See page 179				See page 179			

Circular connectors

M17 signal connectors

Crimp contacts, turned

Depending on the number of positions, assemble the M17 signal connectors with Ø 1.0 mm or Ø 0.6 mm contacts.

- 8-pos. versions: contacts with Ø 1.0 mm
- 17-pos. versions: contacts with Ø 0.6 mm

Note:

Depending on the litz wire used, the connection cross sections (crimp ranges) can differ from the values listed below.



Crimp contact, female



Crimp contact, male

		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact female Ø 0.6 mm	0.06 ... 0.25	ST-06KS010	1607580	100			
	0.14 ... 0.34	ST-06KS020	1607581	100			
	0.34 ... 0.50	ST-06KS030	1607582	100			
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25	ST-10KS010	1618239	100			
	0.34 ... 0.50	ST-10KS020	1618251	100			
	0.25 ... 1.0	ST-10KS035	1618464	100			
Contact male Ø 0.6 mm	0.06 ... 0.25				ST-06KP010	1607577	100
	0.14 ... 0.34				ST-06KP020	1607578	100
	0.34 ... 0.50				ST-06KP030	1607579	100
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25				ST-10KP010	1618255	100
	0.34 ... 0.50				ST-10KP020	1618256	100
	0.25 ... 1.0				ST-10KP035	1618458	100
		Accessories			Accessories		
Crimping tools		Order separately, see page 177			Order separately, see page 177		

Notes:

Each connector housing type can be assembled with male or female contacts.

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 PRO series signal connectors

Mechanical and electrical data

Mechanical data	
Housing material:	Die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Thermoplastic polyester (PBT), polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Temperature range:	-40°C ... 125°C
Cable entry:	External cable diameter 3 to 15 mm
Type of locking:	M23 ONECLICK fast locking system, Cable connector with optional M23 x 1 standard locking
Mechanical insertion cycles:	Standard: 100, punched-rolled crimp contacts: up to 500
Protection class:	IP66/IP68

Electrical data							
Number of positions	6	7	9 (8+1)		12	17	
Contacts	6	7	8	+	1	12	17
Contact Ø [mm]	2	2	1	2	1	1	
Litz wire cross section							
Crimp connection: contacts x [mm²] max.	6 x 2.5	7 x 2.5	8 x 0.56 + 1 x 2.5		12 x 1.0	17 x 1.0	
Nominal current per contact at 25°C ¹⁾ [A]	20	20	8	20	8	8	
Specifications in accordance with DIN EN 61984:2009							
Rated voltage [V AC/DC]	300	300	300		150	125	
Test/surge voltage [kV AC]	2.5	2.5	2.5		1.5	2	
Overvoltage category	II	II	II		II	II	
Pollution degree ²⁾	3	3	3		3	3	
Installation altitude [m]	Up to 2000	Up to 2000	Up to 2000		Up to 2,000	Up to 2000	
Cable clamping area ³⁾ Max. Ø [mm]	14.5	14.5	14.5		14.5	15	

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Note:

In contrast to connecting equipment, connectors may only be plugged in / unplugged when the power supply is disconnected.

Contact chamber numbering (view of plug-in side)		
Direction of rotation for contact chamber numbering (view of plug-in side)		
	Forward running (standard)	Reverse running (standard)
Number of positions	Male	Female
6-pos. Crimp		
7-pos. Crimp		
9-pos. (8 + 1) Crimp		
12-pos. Crimp		
17-pos. Crimp		

Note:

The connectors can be assembled with male or female contacts depending on the application.

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 PRO series signal connectors

Selection guide

M23 PRO series signal connectors
12- and 17-pos., up to 8 A 150 V,
crimp connection.

- Cable connectors
- Device connectors (device flanges)

The connectors can be furnished with
the corresponding crimp contacts.

Every housing type can be assembled
with male or female contacts. The product
chart provides an overview of the available
components.

Connector type

Cable connectors, short design

M23 ONECLICK fast locking system,
see page 76.



M23 x 1 standard locking,
see page 76.



ONECLICK Technology [®]
Designed by PHOENIX CONTACT

Shielded

Device connectors

Front mounting,
angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 77.



Front mounting,
angled, rotatable,
flange dimensions: 28 mm x 28 mm,
see page 77.



Shielded

For crimp connection:

Tools/accessories

Female contacts

Turned, see page 78.



Punched-rolled, taped,
see page 78.



Crimping tools

Crimping pliers for rolled
crimp contacts,
see page 176.



Crimping pliers with digital display for
turned crimp contacts,
see page 176.



Tools/accessories

Unlocking tool for device connectors for releasing
the contact carriers from the plug-in side,
see page 179.



Female contact
Male contact

Female contact
Male contact

All housings can be fitted with male or female crimp contacts

Male contacts

Turned, see page 78.



Punched-rolled, taped,
see page 78.

**Note:**

For safety reasons, only use female
contacts in the live part of the connector.

Circular connectors

M23 PRO series signal connectors

Cable connectors, short design, ONECLICK fast locking system

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts



6-, 7-, 8+1-pos.

new



12-, 17-pos.

new

Ordering data

Description	Cable clamping area

Cable connector, short, with contact carrier, without contacts, for female assembly, crimp connection

Universal gasket	3 mm ... 15 mm
	4 mm ... 8.5 mm
	6 mm ... 10 mm
	9 mm ... 15 mm

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
6-pos.		7-pos.		8+1-pos.	

1629184	1	1629180	1	1629172	1
1629187	1	1629183	1	1629175	1
1629186	1	1629182	1	1629174	1
1629185	1	1629181	1	1629173	1

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			

1629164	1	1629156	1
1629167	1	1629159	1
1629166	1	1629158	1
1629165	1	1629157	1

Cable connector, short, with contact carrier, without contacts, for male assembly, crimp connection

Universal gasket	3 mm ... 15 mm
	4 mm ... 8.5 mm
	6 mm ... 10 mm
	9 mm ... 15 mm

1629188	1	1629176	1	1629168	1
1629191	1	1629179	1	1629171	1
1629190	1	1629178	1	1629170	1
1629189	1	1629177	1	1629169	1

1629160	1	1629152	1
1629163	1	1629155	1
1629162	1	1629154	1
1629161	1	1629153	1

Accessories

Crimp contacts

Order separately, see page 78 onwards

Accessories

Order separately, see page 78 onwards

Cable connectors, short design, standard locking

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts



6-, 7-, 8+1-pos.

new



12-, 17-pos.

new

Ordering data

Description	Cable clamping area

Cable connector, short, with contact carrier, without contacts, for female assembly, crimp connection

Universal gasket	3 mm ... 15 mm
	4 mm ... 8.5 mm
	6 mm ... 10 mm
	9 mm ... 15 mm

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
6-pos.		7-pos.		8+1-pos.	

1629236	1	1629228	1	1629220	1
1629239	1	1629231	1	1629223	1
1629238	1	1629230	1	1629222	1
1629237	1	1629229	1	1629221	1

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
12-pos.		17-pos.			

1629212	1	1629204	1
1629215	1	1629207	1
1629214	1	1629206	1
1629213	1	1629205	1

Cable connector, short, with contact carrier, without contacts, for male assembly, crimp connection

Universal gasket	3 mm ... 15 mm
	4 mm ... 8.5 mm
	6 mm ... 10 mm
	9 mm ... 15 mm

1629232	1	1629224	1	1629216	1
1629235	1	1629227	1	1629219	1
1629234	1	1629226	1	1629218	1
1629233	1	1629225	1	1629217	1

1629208	1	1629200	1
1629211	1	1629203	1
1629210	1	1629202	1
1629209	1	1629201	1

Accessories

Crimp contacts

Order separately, see page 78 onwards

Accessories

Order separately, see page 78 onwards

**Device connectors,
angled, rotatable**

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts



new

Flange dimensions: 26 mm x 26 mm,
12-pos., 17-pos.



new

Flange dimensions: 28 mm x 28 mm,
12-pos., 17-pos.

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		12-pos.		17-pos.		12-pos.		17-pos.	
Device connector, angled, rotatable, with contact carrier, without contacts, for female assembly, crimp connection		1628499	1	1628497	1	1628495	1	1628493	1
Device connector, angled, rotatable, with contact carrier, without contacts, for male assembly, crimp connection		1628498	1	1628496	1	1628494	1	1628492	1
		Accessories				Accessories			
Crimp contacts		Order separately, see page 78 onwards				Order separately, see page 78 onwards			

Crimp contacts

Male and female crimp contacts with various connection cross sections can be ordered for each crimp contact carrier.



Punched-rolled crimp contacts



Turned crimp contacts

Ordering data				Ordering data			
Description	Contacts / connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Crimp contact for contact carriers, 6-pos., 6 x Ø2.0 mm							
	Male Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Female Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
	Male Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Female Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
Crimp contact for contact carriers, 7-pos., 7 x Ø2.0 mm							
	Male Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Female Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
	Male Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Female Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
Crimp contact for contact carriers, 9-pos. (8+1), 8 x Ø1.0 mm, 1 x Ø2.0 mm							
	Male Ø1.0 mm / 0.14 ... 0.56				RC-12P2000	1597862	100
	Female Ø1.0 mm / 0.14 ... 0.56				RC-12S2000	1599600	100
	Male Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Female Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
	Male Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Female Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm							
	Male Ø 1.0 mm / 0.08 ... 0.22				RC-11P2000	1596770	100
	Female Ø 1.0mm / 0.08 ... 0.22				RC-11S2000	1596772	100
	Male Ø1.0 mm / 0.14 ... 0.56				RC-12P2000	1597862	100
	Female Ø1.0 mm / 0.14 ... 0.56				RC-12S2000	1599600	100
	Male Ø 1.0 mm / 0.5 ... 1.0				RC-1KP2000	1602996	100
	Female Ø 1.0mm / 0.5 ... 1.0				RC-1KS2000	1602998	100
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm							
	Single contact male Ø 1.0 mm / 0.22 ... 0.56	RC-22P2000	1603321	100			
	Single contact female Ø 1.0 mm / 0.22 ... 0.56	RC-22S2000	1603327	100			
	Roll with 500 pieces, male Ø 1.0 mm / 0.22 ... 0.56	RC-22P2300	1603324	1			
	Roll with 500 pieces, female Ø 1.0 mm / 0.22 ... 0.56	RC-22S2300	1603330	1			
	Roll with 10,000 pieces, male Ø 1.0 mm / 0.22 ... 0.56	RC-22P2400	1603325	1			
	Roll with 10,000 pieces, female Ø 1.0 mm / 0.22 ... 0.56	RC-22S2400	1603332	1			
Accessories				Accessories			
See page 176				See page 176			

Circular connectors

M23 signal connectors

Mechanical and electrical data

Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Thermoplastic polyester (PBT), polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Solder cup, crimp connection, solder pin
Sealing and O-ring:	NBR
Flat gasket:	NBR, fiber-reinforced NBR
Temperature range:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 3 to 14.5 mm, shielded
Type of locking:	M23 SPEEDCON fast locking system, cable connector with M23 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data										
Number of positions	6	7	9 (8+1)		12	17	19 (16+3)		19 (16+2+PE)	
Contacts	6	7	8	+ 1	12	17	16	+ 3	16	+ 2+PE
Contact Ø [mm]	2	2	1	2	1	1	1	1.5	1	1.5
Litz wire cross section										
Solder connection: contacts x [mm²] max.	6 x 2.5	7 x 2.5	8 x 1.0 + 1 x 2.5		12 x 1.0	17 x 1.0	16 x 1.0 + 3 x 1.0		–	
Crimp connection: contacts x [mm²] max.	6 x 2.5	7 x 2.5	8 x 0.56 + 1 x 2.5		12 x 0.56	17 x 0.56	–		16 x 1.0 + 3 x 1.0	
Nominal current per contact at 25°C ¹⁾ [A]	20	20	8	20	8	8	8	10	8	10
Specifications in accordance with DIN EN 61984:2009										
Rated voltage [V AC/DC]	300	300	300		150	150	150		150	
Test/surge voltage [kV AC]	2.5	2.5	2.5		1.5	1.5	1.5		1.5	
Overvoltage category	II	II	II		II	II	II		II	
Pollution degree ²⁾	3	3	3		3	3	3		3	
Installation altitude [m]	Up to 2000	Up to 2000	Up to 2000		Up to 2000	Up to 2000	Up to 2000		Up to 2000	
Cable clamping area ³⁾ Max. Ø [mm]	14.5	14.5	14.5		14.5	14.5	14.5		14.5	

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

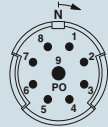
³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Note:

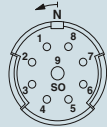
In contrast to connecting equipment, connectors may only be plugged in / unplugged when the power supply is disconnected.

Contact chamber numbering
(view of plug-in side)

**Direction of rotation for
contact chamber numbering**
(view of plug-in side)



Forward running (standard)



Reverse running (standard)

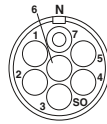
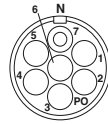
Number of positions

Male

Female

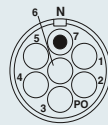
6-pos.

Solder / crimp / solder-in



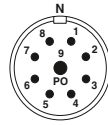
7-pos.

Solder / crimp / solder-in



9-pos. (8 + 1)

Solder / crimp / solder-in



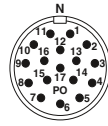
12-pos.

Solder / crimp / solder-in



17-pos.

Solder / crimp / solder-in



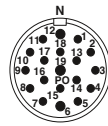
19-pos. (16 + 3)

Solder



19-pos. (16 + 2 + PE)

Crimp



Note:

The connectors can be assembled with male or female contacts depending on the application.

For safety reasons, only use female contacts in the live part of the connector.

Selection guide

M23 signal connectors
6- to 19-pos., up to 20 A / 300 V,
solder, crimp, and solder-in connection.

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

In the case of crimp connection, the
respective crimp contacts must be added
depending on the connection cross
section.

Every housing type can be assembled
with male or female contacts. The product
chart provides an overview of the available
components.

Connector type

Cable connectors

SPEEDCON fast locking system,
see page 84.

M23 x 1 standard locking,
see page 86.



Shielded

Coupler connectors

See page 88.



Shielded

Device connectors

Front mounting,
Pg13.5 fastening thread,
see page 94.

Front mounting,
M20 fastening thread,
see phoenixcontact.net/products



Front mounting,
flange dimensions: 25 mm x 25 mm,
see page 100.

Front mounting, solder-in connection,
flange dimensions: 25 mm x 25 mm,
see phoenixcontact.net/products



Front mounting,
angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 104.



Rear mounting,
central fixing nut,
see page 102.



Shielded

For crimp connection:**Female contacts**

Turned, see page 105.



Punched-rolled, taped,
see page 105.

**Male contacts**

Turned, see page 105.



Punched-rolled, taped,
see page 105.



All housings can be fitted with male or female crimp contacts

Tools/accessories**Crimping tools**

Crimping pliers for rolled
crimp contacts,
see page 176.



Crimping pliers with digital display for
turned crimp contacts,
see page 176.

**Tools/accessories**

Unlocking tool for device connectors for releasing
the contact carriers from the plug-in side,
see page 179.



Color rings for individually marking the connectors,
see page 180.

**Note:**

For safety reasons, only use female
contacts in the live part of the connector.

Circular connectors

M23 signal connectors

Cable connectors, SPEEDCON fast locking system

- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		6-pos.		7-pos.		8+1-pos.		12-pos.	
Cable connector, with contact carrier, with female contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619605	1	1619601	1	1619597	1	1619593	1
	4 mm ... 6 mm	1619579	1	1619575	1	1619571	1	1619567	1
	6 mm ... 10 mm	1619534	1	1619530	1	1619526	1	1619522	1
	10 mm ... 14.5 mm	1619508	1	1619504	1	1619500	1	1619496	1
Cable connector, with contact carrier, with male contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619604	1	1619600	1	1619596	1	1619592	1
	4 mm ... 6 mm	1619578	1	1619574	1	1619570	1	1619548	1
	6 mm ... 10 mm	1619533	1	1619529	1	1619525	1	1619521	1
	10 mm ... 14.5 mm	1619507	1	1619503	1	1619499	1	1619495	1
Cable connector, with contact carrier, without contacts, for female assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619603	1	1619599	1	1619595	1	1619591	1
	4 mm ... 6 mm	1619577	1	1619573	1	1619569	1	1619547	1
	6 mm ... 10 mm	1619532	1	1619528	1	1619524	1	1619520	1
	10 mm ... 14.5 mm	1619506	1	1619502	1	1619498	1	1619489	1
Cable connector, with contact carrier, without contacts, for male assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619602	1	1619598	1	1619594	1	1619590	1
	4 mm ... 6 mm	1619576	1	1619572	1	1619568	1	1619546	1
	6 mm ... 10 mm	1619531	1	1619527	1	1619523	1	1619519	1
	10 mm ... 14.5 mm	1619505	1	1619501	1	1619497	1	1619488	1
		Accessories				Accessories			
For crimp connection: crimp contacts		Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.	

1619585	1	1619581	1
1619541	1	1619537	1
1619514	1	1619510	1
1619483	1	1619479	1

1619584	1	1619580	1
1619540	1	1619536	1
1619513	1	1619509	1
1619482	1	1619478	1

1619583	1
1619539	1
1619512	1
1619481	1

1619582	1
1619538	1
1619511	1
1619480	1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
16+2+PE-pos.			

1623838	1
1623836	1
1623834	1
1623832	1

1623837	1
1623835	1
1623833	1
1623831	1

Accessories

Order separately, see page 105 onwards
See page 180
See page 181

Accessories

Order separately, see page 105 onwards
See page 180
See page 181

Circular connectors

M23 signal connectors

Cable connectors, M23 standard locking

- Standard knurled nut compatible with mating connectors with SPEEDCON and M23 standard external thread
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		6-pos.		7-pos.		8+1-pos.		12-pos.	
Cable connector, with contact carrier, with female contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619776	1	1619772	1	1619768	1	1619764	1
	4 mm ... 6 mm	1619750	1	1619746	1	1619742	1	1619738	1
	6 mm ... 10 mm	1619724	1	1619720	1	1619716	1	1619710	1
	10 mm ... 14.5 mm	1619659	1	1619655	1	1619651	1	1619647	1
Cable connector, with contact carrier, with male contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619775	1	1619771	1	1619767	1	1619763	1
	4 mm ... 6 mm	1619749	1	1619745	1	1619741	1	1619737	1
	6 mm ... 10 mm	1619723	1	1619719	1	1619715	1	1619709	1
	10 mm ... 14.5 mm	1619658	1	1619654	1	1619650	1	1619646	1
Cable connector, with contact carrier, without contacts, for female assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619774	1	1619770	1	1619766	1	1619762	1
	4 mm ... 6 mm	1619748	1	1619744	1	1619740	1	1619736	1
	6 mm ... 10 mm	1619722	1	1619718	1	1619714	1	1619708	1
	10 mm ... 14.5 mm	1619657	1	1619653	1	1619649	1	1619645	1
Cable connector, with contact carrier, without contacts, for male assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619773	1	1619769	1	1619765	1	1619761	1
	4 mm ... 6 mm	1619747	1	1619743	1	1619739	1	1619735	1
	6 mm ... 10 mm	1619721	1	1619717	1	1619711	1	1619707	1
	10 mm ... 14.5 mm	1619656	1	1619652	1	1619648	1	1619644	1
		Accessories				Accessories			
For crimp connection: crimp contacts		Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1619756	1	1619752	1				
1619730	1	1619726	1				
1619702	1	1619661	1				
1619639	1	1619635	1				
1619755	1	1619751	1				
1619729	1	1619725	1				
1619701	1	1619660	1				
1619638	1	1619634	1				
1619754	1	1623846	1				
1619728	1	1623844	1				
1619700	1	1623842	1				
1619637	1	1623840	1				
1619753	1	1623845	1				
1619727	1	1623843	1				
1619699	1	1623841	1				
1619636	1	1623839	1				
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Coupler connectors

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		6-pos.		7-pos.		8+1-pos.		12-pos.	
Coupler connector, with contact carrier, with female contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1620172	1	1620168	1	1620164	1	1620160	1
	4 mm ... 6 mm	1620145	1	1620141	1	1620137	1	1620133	1
	6 mm ... 10 mm	1620119	1	1620115	1	1620079	1	1620075	1
	10 mm ... 14.5 mm	1620046	1	1620042	1	1620036	1	1620032	1
Coupler connector, with contact carrier, with male contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1620171	1	1620167	1	1620163	1	1620159	1
	4 mm ... 6 mm	1620144	1	1620140	1	1620136	1	1620132	1
	6 mm ... 10 mm	1620118	1	1620114	1	1620078	1	1620074	1
	10 mm ... 14.5 mm	1620045	1	1620041	1	1620035	1	1620031	1
Coupler connector, with contact carrier, without contacts, for female assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1620170	1	1620166	1	1620162	1	1620158	1
	4 mm ... 6 mm	1620143	1	1620139	1	1620135	1	1620131	1
	6 mm ... 10 mm	1620117	1	1620081	1	1620077	1	1620073	1
	10 mm ... 14.5 mm	1620044	1	1620038	1	1620034	1	1620030	1
Coupler connector, with contact carrier, without contacts, for male assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1620169	1	1620165	1	1620161	1	1620157	1
	4 mm ... 6 mm	1620142	1	1620138	1	1620134	1	1620130	1
	6 mm ... 10 mm	1620116	1	1620080	1	1620076	1	1620072	1
	10 mm ... 14.5 mm	1620043	1	1620037	1	1620033	1	1620029	1
		Accessories				Accessories			
For crimp connection: crimp contacts		Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1620151	1	1620147	1				
1620125	1	1620121	1				
1620052	1	1620048	1				
1620024	1	1620020	1				
1620150	1	1620146	1				
1620124	1	1620120	1				
1620051	1	1620047	1				
1620023	1	1620019	1				
1620149	1			1624006	1		
1620123	1			1624009	1		
1620050	1			1624008	1		
1620022	1			1624007	1		
1620148	1			1624010	1		
1620122	1			1624013	1		
1620049	1			1624012	1		
1620021	1			1624011	1		
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Cable connectors, angled, SPEEDCON fast locking system

- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings
- 8 different cable outlet directions can be set



6- and 7-pos.



8+1-pos., 12-pos.

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		6-pos.		7-pos.		8+1-pos.		12-pos.	
Cable connector, angled, with contact carrier, with female contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619450	1	1619446	1	1619442	1	1619438	1
	4 mm ... 6 mm	1619424	1	1619420	1	1619416	1	1619412	1
	6 mm ... 10 mm	1619398	1	1619394	1	1619390	1	1619386	1
	10 mm ... 14.5 mm	1619372	1	1619366	1	1619362	1	1619358	1
Cable connector, angled, with contact carrier, with male contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619449	1	1619445	1	1619441	1	1619437	1
	4 mm ... 6 mm	1619423	1	1619419	1	1619415	1	1619411	1
	6 mm ... 10 mm	1619397	1	1619393	1	1619389	1	1619385	1
	10 mm ... 14.5 mm	1619371	1	1619365	1	1619361	1	1619357	1
Cable connector, angled, with contact carrier, without contacts, for female assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619448	1	1619444	1	1619440	1	1619436	1
	4 mm ... 6 mm	1619422	1	1619418	1	1619414	1	1619410	1
	6 mm ... 10 mm	1619396	1	1619392	1	1619388	1	1619384	1
	10 mm ... 14.5 mm	1619368	1	1619364	1	1619360	1	1619356	1
Cable connector, angled, with contact carrier, without contacts, for male assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619447	1	1619443	1	1619439	1	1619435	1
	4 mm ... 6 mm	1619421	1	1619417	1	1619413	1	1619409	1
	6 mm ... 10 mm	1619395	1	1619391	1	1619387	1	1619383	1
	10 mm ... 14.5 mm	1619367	1	1619363	1	1619359	1	1619354	1
		Accessories				Accessories			
For crimp connection: crimp contacts		Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.	

1619430	1	1619426	1
1619404	1	1619400	1
1619378	1	1619374	1
1619349	1	1619345	1

1619429	1	1619425	1
1619403	1	1619399	1
1619377	1	1619373	1
1619348	1	1619344	1

1619428	1
1619402	1
1619376	1
1619347	1

1619427	1
1619401	1
1619375	1
1619346	1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.

1624080	1
1624081	1
1624082	1
1624083	1

1624084	1
1624085	1
1624086	1
1624087	1

Accessories

Order separately, see page 105 onwards
See page 180
See page 181

Accessories

Order separately, see page 105 onwards
See page 180
See page 181

Circular connectors

M23 signal connectors

Cable connectors, angled, M23 standard locking

- Standard knurled nut compatible with mating connectors with SPEEDCON and M23 standard external thread
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings
- 8 different cable outlet directions can be set



6- and 7-pos.



8+1-pos., 12-pos.

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		6-pos.		7-pos.		8+1-pos.		12-pos.	
Cable connector, with contact carrier, with female contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619343	1	1619339	1	1619335	1	1619331	1
	4 mm ... 6 mm	1620291	1	1620287	1	1620283	1	1620279	1
	6 mm ... 10 mm	1620262	1	1620258	1	1620254	1	1620250	1
	10 mm ... 14.5 mm	1620212	1	1620208	1	1620190	1	1620186	1
Cable connector, angled, with contact carrier, with male contacts, solder connection									
Universal gasket	3 mm ... 14.5 mm	1619342	1	1619338	1	1619334	1	1619330	1
	4 mm ... 6 mm	1620290	1	1620286	1	1620282	1	1620278	1
	6 mm ... 10 mm	1620261	1	1620257	1	1620253	1	1620249	1
	10 mm ... 14.5 mm	1620211	1	1620207	1	1620189	1	1620185	1
Cable connector, angled, with contact carrier, without contacts, for female assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619341	1	1619337	1	1619333	1	1620303	1
	4 mm ... 6 mm	1620289	1	1620285	1	1620281	1	1620277	1
	6 mm ... 10 mm	1620260	1	1620256	1	1620252	1	1620248	1
	10 mm ... 14.5 mm	1620210	1	1620192	1	1620188	1	1620184	1
Cable connector, angled, with contact carrier, without contacts, for male assembly, crimp connection									
Universal gasket	3 mm ... 14.5 mm	1619340	1	1619336	1	1619332	1	1620302	1
	4 mm ... 6 mm	1620288	1	1620284	1	1620280	1	1620276	1
	6 mm ... 10 mm	1620259	1	1620255	1	1620251	1	1620247	1
	10 mm ... 14.5 mm	1620209	1	1620191	1	1620187	1	1620183	1
		Accessories				Accessories			
For crimp connection: crimp contacts		Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.					
1620297	1	1620293	1				
1620268	1	1620264	1				
1620218	1	1620214	1				
1620178	1	1620174	1				
1620296	1	1620292	1				
1620267	1	1620263	1				
1620217	1	1620213	1				
1620177	1	1620173	1				
1620295	1	1624071	1				
1620266	1	1624072	1				
1620216	1	1624073	1				
1620176	1	1624074	1				
1620294	1	1624075	1				
1620265	1	1624076	1				
1620215	1	1624077	1				
1620175	1	1624078	1				
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors, front mounting

– Pg13.5 fastening thread

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	6-pos.		7-pos.		8+1-pos.		12-pos.	
Device connector, with contact carrier, with female contacts, solder connection, Pg13.5 central fastening thread, axial seal	1619903	1	1619899	1	1619895	1	1619891	1
Device connector, with contact carrier, with male contacts, solder connection, Pg13.5 central fastening thread, axial seal	1619902	1	1619898	1	1619894	1	1619890	1
Device connector, with contact carrier, without contacts, for female assembly, crimp connection, Pg13.5 central fastening thread, axial seal	1619901	1	1619897	1	1619893	1	1619889	1
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, Pg13.5 central fastening thread, axial seal	1619900	1	1619896	1	1619892	1	1619888	1
	Accessories				Accessories			
For crimp connection: crimp contacts	Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1619883	1	1619879	1				
1619882	1	1619878	1				
1619881	1			1624019	1		
1619880	1			1624018	1		
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors, front mounting

– M20 fastening thread

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	6-pos.		7-pos.		8+1-pos.		12-pos.	
Device connector, with contact carrier, with female contacts, solder connection, M20 central fastening thread, axial seal	1619877	1	1619873	1	1619869	1	1619865	1
Device connector, with contact carrier, with male contacts, solder connection, M20 central fastening thread, axial seal	1619876	1	1619872	1	1619868	1	1619864	1
Device connector, with contact carrier, without contacts, for female assembly, crimp connection, M20 central fastening thread, axial seal	1619875	1	1619871	1	1619867	1	1619863	1
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, M20 central fastening thread, axial seal	1619874	1	1619870	1	1619866	1	1619862	1
Description	Accessories			Accessories				
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.		
	Locking nut, for mounting bore holes and polarization	RC-13041	1600417	10	RC-13041	1600417	10	
M20 x 1.5	Order separately, see page 105 onwards			Order separately, see page 105 onwards				
For crimp connection: crimp contacts	See page 180			See page 180				
Color rings, 50 pcs. in set (to be ordered separately)	See page 181			See page 181				
Protective caps (to be ordered separately)								



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1619857	1	1619853	1				
1619856	1	1619852	1				
1619855	1			1624017	1		
1619854	1			1624016	1		
Accessories				Accessories			
Type	Order No.	Pcs./Pkt.		Type	Order No.	Pcs./Pkt.	
RC-13041	1600417	10		RC-13041	1600417	10	
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors, front mounting, can be positioned

– M20 fastening thread

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	6-pos.		7-pos.		8+1-pos.		12-pos.	
Device connector, with contact carrier, with female contacts, solder connection, M20 central fastening thread, axial seal	1624045	1	1624047	1	1624049	1	1624051	1
Device connector, with contact carrier, with male contacts, solder connection, M20 central fastening thread, axial seal	1624044	1	1624046	1	1624048	1	1624050	1
Device connector, with contact carrier, without contacts, for female assembly, crimp connection, M20 central fastening thread, axial seal	1624030	1	1624031	1	1624032	1	1624033	1
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, M20 central fastening thread, axial seal	1624022	1	1624023	1	1624024	1	1624026	1
Description	Accessories			Accessories				
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.		
	Locking nut, for mounting bore holes and polarization							
M20 x 1.5	RC-13041	1600417	10	RC-13041	1600417	10		
For crimp connection: crimp contacts	Order separately, see page 105 onwards			Order separately, see page 105 onwards				
Color rings, 50 pcs. in set (to be ordered separately)	See page 180			See page 180				
Protective caps (to be ordered separately)	See page 181			See page 181				



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1624056	1	1624058	1				
1624055	1	1624057	1				
1624035	1			1623629	1		
1624029	1			1623630	1		
Accessories				Accessories			
Type	Order No.	Pcs./Pkt.		Type	Order No.	Pcs./Pkt.	
RC-13041	1600417	10		RC-13041	1600417	10	
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors, front mounting

- **Flange dimensions: 25 mm x 25 mm**
- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	6-pos.		7-pos.		8+1-pos.		12-pos.	
Device connector, with contact carrier, with female contacts, solder connection, flat gasket	1619993	1	1619989	1	1619973	1	1619969	1
Device connector, with contact carrier, with male contacts, solder connection, flat gasket	1619992	1	1619988	1	1619972	1	1619968	1
Device connector, with contact carrier, without contacts, for female assembly, crimp connection, flat gasket	1619991	1	1619987	1	1619971	1	1619967	1
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, flat gasket	1619990	1	1619986	1	1619970	1	1619966	1
	Accessories				Accessories			
For crimp connection: crimp contacts	Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			



17-pos., 16+3-pos.



16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1619961	1	1619957	1				
1619960	1	1619956	1				
1619959	1			1624015	1		
1619958	1			1624014	1		
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors, rear mounting

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 6- to 19-pos. versions, solder or crimp connection
- Individual marking of connectors with color rings



6- and 7-pos.



8+1-pos., 12-pos.

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	6-pos.		7-pos.		8+1-pos.		12-pos.	
Device connector, with contact carrier, with female contacts, solder connection, central fixing nut, axial seal	1619851	1	1619847	1	1619843	1	1619790	1
Device connector, with contact carrier, with male contacts, solder connection, central fixing nut, axial seal	1619850	1	1619846	1	1619842	1	1619789	1
Device connector, with contact carrier, without contacts, for female assembly, crimp connection, central fixing nut, axial seal	1619849	1	1619845	1	1619841	1	1619788	1
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, central fixing nut, axial seal	1619848	1	1619844	1	1619791	1	1619787	1
Accessories				Accessories				
For crimp connection: crimp contacts	Order separately, see page 105 onwards				Order separately, see page 105 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			



17-pos., 16+3-pos.



16+3-pos., 16+2+PE-pos.

Ordering data				Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
17-pos.		16+3-pos.		16+2+PE-pos.			
1619782	1	1619778	1				
1619781	1	1619777	1				
1619780	1			1624021	1		
1619779	1			1624020	1		
Accessories				Accessories			
Order separately, see page 105 onwards				Order separately, see page 105 onwards			
See page 180				See page 180			
See page 181				See page 181			

Circular connectors

M23 signal connectors

Device connectors,
angled, rotatable,
front mounting

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- Flange dimensions: 26 mm x 26 mm



8+1-, 12-, 17-pos.

Description
Device connector, with contact carrier, with male contacts, solder connection, angled, rotatable, axial seal
Device connector, with contact carrier, without contacts, for male assembly, crimp connection, angled, rotatable, axial seal

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
8+1-pos.		12-pos.		17-pos.	
1621746	1	1621741	1	1621745	1
1621735	1	1621738	1	1621744	1
Accessories					
For crimp connection: crimp contacts			Order separately, see page 105 onwards		
Color rings, 50 pcs. in set (to be ordered separately)			See page 180		

Crimp contacts

Male and female crimp contacts with various connection cross sections can be ordered for each crimp contact carrier.



Punched-rolled crimp contacts



Turned crimp contacts

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
Crimp contact for contact carriers, 6-pos., 6 x Ø2.0 mm		
	Male Ø 2.0 mm / 1.0 ... 1.5	
	Female Ø 2.0 mm / 1.0 ... 1.5	
	Male Ø 2.0 mm / 1.5 ... 2.5	
Crimp contact for contact carriers, 7-pos., 7 x Ø2.0 mm		
	Male Ø 2.0 mm / 1.0 ... 1.5	
	Female Ø 2.0 mm / 1.0 ... 1.5	
	Male Ø 2.0 mm / 1.5 ... 2.5	
Crimp contact for contact carriers, 9-pos. (8+1), 8 x Ø1.0 mm, 1 x Ø2.0 mm		
	Male Ø1.0 mm / 0.14 ... 0.56	
	Female Ø1.0 mm / 0.14 ... 0.56	
	Male Ø 2.0 mm / 1.5 ... 2.5	
	Female Ø 2.0 mm / 1.5 ... 2.5	
	Male Ø 2.0 mm / 1.0 ... 1.5	
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm		
	Male Ø 1.0 mm / 0.08 ... 0.22	
	Female Ø 1.0 mm / 0.08 ... 0.22	
	Male Ø1.0 mm / 0.14 ... 0.56	
	Female Ø1.0 mm / 0.14 ... 0.56	
	Male Ø 1.0 mm / 0.5 ... 1.0	
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm		
	Male Ø 1.0 mm / 0.08 ... 0.22	
	Female Ø 1.0 mm / 0.08 ... 0.22	
	Male Ø1.0 mm / 0.14 ... 0.56	
	Female Ø1.0 mm / 0.14 ... 0.56	
	Male Ø 1.0 mm / 0.5 ... 1.0	
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm		
	Single contact male Ø 1.0 mm / 0.22 ... 0.56	
	Single contact female Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 500 pieces, male Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 500 pieces, female Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 10,000 pieces, male Ø 1.0 mm / 0.22 ... 0.56	
Crimp contact for contact carriers, 12-pos., 12 x Ø 1.0 mm and 17-pos., 17 x Ø 1.0 mm		
	Roll with 10,000 pieces, female Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 10,000 pieces, male Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 10,000 pieces, female Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 10,000 pieces, male Ø 1.0 mm / 0.22 ... 0.56	
	Roll with 10,000 pieces, female Ø 1.0 mm / 0.22 ... 0.56	
Crimp contact for contact carriers, 19-pos. (16+2+PE), 16 x Ø1.0 mm, 2 x Ø1.5 mm, 1 x Ø1.5 mm (PE)		
	Male Ø 1.0 mm / 0.08 ... 0.22	
	Male Ø 1.0 mm / 0.14 ... 0.56	
	Male Ø 1.0 mm / 0.5 ... 1.0	
	Male Ø 1.5 mm / 0.75 ... 1.0	
	Female Ø 1.5 mm / 0.75 ... 1.0	
Crimp contact for contact carrier, 19-pos. (16+2+PE), 2 x Ø 1.5 mm		
	Male Ø 1.5 mm / 0.75 ... 1.0	
	Female Ø 1.5 mm / 0.75 ... 1.0	
	Male Ø 1.5 mm / 0.75 ... 1.0	
	Female Ø 1.5 mm / 0.75 ... 1.0	
	Male Ø 1.5 mm / 0.75 ... 1.0	
Crimp contact for contact carrier, 19-pos. (16+2+PE), 1 x Ø 1.5 mm		
	Male Ø 1.5 mm / 0.75 ... 1.0	
	Female Ø 1.5 mm / 0.75 ... 1.0	
	Male Ø 1.5 mm / 0.75 ... 1.0	
	Female Ø 1.5 mm / 0.75 ... 1.0	
	Male Ø 1.5 mm / 0.75 ... 1.0	

Accessories

See page 176

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
RC-5CP2000	1603513	50
	1603517	50
	1603505	50
	1603509	50
RC-5CS2000	1603513	50
	1603517	50
	1603505	50
	1603509	50
RC-5AP2000	1597862	100
	1599600	100
	1603505	50
	1603509	50
RC-5AS2000	1603513	50
	1603517	50
	1603505	50
	1603509	50
RC-12P2000	1596770	100
	1596772	100
	1597862	100
	1599600	100
RC-12S2000	1602996	100
	1602998	100
	1603513	50
	1603517	50
RC-11P2000	1603321	100
	1603327	100
	1603324	1
	1603330	1
RC-11S2000	1603325	1
	1603332	1
	1603321	100
	1603327	100
RC-12P2000	1603324	1
	1603330	1
	1603325	1
	1603332	1
RC-12S2000	1603321	100
	1603327	100
	1603324	1
	1603330	1
RC-1KP2000	1603325	1
	1603332	1
	1603321	100
	1603327	100
RC-1KS2000	1603324	1
	1603330	1
	1603325	1
	1603332	1
RC-15P2010	1623776	100
	1623777	100
	1623778	100
	1623779	100
RC-15P2020	1623777	100
	1623778	100
	1623779	100
	1623775	100
RC-15P2030	1623776	100
	1623777	100
	1623778	100
	1623779	100
RC-15S2000	1623777	100
	1623778	100
	1623779	100
	1623775	100
RC-15P2100	1623776	100
	1623777	100
	1623778	100
	1623779	100

Accessories

See page 176

Crimping tools

Circular connectors

M23 feedback connectors

Mechanical and electrical data

Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-20°C ... 125°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 3 to 14.5 mm, shielded
Type of locking:	M23 SPEEDCON screw locking, cable connector with M23 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data			
Number of positions		12	17
Contacts		12	17
Contact Ø	[mm]	1	1
Litz wire cross section, crimp contacts turned	[mm²]	0.08 ... 1.0	0.08 ... 1.0
Litz wire cross section, C-HC crimp contacts punched-rolled	[mm²]	0.06 ... 0.56	0.06 ... 0.56
Cable clamping area	Max. Ø [mm]	14.5	14.5
Nominal current per contact at 25°C ¹⁾	[A]	8	8
Specifications in accordance with DIN EN 61984:2009			
Rated voltage	[V AC/DC]	150	100
Test/surge voltage	[kV]	2.5	1.5
Overvoltage category		III	III
Pollution degree ²⁾		3	3
Installation altitude	[m]	Up to 3000	Up to 3000
Cable clamping area ³⁾	Max. Ø [mm]	14.5	14.5

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Note:

In contrast to connecting equipment, connectors may only be plugged in / unplugged when the power supply is disconnected.

Contact chamber numbering (view of plug-in side)				
Direction of rotation for contact chamber numbering (view of plug-in side)				
	Forward running (standard) R marked	Reverse running (standard) L marked	Reverse running (counter direction) L marked	Forward running (counter direction) R marked
Number of positions	Male	Female	Male	Female
12-pos. N-coding Crimp				
17-pos. N-coding Crimp				

Note:
The standard coding is "N". Other codings and numbers of positions available on request.

The connectors can be assembled with male or female contacts depending on the application.

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 feedback connectors

Selection guide

M23 feedback connectors

12- and 17-pos., N-coding, up to
8 A / 150 V, crimp ranges up to 1 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

Crimp contacts must be ordered
separately depending on the connection
cross section.

Every housing type can be assembled
with male or female contacts.

The connectors are available with
forward or reverse running contact
chamber numbering.

N (0°) and S (20°, on request) coding
positions are possible.

The product chart provides an overview
of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system,
see page 110.

M23 x 1 standard locking,
see page 110.



Square mounting flange for
cable and coupler connectors for
wall mounting,
see page 179.

Shielded

Coupler connectors

See page 111.



Square mounting flange for
cable and coupler connectors for
wall mounting,
see page 179.

Shielded

Device connectors

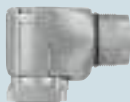
Straight, 4-hole mounting
Ø 3.2, see page 112.



Contact carrier for snapping in from the device side,
straight, 4-hole mounting Ø 3.2,
see page 112.



Angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 112.



Angled, rotatable,
flange dimensions: 28 mm x 28 mm,
see page 112.



Shielded

Crimp contacts

Female contacts

Turned, see page 113.



Male contacts

Turned, see page 113.



All housings can be fitted with male or female crimp contacts

Tools/accessories

Crimping tools

Crimping pliers with digital display for turned crimp contacts, see page 177.



Tools/accessories

Unlocking tool for device connectors with contact carriers for snapping in from the device side, see page 179.



Color rings for individually marking the connectors, see page 180.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 feedback connectors

Cable connectors, SPEEDCON fast locking system

- 12- and 17-pos. versions
- Individual marking of connectors with color rings



Cable connector, female assembly



Cable connector, male assembly

Ordering data

Description	Cable clamping area

Cable connector, with contact carrier, **without** contacts, **standard** direction of rotation

Universal gasket	3 mm ... 14.5 mm
	4 mm ... 6 mm
	6 mm ... 10 mm
	10 mm ... 14.5 mm

Order No.
12-pos.

Pcs./Pkt.

Order No.
17-pos.

Pcs./Pkt.

1619472
1619466
1619460
1619454

1
1
1
1

1619470
1619464
1619458
1619452

1
1
1
1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
12-pos.		17-pos.	

1619471
1619465
1619459
1619453

1
1
1
1

1619469
1619463
1619457
1619451

1
1
1
1

Cable connector, with contact carrier, **without** contacts, **reverse** direction of rotation

Universal gasket	3 mm ... 14.5 mm
	4 mm ... 6 mm
	6 mm ... 10 mm
	10 mm ... 14.5 mm

1619474
1619468
1619462
1619456

1
1
1
1

1619473
1619467
1619461
1619455

1
1
1
1

Accessories

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)

For female contacts, see page 113 onwards
See page 180

Accessories

For male contacts, see page 113 onwards
See page 180

Cable connectors, M23 standard locking

- M23 standard knurled nut
- 12- and 17-pos. versions
- Individual marking of connectors with color rings



Cable connector, female assembly



Cable connector, male assembly

Ordering data

Description	Cable clamping area

Cable connector housing, with contact carrier, **without** contacts, **standard** direction of rotation

Universal gasket	3 mm ... 14.5 mm
	4 mm ... 6 mm
	6 mm ... 10 mm
	10 mm ... 14.5 mm

Order No.
12-pos.

Pcs./Pkt.

Order No.
17-pos.

Pcs./Pkt.

1619631
1619625
1619616
1619610

1
1
1
1

1619629
1619623
1619614
1619608

1
1
1
1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
12-pos.		17-pos.	

1619630
1619624
1619615
1619609

1
1
1
1

1619628
1619619
1619613
1619607

1
1
1
1

Cable connector housing, with contact carrier, **without** contacts, **reverse** direction of rotation

Universal gasket	3 mm ... 14.5 mm
	4 mm ... 6 mm
	6 mm ... 10 mm
	10 mm ... 14.5 mm

1619633
1619627
1619618
1619612

1
1
1
1

1619632
1619626
1619617
1619611

1
1
1
1

Accessories

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)

For female contacts, see page 113 onwards
See page 180

Accessories

For male contacts, see page 113 onwards
See page 180

Coupler connectors

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 12- and 17-pos. versions
- Individual marking of connectors with color rings

Coupler connector,
female assemblyCoupler connector,
male assembly

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		12-pos.		17-pos.		12-pos.		17-pos.	
Coupler connector housing , with contact carrier, without contacts, standard direction of rotation									
Universal gasket	3 mm ... 14.5 mm	1620016	1	1620014	1	1620015	1	1620013	1
	4 mm ... 6 mm	1620009	1	1620007	1	1620008	1	1620006	1
	6 mm ... 10 mm	1620003	1	1620001	1	1620002	1	1620000	1
	10 mm ... 14.5 mm	1619997	1	1619995	1	1619996	1	1619994	1
Coupler connector housing , with contact carrier, without contacts, reverse direction of rotation									
Universal gasket	3 mm ... 14.5 mm	1620018	1			1620017	1		
	4 mm ... 6 mm	1620011	1			1620010	1		
	6 mm ... 10 mm	1620005	1			1620004	1		
	10 mm ... 14.5 mm	1619999	1			1619998	1		
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 113 onwards				For male contacts, see page 113 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			

Circular connectors

M23 feedback connectors

Device connectors, straight, front mounting

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- Contact insert for support on the device or can be snapped in



Device connector, straight, female assembly



Device connector, straight, male assembly

Ordering data

Description	Order No.	Pcs./Pkt.
Device connector, straight , with contact carrier, without contacts, 4-hole fastening with Ø 3.2 mm		
Standard direction of rotation	1607283	1
Reverse direction of rotation	1607307	1
Device connector, straight , with contact carrier, without contacts, 4-hole fastening with Ø 3.2 mm, contact insert can be snapped in		
Standard direction of rotation	1607830	1
Reverse direction of rotation	1607844	1

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	12-pos.		17-pos.
1607283	1	1607892	1
1607307	1		
1607830	1	1607893	1
1607844	1		

Accessories

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

For female contacts, see page 113 onwards
See page 180
See page 181

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	12-pos.		17-pos.
1607236	1	1607860	1
1607260	1		
1607804	1	1607863	1
1607817	1		

Accessories

For male contacts, see page 113 onwards
See page 180
See page 181

Device connectors, angled, rotatable, front mounting

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- Flange dimensions: 26 mm x 26 mm or 28 mm x 28 mm



Device connectors, angled, rotatable, female assembly



Device connectors, angled, rotatable, male assembly

Ordering data

Description	Order No.	Pcs./Pkt.
Device connector, angled, rotatable , with contact carrier, without contacts, flange dimensions: 26 mm x 26 mm		
Standard direction of rotation	1607280	1
Reverse direction of rotation	1607304	1
Device connector, angled, rotatable , with contact carrier, without contacts, flange dimensions: 28 mm x 28 mm		
Standard direction of rotation	1607827	1
Reverse direction of rotation	1607842	1

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	12-pos.		17-pos.
1607280	1	1607345	1
1607304	1		
1607827	1	1607887	1
1607842	1		

Accessories

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

For female contacts, see page 113 onwards
See page 180
See page 181

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	12-pos.		17-pos.
1607233	16	1607328	1
1607257	1		
1607802	1	1607852	1
1607814	1		

Accessories

For male contacts, see page 113 onwards
See page 180
See page 181

Crimp contacts, turned

Depending on the number of positions, assemble the M23 feedback connectors with 12 or 17 Ø 1 mm signal contacts from the SF series.

These contacts are also used as signal contacts with the M23 power connectors. This simplifies handling and storage considerably.

Note: Depending on the litz wire used, the connection cross sections (crimp ranges) can differ from the values listed below.



Crimp contacts, female



Crimp contacts, male

		Ordering data			Ordering data		
Description	Connection cross section [mm ²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact female Ø 1.0 mm	0.06 ... 0.2	SF-6CS2000	1605562	100			
	0.14 ... 0.5	SF-10KS004	1607356	100			
	0.5 ... 1.0	SF-6AS2000	1605557	100			
Contact male Ø 1.0 mm	0.06 ... 0.2				SF-6CP2000	1605559	100
	0.14 ... 0.5				SF-10KP004	1607355	100
	0.5 ... 1.0				SF-6AP2000	1605554	100
		Accessories			Accessories		
Crimping tools		Order separately, see page 177			Order separately, see page 177		

Notes:

Each connector housing type can be assembled with male or female contacts.

For safety reasons, only use male contacts in the live part of the connector.

Circular connectors

M23 hybrid connectors

Mechanical and electrical data

Mechanical data

Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 130°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 7.5 to 18 mm, shielded
Type of locking:	M23 SPEEDCON screw locking
Mechanical insertion cycles:	Standard: 100
Protection class:	IP67 when locked

Electrical data

Number of positions			13 (4 + 4 + 4 + PE), CAT5 (100 Mbps)						13 (8 + 4 + PE)					
Contacts			4	+	4	+	4	+	PE	8	+	4	+	PE
Contact Ø [mm]			0.8		1.0		2.0		2.0	1.0		2.0		2.0
Litz wire cross sections														
Cable and coupler connectors:														
Cable Ø max. 18 mm [mm ²]			0.08 ... 0.5		0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Device connectors: [mm ²]			0.08 ... 0.5		0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Nominal current per contact at 25°C ¹⁾ [A]			3.6		8		30		-	8		30		-
Specifications in accordance with DIN EN 61984:2009														
Rated voltage [V AC/DC]			50/50		50/50		630/850		-	50/50		630/850		-
Test/surge voltage [kV AC]			1.5		1.5		6		-	1.5		6		-
Overvoltage category [AC/DC]									-	III / II				-
Pollution degree ²⁾			3						3					
Cable clamping area ³⁾ Max. Ø [mm]			18						18					

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

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Circular connectors

M23 hybrid connectors

Selection guide

M23 hybrid connectors up to 30 A/630 V AC/850 V DC, crimp ranges up to 4 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

The connectors are pre-assembled on delivery. The connectors can be furnished with the corresponding crimp contacts.

The product chart provides an overview of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system, see page 118.

M23 x 1 standard interlocking, see page 118.



Shielded

Coupler connectors

See page 119.



Shielded

Device connectors

Straight, front mounting
see page 119.



Angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 120.



Straight, rear mounting
see page 120.



Angled, rotatable,
flange dimensions: 28 mm x 28 mm
see page 120.



Shielded

Crimp contacts

Female contacts

Turned, see page 121.



Male contacts

Turned, see page 121.



All housings can be fitted with male or female crimp contacts

Tools/accessories

Crimping pliers with digital display for turned crimp contacts, see page 177.



Accessories

Color rings for individually marking the connectors, see page 180.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 hybrid connectors

Cable connectors, hybrid, SPEEDCON fast locking system

- 4x power+PE, 4x signal,
4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Cable connector,
female assembly



Cable connector,
male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4 x signal + CAT5		8 x signal	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4 x signal + CAT5		8 x signal	

Description	Cable clamping area
Cable connector , with contact carrier, without contacts, crimp connection	
Universal gasket	7.5 mm ... 18 mm
	7.5 mm ... 9 mm
	9 mm ... 12 mm
	12 mm ... 15 mm
	15 mm ... 18 mm

1621517	1	1621524	1
1621520	1	1621525	1
1621521	1	1621526	1
1621522	1	1621527	1
1621523	1	1621528	1

1621529	1	1621534	1
1621530	1	1621535	1
1621531	1	1621536	1
1621532	1	1621537	1
1621533	1	1621538	1

Accessories

M23 hybrid cable, (5 x 2.5 + 2 x (2 x 0.5) + (4 x 22 AWG)C)C

Length of cable: 1 m
Length of cable: 20 m
Length of cable: 100 m

KC-88014311/1,00	1623127	1
KC-88014311/20,00	1622080	1
KC-88014311/100,00	1623039	1

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

See page 121
See page 180
See page 181

Accessories

KC-88014311/1,00	1623127	1
KC-88014311/20,00	1622080	1
KC-88014311/100,00	1623039	1

See page 121
See page 180
See page 181

Cable connectors, hybrid, standard locking

- 4x power+PE, 4x signal,
4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Cable connector,
female assembly



Cable connector,
male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4 x signal + CAT5		8 x signal	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4 x signal + CAT5		8 x signal	

Description	Cable clamping area
Cable connector , with contact carrier, without contacts, crimp connection	
Universal gasket	7.5 mm ... 18 mm
	7.5 mm ... 9 mm
	9 mm ... 12 mm
	12 mm ... 15 mm
	15 mm ... 18 mm

1621997	1	1622002	1
1621998	1	1622003	1
1621999	1	1622004	1
1622000	1	1622005	1
1622001	1	1622006	1

1622007	1	1622012	1
1622008	1	1622013	1
1622009	1	1622014	1
1622010	1	1622015	1
1622011	1	1622016	1

Accessories

M23 hybrid cable, (5 x 2.5 + 2 x (2 x 0.5) + (4 x 22 AWG)C)C

Length of cable: 1 m
Length of cable: 20 m
Length of cable: 100 m

KC-88014311/1,00	1623127	1
KC-88014311/20,00	1622080	1
KC-88014311/100,00	1623039	1

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

See page 121
See page 180
See page 181

Accessories

KC-88014311/1,00	1623127	1
KC-88014311/20,00	1622080	1
KC-88014311/100,00	1623039	1

See page 121
See page 180
See page 181

Coupler connectors, hybrid

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal

Coupler connector,
female assemblyCoupler connector,
male assembly

Description		Ordering data				Ordering data			
Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Coupler connector , with contact carrier, without contacts, crimp connection									
Universal gasket	7.5 mm ... 18 mm	1621539	1	1621544	1	1621549	1	1621554	1
	7.5 mm ... 9 mm	1621540	1	1621545	1	1621550	1	1621555	1
	9 mm ... 12 mm	1621541	1	1621546	1	1621551	1	1621556	1
	12 mm ... 15 mm	1621542	1	1621547	1	1621552	1	1621557	1
	15 mm ... 18 mm	1621543	1	1621548	1	1621553	1	1621558	1
		Accessories				Accessories			
M23 hybrid cable , (5 x 2.5 + 2 x (2 x 0.5) + (4 x 22 AWG)C)C									
Length of cable: 1 m		KC-88014311/1,00		1623127	1	KC-88014311/1,00		1623127	1
Length of cable: 20 m		KC-88014311/20,00		1622080	1	KC-88014311/20,00		1622080	1
Length of cable: 100 m		KC-88014311/100,00		1623039	1	KC-88014311/100,00		1623039	1
Crimp contacts		See page 121				See page 121			
Color rings , 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Device connectors, hybrid,
straight, front mounting

- The external thread is designed for the standard and SPEEDCON fast locking system
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal

Device connector, straight,
female assemblyDevice connector, straight,
male assembly

Description		Ordering data				Ordering data			
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Device connector , with contact carrier, without contacts									
Flange dimensions: 26 mm x 26 mm		1621567	1	1621568	1	1621569	1	1621570	1
		Accessories				Accessories			
Crimp contacts		See page 121				See page 121			
Color rings , 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Circular connectors

M23 hybrid connectors

Device connectors, hybrid, straight, rear mounting

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Device connector, straight, female assembly



Device connector, straight, male assembly

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Device connector, with contact carrier, without contacts	1624344	1	1627204	1	1627205	1	1627206	1
Accessories				Accessories				
Crimp contacts	See page 121				See page 121			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			

Device connectors, hybrid, angled, rotatable, front mounting

- The external thread is designed for the standard and SPEEDCON fast locking system
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal
- Housing can be freely rotated by 310°



Device connector, angled, rotatable, female assembly



Device connector, angled, rotatable, male assembly

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Device connector, with contact carrier, without contacts								
Flange dimensions: 26 mm x 26 mm	1621563	1	1621564	1	1621565	1	1621566	1
Device connector, with contact carrier, without contacts								
Flange dimensions: 28 mm x 28 mm	1621559	1	1621560	1	1621561	1	1621562	1
	Accessories				Accessories			
Crimp contacts	See page 121				See page 121			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			

Crimp contacts, turned



Crimp contacts, female



Crimp contacts, male

		Ordering data			Ordering data		
Description	Connection cross section [mm ²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact, Ø 0.8 mm	0.08 ... 0.25	SF-08KS010	1621571	100	SF-08KP010	1621574	100
	0.34 ... 0.50	SF-08KS020	1621573	100	SF-08KP020	1621575	100
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25	ST-10KS010	1618239	100	ST-10KP010	1618255	100
	0.34 ... 0.50	ST-10KS020	1618251	100	ST-10KP020	1618256	100
	0.25 ... 1.0	ST-10KS035	1618464	100	ST-10KP035	1618458	100
Contact, Ø 2.0 mm	0.25 ... 1.0	SF-20KS021	1621576	50	SF-20KP021	1621579	50
	1.0 ... 2.5	SF-20KS022	1621577	50	SF-20KP022	1621580	50
	2.5 ... 4.0	SF-20KS023	1621578	50	SF-20KP023	1621581	50

Circular connectors

M40 hybrid connectors

Mechanical and electrical data

Mechanical data

Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 130°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 9 to 26.5 mm, shielded
Type of locking:	M40 SPEEDCON screw locking
Mechanical insertion cycles:	Standard: 100
Protection class:	IP68/IP69K when locked

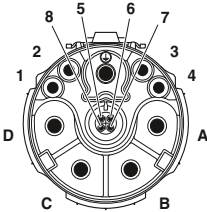
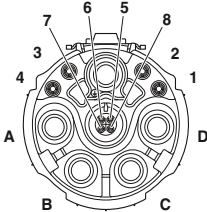
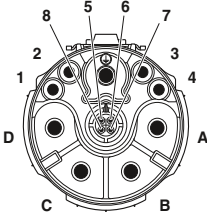
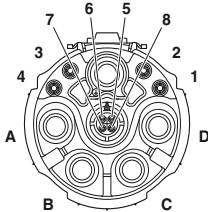
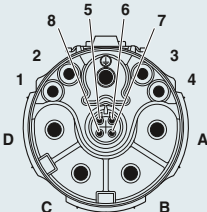
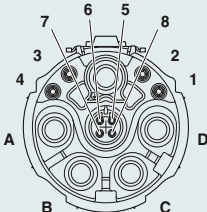
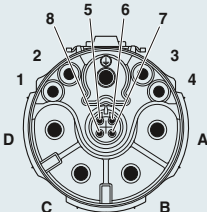
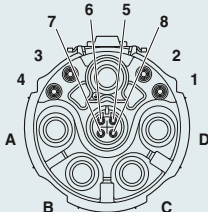
Electrical data

Number of positions		13 (4 + 4 + 4 + PE), CAT5 (100 Mbps)				13 (4 + 4 + 4 + PE), signal			
Contacts		4	+	4	+	4	+	4	+
Contact Ø	[mm]	0.8		1.0		3.6		3.6	
Litz wire cross sections									
Cable and coupler connectors:									
	Cable Ø max. 26.5 mm	[mm²]	0.08 ... 0.5	0.06 ... 1.5	2.5 ... 16.0	2.5 ... 16.0	0.06 ... 1.0	0.06 ... 1.5	2.5 ... 16.0
Device connectors:		[mm²]	0.08 ... 0.5	0.06 ... 1.5	2.5 ... 10.0	2.5 ... 10.0	0.06 ... 1.0	0.06 ... 1.5	2.5 ... 10.0
Nominal current per contact at 25°C ¹⁾		[A]	3.6	8	70	–	8	8	70
Specifications in accordance with DIN EN 61984:2009									
Rated voltage	[V AC/DC]	50/50	500/500	630/850	–	–	50/50	500/500	630/850
Test/surge voltage	[kV AC]	1.5	4	6	–	–	1.5	4	6
Overvoltage category	[AC/DC]	III / II				–	III / II		
Pollution degree ²⁾		3				–	3		
Installation altitude	[m]	Up to 3000				–	Up to 3000		
Cable clamping area ³⁾	Max. Ø [mm]	26.5				–	26.5		

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

³⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering (view of plug-in side)				
Number of positions	Male AC-coded	Female AC-coded	Male DC-coded	Female DC-coded
13-pos., CAT5 (100 Mbps) (4 + 4 + 4 + PE) Crimp				
13-pos., signal (4 + 4 + 4 + PE) Crimp				

Circular connectors

M40 hybrid connectors

Selection guide

M40 hybrid connectors up to
70 A/630 V AC/850 V DC,
crimp ranges up to 16 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

The connectors are pre-assembled on
delivery. The connectors can be furnished
with the corresponding crimp contacts.

The product chart provides an overview
of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system,
see page 126.



Shielded

Coupler connectors

See page 127.



Shielded

Device connectors

Straight,
see page 128.



Angled, rotatable,
see page 128.



Shielded

Crimp contacts

Female contacts

Turned, see page 129.



Male contacts

Turned, see page 129.



Tools/accessories

Crimping pliers with digital display for turned crimp contacts, see page 177.



Accessories

Color rings for individually marking the connectors, see page 180.



All housings can be fitted with male or female crimp contacts

Note:

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M40 hybrid connectors

Cable connectors, hybrid, SPEEDCON fast locking system

- 4x power+PE, 4x signal,
4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Cable connector,
female assembly



Cable connector,
male assembly

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)		4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	
Cable connector, AC-coded, with contact carrier, without contacts, crimp connection									
Universal gasket	9 mm ... 14 mm	1623324	1	1623329	1	1623332	1	1623335	1
	14 mm ... 20.5 mm	1623327	1	1623330	1	1623333	1	1623336	1
	20.5 mm ... 26.5 mm	1623328	1	1623331	1	1623334	1	1623337	1
Cable connector, DC-coded, with contact carrier, without contacts, crimp connection									
Universal gasket	9 mm ... 14 mm	1623683	1	1623686	1	1623692	1	1623695	1
	14 mm ... 20.5 mm	1623684	1	1623687	1	1623693	1	1623696	1
	20.5 mm ... 26.5 mm	1623685	1	1623688	1	1623694	1	1623697	1
		Accessories				Accessories			
M40 hybrid cable, (5 x 10 + 2 x (2 x 0.5) + (4 x 22 AWG)C)C									
Length of cable: 1 m		KC-88014448/1,00		1627298	1	KC-88014448/1,00		1627298	1
Length of cable: 20 m		KC-88014448/20,00		1627299	1	KC-88014448/20,00		1627299	1
Crimp contacts		see page 129				see page 129			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Coupler connectors, hybrid, M40 standard locking

- Compatible with mating connectors with SPEEDCON and M40 standard knurled nut
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Coupler connector,
female assembly



Coupler connector,
male assembly

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)		4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	
Coupler connector, AC-coded, with contact carrier, without contacts, crimp connection									
Universal gasket	9 mm ... 14 mm	1623339	1	1623344	1	1623356	1	1623359	1
	14 mm ... 20.5 mm	1623341	1	1623345	1	1623357	1	1623360	1
	20.5 mm ... 26.5 mm	1623342	1	1623346	1	1623358	1	1623361	1
Coupler connector, DC-coded, with contact carrier, without contacts, crimp connection									
Universal gasket	9 mm ... 14 mm	1623701	1	1623704	1	1623710	1	1623713	1
	14 mm ... 20.5 mm	1623702	1	1623705	1	1623711	1	1623714	1
	20.5 mm ... 26.5 mm	1623703	1	1623706	1	1623712	1	1623715	1
		Accessories				Accessories			
M40 hybrid cable, (5 x 10 + 2 x (2 x 0.5) + (4 x 22 AWG)C)C									
Length of cable: 1 m		KC-88014448/1,00		1627298	1	KC-88014448/1,00		1627298	1
Length of cable: 20 m		KC-88014448/20,00		1627299	1	KC-88014448/20,00		1627299	1
Crimp contacts		see page 129				see page 129			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Circular connectors

M40 hybrid connectors

Device connectors, hybrid, straight, front mounting

- The external thread is designed for the standard and SPEEDCON fast locking system
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Device connector, straight, female assembly



Device connector, straight, male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	

Description

Device connector, AC-coded, with contact carrier, without contacts, crimp connection

Flange dimensions: 40 mm x 40 mm

Device connector, DC-coded, with contact carrier, without contacts, crimp connection

Flange dimensions: 40 mm x 40 mm

1623371

1

1623372

1

1623374

1

1623375

1

1623725

1

1623726

1

1623728

1

1623729

1

Accessories

see page 129
See page 180
See page 181

Accessories

see page 129
See page 180
See page 181

Crimp contacts

Color rings, 50 pcs. in set (to be ordered separately)

Protective caps (to be ordered separately)

Device connectors, hybrid, angled, rotatable, front mounting

- The external thread is designed for the standard and SPEEDCON fast locking system
- 4x power+PE, 4x signal, 4x data (CAT5, 100 Mbps)
- 4x power+PE, 8x signal



Device connector, angled, rotatable, female assembly



Device connector, angled, rotatable, male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4+4+4+PE-pos. (CAT5)		4+4+4+PE-pos. (signal)	

Description

Device connector, AC-coded, angled, rotatable, with contact carrier, without contacts, crimp connection

Flange dimensions: 40 mm x 40 mm

Device connector, DC-coded, angled, rotatable, with contact carrier, without contacts, crimp connection

Flange dimensions: 40 mm x 40 mm

1623365

1

1623366

1

1623368

1

1623369

1

1623719

1

1623720

1

1623722

1

1623723

1

Accessories

see page 129
See page 180
See page 181

Accessories

see page 129
See page 180
See page 181

Crimp contacts

Color rings, 50 pcs. in set (to be ordered separately)

Protective caps (to be ordered separately)

Crimp contacts, turned

Notes:

¹⁾ Not for device connector, angled, rotatable



Crimp contacts, female



Crimp contacts, male

		Ordering data			Ordering data		
Description	Connection cross section [mm ²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact, Ø 0.8 mm	0.08 ... 0.25	SF-08KS010	1621571	100	SF-08KP010	1621574	100
	0.34 ... 0.50	SF-08KS020	1621573	100	SF-08KP020	1621575	100
Contact, Ø 1.0 mm, for CAT5 and signal	0.06 ... 0.25	SB-10KS001	1623603	100	SB-10KP001	1623607	100
	0.34 ... 0.50	SB-10KS002	1623604	100	SB-10KP002	1623611	100
	0.5 ... 1.0	SB-10KS003	1623605	100	SB-10KP003	1623612	100
	1.0 ... 1.5	SB-10KS004	1623606	100	SB-10KP004	1623613	100
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25	ST-10KS010	1618239	100	ST-10KP010	1618255	100
	0.34 ... 0.50	ST-10KS020	1618251	100	ST-10KP020	1618256	100
	0.25 ... 1.0	ST-10KS035	1618464	100	ST-10KP035	1618458	100
Contact, Ø 3.6 mm	2.5 ... 4.0	SB-36KS002	1623378	20	SB-36KP002	1623383	20
	4.0 ... 6.0	SB-36KS003	1623379	20	SB-36KP003	1623384	20
	10.0	SB-36KS004	1623380	20	SB-36KP004	1623385	20
	16.0 ¹⁾	SB-36KS005	1623381	20	SB-36KP005	1623386	20

Mechanical and electrical data

Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick-layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FKM)
Ambient temperature:	-40°C to 125°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 3.5 to 11 mm, shielded (M17 Compact) 5 to 12.5 mm, shielded (M17)
Type of locking:	M17 SPEEDCON fast locking system, cable connector With M17 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data								
Number of positions		4 (3+PE)	6 (5+PE)	7 (6+PE)	8 (7+PE)	9 (5+3+PE)		
Contacts		3 + PE	5 + PE	6 + PE	7 + PE	5	+	3 + PE
Contact Ø	[mm]	2	1	1	1	0.6		1
Litz wire cross section, crimp contacts	[mm²]	0.25 ... 2.5	0.06 ... 1.0	0.06 ... 1.0	0.06 ... 1.0	0.06 ... 0.5		0.06 ... 1.0
Turned								
Litz wire cross section, C-HC crimp contacts	[mm²]	–	0.08 ... 0.56	0.06 ... 0.56	0.06 ... 0.56	–	–	–
Punched-rolled								
Nominal current per contact at 25°C ¹⁾	[A]	20 (25) ²⁾	14	14	14	3.6	14	–
Specifications in accordance with DIN EN 61984:2009								
Rated voltage	[V AC/DC]	630	630	630	630	60	630	–
Test/surge voltage	[kV AC]	6	6	6	6	1.5	6	–
Overvoltage category		III	III	III	III		III	
Pollution degree ³⁾		3	3	3	3		3	
Installation altitude	[m]	Up to 3000	Up to 3000	Up to 3000	Up to 3000		Up to 3000	
Cable clamping area ⁴⁾	Max. Ø [mm]	12.5	12.5	12.5	12.5		12.5	

¹⁾ Determine the effective current carrying capacity in accordance with the application, if necessary, using a derating curve.

²⁾ 25 A in the case of assignment with 3 x 2.5 mm²

³⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

⁴⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering (view of plug-in side)		
Number of positions	Male	Female
4-pos. (3+PE) Crimp		
6-pos. (5+PE) (contact chambers 2+5 closed) Crimp		
7-pos. (6+PE) Crimp		
8-pos. (7+PE) Crimp		
9-pos. (5+3+PE) Crimp		
	* with grounding spring PE leading	* with grounding spring PE leading

Note:

The connectors can be assembled with male or female contacts depending on the application.

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M17 power connectors

Selection guide

M17 power connectors, 4-, 6-, 7-, 8-, and 9-pos., up to 20 A/630 V, crimp ranges: 0.06 mm² to 2.5 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)

The connectors are delivered pre-assembled. The connectors can be furnished with the corresponding crimp contacts.

Every housing type can be assembled with male or female contacts. The cable connectors can be equipped with the SPEEDCON fast locking system or with M17 x 1 coarse-pitch thread as an option. The connectors with external thread are fully compatible with standard threads and the SPEEDCON fast locking system.

The product chart provides an overview of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system, M17 Compact, see page 134.



M17, see page 136.



M17 x 1 standard locking, M17, see page 136.



Square mounting flange for cable and coupler connectors for wall mounting, see page 179.



Shielded

Coupler connectors / panel feed-throughs

Coupler connector M17 Compact, see page 134.



M17, see page 137.



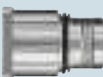
Panel feed-through M17 Compact, see page 135.



Shielded

Device connectors

Straight, M17 Compact, see page 135.



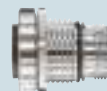
Straight, M17, see page 137.



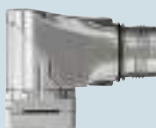
Straight, with central fastening thread, front mounting, M17, see page 139.



Straight, with central fastening thread, rear mounting, M17, see page 139.



Angled, rotatable, M17, see page 138.



Shielded

Crimp contacts

Female contacts

Turned, see page 140.



All housings can be fitted with male or female crimp contacts

Male contacts

Turned, see page 140.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Tools/accessories

Crimping tools

Crimping pliers with digital display for turned crimp contacts, see page 177.



Tools/accessories

Unlocking tool for device connectors with contact carriers for snapping in from the device side, see page 179.



Color rings for individually marking the connectors, see page 180.



Circular connectors

M17 power connectors

Cable connectors, M17 Compact

- High packing density in a compact product
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

		Ordering data			Ordering data		
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.	
Cable connector, with contact carrier, without contacts, for female assembly							
	3.5 mm ... 5.5 mm	1618312	1	1618621	1	1618632	1
	5 mm ... 9.2 mm	1618408	1	1618620	1	1618631	1
	9 mm ... 11.2 mm	1618603	1	1618619	1	1618630	1
Cable connector, with contact carrier, without contacts, for male assembly							
	3.5 mm ... 5.5 mm	1618602	1	1618614	1	1618622	1
	5 mm ... 9.2 mm	1618574	1	1618615	1	1618623	1
	9 mm ... 11.2 mm	1618575	1	1618616	1	1618624	1
		Accessories			Accessories		
Crimp contacts		Order separately, see page 140 onwards			Order separately, see page 140 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 180			See page 180		
Protective caps (to be ordered separately)		See page 181			See page 181		

Coupler connectors, M17 Compact

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

		Ordering data			Ordering data		
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.	
Coupler connector, with contact carrier, without contacts, for female assembly							
	3.5 mm ... 5.5 mm	1618695	1	1618696	1	1618708	1
	5 mm ... 9.2 mm	1618694	1	1618697	1	1618709	1
	9 mm ... 11.2 mm	1618693	1	1618698	1	1618710	1
Coupler connector, with contact carrier, without contacts, for male assembly							
	3.5 mm ... 5.5 mm	1620614	1	1618703	1	1618704	1
	5 mm ... 9.2 mm	1618406	1	1618702	1	1618705	1
	9 mm ... 11.2 mm	1618690	1	1618701	1	1618706	1
		Accessories			Accessories		
Crimp contacts		Order separately, see page 140 onwards			Order separately, see page 140 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 180			See page 180		
Protective caps (to be ordered separately)		See page 181			See page 181		

Panel feed-throughs, M17 Compact

- Panel feed-throughs suitable for front and rear mounting
- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings
- **Flange dimensions:**
25.7 mm x 25.7 mm



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

Description		Ordering data						Ordering data					
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.			
Panel feed-through, with contact carrier, without contacts, for female assembly	Cable clamping area												
	3.5 mm ... 5.5 mm	1618762	1	1618772	1	1618780	1	1618787	1	1618825	1		
	5 mm ... 9 mm	1618763	1	1618773	1	1618781	1	1618786	1	1618824	1		
Panel feed-through, with contact carrier, without contacts, for male assembly	9 mm ... 11 mm	1618764	1	1618774	1	1618782	1	1618785	1	1618823	1		
	3.5 mm ... 5.5 mm	1618402	1	1618767	1	1618776	1	1618788	1	1618818	1		
	5 mm ... 9 mm	1618407	1	1618768	1	1618777	1	1618790	1	1618819	1		
	9 mm ... 11 mm	1618760	1	1618769	1	1618778	1	1618791	1	1618820	1		
		Accessories						Accessories					
Crimp contacts		Order separately, see page 140 onwards						Order separately, see page 140 onwards					
Color rings, 50 pcs. in set (to be ordered separately)		See page 180						See page 180					
Protective caps (to be ordered separately)		See page 181						See page 181					

Device connectors, M17 Compact, front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings
- **Flange dimensions:**
21.6 mm x 21.6 mm



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.



Description		Ordering data						Ordering data					
		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.			
Device connector, with contact carrier, without contacts, for female assembly	Contact insert for support on the device	1607694	1	1607728	1	1613589	1	1607769	1	1613631	1		
	Device connector, with contact carrier, without contacts, for male assembly												
Device connector, with contact carrier, without contacts, for male assembly	Contact insert for support on the device	1607675	1	1607711	1	1613570	1	1607747	1	1613612	1		
	Device connector, with contact carrier, without contacts, for female assembly												
Device connector, with contact carrier, without contacts, for female assembly	Contact insert can be snapped in	1607692	1	1607727	1	1613588	1	1607768	1	1613630	1		
	Device connector, with contact carrier, without contacts, for male assembly												
Device connector, with contact carrier, without contacts, for male assembly	Contact insert can be snapped in	1607674	1	1607710	1	1613569	1	1607746	1	1613611	1		
		Accessories						Accessories					
Crimp contacts		Order separately, see page 140 onwards						Order separately, see page 140 onwards					
Color rings, 50 pcs. in set (to be ordered separately)		See page 180						See page 180					
Protective caps (to be ordered separately)		See page 181						See page 181					
Unlocking tool for contact carriers		See page 179						See page 179					

Circular connectors

M17 power connectors

Cable connectors, SPEEDCON fast locking system

- SPEEDCON fast locking system or M17 standard interlocking
- Standard knurled nut compatible with mating connectors with SPEEDCON and M17 standard external thread
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

		Ordering data			Ordering data		
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.	
Cable connector, with contact carrier, without contacts, for female assembly							
	5 mm ... 8 mm	1607683	1	1607718	1	1613578	1
	8 mm ... 10 mm	1607685	1	1607720	1	1613580	1
	10 mm ... 12.5 mm	1624538	1	1624544	1	1624550	1
Cable connector, with contact carrier, without contacts, for male assembly							
	5 mm ... 8 mm	1607665	1	1607700	1	1613559	1
	8 mm ... 10 mm	1607667	1	1607702	1	1613561	1
	10 mm ... 12.5 mm	1624535	1	1624541	1	1624547	1
		Accessories			Accessories		
Crimp contacts		Order separately, see page 140 onwards			Order separately, see page 140 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 180			See page 180		
Protective caps (to be ordered separately)		See page 181			See page 181		

Cable connectors, M17 standard locking

- Standard knurled nut compatible with mating connectors with SPEEDCON and M17 standard external thread
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

		Ordering data			Ordering data		
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		5+PE-pos.		6+PE-pos.	
Cable connector, with contact carrier, without contacts, for female assembly							
	5 mm ... 8 mm	1607682	1	1607717	1	1613577	1
	8 mm ... 10 mm	1607684	1	1607719	1	1613579	1
	10 mm ... 12.5 mm	1624537	1	1624543	30	1624549	1
Cable connector, with contact carrier, without contacts, for male assembly							
	5 mm ... 8 mm	1607663	1	1607699	1	1613558	1
	8 mm ... 10 mm	1607666	1	1607701	1	1613560	1
	10 mm ... 12.5 mm	1624534	1	1624540	1	1624546	1
		Accessories			Accessories		
Crimp contacts		Order separately, see page 140 onwards			Order separately, see page 140 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 180			See page 180		
Protective caps (to be ordered separately)		See page 181			See page 181		

Coupler connectors

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

Description		Cable clamping area		Ordering data						Ordering data						
				Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	
				3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.				
Coupler connector , with contact carrier, without contacts, for female assembly				5 mm ... 8 mm	1607688	1	1607723	1	1613583	1	1607764	1	1613625	1		
				8 mm ... 10 mm	1607689	1	1607724	1	1613584	1	1607765	1	1613626	1		
				10 mm ... 12.5 mm	1624539	1	1624545	1	1624551	1	1624557	1	1624654	1		
Coupler connector , with contact carrier, without contacts, for male assembly				5 mm ... 8 mm	1607670	1	1607706	1	1613564	1	1607741	1	1613606	1		
				8 mm ... 10 mm	1607671	1	1607707	1	1613565	1	1607742	1	1613607	1		
				10 mm ... 12.5 mm	1624536	1	1624542	1	1624548	1	1624554	1	1624653	1		
				Accessories						Accessories						
Crimp contacts				Order separately, see page 140 onwards						Order separately, see page 140 onwards						
Color rings, 50 pcs. in set (to be ordered separately)				See page 180						See page 180						
Protective caps (to be ordered separately)				See page 181						See page 181						

Device connectors, straight, front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Contact insert for support on the device or can be snapped in
- Individual marking of connectors with color rings
- **Flange dimensions:**
25.7 mm x 25.7 mm



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

Description	Ordering data						Ordering data					
	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
	3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.			
Device connector , with contact carrier, without contacts, for female assembly Contact insert for support on the device	1619189	1	1619191	1	1619193	1	1619195	1	1620459	1		
Device connector , with contact carrier, without contacts, for male assembly Contact insert for support on the device	1619186	1	1619190	1	1619192	1	1619194	1	1620460	1		
Device connector , with contact carrier, without contacts, for female assembly Contact insert can be snapped in	1619212	1	1619214	1	1619216	1	1619218	1	1620461	1		
Device connector , with contact carrier, without contacts, for male assembly Contact insert can be snapped in	1619209	1	1619213	1	1619215	1	1619217	1	1620462	1		
Accessories												
Crimp contacts	Order separately, see page 140 onwards						Order separately, see page 140 onwards					
Color rings, 50 pcs. in set (to be ordered separately)	See page 180						See page 180					
Protective caps (to be ordered separately)	See page 181						See page 181					
Unlocking tool for contact carriers	See page 179						See page 179					

Circular connectors

M17 power connectors

Device connectors, angled, rotatable, front mounting

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Housing can be freely rotated up to 308°
- Individual marking of connectors with color rings
- Flange versions for M2.5 or M3 fixing
- **Flange dimensions:**
25.7 mm x 25.7 mm



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

Description	Ordering data						Ordering data					
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.			
Device connector, angled, rotatable, with contact carrier, without contacts, for female contacts												
Fixing with M2.5	1620428	1	1620432	1	1620434	1	1620436	1	1620438	1		
Device connector, angled, rotatable, with contact carrier, without contacts, for male contacts												
Fixing with M2.5	1620427	1	1620431	1	1620433	1	1620435	1	1620437	1		
Device connector, angled, rotatable, with contact carrier, without contacts, for female contacts												
Fixing with M3	1620443	1	1620447	1	1620449	1	1620451	1	1620453	1		
Device connector, angled, rotatable, with contact carrier, without contacts, for male contacts												
Fixing with M3	1620444	1	1620448	1	1620450	1	1620452	1	1620454	1		
Accessories												
Crimp contacts	Order separately, see page 140 onwards						Order separately, see page 140 onwards					
Color rings, 50 pcs. in set (to be ordered separately)	See page 180						See page 180					
Protective caps (to be ordered separately)	See page 181						See page 181					

**Device connectors,
central fastening thread,
front and rear mounting**

- Compatible with mating connectors with SPEEDCON or M17 standard knurled nuts
- Snapping in the contact carriers from the device side
- Individual marking of connectors with color rings



3+PE, 5+PE, 6+PE-pos.



7+PE, 5+3+PE-pos.

Description	Ordering data						Ordering data						
	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	
Device connector,front mounting, M18 x 0.75 fastening thread, with contact carrier, without contacts, for female contacts	3+PE-pos.		5+PE-pos.		6+PE-pos.		7+PE-pos.		5+3+PE-pos.				
	1613546	1	1613550	1	1613572	1	1613592	1	1613614	1			
Device connector, front mounting, M18 x 0.75 fastening thread, with contact carrier, without contacts, for male contacts													
	1613544	1	1613548	1	1613553	1	1613590	1	1613595	1			
Device connector,rear mounting, M20 x 1.5 fastening thread, with contact carrier, without contacts, for female contacts													
	1613547	1	1613551	1	1613587	1	1613593	1	1613629	1			
Device connector,rear mounting, M20 x 1.5 fastening thread, with contact carrier, without contacts, for male contacts													
	1613545	1	1613549	1	1613568	1	1613591	1	1613610	1			
Accessories													
Description	Type				Order No.	Pcs./ Pkt.	Type				Order No.	Pcs./ Pkt.	
Locking nut, for mounting bore holes and polarization					ST-E2015151	1613831	10					1613831	10
					RC-13041	1600417	10					1600417	10
Crimp contacts	Order separately, see page 140 onwards						Order separately, see page 140 onwards						
Color rings, 50 pcs. in set (to be ordered separately)	See page 180						See page 180						
Protective caps (to be ordered separately)	See page 181						See page 181						
Unlocking tool for contact carriers	See page 179						See page 179						

Circular connectors

M17 power connectors

Crimp contacts, turned

Depending on the number of positions, assemble the M17 power connectors with Ø 2 mm, Ø 1 mm or Ø 0.6 mm contacts (see table below).

Note: Depending on the litz wire used, the connection cross sections (crimp ranges) may deviate from the listed values. For safety reasons, only use female contacts in the live part of the plug.



Crimp contacts, female



Crimp contacts, male

		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact, female, Ø 2.0 mm	0.25 ... 1.0	ST-20KS010	1607657	50			
	1.0 ... 2.5	ST-20KS020	1607658	50			
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25	ST-10KS010	1618239	100			
	0.34 ... 0.50	ST-10KS020	1618251	100			
	0.25 ... 1.0	ST-10KS035	1618464	100			
Contact, female, Ø 0.6 mm	0.06 ... 0.25	ST-06KS010	1607580	100			
	0.14 ... 0.34	ST-06KS020	1607581	100			
	0.34 ... 0.50	ST-06KS030	1607582	100			
Contact, male, Ø 2.0 mm	0.25 ... 1.0				ST-20KP010	1607655	50
	1.0 ... 2.5				ST-20KP020	1607656	50
Contact, Ø 1.0 mm, for signal	0.06 ... 0.25				ST-10KP010	1618255	100
	0.34 ... 0.50				ST-10KP020	1618256	100
	0.25 ... 1.0				ST-10KP035	1618458	100
Contact, male, Ø 0.6 mm	0.06 ... 0.25				ST-06KP010	1607577	100
	0.14 ... 0.34				ST-06KP020	1607578	100
	0.34 ... 0.50				ST-06KP030	1607579	100
		Accessories			Accessories		
Crimping tools		Order separately, see page 177			Order separately, see page 177		

Contact diameter

Number of positions	Number of contacts	Contact Ø [mm]
4(3+PE)	4	2
6(5+PE)	6	1
7(6+PE)	7	1
8(7+PE)	8	1
9(5+3+PE)	5+3+PE	0.6+1+1
17	17	0.6

Mechanical and electrical data

Mechanical data

Housing material:	Die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	External cable diameter 5.5 to 17 mm
Type of locking:	M23 ONECLICK fast locking system, cable connector M23 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100
Protection class:	IP66/IP68

Electrical data

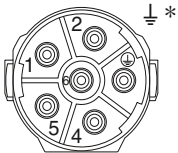
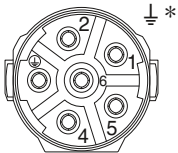
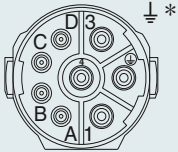
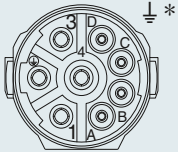
Number of positions		6 (5+PE)	8 (4+3+PE)				
Contacts		5 + PE	4	+	3	+	PE
Contact Ø	[mm]	2	1		2		2
Litz wire cross sections							
Short version, cable Ø max. 14 mm	[mm²]	0.25 ... 2.5	0.06 ... 1.0		0.25 ... 2.5		0.25 ... 2.5
Long version, cable Ø max. 18 mm	[mm²]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Device connectors	[mm²]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Nominal current per contact at 25°C ¹⁾	[A]	30	9		30		–
Specifications in accordance with DIN EN 61984:2009							–
Rated voltage	[V AC/DC]	630 ²⁾	250		630 ²⁾		–
Test/surge voltage	[kV AC]	6	4		6		–
Overvoltage category		III			III		
Pollution degree ³⁾		3			3		
Installation altitude	[m]	Up to 2000			Up to 2000		
Cable clamping area ⁴⁾	Max. Ø [mm]	17			17		

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ 400 V when assembled with punched-rolled C-HC contacts

³⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

⁴⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering (view of plug-in side)				
Number of positions	Male		Female	
6-pos. (5 + PE) Crimp		* with grounding spring, pos. 3 leading		* with grounding spring, pos. 3
8-pos. (4 + 3 + PE) Crimp		* with grounding spring, pos. 2		* with grounding spring, pos. 2 leading

Circular connectors

M23 PRO series power connectors

Selection guide

M23 PRO series power connectors
up to 30 A / 630 V, crimping range
up to 4 mm²

- Cable connectors
- Device connectors (device flanges)

The connectors are delivered
pre-assembled. The connectors can
be furnished with the corresponding
crimp contacts.

Every housing type can be assembled
with male or female contacts. The product
chart provides an overview of the available
components.

Connector type

Cable connectors, short design

M23 ONECLICK fast locking system,
see page 146.

M23 x 1 standard locking,
see page 146.



ONECLICK Technology[®]
Designed by PHOENIX CONTACT

Shielded

Cable connectors, long design

M23 ONECLICK fast locking system,
see page 146.

M23 x 1 standard locking,
see page 146.



ONECLICK Technology[®]
Designed by PHOENIX CONTACT

Shielded

Device connectors

Angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 147.



Angled, rotatable,
flange dimensions: 28 mm x 28 mm,
see page 147.



Shielded

Crimp contacts

Tools/accessories

Female contacts

Turned, see page 148.



Crimping pliers with digital display for turned crimp contacts, see page 177.



Female contact
Male contact

Female contact
Male contact

Female contact
Male contact

All housings can be fitted with male or female crimp contacts

Male contacts

Turned, see page 148.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 PRO series power connectors

Cable connectors, short and long design, ONECLICK fast locking system

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts

Notes:

Touch protection only on the female side



Cable connector, female assembly



Cable connector, male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

Cable connector, short, with contact carrier, **without** contacts, crimp connection

Universal gasket	5.5 mm ... 15 mm
	5.5 mm ... 8 mm
	7.5 mm ... 12 mm
	9.5 mm ... 14.5 mm

1628815	1	1628811	1
1628818	1	1628813	1
1628817	1	1628814	1
1628816	1	1628812	1

1628871	1	1628867	1
1628874	1	1628869	1
1628873	1	1628870	1
1628872	1	1628868	1

Cable connector, long, with contact carrier, **without** contacts, crimp connection

Universal gasket	7.5 mm ... 17 mm
	5.5 mm ... 8 mm
	7.5 mm ... 12 mm
	9.5 mm ... 14.5 mm
	14 mm ... 17 mm

1628796	1	1628791	1
1628800	1	1628795	1
1628799	1	1628794	1
1628798	1	1628793	1
1628797	1	1628792	1

1628852	1	1628847	1
1628856	1	1628850	1
1628855	1	1628851	1
1628854	1	1628849	1
1628853	1	1628848	1

Accessories

Crimp contacts

Order separately, see page 148 onwards

Accessories

Order separately, see page 148 onwards

Cable connectors, short and long design, M23 standard locking

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts

Notes:

Touch protection only on the female side



Cable connector, female assembly



Cable connector, male assembly

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

Cable connector, short, with contact carrier, **without** contacts, crimp connection

Universal gasket	5.5 mm ... 15 mm
	5.5 mm ... 8 mm
	7.5 mm ... 12 mm
	9.5 mm ... 14.5 mm

1628823	1	1628819	1
1628826	1	1628822	1
1628825	1	1628821	1
1628824	1	1628820	1

1628879	1	1628875	1
1628882	1	1628878	1
1628881	1	1628877	1
1628880	1	1628876	1

Cable connector, long, with contact carrier, **without** contacts, crimp connection

Universal gasket	7.5 mm ... 17 mm
	5.5 mm ... 8 mm
	7.5 mm ... 12 mm
	9.5 mm ... 14.5 mm
	14 mm ... 17 mm

1628806	1	1628801	1
1628810	1	1628805	1
1628809	1	1628804	1
1628808	1	1628803	1
1628807	1	1628802	1

1628862	1	1628857	1
1628866	1	1628861	1
1628865	1	1628860	1
1628864	1	1628859	1
1628863	1	1628858	1

Accessories

Crimp contacts

Order separately, see page 148 onwards

Accessories

Order separately, see page 148 onwards

Device connectors, angled, rotatable

- Cross-manufacturer connection compatibility
- All housings can be fitted with male or female contacts

Notes:

Touch protection only on the female side

new



Device connector,
female assembly

new



Device connector,
male assembly

Ordering data

Description	Cable clamping area
Device connector, angled, rotatable, with contact carrier, without contacts	
Flange dimensions: 26 mm x 26 mm	
Device connector, angled, rotatable, with contact carrier, without contacts	
Flange dimensions: 28 mm x 28 mm	

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

1628491	1	1628490	1
1628489	1	1628488	1

Accessories

Crimp contacts

Order separately, see page 148 onwards

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5+PE-pos.		4+3+PE-pos.	

1628487	1	1628486	1
1628485	1	1628484	1

Accessories

Order separately, see page 148 onwards

Circular connectors

M23 PRO series power connectors

Crimp contacts, turned

Assemble the 5+PE-pos. M23 power connectors with 5 x Ø 2 mm contacts. The 4+3+PE-pos. M23 power connectors are assembled with 4 x Ø 1 mm and 4 x Ø 2 mm contacts.



Crimp contacts, female



Crimp contacts, male

		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact Ø 1.0 mm	0.06 ... 0.25	ST-10KS010	1618239	100	ST-10KP010	1618255	100
	0.34 ... 0.50	ST-10KS020	1618251	100	ST-10KP020	1618256	100
	0.25 ... 1.0	ST-10KS035	1618464	100	ST-10KP035	1618458	100
Contact Ø 2.0 mm	0.25 ... 1.0	SF-20KS021	1621576	50	SF-20KP011	1050147	50
	1.0 ... 2.5	SF-20KS022	1621577	50	SF-20KP012	1050205	50
	2.5 ... 4.0	SF-20KS023	1621578	50	SF-20KP013	1050210	50
		Accessories			Accessories		
Crimping tools		Order separately, see page 177 onwards			Order separately, see page 177 onwards		

Mechanical and electrical data

Mechanical data

Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated / thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 7.5 to 18 mm, shielded
Type of locking:	M23 SPEEDCON screw locking, cable connector M23 x 1 coarse-pitch thread as an option
Mechanical insertion cycles:	Standard: 100
Protection class:	IP67 when locked

Electrical data

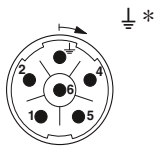
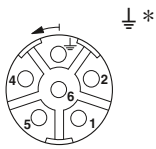
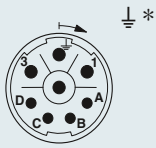
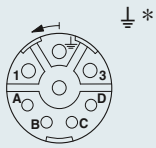
Number of positions		6 (5+PE)	8 (4+3+PE)				
Contacts		5 + PE	4	+	3	+	PE
Contact Ø	[mm]	2	1		2		2
Litz wire cross sections							
Short version, cable Ø max. 14 mm	[mm²]	0.25 ... 2.5	0.06 ... 1.0		0.25 ... 2.5		0.25 ... 2.5
Long version, cable Ø max. 18 mm	[mm²]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Device connectors	[mm²]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Nominal current per contact at 25°C ¹⁾	[A]	30	9		30		–
Specifications in accordance with DIN EN 61984:2009							–
Rated voltage	[V AC/DC]	630 ²⁾	250		630 ²⁾		–
Test/surge voltage	[kV AC]	6	4		6		–
Overvoltage category		III			III		
Pollution degree ³⁾		3			3		
Installation altitude	[m]	Up to 3000			Up to 3000		
Cable clamping area ⁴⁾	Max. Ø [mm]	18			18		

¹⁾ Determine the effective current carrying capacity depending on the application, if necessary, using a derating curve.

²⁾ 400 V when assembled with punched-rolled C-HC contacts

³⁾ The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, seal the connector using a protective cap ≥ IP54.

⁴⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering (view of plug-in side)				
Number of positions	Male		Female	
6-pos. (5 + PE) Crimp		* with grounding spring, pos. 3 leading		* with grounding spring, pos. 3
8-pos. (4 + 3 + PE) Crimp		* with grounding spring, pos. 2		* with grounding spring, pos. 2 leading

Circular connectors

M23 power connectors

Selection guide

M23 power connectors up to 30 A/630 V, crimp ranges up to 4 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)
- Feed-throughs/panel feed-throughs

The connectors are pre-assembled on delivery. The connectors can be furnished with the corresponding crimp contacts.

The product chart provides an overview of the available components.

Connector type

Cable connectors

Short, SPEEDCON fast locking system, see page 154.

M23 x 1 standard interlocking, see page 154.



Long, SPEEDCON fast locking system, see page 154.

M23 x 1 standard interlocking, see page 154.



Device connectors with knurled nut

Straight, see page 157.



Angled, see page 157.



Coupler connectors

Short, see page 155.



Long, see page 155.



With mounting flange
Short, see page 158.



With mounting flange
Long, see page 158.



Device connectors

Straight, see page 156.



Angled, rotatable,
flange dimensions: 26 mm x 26 mm,
see page 156.



Angled, rotatable,
flange dimensions: 28 mm x 28 mm
see page 156.



Panel feed-throughs

External female – internal male,
see page 159.



Panel feed-throughs are supplied fully wired.

Crimp contacts

Tools/accessories

Female contacts

Female contacts

Turned, see page 160.



Crimping pliers with digital display for turned crimp contacts, see page 177.



Male contacts

Male contacts

Turned, see page 160.



Accessories

Color rings for individually marking the connectors, see page 180.



Male contacts

Note:

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M23 power connectors

Cable connectors, long and short design

- SPEEDCON fast locking system or M23 standard interlocking
- Standard knurled nut compatible with mating connectors with SPEEDCON and M23 standard external thread
- Individual marking of connectors with color rings



Cable connector,
SPEEDCON



Cable connector,
M23 standard interlocking

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		5+PE-pos.		4+3+PE-pos.		5+PE-pos.		4+3+PE-pos.	
Cable connector, short, with contact carrier, without contacts, for cable Ø 7.5 mm to 14 mm, connection cross section up to 2.5 mm²									
Universal gasket	7.5 mm ... 14 mm	1618197	1	1618207	1	1605532	1	1605602	1
	7.5 mm ... 9 mm	1618194	1	1618204	1	1605524	1	1605595	1
	9 mm ... 11 mm	1618195	1	1618205	1	1605526	1	1605596	1
	11 mm ... 14 mm	1618196	1	1618206	1	1605529	1	1605597	1
Cable connector, long, with contact carrier, without contacts, for cable Ø 7.5 mm to 18 mm, connection cross section up to 4 mm²									
Universal gasket	7.5 mm ... 18 mm	1618202	1	1618212	1	1605549	1	1605617	1
	7.5 mm ... 9 mm	1618201	1	1618211	1	1605548	1	1605614	1
	9 mm ... 12 mm	1618200	1	1618210	1	1605546	1	1605610	1
	12 mm ... 15 mm	1618199	1	1618209	1	1605545	1	1605607	1
	15 mm ... 18 mm	1618198	1	1618208	1	1605543	1	1605605	1
		Accessories				Accessories			
Crimp contacts		For female contacts, see page 160				For female contacts, see page 160			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Coupler connectors, long and short design

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut
- Individual marking of connectors with color rings



Coupler connector, short



Coupler connector, long

		Ordering data				Ordering data			
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		5+PE-pos.		4+3+PE-pos.		5+PE-pos.		4+3+PE-pos.	
Coupler connector, short, with contact carrier, without contacts, for cable Ø 7.5 mm to 14 mm, connection cross section up to 2.5 mm²									
Universal gasket	7.5 mm ... 14 mm	1605499	1	1605575	1				
	7.5 mm ... 9 mm	1605494	1	1605568	1				
	9 mm ... 11 mm	1605496	1	1605570	1				
	11 mm ... 14 mm	1605498	1	1605571	1				
Coupler connector, long, with contact carrier, without contacts, for cable Ø 7.5 mm to 18 mm, connection cross section up to 4 mm²									
Universal gasket	7.5 mm ... 18 mm					1605510	1	1605583	1
	7.5 mm ... 9 mm					1605509	1	1605582	1
	9 mm ... 12 mm					1605508	1	1605581	1
	12 mm ... 15 mm					1605507	1	1605580	1
	15 mm ... 18 mm					1605505	1	1605578	1
		Accessories				Accessories			
Crimp contacts		For male contacts, see page 160				For male contacts, see page 160			
Color rings, 50 pcs. in set (to be ordered separately)		See page 180				See page 180			
Protective caps (to be ordered separately)		See page 181				See page 181			

Circular connectors

M23 power connectors

Device connectors, straight and angled, rotatable

- Compatible with mating connectors with SPEEDCON and M23 standard knurled nut



Device connector,
straight



Device connector,
angled rotatable

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	5+PE-pos.		4+3+PE-pos.		5+PE-pos.		4+3+PE-pos.	
Device connector , with contact carrier without contacts								
Flange dimensions: 26 mm x 26 mm	1605520	1	1605589	1	1620657	1	1620660	1
Device connector , with reinforced contact carrier (black) for angled mating connectors, without contacts								
Flange dimensions: 26 mm x 26 mm	1620619	1	1620620	1				
Device connector with contact carrier without contacts								
Flange dimensions: 28 mm x 28 mm					1620661	1	1620662	1
	Accessories				Accessories			
Crimp contacts	For male contacts, see page 160				For male contacts, see page 160			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			

Device connectors, with knurled nut

- Only assemble device connectors with knurled nut with female contacts.
- Standard knurled nut compatible with mating connectors with SPEEDCON and M23 standard external thread



Device connector with knurled nut,
straight



Device connector with knurled nut,
angled fixed

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Device connector, with knurled nut, straight , with contact carrier, without contacts	5+PE-pos.		4+3+PE-pos.		5+PE-pos.		4+3+PE-pos.	
	1607082	1	1605622	1				
Device connector, with knurled nut, angled, fixed , with contact carrier, without contacts					1607405		1607429	
					1		1	
Accessories	Accessories				Accessories			
	For female contacts, see page 160				For female contacts, see page 160			
	See page 181				See page 181			
Crimp contacts								
Protective caps (to be ordered separately)								

Circular connectors

M23 power connectors

Panel feed-throughs, long and short design

- Rear mounting
- Compatible with mating connectors with M23 standard knurled nuts



Panel feed-through, short



Panel feed-through, long

		Ordering data				Ordering data					
Description		Cable clamping area		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.		
				5+PE-pos.		4+3+PE-pos.		5+PE-pos.			
Panel feed-through, short , with contact carrier, without contacts, for cable Ø 7.5 to 14 mm, connection cross section up to 2.5 mm²											
Universal gasket	7.5 mm ... 14 mm		1605517	1	1607051	1					
	7.5 mm ... 9 mm		1605516	1	1607048	1					
	9 mm ... 11 mm		1607037	1	1607049	1					
	11 mm ... 14 mm		1607038	1	1607050	1					
Panel feed-through, long , with contact carrier, without contacts, for cable Ø 7.5 to 18 mm, connection cross section up to 4 mm²											
Universal gasket	7.5 mm ... 18 mm						1605518	1	1607056	1	
	7.5 mm ... 9 mm						1607042	1	1607055	1	
	9 mm ... 12 mm						1607041	1	1607054	1	
	12 mm ... 15 mm						1607040	1	1607053	1	
	15 mm ... 18 mm						1607039	1	1607052	1	
				Accessories				Accessories			
Crimp contacts				For male contacts, see page 160				For male contacts, see page 160			
Color rings, 50 pcs. in set (to be ordered separately)				See page 180				See page 180			
Protective caps (to be ordered separately)				See page 181				See page 181			

Panel feed-throughs, fully wired

- Front mounting
- Internally fully wired and fitted with contacts
- Compatible with mating connectors with M23 standard knurled nuts



Panel feed-through, male/female

Ordering data

Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	5+PE-pos.		4+3+PE-pos.	
Panel feed-through, male inside - female outside, fully wired, with contacts	1605492	1	1605567	1

Accessories

Protective caps (to be ordered separately)	See page 181

Circular connectors

M23 power connectors

Crimp contacts, turned

Assemble the 6-pos. (5+PE) versions with two Ø 2 mm contacts. Assemble the 8-pos. (4+3+PE) versions with four Ø 1 mm signal contacts and four Ø 2 mm contacts.

Note: observe the crimp ranges for cable and coupler connectors.

- Short version: connection cross sections up to 2.5 mm², max. cable Ø of 14 mm
- Long version: connection cross sections up to 4 mm², max. cable Ø of 18 mm



Crimp contacts, female



Crimp contacts, male

ERC

			Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.	
Contact, female Ø 2.0 mm for cable and device connectors with knurled nuts, power and PE contacts	0.25 ... 1.0	SF-7PS2000	1605636	50				
	0.75 ... 1.5	SF-7NS2000	1605631	50				
	1.0 ... 2.5	SF-7QS2000	1605643	50				
	4.0	SF-7MS2000	1605628	50				
Contact, female Ø 1.0 mm for cable and device connectors with knurled nuts, signal contacts	0.06 ... 0.2	SF-6CS2000	1605562	100				
	0.14 ... 0.5	SF-10KS004	1607356	100				
	0.5 ... 1.0	SF-6AS2000	1605557	100				
Contact, male Ø 2.0 mm for coupler connectors, power and PE contacts	0.14 ... 0.25				SF-7RP2000	1605646	50	
	0.25 ... 1.0				SF-7PP2000	1605634	50	
	0.75 ... 1.5				SF-20KP004	1607376	50	
	1.0 ... 2.5				SF-7QP2000	1605639	50	
	4.0				SF-7MP2000	1605626	50	
Contact, male Ø 1.0 mm for coupler connectors, signal contacts	0.06 ... 0.2				SF-6CP2000	1605559	100	
	0.14 ... 0.5				SF-10KP004	1607355	100	
	0.5 ... 1.0				SF-6AP2000	1605554	100	
Contact, male Ø 2.0 mm for device connectors, power and PE contacts	0.14 ... 0.25				SF-7RP2000	1605646	50	
	0.25 ... 1.0				SF-7PP2000	1605634	50	
	0.75 ... 1.5				SF-20KP004	1607376	50	
	1.0 ... 2.5				SF-7QP2000	1605639	50	
	4.0				SF-7MP2000	1605626	50	
Contact, male Ø 1.0 mm for device connectors, signal contacts	0.06 ... 0.2				SF-6CP2000	1605559	100	
	0.14 ... 0.5				SF-10KP004	1607355	100	
	0.5 ... 1.0				SF-6AP2000	1605554	100	
Accessories					Accessories			
Crimping tools		Order separately, see page 177 onwards			Order separately, see page 177 onwards			

Contact diameter

Number of positions	Number of contacts	Contact Ø [mm]
6(5+PE)	5+PE	2+2
8(4+3+PE)	4+3+PE	1+2+2

Circular connectors

M40 power connectors

Mechanical and electrical data

Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated/thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Outer cable diameter 9.0 to 26.5 mm, shielded
Type of locking:	M40 SPEEDCON fast locking system, cable connector with M40 x 1.5 coarse-pitch thread as an option
Mechanical insertion/withdrawal cycles:	Standard: 50
Protection class	IP67 when locked

Electrical data											
Number of positions		6 (2 + 3 + PE)					8 (4 + 3 + PE)				
Contacts		2	+	3	+	PE	4	+	3	+	PE
Contact Ø	[mm]	2.0		3.6		3.6	2.0		3.6		3.6
Litz wire cross sections											
Cable and coupler connectors	[mm²]	0.14 ... 4.0		0.75 ... 10		0.75 ... 10	0.14 ... 4.0		0.75 ... 10		0.75 ... 10
Device connectors	[mm²]	0.14 ... 4.0		0.75 ... 10		0.75 ... 10	0.14 ... 4.0		0.75 ... 10		0.75 ... 10
Nominal current per contact at 25°C ¹⁾	[A]	30		70		–	30		70		–
Specifications in accordance with DIN EN 1984:2009											
Rated voltage	[V AC/DC]	250		630		–	250		630		–
Test/surge voltage	[kV]	4		6		–	4		6		–
Overvoltage category		III					III				
Pollution degree		3					3				
Installation height	[m]	Up to 3000					Up to 3000				
Cable clamping area ²⁾	Max. Ø [mm]	26.5					26.5				

¹⁾ Determine the effective current carrying capacity in accordance with the application, if necessary, using a derating curve.

²⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Contact chamber numbering (view of plug-in side)		
Number of positions	Male	Female
6-pos. (2 + 3 + PE) Crimp		
8-pos. (4 + 3 + PE) Crimp		

* with grounding spring

Circular connectors

M40 power connectors

Selection guide

M40 power connectors up to
70 A/630 V, crimp ranges up to 16 mm²

- Cable connectors
- Coupler connectors
- Device connectors (device flanges)
- Feed-throughs/panel feed-throughs

The connectors are pre-assembled on delivery. The connectors can be furnished with the corresponding crimp contacts.

M40 connectors with knurled nuts can be supplied with SPEEDCON fast locking system or with M40 x 1.5 coarse-pitch thread as an option.

The product chart provides an overview of the available components.

Connector type

Cable connectors

SPEEDCON fast locking system,
see page 166.



Mounting flange for
wall mounting,
see page 179.



M40 x 1.5 standard interlocking,
see page 166.



Shielded

Device connectors with knurled nut

Straight,
see page 167.



Angled,
see page 167.



Shielded

Coupler connectors

See page 166.



Shielded

Device connectors

Angled, rotatable,
see page 168.



Straight,
see page 166.



Crimp contacts**Tools/accessories****Female contacts**

Turned, see page 169.

**Crimping tools**

Crimping pliers, see page 177.



Crimping pliers with digital display for turned crimp contacts, see page 177.



Female contacts

Male contacts

Turned, see page 169.

**Accessories**

Color rings for individually marking the connectors, see page 180.



Male contacts

Note:

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M40 power connectors

Cable connectors

- SPEEDCON fast locking system or M40 standard interlocking
- Standard knurled nut compatible with mating connectors with SPEEDCON or M40 standard external thread
- Individual marking of connectors with color rings



Cable connector,
SPEEDCON



Cable connector

Description	Cable clamping area
Cable connector housing , with contact carrier, without contacts, connection cross section up to 16 mm ²	
	9 mm ... 14 mm
	14 mm ... 20.5 mm
	20.5 mm ... 26.5 mm

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
2+3+PE-pos.		4+3+PE-pos.	
1613428	1	1613434	1
1613429	1	1613435	1
1613430	1	1613436	1

Accessories	
For female contacts, see page 169	
See page 180	
See page 181	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
2+3+PE-pos.		4+3+PE-pos.	
1613518	1	1613528	1
1613519	1	1613529	1
1613520	1	1613530	1

Accessories	
For female contacts, see page 169	
See page 180	
See page 181	

Coupler and device connectors

- Compatible with mating connectors with SPEEDCON and M40 standard knurled nut
- Individual marking of connectors with color rings



Coupling connector



Device connector, straight

Description	Cable clamping area
Coupler connector , with contact carrier, without contacts, connection cross section up to 16 mm ²	
	9 mm ... 14 mm
	14 mm ... 20.5 mm
	20.5 mm ... 26.5 mm
Device connector, straight , with contact carrier, without contacts	
Connection cross section up to 10 mm ²	

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
2+3+PE-pos.		4+3+PE-pos.	
1613425	1	1613431	1
1613426	1	1613432	1
1613427	1	1613433	1

Accessories	
For male contacts, see page 169	
See page 180	
See page 181	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
2+3+PE-pos.		4+3+PE-pos.	
1613517	1	1613527	1

Accessories	
For male contacts, see page 169	
See page 180	
See page 181	

Device connectors, with knurled nut

- SPEEDCON fast locking system or M40 standard interlocking
- Standard knurled nut compatible with mating connectors with SPEEDCON or M40 standard external thread
- Only assemble device connectors with knurled nut with female contacts



Device connector with knurled nut,
straight, SPEEDCON



Device connector with knurled nut,
straight

Description	Ordering data				Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	2+3+PE-pos.		4+3+PE-pos.		2+3+PE-pos.		4+3+PE-pos.	
Device connector, with SPEEDCON knurled nut, straight , with contact carrier, without contacts								
Connection cross section up to 16 mm ²	1613524		1		1613534		1	
Device connector, with standard knurled nut, straight , with contact carrier, without contacts								
Connection cross section up to 16 mm ²					1605823		1	
					1605865		1	
Accessories				Accessories				
Crimp contacts	For female contacts, see page 169			For female contacts, see page 169				
Color rings, 50 pcs. in set (to be ordered separately)	See page 180			See page 180				
Protective caps (to be ordered separately)	See page 181			See page 181				

Device connectors, with knurled nut

Only assemble device connectors with knurled nut with female contacts.



Device connector with knurled nut,
angled, SPEEDCON



Device connector with knurled nut,
angled

	Ordering data				Ordering data			
Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	2+3+PE-pos.		4+3+PE-pos.		2+3+PE-pos.		4+3+PE-pos.	
Device connector, with SPEEDCON knurled nut, angled , with contact carrier, without contacts								
Connection cross section up to 16 mm ²	1613525	1	1613535	1				
Device connector, with knurled nut, angled , with contact carrier, without contacts								
Connection cross section up to 16 mm ²					1607532	1	1607543	1
	Accessories				Accessories			
Crimp contacts	For female contacts, see page 169				For female contacts, see page 169			
Color rings, 50 pcs. in set (to be ordered separately)	See page 180				See page 180			
Protective caps (to be ordered separately)	See page 181				See page 181			

Circular connectors

M40 power connectors

Device connectors,
angled, rotatable

- Compatible with mating connectors with SPEEDCON and M40 standard knurled nut
- The rotatable angled housing can be rotated freely through 310°.
- Individual marking of connectors with color rings



Device connector,
angled rotatable

Description

Device connector, angled, rotatable, with contact carrier, without contacts

Connection cross section up to 10 mm²

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
2+3+PE-pos.		4+3+PE-pos.	

1620663	1	1620664	1

Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)
Protective caps (to be ordered separately)

Accessories	
For male contacts, see page 169	
See page 180	
See page 181	

Crimp contacts, turned

Assemble the 6-pos. (2+3+PE) versions with two Ø 2 mm signal contacts and four Ø 3.6 mm contacts (three power contacts and one PE contact).

Assemble the 8-pos. (4+3+PE) versions with four Ø 2 mm signal contacts and four Ø 3.6 mm contacts (three power contacts and one PE contact).

Note: Depending on the litz wire used, the connection cross sections (crimp ranges) can differ from the values listed below.



Crimp contacts, female



Crimp contacts, male

Ordering data		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact, female Ø 3.6 mm, for cable and device connectors with knurled nuts, power and PE contacts	1.0 ... 2.5	SM-36KS001	1605756	20			
	2.5 ... 4.0	SM-36KS002	1605758	20			
	4.0 ... 6.0	SM-36KS003	1605760	20			
	6.0 ... 10.0	SM-36KS004	1605762	20			
	16	SM-36KS016	1623972	20			
Contact, female Ø 2.0 mm, for cable and device connectors with knurled nuts, signal contacts	0.25 ... 1.0	SF-7PS2000	1605636	50			
	0.75 ... 1.5	SF-7NS2000	1605631	50			
	1.0 ... 2.5	SF-7QS2000	1605643	50			
	4.0	SF-7MS2000	1605628	50			
Contact, male Ø 3.6 mm, for coupler connectors, power and PE contacts	1.0 ... 2.5				SM-36KP005	1605749	20
	2.5 ... 4.0				SM-36KP006	1605750	20
	4.0 ... 6.0				SM-36KP008	1605754	20
	6.0 ... 10.0				SM-36KP007	1605752	20
	16				SM-36KP016	1623970	20
Contact, male Ø 2.0 mm, for coupler connectors, signal contacts	0.25 ... 1.0				SM-20KP006	1605738	50
	0.75 ... 1.5				SM-20KP005	1605736	50
	1.0 ... 2.5				SM-20KP007	1605739	50
	4.0				SM-20KP008	1605741	50
Contact, male Ø 3.6 mm, for device connectors, power and PE contacts	0.75 ... 1.5				SM-36KP001	1605743	20
	1.0 ... 2.5				SM-36KP009	1607057	20
	4.0 ... 6.0				SM-36KP003	1605745	20
	6.0 ... 10.0				SM-36KP004	1605747	20
Contact, male Ø 2.0 mm, for device connectors, signal contacts	0.14 ... 0.25				SF-7RP2000	1605646	50
	0.25 ... 1.0				SF-7PP2000	1605634	50
	0.75 ... 1.5				SF-20KP004	1607376	50
	1.0 ... 2.5				SF-7QP2000	1605639	50
	4.0				SF-7MP2000	1605626	50
Accessories		Accessories			Accessories		
Crimping tools		Order separately, see page 177			Order separately, see page 177		

Number of positions	Number of contacts	Contact Ø [mm]
6(2+3+PE)	2+3+PE	2+3.6+3.6
8(4+3+PE)	4+3+PE	2+3.6+3.6

Circular connectors

M58 power connectors

Mechanical and electrical data

Mechanical data

Housing material:	Aluminum
Housing surface:	Aluminum, anodized
Insulating body:	Polyamide (PA 66)
Contact surface:	Power and PE contacts: silver-plated (Ag), signal contacts: gold-plated (Au)
Connection technology:	Crimp connection
Sealing and O-ring:	Fluororubber (FPM)
Ambient temperature:	-40°C ... 120°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 17 to 36 mm, shielded
Type of locking:	M58 x 2 screw locking
Mechanical insertion/withdrawal cycles:	Standard: 100
Protection class:	IP67 when locked

Electrical data

Number of positions	6 (2 + 3 + PE)					8 (4 + 3 + PE)				
Contacts	2	+	3	+	PE	4	+	3	+	PE
Contact Ø [mm]	1.6		10		10	1.6		10		10
Litz wire cross section										
Crimp contacts, turned [mm²]	0.75 ... 1.5		10 ... 50		10 ... 50	0.75 ... 1.5		10 ... 50		10 ... 50
Nominal current per contact at 25°C ¹⁾ [A]	12		150		–	12		150		–
Specifications in accordance with DIN EN 61984:2009										
Rated voltage [V AC/DC]	250		630		–	250		630		–
Test/surge voltage [kV AC]	4		6		–	4		6		–
Overvoltage category	III					III				
Pollution degree	3					3				
Installation height [m]	Up to 2000					Up to 2000				
Cable clamping area ²⁾ Max. Ø [mm]	36					36				

¹⁾ Determine the effective current carrying capacity in accordance with the application, if necessary, using a derating curve.

²⁾ The cable clamping areas specified on the following pages may vary depending on the cable material and structure. Selection and testing is the responsibility of the user.

Note:

In contrast to connecting equipment, connectors may only be inserted/withdrawn with the power supply disconnected.

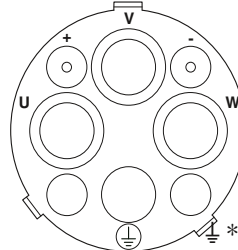
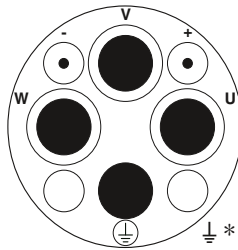
Contact chamber numbering
(view of plug-in side)

Number of positions

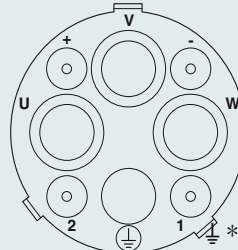
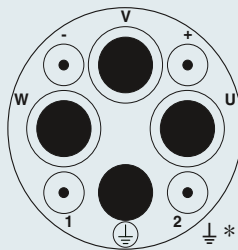
Male

Female

6-pos.
(2 + 3 + PE)
Crimp



8-pos.
(4 + 3 + PE)
Crimp



* with grounding spring,
PE leading

Circular connectors

M58 power connectors

Selection guide

M58 power connectors up to 150 A/630 V, crimp ranges up to 50 mm²

- Cable connectors
- Coupler connectors
- Device connectors, straight

The connectors are pre-assembled on delivery. The connectors can be furnished with the corresponding crimp contacts.

The product chart provides an overview of the available components.

Connector type

Cable connectors

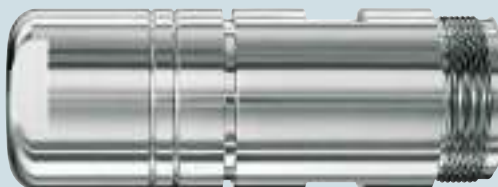
Shielded



See page 174.

Coupler connectors

Shielded



See page 174.

Device connectors

Shielded



See page 174.

Crimp contacts

Female contacts

Turned, see page 175.



Female contacts

Male contacts

Turned, see page 175.



Male contacts

Male contacts

Tools/accessories

Crimping tools

Crimping device for power and PE contacts
Ø 10 mm, see page 178.



Crimping pliers for signal contacts Ø 1.6 mm,
see page 178.

**Note:**

For safety reasons, only use female contacts in the live part of the connector.

Circular connectors

M58 power connectors

Cable and coupler connectors

- High transmission capacities of up to 630 V and 150 A
- Connection cross sections up to 50 mm²
- Cable clamping area from 17 mm to 36 mm



Cable connector



Coupling connector

		Ordering data				Ordering data				
Description	Cable clamping area	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	
		2+3+PE-pos.		4+3+PE-pos.		2+3+PE-pos.		4+3+PE-pos.		
Connector housing , with contact carrier, without contacts, for cable diameter:		17 mm ... 25 mm	1607503	1	1607508	1	1607500	1	1607506	1
		25 mm ... 36 mm	1607501	1	1607507	1	1607499	1	1607505	1
		Accessories				Accessories				
Crimp contacts		For female contacts, see page 175				For male contacts, see page 175				
Protective caps (to be ordered separately)		See page 181				See page 181				

Device connectors for front mounting

Assemble the coupler and device connectors with male contacts and the cable connectors with female contacts.



Device connector, straight

Description	Ordering data			
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	2+3+PE-pos.		4+3+PE-pos.	
	1615686		1	1615687
Accessories				
Crimp contacts		For male contacts, see page 175		
Protective caps (to be ordered separately)		See page 181		

Crimp contacts, turned

Assemble the 6-pos. (2+3+PE) versions with two Ø 1.6 mm signal contacts and four Ø 10 mm contacts (three power contacts and one PE contact).

Assemble the 8-pos. (4+3+PE) versions with four Ø 1.6 mm signal contacts and four Ø 10 mm contacts (three power contacts and one PE contact).

Note: Depending on the litz wire used, the connection cross sections (crimp ranges) can differ from the values listed below.



Crimp contacts, female



Crimp contacts, male

			Ordering data			Ordering data		
Description	Connection cross section [mm²]		Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Contact, female Ø 10.0 mm for cable connectors, power and PE contacts	10.0		SL-1CKS010	1607916	4			
	16.0		SL-1CKS020	1607917	4			
	25.0		SL-1CKS030	1607918	4			
	35.0		SL-1CKS040	1607919	4			
	50.0		SL-1CKS050	1607920	4			
Contact, female Ø 1.6 mm for cable connectors, signal contacts	0.75 ... 1.5		SL-16KS010	1607956	4			
Contact, male Ø 10.0 mm for coupler and device connectors, power and PE contacts	10.0					SL-1CKP010	1607911	4
	16.0					SL-1CKP020	1607912	4
	25.0					SL-1CKP030	1607913	4
	35.0					SL-1CKP040	1607914	4
	50.0					SL-1CKP050	1607915	4
Contact, male Ø 1.6 mm for coupler and device connectors, signal contacts	0.75 ... 1.5					SL-16KP010	1607909	4
			Accessories			Accessories		
Crimping tools			Order separately, see page 178 onwards			Order separately, see page 178 onwards		

Number of positions	Number of contacts	Contact Ø [mm]
6(2+3+PE)	2+3+PE	1.6+10+10
8(4+3+PE)	4+3+PE	1.6+10+10

Circular connectors

Tools and accessories

Special wrench

The torque screw driver is specially adapted to the M23 circular connectors and simplifies the process of tightening and loosening the knurled nut safely even in places where space is restricted.

The tool consists of a hook spanner as well as a torque screw driver with a set torque of 2.5 Nm.



Torque screw driver for M23 connectors with knurled nuts



Special screw key for screwing the adapter

		Ordering data			Ordering data		
Description	Wrench size [mm]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Torque screw driver incl. hook wrench							
For M23 connectors with knurled nuts		SF-Z0028	1607456	1			
Replacement hook spanner for torque screw driver		SF-Z0027	1607455	1			
Special wrench for cable or coupler connectors for screwing the adapter. Connection dimensions for torque spanner: 8.9 mm x 11.9 mm							
for M17 connectors, WAF 19					ST-Z0012	1613667	1
for M23 connectors, WAF 24					RF-Z0007	1614347	1
for M40 connectors, WAF 41					SM-Z0012	1614349	1
for M58 connectors, WAF 55					SL-Z0016	1614348	1

Crimping tools and accessories for M23 signal connectors

The RC-Z2130 and RC-Z2514 crimping pliers are used for rolled or turned RC crimp contacts.

The RC-Z2514 crimping pliers with 4-mandrel crimping are suitable for turned RC contacts. Detailed operating instructions are included in the packaging.



Crimping tools for rolled or turned RC contacts



Insertion and contact removal tool for RC contacts

Ordering data				Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Crimping pliers for rolled RC crimp contacts Ø 1 mm	RC-Z2130	1604267	1			
Litz wire cross section 0.08 ... 0.56 mm²						
Crimping pliers for turned RC crimp contacts Ø 1 mm / Ø 1.5 mm / Ø 2 mm	RC-Z2514	1614590	1			
Litz wire cross section of 0.08 ... 2.5 mm²						
Insertion and contact removal tool for RC crimp contacts						
Female / male Ø 1 mm				RC-Z2494	1614123	1
Female / male Ø 1.5 mm				RC-Z2274	1604409	1
Female / male Ø 2 mm				RC-Z2490	1611803	1

Crimping tools for turned contacts

The crimping pliers are suitable for turned contacts with Ø 0.6 mm, Ø 1 mm, Ø 2 mm, and Ø 3.6 mm (excluding M23 signal connectors). A pneumatic crimping tool is available for large litz wire cross sections.

Notes:

For crimping tools for M23 signal connectors, see page 176



Manual crimping pliers

ERC

		Ordering data		
Description	Litz wire cross section [mm ²]	Type	Order No.	Pcs./Pkt.
Manual crimping pliers with digital display for turned crimp contacts with Ø 1 mm, Ø 2 mm, Ø 3.6 mm	0.06 ... 6	SF-Z0025	1607452	1
Positioners for crimping the SF-6FS2000 / SF-6DP2000 contacts with a connection cross section of 1.5 mm ²		SF-Z0042	1613666	1
Manual crimping pliers with digital display for turned crimp contacts with Ø 0.6 mm, Ø 1 mm, Ø 2 mm	0.06 ... 2.5	SF-Z0054	1615585	1
Manual crimping pliers with digital display for turned crimp contacts with Ø 2 mm, Ø 3.6 mm	1.5 ... 10	SF-Z0026	1607454	1
Locator for SF-Z0026 crimping pliers, for crimping turned M40 hybrid contacts, Ø 3.6 mm	2.5 ... 6	SB-Z0026	1624618	1
Manual crimping pliers , for turned crimp contacts, Ø 3.6 mm	10 ... 16	SB-Z0016	1624515	1

Circular connectors

Tools and accessories

Crimping tools for turned contacts for M58 power connectors

The SF-Z0025 manual crimping pliers are used for turned crimp contacts with Ø 1.6 mm for M58 power connectors. The Ø 10 mm contacts can be crimped conveniently using the SL-Z0007 electric crimping tool.

The crimping stamps for the Ø 10 mm contacts are used in pairs. The stamps are tailored to the connection cross sections and marked.



Electro-hydraulic crimping device



Manual crimping pliers

ERC

		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Electro-hydraulic crimping device incl. charger and rechargeable battery , for Litz wire cross section 10 ... 50 mm² (power and PE contacts Ø 10 mm)		SL-Z0007	1613484	1			
Crimping stamp for crimping device SL-Z0007	10	SL-Z0011	1613488	1			
Crimping stamp for crimping device SL-Z0007	16	SL-Z0012	1613489	1			
Crimping stamp for crimping device SL-Z0007	25	SL-Z0013	1613490	1			
Crimping stamp for crimping device SL-Z0007	35	SL-Z0014	1613491	1			
Crimping stamp for crimping device SL-Z0007	50	SL-Z0015	1613492	1			
Crimping tool with digital display	0.06 ... 6				SF-Z0025	1607452	1
Accessories for electro-hydraulic crimping device SL-Z0007							
	Replacement battery	SL-Z0008	1613485	1			
	Table holder incl. foot actuation switch	SL-Z0010	1613487	1			

Notes:

The SF-Z0025 manual crimping pliers with digital display are also suitable for crimping ST / SF / SM turned crimp contacts.

Contact removal tools, square mounting flange

The removal tool is used for those contact carriers which are snapped into the housing without rear support. They are removed from the plug-in side using the removal tool.

The square mounting flange is used for cable and coupling connectors. In this way, the product range is easily expanded with connectors as panel feed-throughs.



Contact removal tool
for snap-in contact carriers



Square mounting flange
for cable or coupler connectors
for wall mounting

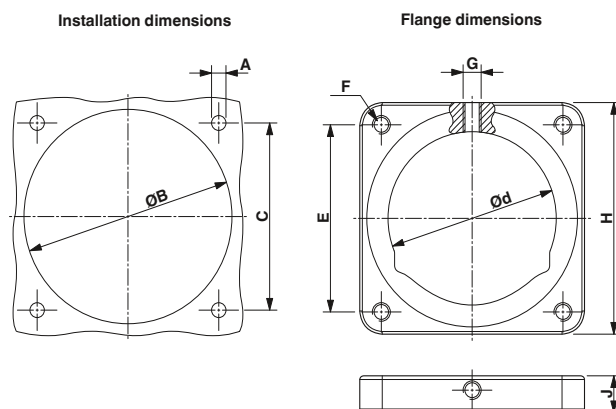
			Ordering data			Ordering data		
Description	Wall mounting	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.	
Contact removal tool for contact carriers, device connectors								
	for M17 signal or power connectors	ST-Z0001	1607770	1				
	For M23 feedback connectors	RF-Z0001	1607904	1				
	For M23 signal connectors	CA-Z0001	1620699	1				
Square mounting flange, metal, with O-ring gasket, for M17 (excluding M17 Compact) cable and coupler connectors for wall mounting								
	4 x Ø 2.7 mm				ST-Z0002	1607771	1	
	4 x M3				ST-Z0003	1607772	1	
Square mounting flange, metal, without O-ring gasket, for M17 (excluding M17 Compact) cable and coupler connectors for wall mounting								
	4 x Ø 2.7 mm				ST-Z0004	1607773	1	
	4 x M3				ST-Z0005	1607775	1	
Square mounting flange, metal, with O-ring gasket, for M23 feedback cable and coupler connectors for wall mounting								
	4 x M3				RF-Z0003	1607905	1	
Square mounting flange, metal, with O-ring gasket, for M40 cable and coupler connectors for wall mounting								
	4 x Ø 4.3 mm				SM-Z0003	1607935	1	
Square mounting flange, metal, without O-ring gasket, for M40 cable and coupler connectors for wall mounting								
	4 x Ø 4.3 mm				SM-Z0004	1607937	1	

Installation dimensions for square mounting flanges

Type	Installation dimensions			Flange dimensions					
	A	B	C	d	E	F	G	H	J
ST-Z0002 ST-Z0003 ST-Z0004 ST-Z0005	4x M2,5 / Ø 3.2	Ø 22.9 + 0.2	□ 22.6 ± 0.1	Ø 21.6	□ 22.6 ± 0.1	4x M3 / Ø 2.7	M2,5	□ 28.0 ± 0.1	5
RF-Z0003	4x Ø 3.2	Ø 27.9 ± 0.1	□ 28.3 ± 0.1	Ø 26.2	□ 28.3 ± 0.1	4x M3	M3	□ 35.0	6
SM-Z0003 SM-Z0004	4x M4 / Ø 4.2	Ø 46.1 ± 0.1	□ 42.4 ± 0.1	Ø 45.0	□ 42.4 ± 0.1	4x Ø 4.3	M3	□ 55.0 ± 0.1	5.5

Note:

For insulating wall mounting, plastic mounting flanges are available on request.



Circular connectors

Tools and accessories

Color rings

The color rings are used for individually marking the connectors



Color rings for marking connectors with cable entry



Color rings for marking device connectors

		Ordering data			Ordering data		
Description	Color	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Color rings for M17 connectors, 50 pcs. in set							
	green	ST-Z0016	1617993	50	ST-Z0019	1620621	50
	orange	ST-Z0017	1618049	50	ST-Z0020	1620622	50
	black	ST-Z0018	1618050	50	ST-Z0021	1620623	50
Color rings for M23 signal connectors, 50 pcs. in set							
	green	RF-Z0014	1620588	50			
	orange	RF-Z0015	1620592	50			
	black	RF-Z0016	1620593	50			
Color rings for M23 signal device connectors, front mounting, Pg13.5 and M20 fastening thread/rear mounting, central fastening thread, 50 pcs. in set							
	green				CA-Z0110	1620700	50
	orange				CA-Z0111	1620701	50
	black				CA-Z0112	1620702	50
Color rings for M23 signal device connectors, front mounting, flange dimensions: 25 mm x 25 mm, 50 pcs. in set							
	green				CA-Z0120	1620704	50
	orange				CA-Z0121	1620705	50
	black				CA-Z0122	1620706	50
Color rings for M23 feedback connectors and M23 signal device connectors, angled, rotatable, 50 pcs. in the set							
	green	RF-Z0014	1620588	50	RF-Z0017	1620624	50
	orange	RF-Z0015	1620592	50	RF-Z0018	1620625	50
	black	RF-Z0016	1620593	50	RF-Z0019	1620626	50
Color rings for M23 hybrid and power connectors, 50 pcs. in set							
	green	SF-Z0064	1620585	50	RF-Z0017	1620624	50
	orange	SF-Z0065	1620586	50	RF-Z0018	1620625	50
	black	SF-Z0066	1620587	50	RF-Z0019	1620626	50
Color rings for M40 hybrid and power connectors, 50 pcs. in the set							
	green	SM-Z0025	1620558	50	SM-Z0028	1620627	50
	orange	SM-Z0026	1620559	50	SM-Z0029	1620628	50
	black	SM-Z0027	1620560	50	SM-Z0030	1620629	50

Protective caps, plastic

A range of protective caps is available for signal connectors and power connectors to protect the contact elements in the case of a separate plug connection.

These prevent penetration of dust and humidity.

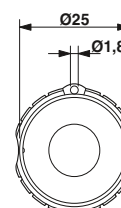
Plastic protective caps enable IP40 degree of protection when locked into place.



Plastic protective cap

ERC

		Ordering data		
Description	Degree of protection when locked	Type	Order No.	Pcs./Pkt.
Plastic protective cap, for signal or power connectors, with M17 external thread	IP40	ST-Z0006	1607776	25
Plastic protective cap, for signal or power connectors, with M17 knurled nut (SPEEDCON and standard)	IP40	ST-Z0007	1607777	25
Plastic protective cap, for signal or power connectors, with M17 external thread (M17 COMPACT)	IP40	ST-Z0023	1621049	25
Plastic protective cap, for signal or power connectors, with M17 knurled nut (M17 COMPACT)	IP40	ST-Z0024	1621904	25
Plastic protective cap with lug, for signal or power connectors, with M23 external thread	IP40	SF-Z0019	1607449	25
Plastic protective cap, for signal or power connectors and for hybrid connectors, with M23 knurled nut	IP40	RC-Z2058	1604223	25
Plastic protective cap, for signal or power connectors, with M23 external thread	IP40	RC-Z2059	1604225	25
Plastic protective cap, anti-static, black, for signal or power connectors, with M23 knurled nut	IP40	RC-Z2468	1611796	25
Plastic protective cap, for hybrid connectors, with M23 external thread	IP40	SH-Z2304	1622137	25
Plastic protective cap, anti-static, black, for signal or power connectors, with M23 external thread	IP40	RC-Z2469	1611797	25
Plastic protective cap, for power connectors and for hybrid connectors, with M40 external thread	IP40	SM-Z0001	1605866	25
Plastic protective cap, for signal or power connectors and for hybrid connectors, with M40 external thread	IP40	SM-Z0031	1624199	25
Plastic protective cap, for power connectors, with M58 external thread	IP40	SL-Z0005	1607926	25



SF-Z0019, eye for fixing cord

Protective caps, metal

Metal protective caps are available for higher demands on the degree of protection. These enable IP67 when locked.

The steel wire is fastened to the housing panel. The metal protective cap is therefore captive.



Metal protective cap

		Ordering data		
Description	Degree of protection when locked	Type	Order No.	Pcs./Pkt.
Metal protective cap , for signal or power connectors, with M17 external thread	IP67	ST-Z0014	1616069	10
Metal protective cap with steel wire and lug , device fastening, for signal or power connectors, with M17 external thread	IP67	ST-Z0013	1616068	10
Metal protective cap with steel wire and loop , cable fastening, for signal or power connectors, with M17 knurled nut	IP67	ST-Z0077	1627217	10
Metal protective cap , for signal connectors, with M23 external thread	IP67	RC-Z2104	1604260	10
Metal protective cap with steel wire and lug , device fastening, for signal connectors, with M23 external thread	IP67	RC-Z2068	1604236	10
Metal protective cap with steel wire and lug , device fastening, for signal connectors, with M23 knurled nut	IP67	RC-Z2062	1604228	10
Metal protective cap with steel wire and loop , cable fastening, for signal connectors, with M23 knurled nut	IP67	CA-Z0077	1627224	1
Metal protective cap , for power connectors, with M23 external thread	IP67	SC-Z2319	1605456	10
Metal protective cap with steel wire and lug , device fastening, for power connectors, with M23 external thread	IP67	SC-Z2320	1605457	10
Metal protective cap , for hybrid and power connectors, with M23 external thread	IP67	SH-Z2301	1622140	10
Metal protective cap with steel wire and lug , device fastening, for hybrid and power connectors, with M23 knurled nut	IP67	SH-Z2300	1622141	10
Metal protective cap with steel wire and loop , cable fastening, for hybrid and power connectors, with M23 knurled nut	IP67	SH-Z0077	1627226	1
Metal protective cap , for hybrid connectors, with M23 external thread	IP67	SH-Z2303	1622138	10
Metal protective cap with steel wire and lug , device fastening, for hybrid connectors, with M23 external thread	IP67	SH-Z2302	1622139	10
Metal protective cap , for hybrid and power connectors, with M40 external thread	IP67	SB-Z0001	1623827	1
Metal protective cap with steel wire and lug , device fastening, for hybrid and power connectors, with M40 external thread	IP67	SB-Z0002	1623828	1
Metal protective cap with steel wire and loop , cable fastening, for hybrid and power connectors, with M40 knurled nut	IP67	SM-Z0077	1627218	1



Sensor/actuator cabling

A one-stop-shop for the entire range of solutions for field installation

In decentral connection technology, passive distributor systems connect the I/O devices to the PLC. Phoenix Contact provides the most comprehensive range of sensor/actuator cabling on the market. Passive M8, and M12 components consisting of distributor boxes, cables, and connectors for assembly are available from stock. A comprehensive selection of valve connectors rounds out the range.

The 1/2" and 7/8" range for the North American market can be found on our website.

Customer and industry-specific solutions

So as to respond flexibly to your requirements, cables and distributor boxes can be individually configured with various cable lengths and types (e.g., other materials or colors).

Phoenix Contact offers a range of suitable product series for increased requirements, such as the railway or food industry, the long-term use of products outdoors and cables for flexible use in drag chains or robot applications.

 Your web code: **#0564**

Assembled cables

3-pos. cables with connectors	186
4-pos. cables with connectors	194
5-pos. cables with connectors	200
6-pos. cables with connectors	205
8-pos. cables with connectors	207
12 and 17-pos. cables with connectors	212
Assembled M17 to M40 cables	216
Cables with valve connectors	228

Distributors and adapters	248

Distributor boxes	260

Cabling for the railway industry	268

Cabling for the food industry	270

Cabling for outdoor applications	272

Cabling for robots and drag chains	274

M12 cabling for power applications	276

By the meter – cable coils, cable drums	302

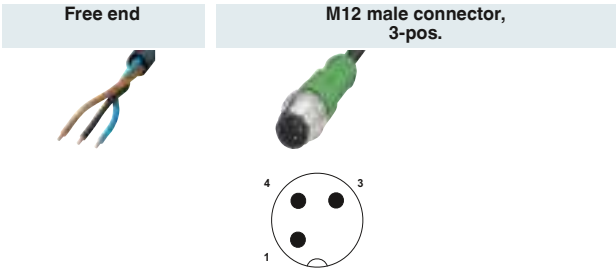
Accessories	306

Cable range	318

Assembled cables

M8 SAC cable, snap-in, 3- and 4-pos., cable type: PUR

Notes:
For information about the cable qualities, see page 318



		Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.	
 	M8 female connector, snap-in, 3-pos., straight	5 m	1519875	Variable	1697593	Variable	1696853
	M8 female connector, snap-in, 3-pos., angled	5 m	1519891	Variable	1697629	Variable	1696882
 	M8 female connector, snap-in, 3-pos., with LEDs, angled	Variable	1513402	Variable	1515675		
	M8 female connector, snap-in, 4-pos., straight	Variable	1513389				
 	M8 female connector, snap-in, 4-pos., angled	Variable	1513392				
	M8 female connector, snap-in, 4-pos., with LEDs, angled	Variable	1511954				

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 3-pos. M12 male and a straight M8 snap-in female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1696853	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

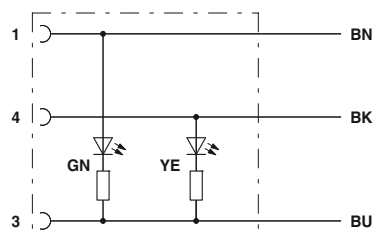
Cable description	Cable type	Suitable for
PUR, halogen-free – black E221474	PUR	3-/4-pos.
PUR, halogen-free – gray E221474	280	3-pos.
TPE-U highly flexible – gray E221474	800	3-/4-pos.

Color coding	Pin assignment 3-pos.
BN	1
BK	4
BU	3

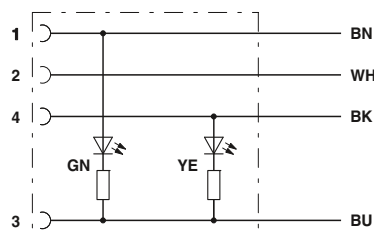
Color coding	Pin assignment 4-pos.
BN	1
WH	2
BK	4
BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

	Technical data	Technical data	Technical data	Technical data
	M8 3-pos.	M8 3-pos., with LEDs	M8 4-pos.	M8 4-pos., with LED
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	48 V AC / 60 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-104
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data				
Male connector/female connector	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of the M8 female connector with LED, 3-pos.



Contact assignment of the M8 female connector with LED, 4-pos.

Sensor/actuator cabling

Assembled cables

M8 and M12 SAC cable, 3-pos., cable type: PUR

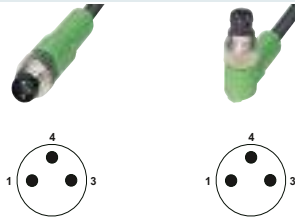
Notes:

For information about the cable qualities, see page 318

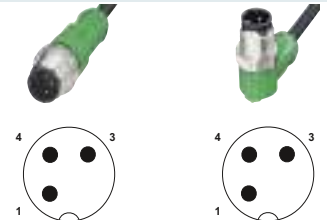
Free end



M8 male connector



M12 male connector



		Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.		Order No.		Order No.	
				1.5 m	1681664	1.5 m	1681693	1.5 m	1668014	1.5 m	1668137
				3 m	1681677	3 m	1681703	3 m	1668027	3 m	1668140
				5 m	1681680	5 m	1681716	5 m	1668030	5 m	1668153
				10 m	1693584	10 m	1694114	10 m	1682566	10 m	1694444
				Variable	1697548	Variable	1697551	Variable	1696662	Variable	1696675
M8 female connector, straight											
		1.5 m	1669712	0.3 m	1681907	0.3 m	1682029	0.3 m	1668797	0.3 m	1668878
		3 m	1669725	0.6 m	1681910	0.6 m	1682032	0.6 m	1668807	0.6 m	1668881
		5 m	1669628	1.5 m	1681923	1.5 m	1682045	1.5 m	1668810	1.5 m	1668894
		10 m	1694101	3 m	1681936	3 m	1682058	3 m	1668823	3 m	1668904
		Variable	1697580	Variable	1697632	Variable	1697661	Variable	1696840	Variable	1696895
M8 female connector, angled											
		1.5 m	1669738	0.3 m	1681949	0.3 m	1682061	0.3 m	1668836	0.3 m	1668917
		3 m	1669741	0.6 m	1681952	0.6 m	1682074	0.6 m	1668849	0.6 m	1668920
		5 m	1669631	1.5 m	1681965	1.5 m	1682087	1.5 m	1668852	1.5 m	1668933
		10 m	1694169	3 m	1681978	3 m	1682090	3 m	1668865	3 m	1668946
		Variable	1697603	Variable	1697645	Variable	1697674	Variable	1696866	Variable	1696905
M8 female connector, angled, with 2 LEDs											
		1.5 m	1671069	0.3 m	1681981	0.3 m	1682100	0.3 m	1694884		
		3 m	1671072	0.6 m	1681994	0.6 m	1682113	0.6 m	1694897		
		5 m	1671085	1.5 m	1682003	1.5 m	1682126	1.5 m	1694907		
		10 m	1683594	3 m	1682016	3 m	1682139	3 m	1694910		
		Variable	1697616	Variable	1697658	Variable	1697687	Variable	1696879	Variable	1696918
M12 female connector, straight											
		1.5 m	1694486	0.3 m	1682304	0.3 m	1682388	0.3 m	1681509		
		3 m	1694499	0.6 m	1682317	0.6 m	1682391	0.6 m	1681512		
		5 m	1683510	1.5 m	1682320	1.5 m	1682401	1.5 m	1681525		
		10 m	1693034	3 m	1682333	3 m	1682414	3 m	1681538		
		Variable	1696688	Variable	1697690	Variable	1697726	Variable	1696756		
M12 female connector, straight, pin 2 - 4 bridged											
		1.5 m	1668072					0.3 m	1668315	0.3 m	1668551
		3 m	1668085					0.6 m	1668328	0.6 m	1668564
		5 m	1668098					1.5 m	1668331	1.5 m	1668577
		10 m	1694208					3 m	1668344	3 m	1668580
		Variable	1696691					Variable	1696769	Variable	1696811
M12 female connector, straight, with LED											
		1.5 m	1694185								
		3 m	1694198								
		5 m	1694787								
		10 m	1694790								
		Variable	1696701	Variable	1514197			Variable	1511802	Variable	1524763
M12 female connector, angled											
		1.5 m	1694509	0.3 m	1682346	0.3 m	1682427	0.3 m	1681541		
		3 m	1694512	0.6 m	1682359	0.6 m	1682430	0.6 m	1681554		
		5 m	1694525	1.5 m	1682362	1.5 m	1682443	1.5 m	1681567		
		10 m	1694538	3 m	1682375	3 m	1682456	3 m	1681570		
		Variable	1696714	Variable	1697700	Variable	1697739	Variable	1696772		
M12 female connector, angled, pin 2 - 4 bridged											
		1.5 m	1668195					0.3 m	1668399	0.3 m	1668632
		3 m	1668205					0.6 m	1668409	0.6 m	1668645
		5 m	1668218					1.5 m	1668412	1.5 m	1668658
		10 m	1681017					3 m	1668425	3 m	1668661
		Variable	1696727					Variable	1696785	Variable	1696824
M12 female connector, angled with LED											
		1.5 m	1694392	0.3 m	1693351	0.3 m	1682469	0.3 m	1694554		
		3 m	1694402	0.6 m	1693364	0.6 m	1682472	0.6 m	1694567		
		5 m	1694415	1.5 m	1693380	1.5 m	1682485	1.5 m	1694570		
		10 m	1694428	3 m	1693403	3 m	1682498	3 m	1694583		
		Variable	1696730	Variable	1697713	Variable	1697742	Variable	1696798		
M12 female connector, angled, with LED, pin 2 - 4 bridged											
		1.5 m	1668250					0.3 m	1668438		
		3 m	1668263					0.6 m	1668441		
		5 m	1668276					1.5 m	1668454		
		10 m	1681059					3 m	1668467		
		Variable	1696743					Variable	1696808	Variable	1696837

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 3-pos. M12 male and a straight M12 female, the ordering data is as follows:

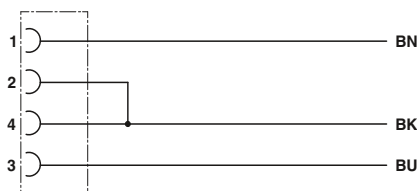
Order No.	Cable type	Length [m] 40 m, maximum
1696756	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Suitable for:
PUR, halogen-free – black E221474	PUR	M8/M12
PUR, halogen-free – gray E221474	280	M8/M12
TPE-U highly flexible – gray E221474	800	M8/M12
PUR irradiated – orange E221474	150	M12
PVC – black E221474	PVC	M8/M12
PVC – gray E221474	500	M8/M12
PVC – yellow E221474	540	M12
PVC 105° – yellow E221474	542	M12

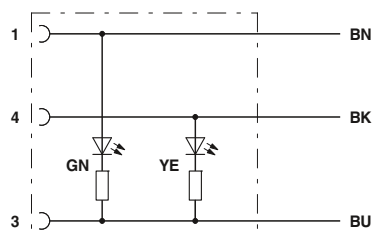
Color coding	Pin assignment
BN	1
BK	4
BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

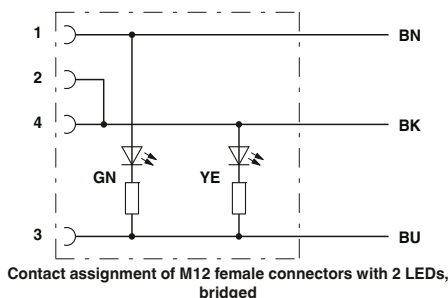
	Technical data	Technical data	Technical data	Technical data
	M8 3-pos.	M8 3-pos., with LEDs	M12 3-pos.	M12 3-pos., with LEDs
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
M12 circular connector in accordance with:	-	-	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90
Male connector/female connector	[A]	[A]	[A]	[A]



Contact assignment of M12 female connectors, bridged



Contact assignment of M8/M12 female connectors with two LEDs



Contact assignment of M12 female connectors with 2 LEDs, bridged

Sensor/actuator cabling

Assembled cables

M8 and M12 SAC cable, 3-pos., cable type: PVC

Notes:

For information about the cable qualities, see page 318

Free end

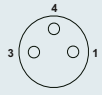
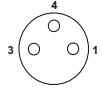
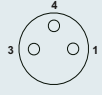
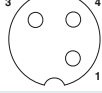
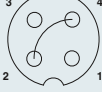
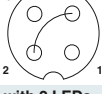


M8 male connector



M12 male connector



			Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Free end			Order No.		Order No.		Order No.		Order No.		Order No.	
			1.5 m	1415861	1.5 m	1415865	1.5 m	1414434	1.5 m	1414447		
			3 m	1415862	3 m	1415866	3 m	1414435	3 m	1414448		
			5 m	1415863	5 m	1415867	5 m	1693173	5 m	1414449		
			10 m	1447280	10 m	1415869	10 m	1414437	10 m	1414450		
			Variable	1697548	Variable	1697551	Variable	1696662	Variable	1696675		
M8 female connector, straight												
		1.5 m	1415870	0.3 m	1415877	0.3 m	1415881	0.3 m	1415525	0.3 m	1415534	
		3 m	1415871	0.6 m	1415878	0.6 m	1415882	0.6 m	1415527	0.6 m	1415535	
		5 m	1510748	1.5 m	1415879	1.5 m	1415883	1.5 m	1415528	1.5 m	1415536	
		10 m	1506532	3 m	1415880	3 m	1415884	3 m	1415529	3 m	1415537	
		Variable	1697580	Variable	1697632	Variable	1697661	Variable	1696840	Variable	1696895	
M8 female connector, angled												
		1.5 m	1415872	0.3 m	1415886	0.3 m	1415891	0.3 m	1415530	0.3 m	1415538	
		3 m	1446320	0.6 m	1415888	0.6 m	1415892	0.6 m	1415531	0.6 m	1415539	
		5 m	1403253	1.5 m	1415889	1.5 m	1415893	1.5 m	1415532	1.5 m	1415540	
		10 m	1403773	3 m	1415890	3 m	1415894	3 m	1415533	3 m	1415541	
		Variable	1697603	Variable	1697645	Variable	1697674	Variable	1696866	Variable	1696905	
M8 female connector, angled, with 2 LEDs												
		1.5 m	1415874	0.3 m	1415896	0.3 m	1415901					
		3 m	1415875	0.6 m	1415897	0.6 m	1415902					
		5 m	1508174	1.5 m	1415898	1.5 m	1415903					
		10 m	1415876	3 m	1415899	3 m	1415904					
		Variable	1697616	Variable	1697658	Variable	1697687	Variable	1696879	Variable	1696918	
M12 female connector, straight												
		1.5 m	1414451					0.3 m	1414576			
		3 m	1414452					0.6 m	1414577			
		5 m	1400505					1.5 m	1414578			
		10 m	1403486					3 m	1414579			
		Variable	1696688	Variable	1697690	Variable	1697726	Variable	1696756			
M12 female connector, straight, pin 2 - 4 bridged												
												
M12 female connector, straight, with 2 LEDs												
		1.5 m	1414556									
		3 m	1414561									
		5 m	1508459									
		10 m	1414565									
		Variable	1696701	Variable	1514197			Variable	1511802	Variable	1524763	
M12 female connector, angled												
		1.5 m	1414552					0.3 m	1414580			
		3 m	1414553					0.6 m	1414581			
		5 m	1579051					1.5 m	1415519			
		10 m	1453821					3 m	1415520			
		Variable	1696714	Variable	1697700	Variable	1697739	Variable	1696772			
M12 female connector, angled, pin 2 - 4 bridged												
												
M12 female connector, angled, with 2 LEDs												
		1.5 m	1414571					0.3 m	1415521			
		3 m	1414573					0.6 m	1415522			
		5 m	1505326					1.5 m	1415523			
		10 m	1414575					3 m	1415524			
		Variable	1696730	Variable	1697713	Variable	1697742	Variable	1696798			
M12 female connector, angled, with LED, pin 2 - 4 bridged												
												

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PVC - black, with a straight 3-pos. M12 male and a straight M12 female, the ordering data is as follows:

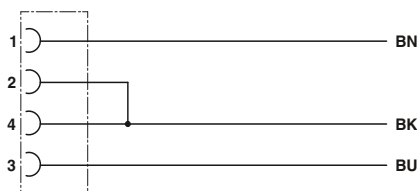
Order No.	Cable type	Length [m] 40 m, maximum
1696756	PVC	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description		Cable type	Suitable for:
PVC – black E221474		PVC	M8/M12
PVC – gray E221474		500	M8/M12
PVC – yellow E221474		540	M12
PVC 105° – yellow E221474		542	M12
PUR, halogen-free – black E221474		PUR	M8/M12
PUR irradiated – orange E221474		150	M12
PUR, halogen-free – gray E221474		280	M8/M12
TPE-U highly flexible – gray E221474		800	M8/M12

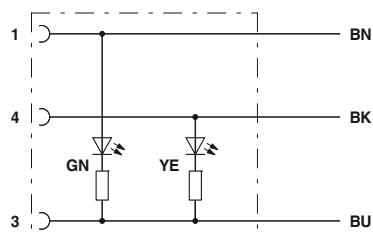
Color coding	Pin assignment
BN	1
BK	4
BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

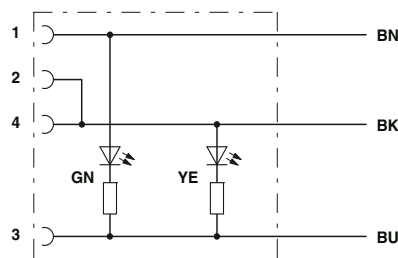
	Technical data	Technical data	Technical data	Technical data
	M8 3-pos.	M8 3-pos., with LEDs	M12 3-pos.	M12 3-pos., with LEDs
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
M12 circular connector in accordance with:	-	-	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90
Male connector/female connector	[A]	[A]	[A]	[A]



Contact assignment of M12 female connectors, bridged



Contact assignment of M8/M12 female connectors with two LEDs



Contact assignment of M12 female connectors with 2 LEDs, bridged

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 3-pos., cable type: 800

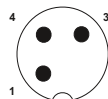
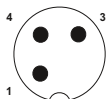
Notes:

For information about the cable qualities, see page 324

Free end



M12 male connector



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
	1.5 m		1456734		1.5 m	
	3 m		1456747		3 m	
	5 m		1456750		5 m	
	10 m		1456763		10 m	
	Variable		1696662		Variable	
	1.5 m		1456679		0.3 m	
	3 m		1456682		0.6 m	
	5 m		1456695		1.5 m	
	10 m		1456705		3 m	
	Variable		1696688		Variable	
	1.5 m		1454260		0.3 m	
	3 m		1456718		0.6 m	
	5 m		1454273		1.5 m	
	10 m		1454299		3 m	
	Variable		1696714		Variable	
	1.5 m		1454312		0.3 m	
	3 m		1456721		0.6 m	
	5 m		1454325		1.5 m	
	10 m		1454341		3 m	
	Variable		1696730		Variable	

Information for products with fixed cable length:

Products with fixed cable length are produced with the highly flexible 800 cable type and are available from stock.

Cable description

TPE-U highly flexible – gray
Robots and drag chains

Cable type

800

Color coding

BN	
BK	
BU	

Pin assignment

1
4
3

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, TPE-U 800, with a straight 3-pos. M12 connector and free cable end, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1696662	800	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

	Technical data	
	M12 3-pos.	M12 3-pos., with LEDs
Rated voltage	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Material, knurls	Zinc die-cast, nickel-plated	Zinc die-cast, nickel-plated
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Male connector/female connector	-25 ... 90	-25 ... 90

M8 and M12 SAC cable, 3-pos., shielded, cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end

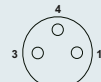
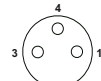
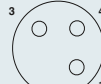
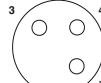


M8 male connector, 360° shielded



M12 male connector, 360° shielded



		Ordering data		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.		Order No.	
		1.5 m	1521614	1.5 m	1521669	1.5 m	1682650	1.5 m	1682689
		3 m	1521527	3 m	1521672	3 m	1682663	3 m	1682692
		5 m	1521630	5 m	1521685	5 m	1682676	5 m	1682702
		10 m	1521643	10 m	1521698	10 m	1500664	10 m	1500677
		Variable	1521656	Variable	1521708	Variable	1697425	Variable	1697438
M8 female connector, straight, 360° shielded									
		1.5 m	1521711	0.3 m	1456310				
		3 m	1521724	0.6 m	1456323				
		5 m	1521737	1.5 m	1455285				
		10 m	1521740	3 m	1455298				
		Variable	1521753	Variable	1552052	Variable	1552078		
M8 female connector, angled, 360° shielded									
		1.5 m	1521766						
		3 m	1521779						
		5 m	1521782						
		10 m	1521795						
		Variable	1521805	Variable	1552065	Variable	1552081		
M12 female connector, straight, 360° shielded									
		1.5 m	1682786			0.3 m	1500800		
		3 m	1682799			0.6 m	1500813		
		5 m	1682809			1.5 m	1500826		
		10 m	1500680			3 m	1500839		
		Variable	1697441			Variable	1536049	Variable	1536065
M12 female connector, angled, 360° shielded									
		1.5 m	1682812			0.3 m	1500923		
		3 m	1682825			0.6 m	1500936		
		5 m	1682838			1.5 m	1500949		
		10 m	1500693			3 m	1500952		
		Variable	1697454			Variable	1536052	Variable	1536078

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 3-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m]
1536049	PUR	4.5
Minimum order amount:		Increments:
25 pcs.		0.2 ... 3 m = 0.1 m
		> 3 m = 0.5 m

Cable description	Cable type	Suitable for:	Color coding	Pin assignment
PUR, halogen-free – black E221474	PUR	M8/M12	BN	1
PVC – black E221474	PVC	M12	BK	4
PVC – gray E221474	500	M12	BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

	Technical data	Technical data
	M8	M12
	3-pos., shielded	3-pos., shielded
	48 V AC / 60 V DC	48 V AC / 60 V DC
Rated voltage	4	4
Rated current	CuSn	CuSn
Contact material	Ni/Au	Ni/Au
Contact surface material	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Material of grip body	IEC 61076-2-104	-
M8 circular connector in accordance with:	-	IEC 61076-2-101
M12 circular connector in accordance with:	IP65 / IP67	IP65 / IP67
Degree of protection		
Temperature data		
Male connector/female connector	-25 ... 90	-25 ... 90

Sensor/actuator cabling

Assembled cables

M8 and M12 SAC cable, 4-pos., cable type: PUR

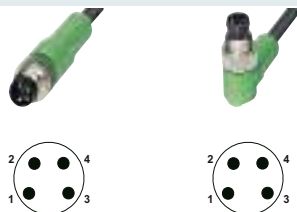
Notes:

For information about the cable qualities, see page 318

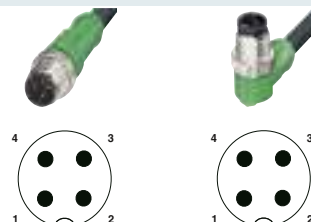
Free end



M8 male connector



M12 male connector



Free end	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.		Order No.		Order No.	
		1.5 m	1681787	1.5 m	1681813	1.5 m	1668043	1.5 m	1668166	
		3 m	1681790	3 m	1681826	3 m	1668056	3 m	1668179	
		5 m	1681800	5 m	1681839	5 m	1668069	5 m	1668182	
		10 m	1694143	10 m	1694156	10 m	1682993	10 m	1694457	
		Variable	1697755	Variable	1697768	Variable	1696947	Variable	1696950	
M8 female connector, straight 		1.5 m	1681842	0.3 m	1682142	0.3 m	1682223	0.3 m	1694923	
		3 m	1681855	0.6 m	1682155	0.6 m	1682236	0.6 m	1693076	
		5 m	1681868	1.5 m	1682168	1.5 m	1682249	1.5 m	1693089	
		10 m	1683484	3 m	1682171	3 m	1682252	3 m	1694936	
		Variable	1697771	Variable	1697797	Variable	1697810	Variable	1697072	Variable 1507874
M8 female connector, angled 		1.5 m	1681871	0.3 m	1682184	0.3 m	1682265		0.3 m	1671551
		3 m	1681884	0.6 m	1682197	0.6 m	1682278		0.6 m	1671564
		5 m	1681897	1.5 m	1682207	1.5 m	1682281		1.5 m	1671577
		10 m	1694172	3 m	1682210	3 m	1682294		3 m	1671580
		Variable	1697784	Variable	1697807	Variable	1697823	Variable	1697085	
M8 female connector, angled, with 2 LEDs 		Variable	1517673					Variable	1515031	
M12 female connector, straight 		1.5 m	1668108				0.3 m	1668357	0.3 m	1668593
		3 m	1668111				0.6 m	1668360	0.6 m	1668603
		5 m	1668124				1.5 m	1668373	1.5 m	1668616
		10 m	1683002				3 m	1668386	3 m	1668629
		Variable	1696963	Variable	1506697		Variable	1697001	Variable	1697030
M12 female connector, straight, with 2 LEDs 		1.5 m	1694800							
		3 m	1694813							
		5 m	1694826							
		10 m	1694839							
		Variable	1696976							
M12 female connector, angled 		1.5 m	1668221				0.3 m	1668470	0.3 m	1668713
		3 m	1668234				0.6 m	1668483	0.6 m	1668726
		5 m	1668247				1.5 m	1668496	1.5 m	1668739
		10 m	1681389				3 m	1668506	3 m	1668742
		Variable	1696989	Variable	1511718	Variable	1697836	Variable	1697014	Variable 1697043
M12 female connector, angled, with 3 LEDs 		1.5 m	1668289				0.3 m	1668519	0.3 m	1668755
		3 m	1668292				0.6 m	1668522	0.6 m	1668768
		5 m	1668302				1.5 m	1668535	1.5 m	1668771
		10 m	1681020				3 m	1668548	3 m	1668784
		Variable	1696992				Variable	1697027	Variable	1697056

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

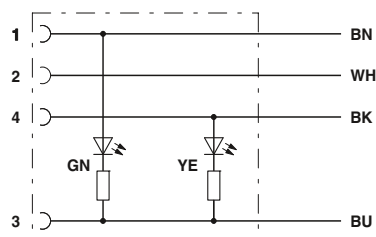
For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 4-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1697001	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

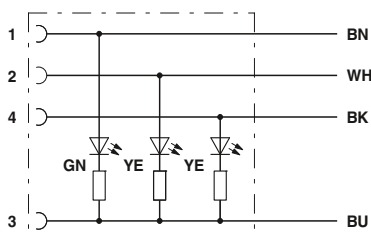
Cable description	Cable type	Suitable for:	Color coding	Pin assignment
PUR, halogen-free – black E221474	 PUR	M8/M12	BN	1
PUR, halogen-free – yellow E221474	 240	M12	WH	2
PUR, halogen-free – gray E221474	 280	M8/M12	BK	4
TPE-U highly flexible – gray E221474	 800	M8/M12	BU	3
PUR irradiated – orange E221474	 150	M12		
PUR irradiated – yellow E221474	 160	M12		
PVC – black E221474	 PVC	M8/M12		
PVC – gray E221474	 500	M8/M12		
PVC – yellow E221474	 540	M12		
PVC 105° – yellow E221474	 542	M12		

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

	Technical data	Technical data	Technical data	Technical data
	M8 4-pos.	M8 4-pos., with LED	M12 4-pos.	M12 4-pos., with LED
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
M12 circular connector in accordance with:	-	-	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90
Male connector/female connector	[A]	[A]	[A]	[A]



Contact assignment of M8/M12 female connectors with LED



Contact assignment of M12 female connectors with LED

Sensor/actuator cabling

Assembled cables

M8 and M12 SAC cable, 4-pos., cable type: PVC

Notes:

For information about the cable qualities, see page 318

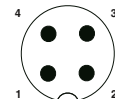
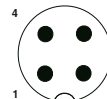
Free end



M8 male connector



M12 male connector



Free end	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.		Order No.		Order No.	
		1.5 m	1415542	1.5 m	1415546	1.5 m	1415585	1.5 m	1415591	
		3 m	1415543	3 m	1415547	3 m	1415588	3 m	1415592	
		5 m	1415544	5 m	1415548	5 m	1415589	5 m	1415593	
		10 m	1415545	10 m	1415549	10 m	1415590	10 m	1415594	
		Variable	1697755	Variable	1697768	Variable	1696947	Variable	1696950	
M8 female connector, straight 		1.5 m	1415550	0.3 m	1415556	0.3 m	1415576	0.3 m	1415671	
		3 m	1415551	0.6 m	1415557	0.6 m	1415577	0.6 m	1415672	
		5 m	1403252	1.5 m	1415558	1.5 m	1415578	1.5 m	1415673	
		10 m	1401062	3 m	1415560	3 m	1415579	3 m	1415674	
		Variable	1697771	Variable	1697797	Variable	1697810	Variable	1697072	Variable 1507874
M8 female connector, angled 		1.5 m	1415552	0.3 m	1415562	0.3 m	1415580		0.3 m	1415667
		3 m	1415554	0.6 m	1415572	0.6 m	1415581		0.6 m	1415668
		5 m	1403254	1.5 m	1415573	1.5 m	1415582		1.5 m	1415669
		10 m	1401064	3 m	1415574	3 m	1415583		3 m	1415670
		Variable	1697784	Variable	1697807	Variable	1697823	Variable	1697085	
M8 female connector, angled, with 2 LEDs 		Variable	1517673					Variable	1515031	
M12 female connector, straight 		1.5 m	1544976				0.3 m	1415611	0.3 m	1415627
		3 m	1404407				0.6 m	1415612	0.6 m	1415628
		5 m	1404408				1.5 m	1415613	1.5 m	1415635
		10 m	1446333				3 m	1415614	3 m	1415636
		Variable	1696963	Variable	1506697		Variable	1697001	Variable	1697030
M12 female connector, straight, with 2 LEDs 		1.5 m	1415596							
		3 m	1415597							
		5 m	1415602							
		10 m	1415605							
		Variable	1696976							
M12 female connector, angled 		1.5 m	1415606				0.3 m	1415617	0.3 m	1415642
		3 m	1693526				0.6 m	1454817	0.6 m	1415643
		5 m	1693539				1.5 m	1415618	1.5 m	1415644
		10 m	1415608				3 m	1415619	3 m	1415645
		Variable	1696989	Variable	1511718	Variable	1697836	Variable	1697014	Variable 1697043
M12 female connector, angled, with 3 LEDs 		1.5 m	1415609				0.3 m	1415620	0.3 m	1415646
		3 m	1415610				0.6 m	1415623	0.6 m	1415647
		5 m	1404961				1.5 m	1415624	1.5 m	1415648
		10 m	1401063				3 m	1415625	3 m	1415650
		Variable	1696992				Variable	1697027	Variable	1697056

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for products with variable cable:

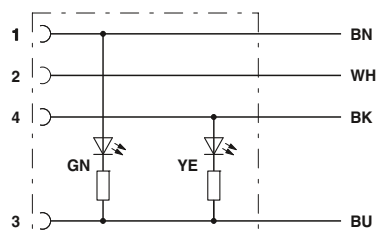
For a 4.5 m long sensor/actuator cable, PVC - black, with a straight 4-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1697001	PVC	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

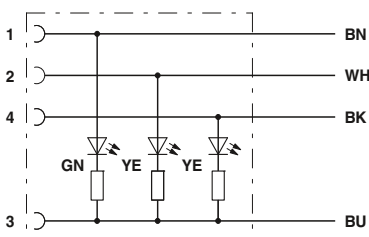
Cable description	Cable type	Suitable for:	Color coding	Pin assignment
PVC – black E221474	PVC	M8/M12	BN	1
PVC – gray E221474	500	M8/M12	WH	2
PVC – yellow E221474	540	M12	BK	4
PVC 105° – yellow E221474	542	M12	BU	3
PUR, halogen-free – black E221474	PUR	M8/M12		
PUR, halogen-free – yellow E221474	240	M12		
PUR, halogen-free – gray E221474	280	M8/M12		
PUR irradiated – orange E221474	150	M12		
PUR irradiated – yellow E221474	160	M12		
TPE-U highly flexible – gray E221474	800	M8/M12		

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

	Technical data	Technical data	Technical data	Technical data
	M8 4-pos.	M8 4-pos., with LED	M12 4-pos.	M12 4-pos., with LED
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
M12 circular connector in accordance with:	-	-	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90
Male connector/female connector	[A]	[A]	[A]	[A]



Contact assignment of M8/M12 female connectors with LED



Contact assignment of M12 female connectors with LED

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 4-pos., cable type: 800

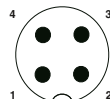
Notes:

For information about the cable qualities, see page 324

Free end



M12 male connector



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
		1.5 m	1457018	1.5 m	1457128	
		3 m	1457021	3 m	1457131	
		5 m	1457034	5 m	1457144	
		10 m	1457047	10 m	1457157	
		Variable	1696947	Variable	1696950	
M12 female connector, straight 		1.5 m	1456938	0.3 m	1457050	
		3 m	1456941	0.6 m	1457063	
		5 m	1567322	1.5 m	1567270	
		10 m	1567335	3 m	1457076	
		Variable	1696963	Variable	1697001	
M12 female connector, angled 		1.5 m	1456954	0.3 m	1457089	
		3 m	1456967	0.6 m	1567225	
		5 m	1456970	1.5 m	1567238	
		10 m	1456983	3 m	1457092	
		Variable	1696989	Variable	1697014	
M12 female connector, angled, with 3 LEDs 		1.5 m	1456996	0.3 m	1457102	
		3 m	1457005	0.6 m	1567173	
		5 m	1567351	1.5 m	1567199	
		10 m	1567364	3 m	1457115	
		Variable	1696992	Variable	1697027	

Information for products with fixed cable length:

Products with fixed cable length are produced with the highly flexible 800 cable type and are available from stock.

Cable description

TPE-U highly flexible – gray
Robots and drag chains

Cable type

800

Color coding

BN	
WH	
BK	
BU	

Pin assignment

1
2
4
3

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, TPE-U 800, with a straight 4-pos. M12 connector and free cable end, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1696947	800	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

	Technical data	
	M12 4-pos.	M12 4-pos., with LED
Rated voltage	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Material, knurls	Zinc die-cast, nickel-plated	Zinc die-cast, nickel-plated
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Male connector/female connector	-25 ... 90	-25 ... 90

M8 and M12 SAC cable, 4-pos., shielded, cable type: PUR

Notes:

For information about the cable qualities, see page 318

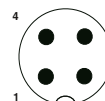
Free end



M8 male connector, 360° shielded



M12 male connector, 360° shielded



		Ordering data		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.		Order No.	
		1.5 m	1521818	1.5 m	1521863	1.5 m	1682715	1.5 m	1682870
		3 m	1521821	3 m	1521876	3 m	1682618	3 m	1682883
		5 m	1521834	5 m	1521889	5 m	1682647	5 m	1682896
		10 m	1521847	10 m	1521892	10 m	1694389	10 m	1500703
		Variable	1521850	Variable	1521902	Variable	1697467	Variable	1697470
M8 female connector, straight, 360° shielded									
 		1.5 m	1521915	0.3 m	1574580				
		3 m	1521928	0.6 m	1455722				
		5 m	1521931	1.5 m	1455735				
		10 m	1521944	3 m	1574603				
		Variable	1521957	Variable	1552094	Variable	1552117		
M8 female connector, angled, 360° shielded									
 		1.5 m	1521960						
		3 m	1521973						
		5 m	1521986						
		10 m	1521999						
		Variable	1522008	Variable	1552104	Variable	1552120		
M12 female connector, straight, 360° shielded									
 		1.5 m	1682841			0.3 m	1500842		
		3 m	1682854			0.6 m	1500855		
		5 m	1682867			1.5 m	1500868		
		10 m	1500716			3 m	1500871		
		Variable	1697483			Variable	1536081	Variable	1536104
M12 female connector, angled, 360° shielded									
 		1.5 m	1682906			0.3 m	1500965		
		3 m	1682919			0.6 m	1500978		
		5 m	1682922			1.5 m	1500981		
		10 m	1500729			3 m	1500994		
		Variable	1697496			Variable	1536094	Variable	1536117

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 4-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m]
1536081	PUR	4.5
Minimum order amount:		25 pcs.
Increments:		0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Suitable for:	Color coding	Pin assignment
PUR, halogen-free – black E221474	PUR	M8/M12	BN	1
PVC – black E221474	PVC	M12	WH	2
PVC – gray E221474	500	M12	BK	4
			BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

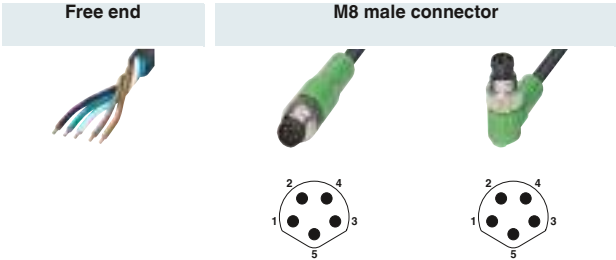
	Technical data	
	M8	M12
Rated voltage	48 V AC / 60 V DC	48 V AC / 60 V DC
Rated current	4	4
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	-
M12 circular connector in accordance with:	-	-
Degree of protection	IP65 / IP67	IP65 / IP67
Temperature data	-25 ... 90	-25 ... 90
Male connector/female connector	-25 ... 90	-25 ... 90

Sensor/actuator cabling

Assembled cables

M8 SAC cable, 5-pos., B-coded, cable type: PUR

Notes:
For information about the cable qualities, see page 318



		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.	
				1.5 m	1404461	1.5 m	1404465
				3 m	1404462	3 m	1404466
				5 m	1404463	5 m	1404467
				10 m	1404464	10 m	1404468
M8 female connector, straight							
		1.5 m	1404470	0.3 m	1404479		
		3 m	1404471	0.6 m	1404480		
		5 m	1404473	1.5 m	1404481		
		10 m	1404474	3 m	1404482		
M8 female connector, angled							
		1.5 m	1404475				
		3 m	1404476				
		5 m	1404477				
		10 m	1404478				

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free 115 cable type and are available from stock.

Cable description	Cable type	Color coding		Pin assignment
PUR, halogen-free – black	115	BN		1
		WH		2
		BK		4
		BU		3
		GY		5

Technical data	
M8, 5-pos.	
Rated voltage	30 V AC / 30 V DC
Rated current	3
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Material, knurls	Zinc die-cast, nickel-plated
M8 circular connector in accordance with:	IEC 61076-2-104
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 90

M12 SAC cable, 5-pos., cable type: PUR

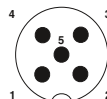
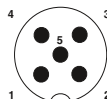
Notes:

For information about the cable qualities, see page 318

Free end



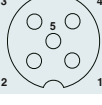
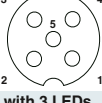
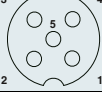
M12 male connector



Ordering data

Ordering data

Ordering data

Free end		Order No.		Order No.		Order No.	
			1.5 m	1669767	1.5 m	1669796	
			3 m	1669770	3 m	1669806	
			5 m	1669783	5 m	1669819	
			10 m	1683361	10 m	1694460	
			Variable	1697098	Variable	1697108	
M12 female connector, straight							
		1.5 m	1669822	0.3 m	1681583		
		3 m	1669835	0.6 m	1681596		
		5 m	1669848	1.5 m	1681606		
		10 m	1683374	3 m	1681619		
		Variable	1697111	Variable	1697140	Variable	1508734
M12 female connector, angled							
		1.5 m	1669851	0.3 m	1681622		
		3 m	1669864	0.6 m	1681635		
		5 m	1669877	1.5 m	1681648		
		10 m	1694541	3 m	1681651		
		Variable	1697124	Variable	1697153	Variable	1529506
M12 female connector, angled, with 3 LEDs							
		1.5 m	1669880	0.3 m	1694635		
		3 m	1669893	0.6 m	1694648		
		5 m	1669903	1.5 m	1694651		
		10 m	1694431				
		Variable	1697137	Variable	1697166	Variable	1552159

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 5-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m]
1697140	PUR	4.5
Minimum order amount:		25 pcs.
Increments:		0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description

Cable type

Color coding

Pin assignment

PUR, halogen-free – black E221474		PUR
PUR, halogen-free – black, 5th wire gray E221474		115
TPE-U highly flexible – gray, 5th wire gray E221474		800
PUR irradiated – orange E221474		150
PVC – black E221474		PVC
PVC – black, 5th wire gray E221474		515
PVC – gray E221474		500
PVC 105° – yellow E221474		540
PVC 105° – yellow, 5th wire gray E221474		542

BN	
WH	
BK	
BU	
GNYE	

1
2
4
3
5

Technical data

Technical data

Rated voltage	[A]
Rated current	
Contact material	
Contact surface material	
Material of grip body	
M12 circular connector in accordance with:	
Degree of protection	
Temperature data	
Male connector/female connector	[°C]

M12 5-pos.	M12 5-pos., with LED
48 V AC / 60 V DC	24 V / 24 V DC
4	4
CuSn	CuSn
Ni/Au	Ni/Au
TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
IEC 61076-2-101	IEC 61076-2-101
IP65 / IP67 / IP68	IP65 / IP67 / IP68
-25 ... 90	-25 ... 90

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 5-pos., cable type: PVC

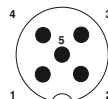
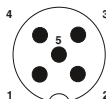
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
		1.5 m	1415675	1.5 m	1415679	
		3 m	1415676	3 m	1415680	
		5 m	1415677	5 m	1415681	
		10 m	1415678	10 m	1415682	
		Variable	1697098	Variable	1697108	
M12 female connector, straight 		1.5 m	1415683	0.3 m	1415695	
		3 m	1415684	0.6 m	1415696	
		5 m	1453889	1.5 m	1415697	
		10 m	1415685	3 m	1415698	
		Variable	1697111	Variable	1697140	Variable 1508734
M12 female connector, angled 		1.5 m	1415686	0.3 m	1415699	
		3 m	1415687	0.6 m	1415700	
		5 m	1415688	1.5 m	1415701	
		10 m	1415689	3 m	1415702	
		Variable	1697124	Variable	1697153	Variable 1529506
M12 female connector, angled, with 3 LEDs 		1.5 m	1415690	0.3 m	1415703	
		3 m	1415691	0.6 m	1415704	
		5 m	1415693	1.5 m	1415705	
		10 m	1415694	3 m	1415706	
		Variable	1697137	Variable	1697166	Variable 1552159

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PVC - black, with a straight 5-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1697140	PVC	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PVC - black E221474	PVC	BN	1
PVC - black, 5th wire gray E221474	515	WH	2
PVC - gray E221474	500	BK	4
PVC 105° - yellow E221474	540	BU	3
PVC 105° - yellow, 5th wire gray E221474	542	GN	5
PUR, halogen-free - black E221474	PUR		
PUR, halogen-free - black, 5th wire gray E221474	115		
PUR irradiated - orange E221474	150		
TPE-U highly flexible - gray, 5th wire gray E221474	800		

Technical data		Technical data	
M12 5-pos.		M12 5-pos., with LED	
Rated voltage	48 V AC / 60 V DC	Rated voltage	24 V / 24 V DC
Rated current	4	Rated current	4
Contact material	CuSn	Contact material	CuSn
Contact surface material	Ni/Au	Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector in accordance with:	-	M12 circular connector in accordance with:	-
Degree of protection	IP65 / IP67 / IP68	Degree of protection	IP65 / IP67 / IP68
Temperature data		Temperature data	
Male connector/female connector	-25 ... 90	Male connector/female connector	-25 ... 90

M12 SAC cable, 5-pos., cable type: 802

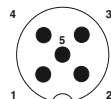
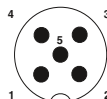
Notes:

For information about the cable qualities, see page 324

Free end



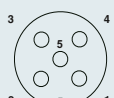
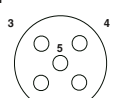
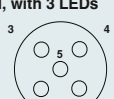
M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.		Order No.		Order No.	
		1.5 m	1457225	1.5 m	1457322	
		3 m	1457238	3 m	1457335	
		5 m	1457241	5 m	1457348	
		10 m	1457254	10 m	1457351	
		Variable	1697098	Variable	1697108	
M12 female connector, straight						
		1.5 m	1454419	0.3 m	1457267	
		3 m	1457160	0.6 m	1454561	
		5 m	1454422	1.5 m	1454587	
		10 m	1454448	3 m	1457270	
		Variable	1697111	Variable	1697140	
M12 female connector, angled						
		1.5 m	1457173	0.3 m	1457283	
		3 m	1457186	0.6 m	1454516	
		5 m	1457199	1.5 m	1454532	
		10 m	1457209	3 m	1457296	
		Variable	1697124	Variable	1697153	
M12 female connector, angled, with 3 LEDs						
		1.5 m	1454367	0.3 m	1457306	
		3 m	1457212	0.6 m	1454464	
		5 m	1454370	1.5 m	1454480	
		10 m	1454396	3 m	1457319	
		Variable	1697137	Variable	1697166	

Information for products with fixed cable length:

Products with fixed cable length are produced with the 802 cable type and are available from stock.

Cable description

TPE-U highly flexible – gray
Robots and drag chains

Cable type

802

Color coding

BN	
WH	
BK	
BU	
GYE	

Pin assignment

1
2
4
3
5

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, TPE-U 802, with a straight 5-pos. M12 connector and free cable end, the ordering data is as follows:

Order No.	Cable type	Length [m]
1697098	802	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Technical data

M12 5-pos.

48 V AC / 60 V DC
4
CuSn
Ni/Au
TPU, hardly inflammable,
self-extinguishing
Zinc die-cast, nickel-plated

Technical data

M12 5-pos., with LED

24 V / 24 V DC
4
CuSn
Ni/Au
TPU, hardly inflammable,
self-extinguishing
Zinc die-cast, nickel-plated

M12 circular connector in accordance with:

Degree of protection

Temperature data

Male connector/female connector

[°C]

IEC 61076-2-101
IP65 / IP67 / IP68

-25 ... 90

IEC 61076-2-101
IP65 / IP67 / IP68

-25 ... 90

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 5-pos., shielded, cable type: PUR

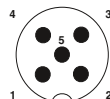
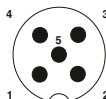
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector, 360° shielded



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
		1.5 m	1682728	1.5 m	1682757	
		3 m	1682744	3 m	1682760	
		5 m	1682731	5 m	1682773	
		10 m	1500732	10 m	1500745	
		Variable	1697506	Variable	1697519	
		1.5 m	1682935	0.3 m	1500884	
		3 m	1682948	0.6 m	1500897	
		5 m	1682951	1.5 m	1500907	
		10 m	1500758	3 m	1500910	
		Variable	1697522	Variable	1536120	Variable 1536146
		1.5 m	1682964	0.3 m	1501003	
		3 m	1682977	0.6 m	1501029	
		5 m	1682980	1.5 m	1501045	
		10 m	1500761	3 m	1501058	
		Variable	1697535	Variable	1536133	Variable 1536159

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 5-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1536120	PUR	4.5
Minimum order amount:		Increments:
25 pcs.		0.2 ... 3 m = 0.1 m
		> 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black E221474	PUR	BN	1
PVC – black E221474	PVC	WH	2
PVC – gray E221474	500	BK	4
		BU	3
		GY	5

Technical data

Rated voltage	
Rated current	[A]
Contact material	
Contact surface material	
Material of grip body	
M12 circular connector in accordance with:	
Degree of protection	
Temperature data	
Male connector/female connector	[°C]

M12
5-pos., shielded
48 V AC / 60 V DC
4
CuSn
Ni/Au
TPU, hardly inflammable, self-extinguishing
IEC 61076-2-101
IP65 / IP67
-25 ... 90

M8 SAC cable, 6-pos., cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end



M8 male connector



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
		1.5 m	1522095	1.5 m	1522147	
		3 m	1522105	3 m	1522150	
		5 m	1522118	5 m	1522163	
		10 m	1522121	10 m	1522176	
		Variable	1522134	Variable	1522189	
M8 female connector, straight 		1.5 m	1522192			
		3 m	1522202			
		5 m	1522215			
		10 m	1522228			
		Variable	1522231	Variable	1551927	Variable 1551943
M8 female connector, angled 		1.5 m	1522244			
		3 m	1522257			
		5 m	1522260			
		10 m	1522273			
		Variable	1522286	Variable	1551930	Variable 1551956

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Cable description

PUR, halogen-free – black
E221474



Cable type

PUR

Color coding

BN

WH

BU

BK

GY

PK

Pin assignment

1

2

3

4

5

6

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 6-pos. M8 connector and open cable end, the ordering data is as follows:

Order No.	Cable type	Length [m]
1522134	PUR	4.5
Minimum order amount:		Increments:
25 pcs.		0.2 ... 3 m = 0.1 m
		> 3 m = 0.5 m

Technical data

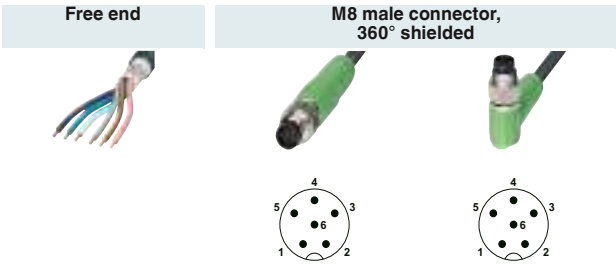
M8 6-pos.	
Rated voltage	30 V AC / 30 V DC
Rated current	1.5 [A]
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 90 [°C]

Sensor/actuator cabling

Assembled cables

M8 SAC cable, 6-pos., shielded, cable type: PUR

Notes:
For information about the cable qualities, see page 318



Ordering data		Ordering data		Ordering data	
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	1.5 m	1522299	1.5 m	1522341	
	3 m	1522309	3 m	1522354	
	5 m	1522312	5 m	1522367	
	10 m	1522325	10 m	1522370	
	Variable	1522338	Variable	1522383	
	1.5 m	1522396			
	3 m	1522406			
	5 m	1522419			
	10 m	1522422			
	Variable	1522435	Variable	1552010	Variable 1552036
	1.5 m	1522448			
	3 m	1522451			
	5 m	1522464			
	10 m	1522477			
	Variable	1522480	Variable	1552023	Variable 1552049

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free PUR cable type and are available from stock.

Cable description	Cable type	Color coding		Pin assignment
PUR, halogen-free – black E221474	 PUR	BN		1
		WH		2
		BU		3
		BK		4
		GY		5
		PK		6

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 6-pos. M8 male and a straight M8 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1552010	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Technical data	
M8 6-pos., shielded 30 V AC / 30 V DC	
Rated voltage	1.5
Rated current [A]	CuZn
Contact material	Ni/Au
Contact surface material	TPU, hardly inflammable, self-extinguishing
Material of grip body	IEC 61076-2-104
M8 circular connector in accordance with:	IP65 / IP67
Degree of protection	
Temperature data	-25 ... 90
Male connector/female connector	

M8 SAC cable, 8-pos., cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end



M8 male connector



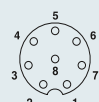
Ordering data

Ordering data

Ordering data

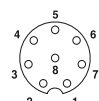
Free end	Order No.	Order No.	Order No.
	1.5 m	1404178	1.5 m
	3 m	1404180	3 m
	5 m	1404181	5 m
	10 m	1404179	10 m

M8 female connector, straight



1.5 m	1404187	0.3 m	1404196
3 m	1404188	0.6 m	1404198
5 m	1404189	1.5 m	1404199
10 m	1404190	3 m	1404200

M8 female connector, angled



1.5 m	1404191	0.3 m	1404201
3 m	1404192	0.6 m	1404202
5 m	1404193	1.5 m	1404203
10 m	1404194	3 m	1404204

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Cable description

PUR, halogen-free – black

Cable type

PUR

Color coding

WH

BN

GN

YE

GY

PK

BU

RD

Pin assignment

1

2

3

4

5

6

7

8

Technical data

Rated voltage

Rated current

Contact material

Contact surface material

Material of grip body

Material, knurls

M8 circular connector in accordance with:

Degree of protection

Temperature data

Male connector/female connector

[A]

[°C]

30 V AC / 30 V DC

1.5

CuSn

Ni/Au

TPU, hardly inflammable,
self-extinguishing

Zinc die-cast, nickel-plated

IEC 61076-2-104

IP65 / IP67 / IP68

-25 ... 85

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 8-pos., cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
			1.5 m	1522493	1.5 m	1522545
			3 m	1522503	3 m	1522558
			5 m	1522516	5 m	1522561
			10 m	1522529	10 m	1522574
			Variable	1522532	Variable	1522587
M12 female connector, straight 			0.3 m	1522671		
			0.6 m	1522684		
			1.5 m	1522697		
			3 m	1522707		
			Variable	1522710	Variable	1551969
M12 female connector, angled 			0.3 m	1522723		
			0.6 m	1522736		
			1.5 m	1522749		
			3 m	1522752		
			Variable	1522765	Variable	1551972

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 8-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1522710	PUR	4.5
Minimum order amount:		Increments:
25 pcs.		0.2 ... 3 m = 0.1 m
		> 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black E221474	PUR	WH	1
TPE-U highly flexible – gray E221474	800	BN	2
PVC – black E221474	PVC	GN	3
PVC – gray E221474	500	YE	4
		GY	5
		PK	6
		BU	7
		RD	8

Technical data

M12 8-pos.	
Rated voltage	30 V AC / 30 V DC
Rated current	2
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 90

M12 SAC cable, 8-pos., cable type: PVC

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end		Order No.		Order No.		Order No.	
		1.5 m	1415716	1.5 m	1415720		
		3 m	1415717	3 m	1415721		
		5 m	1415718	5 m	1415722		
		10 m	1415719	10 m	1415723		
		Variable	1522532	Variable	1522587		
M12 female connector, straight							
		1.5 m	1415724	0.3 m	1415737		
		3 m	1415725	0.6 m	1415738		
		5 m	1415726	1.5 m	1415739		
		10 m	1415727	3 m	1415740		
		Variable	1522613	Variable	1522710		
			Variable	1551969			
M12 female connector, angled							
		1.5 m	1415732	0.3 m	1415745		
		3 m	1415734	0.6 m	1415746		
		5 m	1415735	1.5 m	1415747		
		10 m	1415736	3 m	1415748		
		Variable	1522668	Variable	1522765		
			Variable	1551972			

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PVC - black, with a straight 8-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m]
1522710	PVC	4.5
Minimum order amount:		Increments:
25 pcs.		0.2 ... 3 m = 0.1 m
		> 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PVC – black E221474	PVC	WH	1
PVC – gray E221474	500	BN	2
PUR, halogen-free – black E221474	PUR	GN	3
TPE-U highly flexible – gray E221474	800	YE	4
		GY	5
		PK	6
		BU	7
		RD	8

Technical data

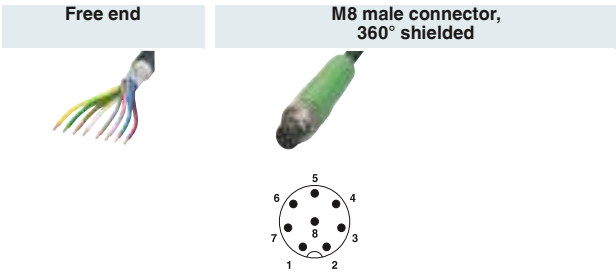
M12 8-pos.	
Rated voltage	30 V AC / 30 V DC
Rated current	2
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 90

Sensor/actuator cabling

Assembled cables

M8 SAC cable, 8-pos., shielded, cable type: PUR

Notes:
For information about the cable qualities, see page 318



Ordering data		Ordering data		Ordering data	
Free end	Order No.		Order No.		Order No.
		1.5 m	1404137		
		3 m	1404140		
		5 m	1404141		
		10 m	1404138		
	1.5 m	1404147	0.3 m	1404133	
	3 m	1404148	0.6 m	1404134	
	5 m	1404149	1.5 m	1404135	
	10 m	1404150	3 m	1404136	

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black	PUR	WH BN GN YE GY PK BU RD	1 2 3 4 5 6 7 8

Technical data	
M8 8-pos.	
Rated voltage	30 V AC / 30 V DC
Rated current [A]	1.5
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Material, knurls	Zinc die-cast, nickel-plated
M8 circular connector in accordance with:	
Degree of protection	IEC 61076-2-104 IP65 / IP67
Temperature data	
Male connector/female connector [°C]	-25 ... 85

M12 SAC cable, 8-pos., shielded, cable type: PUR

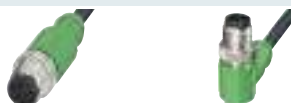
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector, 360° shielded



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
			1.5 m	1522778	1.5 m	1522817
			3 m	1522781	3 m	1522820
			5 m	1526981	5 m	1522833
			10 m	1522794	10 m	1522846
			Variable	1522804	Variable	1522859
	M12 female connector, straight, 360° shielded					
			1.5 m	1522862	0.3 m	1522969
			3 m	1522875	0.6 m	1522972
			5 m	1522888	1.5 m	1522985
			10 m	1522891	3 m	1522998
			Variable	1522901	Variable	1523007
	M12 female connector, angled, 360° shielded					
			1.5 m	1522914	0.3 m	1523010
			3 m	1522927	0.6 m	1523023
			5 m	1522930	1.5 m	1523036
			10 m	1522943	3 m	1523049
			Variable	1522956	Variable	1523052
					Variable	1551998
					Variable	1552007

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long shielded sensor/actuator cable, PUR, halogen-free, black, with a straight 8-pos. M12 male and a straight M12 female, the ordering data is as follows:

Order No.	Cable type	Length [m]
1523007	PUR	4.5
Minimum order amount:		25 pcs.
		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black E221474	PUR	WH	1
PUR, halogen-free – gray E221474	280	BN	2
PVC – black E221474	PVC	GN	3
		YE	4
		GY	5
		PK	6
		BU	7
		RD	8

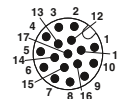
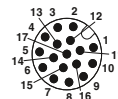
Technical data	
M12	
8-pos., shielded	
30 V AC / 30 V DC	
2	
CuZn	
Ni/Au	
TPU, hardly inflammable, self-extinguishing	
IEC 61076-2-101	
IP65 / IP67	
M12 circular connector in accordance with:	
Degree of protection	
Temperature data	
Male connector/female connector	[-25 ... 90

M12 SAC cable, 12 and 17-pos., cable type: PVC

Notes:

For information about the cable qualities, see page 318

Free end

M12 male connector,
12-pos.M12 male connector,
17-pos.

Ordering data

Ordering data

Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	1554775	1.5 m	1554814
		3 m	1554788	3 m	1554827
		5 m	1554791	5 m	1554830
		10 m	1554801	10 m	1554843
M12 female, 12-pos., straight					
	1.5 m	1554856			
	3 m	1554869			
	5 m	1554872			
	10 m	1554885			
M12 female, 12-pos., angled					
	1.5 m	1554898			
	3 m	1554908			
	5 m	1554924			
	10 m	1554937			
M12 female, 17-pos., straight					
	1.5 m	1555347			
	3 m	1555350			
	5 m	1555363			
	10 m	1555376			
M12 female, 17-pos., angled					
	1.5 m	1555389			
	3 m	1555392			
	5 m	1555402			
	10 m	1555415			

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Cable description	Cable type	Color coding	Pin assignment, 17-pos.
PVC – black	PVC	BN	1
		BU	2
		WH	3
		GN	4
		PK	5
		YE	6
		BK	7
		GY	8
		RD	9
		VT	10
		GYPK	11
		RDBU	12
		WHGN	13
		BNGN	14
		WHYE	15
		YEBN	16
		WHGY	17

Technical data	Technical data
M12 12-pos.	M12 17-pos.
30 V AC / 30 V DC	30 V AC / 30 V DC
1.5	1.5
CuZn	CuZn
Ni/Au	Ni/Au
TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
IEC 61076-2-101	IEC 61076-2-101
IP65 / IP67 / IP68	IP65 / IP67 / IP68
-25 ... 90	-25 ... 90

Rated voltage	
Rated current	[A]
Contact material	
Contact surface material	
Material of grip body	
M12 circular connector in accordance with:	
Degree of protection	
Temperature data	
Male connector/female connector	[°C]

Sensor/actuator cabling

Assembled cables

M12 SAC cable, 12-pos., shielded

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector, 360° shielded



Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
			1.5 m	1430048	1.5 m	1430080
			3 m	1430051	3 m	1430093
			5 m	1430064	5 m	1430103
			10 m	1430077	10 m	1430116
			0.5 m	1437083	3 m	1402551
			1 m	1434730		
			1.5 m	1430129		
			3 m	1430132		
			5 m	1430145		
			10 m	1430158		
			1.5 m	1430161		
			3 m	1430174		
			5 m	1430187		
			10 m	1430190		

Information for products with fixed cable length:

Products with fixed cable length are produced with the 35T cable type and are available from stock.

Cable description	Cable type	Color coding	Pin assignment M12
PUR/PVC – black, twisted pair	35T	BN	1
		BU	2
		WH	3
		GN	4
		PK	5
		YE	6
		BK	7
		GY	8
		RD	9
		VT	10
		GYPK	11
		RDBU	12

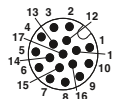
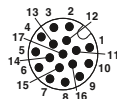
Technical data

M12 12-pos.

Rated voltage	30 V AC / 30 V DC
Rated current [A]	1.5
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector [°C]	-25 ... 85

**M12 SAC cable,
17-pos., shielded****Notes:**

For information about the cable qualities, see page 318

Free end**M12 male connector,
360° shielded****Ordering data****Ordering data****Ordering data****Free end****Order No.****Order No.****Order No.**

1.5 m

[1430200](#)

1.5 m

[1430242](#)

3 m

[1430213](#)

3 m

[1430255](#)

5 m

[1430226](#)

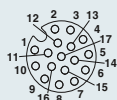
5 m

[1430268](#)

10 m

[1430239](#)

10 m

[1430271](#)**M12 female, straight, 360° shielded**

1.5 m

[1430284](#)

3 m

[1430297](#)

5 m

[1430307](#)

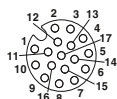
5 m

[1402421](#)

10 m

[1430310](#)

10 m

[1402422](#)**M12 female, angled, 360° shielded**

1.5 m

[1430323](#)

3 m

[1430336](#)

5 m

[1430349](#)

10 m

[1430352](#)**Information for products with
fixed cable length:**

Products with fixed cable length are produced with the 35T cable type and are available from stock.

Cable description**Cable
type****Color coding****Pin assignment
M12**

PUR/PVC – black, twisted pair

35T

BN		1
BU		2
WH		3
GN		4
PK		5
YE		6
BK		7
GY		8
RD		9
VT		10
GYPK		11
RDBU		12
WHGN		13
BNGN		14
WHYE		15
YEBN		16
WHGY		17

Technical data

Rated voltage

Rated current

Contact material

Contact surface material

Material of grip body

M12 circular connector in accordance with:

Degree of protection

Temperature data

Male connector/female connector

[A]

[°C]

30 V AC / 30 V DC

1.5

CuZn

Ni/Au

TPU, hardly inflammable,
self-extinguishing

IEC 61076-2-101

IP65 / IP67

-25 ... 90

Sensor/actuator cabling

Assembled cables

Plastic-molded M17 and M23 signal connectors

- Feedback connectors
- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- Standard and counter direction contact numbering
- M17 and M23 standard thread, SPEEDCON fast locking system on request
- Angled versions rotatable

	M17, 17-position, female, standard, 60 V, 3.6 A	M23, 12-position, female, counter direction, 150 V, 9 A	M23, 12-position, female, counter direction, 150 V, 9 A
			
	E01	E00	E00
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	2 m 1624780 5 m 1624781 10 m 1624782	2 m 1619247 5 m 1619248 10 m 1619249	2 m 1619280 5 m 1619281 10 m 1619282
M17, 17-pos., male	2 m 1624778 5 m 1624783 10 m 1624784		
M23, 12-pos., male		2 m 1619289 5 m 1619290 10 m 1619291	
M23, 12-pos., male			
M23, 17-pos., male			

Cable information:

Type/application	Color	Structure	Sheath/core material	Assignment	Temperature range
E00 Feedback	Orange	Shielded, 4 x 2x 0.25 + 2x 0.5	TPU/PP	1 - Pink 2 - Red 3 - Black 4 - Blue 5 - Brown 6 - Green 7 - Violet 8 - Gray 9 - Outer shield 10 - White 11 - n.c. 12 - Brown	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
E01 Feedback	Green	Shielded, 3x 2x 0.14 + 2x 0.5 + 4x 0.14 + 4x 0.22	TPU/TPM	1 - Yellow 2 - Green 3 - Red 4 - n.c. 5 - Blue 6 - n.c. 7 - Brown-blue (encoder) 8 - Green-black (+temp.) 9 - Green-red (-temp.) 10 - Brown-red (P encoder) 11 - Black 12 - Brown 13 - Orange 14 - White-black 15 - Brown-gray (OV sense) 16 - Brown-yellow (sense) 17 - n.c. Inner shield on housing	Mobile: -30°C ... 60°C Fixed: -30°C ... 80°C

M23, 12-position, female, standard, 150 V, 9 A		M23, 12-position, female, standard, 150 V, 9 A		M23, 17-position, female, standard, 100 V, 9 A		M23, 17-position, female, standard, 100 V, 9 A	
							
E00		E00		E01		E01	
Ordering data		Ordering data		Ordering data		Ordering data	
Order No.		Order No.		Order No.		Order No.	
2 m	1619250	2 m	1619285	2 m	1619277	2 m	1619286
5 m	1619273	5 m	1619283	5 m	1619278	5 m	1619287
10 m	1619274	10 m	1619284	10 m	1619279	10 m	1619288

Sensor/actuator cabling

Assembled cables

Plastic-molded

M17 power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- Standard contact numbering
- M17 standard thread, SPEEDCON fast locking system on request

	M17, 3+PE-position, female, standard, 630 V, 18 A	M17, 3+PE-position, female, standard, 630 V, 26 A	M17, 5+PE-position, female, standard, 630 V, 12 A
			
	B00	B01	C00
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	2 m 1619298 5 m 1619299 10 m 1619300	2 m 1619301 5 m 1619302 10 m 1619303	2 m 1619307 5 m 1619308 10 m 1619309
M17, 3+PE-pos., male	2 m 1619304 5 m 1619305 10 m 1619306	2 m 1619326 5 m 1619327 10 m 1619328	
M17, 5+PE-pos., male			2 m 1619316 5 m 1619317 10 m 1619318
M17, 7+PE-pos., male			

Cable information:

Type	Color	Structure	Sheath/core material	Assignment	Temperature range
B00 Servo	Orange	Shielded, 4 x 1.50	PUR/TPM	1 - Black U 2 - Black V 3 - Black W PE - Green-yellow	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
B01 Servo	Orange	Shielded, 4 x 2.50	TPU/TPM		Mobile: -20°C ... 70°C Fixed: -50°C ... 80°C
C00 Servo	Orange	Shielded, 4 x 0.75 + 2 x 0.5	PUR/TPM	1 - Black U 6 - Black V 7 - Black W PE - Green-yellow	3 - Black, 5 (brake) 4 - Black, 6 (brake) Mobile: -30°C ... 70°C Fixed: -40°C ... 80°C
C01 Servo	Orange	Shielded, 4G1 + 2 x 0.5	PUR/TPE	1 - Black U 6 - Black V 7 - Black W PE - Green-yellow	3 - Black (brake) 4 - White (brake) Mobile: -5°C ... 70°C Fixed: -30°C ... 70°C
D00 Servo	Orange	Shielded, 4 x 0.75 + 2 x 2 x 0.34	PUR/TPM	1 - Black U 2 - Black V 3 - Black W PE - Green-yellow	4 - Black 5 (brake) 5 - Black 6 (brake) 6 - Black 7 (temp. +) 7 - Black 8 (temp. -) Mobile: -30°C ... 90°C Fixed: -40°C ... 90°C
D01 Servo	Orange	Shielded, 4 x 1.0 + 2 x 2 x 0.75	PUR/TPM		Mobile: -40°C ... 60°C Fixed: -40°C ... 80°C

M17, 5+PE-position, female, standard, 630 V, 15 A		M17, 7+PE-position, female, standard, 630 V, 12 A		M17, 7+PE-position, female, standard, 630 V, 15 A	
					
		D00		D01	
Ordering data		Ordering data		Ordering data	
Order No.		Order No.		Order No.	
2 m	1619310	2 m	1624785	2 m	1619313
5 m	1619311	5 m	1624786	5 m	1619314
10 m	1619312	10 m	1624792	10 m	1619315
2 m	1619319				
5 m	1619321				
10 m	1619322				
		2 m	1624787	2 m	1619323
		5 m	1624788	5 m	1619324
		10 m	1624789	10 m	1619325

Sensor/actuator cabling

Assembled cables

Plastic-molded M23 power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- Standard contact numbering
- M23 standard thread, SPEEDCON fast locking system on request
- Angled version rotatable (only with reinforced device connector [1620619](#))

	M23, 3+PE-position, female, standard, 630 V, 34 A	M23, 4+PE-position, female, standard, 630 V, 34 A	M23, 5+PE-position, female, standard, 630 V, 18 A
			
	A00	A01	C02
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	2 m 1624771 5 m 1619622 10 m 1624772	2 m 1625776 5 m 1625777 10 m 1625775	2 m 1618957 5 m 1618958 10 m 1618959
M23, 3+PE-pos., male	2 m 1624773 5 m 1619606 10 m 1624774		
M23, 4+PE-pos., male		2 m 1625779 5 m 1625781 10 m 1625780	
M23, 5+PE-pos., male			2 m 1618964 5 m 1618965 10 m 1618966

Cable information:

Type	Color	Structure	Sheath/core material	Assignment		Temperature range
A00 Energy	Gray	Shielded, 4x 4.0	PVC/PVC	1 - n.c. 2 - Black 3 PE - Green-yellow	4 - Black 1 5 - Black 2 6 - n.c.	Fixed: -40°C ... 90°C
A01 Energy	Gray	5x 4.0	PVC/PVC	1 - Black 4 2 - Black 3 PE - Green-yellow	4 - Black 1 5 - Black 2 6 - n.c.	Fixed: -40°C ... 90°C
C02 Servo	Orange	Shielded, 4x 1.50 + 2x 1.5	PUR/TPM	1 - Black U 2 - Black V 6 - Black W PE - Green-yellow	4 - Black, (BR1 brake) 5 - White, (BR2 brake)	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
C03 Servo	Orange	Shielded, 4x 2.50 + 2x 1.5	TPU/TPM			Mobile: -20°C ... 70°C Fixed: -50°C ... 80°C

**M23, 5+PE-position,
female, standard,
630 V, 26 A**



C03

Ordering data

Order No.

2 m	1620418
5 m	1620419
10 m	1620420

Sensor/actuator cabling

Assembled cables

Plastic-molded M23 power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- Standard contact numbering
- M23 standard thread, SPEEDCON fast locking system on request
- Angled version rotatable (only with reinforced device connector [1620620](#))

	M23, 4+3+PE-position, female, standard, 250 V/630 V, 18 A	M23, 4+3+PE-position, female, standard, 250 V/630 V, 18 A	M23, 4+3+PE-position, female, standard, 250 V/630 V, 26 A
			
	D02	D02	D03
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end 	2 m	2 m	2 m
	5 m	5 m	5 m
	10 m	10 m	10 m
M23, 4+3+PE-pos., male 	2 m		2 m
	5 m		5 m
	10 m		10 m

Cable information:

Type	Color	Structure	Sheath/core material	Assignment		Temperature range
D02 Servo	Orange	Shielded, 4x 1.5 + 2x 2x 0.75	PUR/TPM	1 - Black U 3 - Black V 4 - Black W PE - Green-yellow	A - Black 5 (brake) B - Black 6 (brake) C - Black 7 (motor temp. +) D - Black 8 (motor temp. -)	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
D03 Servo	Orange	Shielded, 4x 2.5 + 2x 2x 0.75	PUR/TPM			Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C

M23, 4+3+PE-position,
female, standard,
250 V/630 V, 26 A



D03

Ordering data

Order No.

2 m	1620424
5 m	1620425
10 m	1620426

Sensor/actuator cabling

Assembled cables

Plastic-molded M40 power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- Standard contact numbering
- M40 standard thread, SPEEDCON fast locking system on request

	M40, 2+3+PE-position, female, standard, 250 V/630 V, 26 A	M40, 2+3+PE-position, female, standard, 250 V/630 V, 34 A	M40, 2+3+PE-position, female, standard, 250 V/630 V, 44 A
			
	C03	C04	C05
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	2 m 1619329 5 m 1620309 10 m 1620310	2 m 1620311 5 m 1620313 10 m 1620314	2 m 1620316 5 m 1620317 10 m 1620318
M40, 2+3+PE-pos., male	2 m 1620345 5 m 1620346 10 m 1620347	2 m 1620348 5 m 1620349 10 m 1620375	2 m 1620376 5 m 1620377 10 m 1620378
M40, 4+3+PE-pos., male			

Cable information:

Type	Color	Structure	Sheath/core material	Assignment	Temperature range
C03 Servo	Orange	Shielded, 4 x 2.50 + 2 x 1.5	TPU/TPM	U - Black U V - Black V W - Black W PE - Green-yellow	Mobile: -20°C ... 70°C Fixed: -50°C ... 80°C
C04 Servo	Orange	Shielded, 4 x 4.00 + 2 x 1.5	TPU/TPM		Mobile: -20°C ... 70°C Fixed: -50°C ... 80°C
C05 Servo	Orange	Shielded, 4 x 6.00 + 2 x 1.5	PUR/TPE		Mobile: -40°C ... 80°C Fixed: -50°C ... 90°C
C06 Servo	Orange	Shielded, 4 x 10.0 + 2 x 1.5	TPU/TPM		Mobile: -20°C ... 70°C Fixed: -50°C ... 80°C
D03 Servo	Orange	Shielded, 4 x 2.5 + 2 x 2 x 0.75	PUR/TPM	U - Black 1 V - Black 2 W - Black 3 PE - Green-yellow	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
D04 Servo	Orange	Shielded, 4 x 4.0 + 2 x 1.5 + 2 x 1.0	PUR/TPM		Mobile: -30°C ... 80°C Fixed: -45°C ... 80°C
D05 Servo	Orange	Shielded, 4 x 6.0 + 2 x 1.5 + 2 x 1.0	PUR/TPM		Mobile: -30°C ... 60°C Fixed: -30°C ... 80°C
D06 Servo	Orange	Shielded, 4 x 10 + 2 x 1.5 + 2 x 1.0	PUR/TPM		Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C

M40, 2+3+PE-position,
female, standard,
250 V/630 V, 61 A



C06

Ordering data

Order No.

2 m 1620319
5 m 1620320
10 m 1620321

M40, 4+3+PE-position,
female, standard,
250 V/630 V, 26 A



D03

Ordering data

Order No.

2 m 1620322
5 m 1620323
10 m 1620324

M40, 4+3+PE-position,
female, standard,
250 V/630 V, 34 A



D04

Ordering data

Order No.

2 m 1620325
5 m 1620337
10 m 1620338

M40, 4+3+PE-position,
female, standard,
250 V/630 V, 44 A



D05

Ordering data

Order No.

2 m 1620339
5 m 1620340
10 m 1620341

M40, 4+3+PE-position,
female, standard,
250 V/630 V, 61 A



D06

Ordering data

Order No.

2 m 1620342
5 m 1620343
10 m 1620344

2 m 1620379
5 m 1620380
10 m 1620381

2 m 1620382
5 m 1620383
10 m 1620384

2 m 1620385
5 m 1620386
10 m 1620387

2 m 1620390
5 m 1620391
10 m 1620392

2 m 1620393
5 m 1620394
10 m 1620395

Sensor/actuator cabling

Assembled cables

Plastic-molded M23 hybrid connectors

- Transmission of signals, data (CAT5, 100 Mbps), and power
- Rated voltage: 630 V AC/850 V DC
- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- CuZn or Gd-Zn knurl, nickel-plated
- IP67 degree of protection
- Connector head temperature range -40°C to +105°C
- SPEEDCON fast locking system, M23 standard thread on request
- Angled version can be rotated

	M23, 4+4+4+PE-position, female, standard, 50 V/630 V, 26 A	M23, 4+4+4+PE-position, male, standard, 50 V/630 V, 26 A	M23, 4+4+4+PE-position, female, standard, 50 V/630 V, 26 A
			
	H00	H00	H00
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	2 m 1622224 5 m 1622225 10 m 1622226	2 m 1622227 5 m 1622228 10 m 1622229	2 m 1622230 5 m 1622231 10 m 1622232
M23, 4+4+4+PE-pos., male	2 m 1622244 5 m 1622245 10 m 1622246		
M23, 4+4+4+PE-pos., male	2 m 1622247 5 m 1622248 10 m 1622249		
M23, 4+4+4+PE-pos., male			2 m 1622250 5 m 1622251 10 m 1622252

Cable information:

Type	Color	Structure	Sheath/core material	Assignment		Temperature range
H00 Hybrid	Orange	Shielded, (5 x 2.5 + 2 x (2 x 0.5) + (4 x AWG 22) C) C	PUR/TPE, polyolefin	A - Black BK1 (2.5 mm ²) B - Black BK2 (2.5 mm ²) C - Black BK3 (2.5 mm ²) D - Black BK4 (2.5 mm ²) PE - Green-yellow (2.5 mm ²)	1 - Brown BN (0.5 mm ²) 2 - Violet VT (0.5 mm ²) 3 - Black BK (0.5 mm ²) 4 - Green GN (0.5 mm ²) 5 - Blue BU (0.34 mm ²) 6 - Yellow YE (0.34 mm ²) 7 - White WH (0.34 mm ²) 8 - Orange OG (0.34 mm ²)	Mobile: -30°C ... 60°C Fixed: -40°C ... 80°C

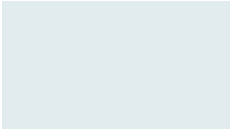
M23, 4+4+4+PE-position,
male, standard,
50 V/630 V, 26 A



H00

Ordering data	
Order No.	

2 m	1622233
5 m	1622234
10 m	1622243



Sensor/actuator cabling

Assembled cables

Valve connectors with Zener diode, cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



M8 male connector



		Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Type A		Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	1434989	0.3 m	1434882	0.3 m	1434934	Variable	1405650		
		3 m	1434992	0.6 m	1434895	0.6 m	1434947				
		5 m	1435001	1.5 m	1434905	1.5 m	1434950				
		10 m	1435014	3 m	1434918	3 m	1434963				
		Variable	1435027	Variable	1434921	Variable	1434976				
		1.5 m	1435386	0.3 m	1435289	0.3 m	1435331	Variable	1405651		
		3 m	1435399	0.6 m	1435292	0.6 m	1435344				
		5 m	1435409	1.5 m	1435302	1.5 m	1435357				
		10 m	1435412	3 m	1435315	3 m	1435360				
		Variable	1435425	Variable	1435328	Variable	1435373				
		1.5 m	1435234	0.3 m	1435137	0.3 m	1435182	Variable	1405652		
		3 m	1435247	0.6 m	1435140	0.6 m	1435195				
		5 m	1435250	1.5 m	1435153	1.5 m	1435205				
		10 m	1435263	3 m	1435166	3 m	1435218				
		Variable	1435276	Variable	1435179	Variable	1435221				
		1.5 m	1435535	0.3 m	1435438	0.3 m	1435483	Variable	1405653		
		3 m	1435548	0.6 m	1435441	0.6 m	1435496				
		5 m	1435551	1.5 m	1435454	1.5 m	1435506				
		10 m	1435564	3 m	1435467	3 m	1435519				
		Variable	1435726	Variable	1435629	Variable	1435674				
		1.5 m	1435687	0.3 m	1435580	0.3 m	1435632	Variable	1405654		
		3 m	1435690	0.6 m	1435593	0.6 m	1435645				
		5 m	1435700	1.5 m	1435603	1.5 m	1435658				
		10 m	1435713	3 m	1435616	3 m	1435661				
		Variable	1435577	Variable	1435470	Variable	1435522				

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free PUR cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, type A valve connector with Zener diode, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1434921	PUR	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	M8	M12	A	B(I)	C(I)	Color coding	Pin assignment M12
PUR, halogen-free – black, 0.5 mm ²	PUR	x	x	x	x	x	BK1 1	4
PUR, halogen-free – black, 1.0 mm ²	121	x	x				BK2 2	3
PUR, halogen-free – yellow, 0.5 mm ²	240			x	x	x	GNYE	5
PUR, halogen-free – gray, 0.5 mm ²	280			x	x	x		
PUR, irradiated – orange, 0.5 mm ²	150			x	x	x		
PUR, highly flexible – gray, 0.5 mm ²	800			x	x	x		
PVC – black, 0.5 mm ²	PVC	x	x	x	x	x		
PVC – black, 0.75 mm ²	534			x	x	x		
PVC – gray, 0.5 mm ²	500			x	x	x		

Color coding M8	Pin assignment M8
BU	3
BN	4

Technical data

Connector

24 V AC / 24 V DC
4
CuSn
Ni/Au
Sn
TPU
Zinc die-cast, nickel-plated

IP65 / IP67

Rated voltage	[A]
Rated current	
Contact material	
Material contact surface M12	
Material contact surface valve connector	
Material of grip body	
Material, knurls	
Degree of protection	
Temperature data	
Male connector/female connector	[°C]
Valve connectors	[°C]

Valve connectors with Zener diode, cable type: PVC

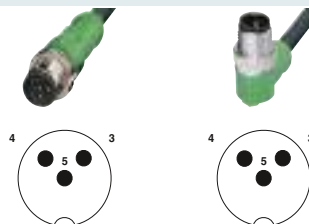
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



M8 male connector



		Ordering data		Ordering data		Ordering data		Ordering data	
Type A		Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	1438684						
		3 m	1415905						
		5 m	1439502						
		10 m	1439492						
		Variable	1435027	Variable	1434921	Variable	1434976	Variable	1405650
		1.5 m	1415922						
		3 m	1415923						
		5 m	1415924						
		10 m	1400610						
		Variable	1435425	Variable	1435328	Variable	1435373	Variable	1405651
		1.5 m	1415929						
		3 m	1400609						
		5 m	1415930						
		10 m	1400607						
		Variable	1435276	Variable	1435179	Variable	1435221	Variable	1405652
		1.5 m	1439162						
		3 m	1439515						
		5 m	1439528						
		10 m	1439531						
		Variable	1435726	Variable	1435629	Variable	1435674	Variable	1405653
		1.5 m	1439175						
		3 m	1415939						
		5 m	1415940						
		10 m	1400605						
		Variable	1435577	Variable	1435470	Variable	1435522	Variable	1405654

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PVC – black, type A valve connector with Zener diode, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1434921	PVC	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	M8	M12	A	B(I)	C(I)	Color coding	Pin assignment M12
PVC – black, 0.5 mm ²	PVC	x	x	x	x	x	BK1 1	4
PVC – black, 0.75 mm ²	534		x	x	x	x	BK2 2	3
							GNYE	5
PVC – gray, 0.5 mm ²	500		x	x	x	x		
PUR, halogen-free – black, 0.5 mm ²	PUR	x	x	x	x	x		
PUR, halogen-free – black, 1.0 mm ²	121		x	x				
PUR, halogen-free – yellow, 0.5 mm ²	240		x	x	x	x		
PUR, halogen-free – gray, 0.5 mm ²	280		x	x	x	x		
PUR, irradiated – orange, 0.5 mm ²	150		x	x	x	x		
PUR, highly flexible – gray, 0.5 mm ²	800		x	x	x	x		

Technical data	
Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	4
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	[-25 ... 90
Valve connectors	[-20 ... 85

Sensor/actuator cabling

Assembled cables

Valve connectors with 24 V varistor, cable type: PUR

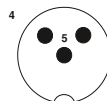
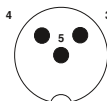
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type A			Order No.		Order No.		Order No.
		1.5 m	1443103				
		3 m	1443116				
		5 m	1443129				
		10 m	1443132				
		Variable	1400876	Variable	1400874	Variable	1400875
		1.5 m	1443145				
		3 m	1443158				
		5 m	1443161				
		10 m	1443174				
		Variable	1400882	Variable	1400880	Variable	1400881
		1.5 m	1443187				
		3 m	1443190				
		5 m	1443200				
		10 m	1443213				
		Variable	1400879	Variable	1400877	Variable	1400878
		1.5 m	1443226				
		3 m	1443239				
		5 m	1443242				
		10 m	1443255				
		Variable	1400894	Variable	1400892	Variable	1400893
		1.5 m	1443268				
		3 m	1443271				
		5 m	1443284				
		10 m	1443297				
		Variable	1400891	Variable	1400889	Variable	1400890

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, type B valve connector with 24 V varistor, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400880	PUR	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black, 0.5 mm ²	PUR	BK1 1	4
PUR, halogen-free – black, 1.0 mm ²	121	BK2 2	3
Type A valve connector only		GNYE	5
PUR, halogen-free – yellow, 0.5 mm ²	240		
PUR, halogen-free – gray, 0.5 mm ²	280		
PUR, irradiated – orange, 0.5 mm ²	150		
PUR, highly flexible – gray, 0.5 mm ²	800		
PVC – black, 0.5 mm ²	PVC		
PVC – black, 0.75 mm ²	534		
PVC – gray, 0.5 mm ²	500		

Technical data

Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	4
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90
Valve connectors	-20 ... 85

Valve connectors with 24 V varistor, cable type: PVC

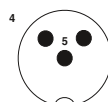
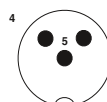
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type		Order No.		Order No.		Order No.	
Type A		1.5 m	1415908	Variable	1400874	Variable	1400875
		3 m	1415909				
		5 m	1415910				
		10 m	1415911				
		Variable	1400876				
Type B		1.5 m	1415925	Variable	1400880	Variable	1400881
		3 m	1415926				
		5 m	1415927				
		10 m	1415928				
		Variable	1400882				
Type BI		1.5 m	1415931	Variable	1400877	Variable	1400878
		3 m	1415932				
		5 m	1415933				
		10 m	1415934				
		Variable	1400879				
Type C		1.5 m	1415935	Variable	1400892	Variable	1400893
		3 m	1415936				
		5 m	1415937				
		10 m	1415938				
		Variable	1400894				
Type CI		1.5 m	1415941	Variable	1400889	Variable	1400890
		3 m	1415942				
		5 m	1415943				
		10 m	1415944				
		Variable	1400891				

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PVC – black, type B valve connector with 24 V varistor, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400880	PVC	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PVC – black, 0.5 mm ²	PVC	BK1 1	4
PVC – black, 0.75 mm ²	534	BK2 2	3
PVC – gray, 0.5 mm ²	500	GYE	5
PUR, halogen-free – black, 0.5 mm ²	PUR		
PUR, halogen-free – black, 1.0 mm ² Type A valve connector only	121		
PUR, halogen-free – yellow, 0.5 mm ²	240		
PUR, halogen-free – gray, 0.5 mm ²	280		
PUR, irradiated – orange, 0.5 mm ²	150		
PUR, highly flexible – gray, 0.5 mm ²	800		

Technical data

Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	4
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	[-25 ... 90
Valve connectors	[-20 ... 85

Assembled cables

Valve connectors
with 230 V varistor,
cable type: PUR

Notes:
For information about the cable qualities, see page 318

Free end



Type A		Ordering data	
			Order No.
		1.5 m	1402985
		3 m	1400694
		5 m	1400648
		10 m	1402986

Technical data		
Connector		
Rated voltage		230 V AC / 230 V DC
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

Valve connectors
with 230 V varistor,
cable type: PVC

Notes:
For information about the cable qualities, see page 318

Free end



		Ordering data	
Type A			Order No.
		1.5 m	1415912
		3 m	1415913
		5 m	1415914
		10 m	1415915

		Technical data
		Connector
Rated voltage		230 V AC / 230 V DC
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

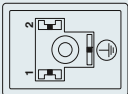
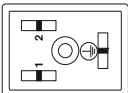
Assembled cables

Valve connectors
with energy-reducing function,
1 A

Notes:
For information about the cable qualities, see page 318

Free end
1 A



Ordering data			
Type A			Order No.
		1.5 m	1413115
		3 m	1413114
		5 m	1413116
		10 m	1413118
Type B			
		1.5 m	1401294
		3 m	1401295
		5 m	1401338
		10 m	1401339
Type BI			
		1.5 m	1401340
		3 m	1401350
		5 m	1401358
		10 m	1401359
Type C			
		1.5 m	1401434
		3 m	1401435
		5 m	1401448
		10 m	1401465
Type CI			
		1.5 m	1401466
		3 m	1401542
		5 m	1401544
		10 m	1401617

Technical data		
Connector		
Rated voltage		24 V DC ±20%
Rated current	[A]	1
Material contact surface valve connector		Ag
Degree of protection		IP67
Temperature data		
Valve connectors	[°C]	-25 ... 80

Valve connectors
with energy-reducing function,
4 A

Notes:
For information about the cable qualities, see page 318

Free end
4 A



Type A



Ordering data	
	Order No.
1.5 m	1400827
3 m	1401131
5 m	1401136
10 m	1401168

		Technical data
		Connector
Rated voltage		24 V DC ±20%
Rated current	[A]	4
Material contact surface valve connector		Ag
Degree of protection		IP67
Temperature data		
Valve connectors	[°C]	-25 ... 80

Sensor/actuator cabling

Assembled cables

Valve connectors with freewheeling diode, cable type: PUR

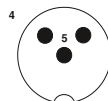
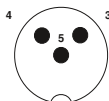
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type A			Order No.		Order No.		Order No.
		1.5 m	1400589				
		3 m	1400588				
		5 m	1400798				
		10 m	1400799				
		Variable	1417832	Variable	1417833	Variable	1417834

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for type A valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, type A valve connector with freewheeling diode, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1417833	PUR	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black, 0.5 mm ²	PUR	BK1 1	4
PUR, halogen-free – black, 1.0 mm ²	121	BK2 2	3
Type A valve connector only		GNYE	5
PUR, halogen-free – yellow, 0.5 mm ²	240		
PUR, halogen-free – gray, 0.5 mm ²	280		
PUR, irradiated – orange, 0.5 mm ²	150		
PUR, highly flexible – gray, 0.5 mm ²	800		
PVC – black, 0.5 mm ²	PVC		
PVC – black, 0.75 mm ²	534		
PVC – gray, 0.5 mm ²	500		

Technical data

Connector	
Rated voltage	24 V DC
Rated current	2
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90
Valve connectors	-20 ... 85

Valve connectors with freewheeling diode, cable type: PVC

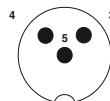
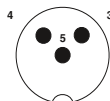
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type A			Order No.		Order No.		Order No.
		1.5 m	1415916				
		3 m	1415917				
		5 m	1415918				
		10 m	1415919				
		Variable	1417832	Variable	1417833	Variable	1417834

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for type A valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PVC – black, type A valve connector with freewheeling diode, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1417833	PVC	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PVC – black, 0.5 mm ²	PVC	BK1 1	4
PVC – black, 0.75 mm ²	534	BK2 2	3
PVC – gray, 0.5 mm ²	500	GNYE	5
PUR, halogen-free – black, 0.5 mm ²	PUR		
PUR, halogen-free – black, 1.0 mm ² Type A valve connector only	121		
PUR, halogen-free – yellow, 0.5 mm ²	240		
PUR, halogen-free – gray, 0.5 mm ²	280		
PUR, irradiated – orange, 0.5 mm ²	150		
PUR, highly flexible – gray, 0.5 mm ²	800		

Technical data

Connector	
Rated voltage	24 V DC
Rated current	2
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	[-25 ... 90
Valve connectors	[-20 ... 85

Sensor/actuator cabling

Assembled cables

Valve connectors without wiring, cable type: PUR

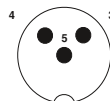
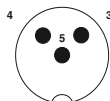
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type A		Order No.		Order No.		Order No.	
		1.5 m	1402983	Variable	1400895	Variable	1400896
		3 m	1439544				
		5 m	1402984				
		10 m	1400732				
		Variable	1400897				
Type B							
		Variable	1400909	Variable	1400903	Variable	1400905
Type BI							
		5 m	1439065	Variable	1400900	Variable	1400901
		10 m	1438862				
		Variable	1400902				
Type C							
		5 m	1400814	Variable	1400919	Variable	1400920
		10 m	1400641				
		Variable	1400921				
Type CI							
		Variable	1400918	Variable	1400916	Variable	1400917

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free PUR cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, unwired type C valve connector, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400919	PUR	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type
PUR, halogen-free – black, 0.5 mm ²	PUR
PUR, halogen-free – black, 1.0 mm ²	121
Type A valve connector only	
PUR, halogen-free – yellow, 0.5 mm ²	240
PUR, halogen-free – gray, 0.5 mm ²	280
PUR, irradiated – orange, 0.5 mm ²	150
PUR, highly flexible – gray, 0.5 mm ²	800
PVC – black, 0.5 mm ²	PVC
PVC – black, 0.75 mm ²	534
PVC – gray, 0.5 mm ²	500

Color coding		Pin assignment
BK1	1	4
BK2	2	3
GNYE		5

Technical data		Technical data
Free end		Connector
Rated voltage	230 V AC / 230 V DC	48 V AC / 60 V DC
Rated current	6	4
Contact material	-	CuSn
Material contact surface M12	-	Ni/Au
Material contact surface valve connector	Sn	Sn
Material of grip body	-	TPU
Material, knurls	-	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67	IP65 / IP67
Temperature data		
Male connector/female connector	- ... -	-25 ... 90
Valve connectors	-20 ... 85	-20 ... 85

Valve connectors without wiring, cable type: PVC

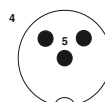
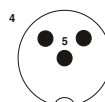
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



		Ordering data		Ordering data		Ordering data	
Type A		Order No.		Order No.		Order No.	
	1.5 m	1415920					
	3 m	1415921					
	5 m	1402977					
	10 m	1402978					
	Variable	1400897	Variable	1400895	Variable	1400896	
Type B							
	Variable	1400909	Variable	1400903	Variable	1400905	
Type BI							
	Variable	1400902	Variable	1400900	Variable	1400901	
Type C							
	Variable	1400921	Variable	1400919	Variable	1400920	
Type CI							
	Variable	1400918	Variable	1400916	Variable	1400917	

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for type A, B, BI, C, CI valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PVC – black, unwired type C valve connector, and a 3-pos. straight M12 male connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400919	PVC	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type
PVC – black, 0.5 mm ²	PVC
PVC – black, 0.75 mm ²	534
PVC – gray, 0.5 mm ²	500
PUR, halogen-free – black, 0.5 mm ²	PUR
PUR, halogen-free – black, 1.0 mm ² Type A valve connector only	121
PUR, halogen-free – yellow, 0.5 mm ²	240
PUR, halogen-free – gray, 0.5 mm ²	280
PUR, irradiated – orange, 0.5 mm ²	150
PUR, highly flexible – gray, 0.5 mm ²	800

Color coding		Pin assignment
BK1	1	4
BK2	2	3
GYE		5

		Technical data	Technical data
		Free end	Connector
Rated voltage		230 V AC / 230 V DC	48 V AC / 60 V DC
Rated current	[A]	6	4
Contact material		-	CuSn
Material contact surface M12		-	Ni/Au
Material contact surface valve connector		Sn	Sn
Material of grip body		-	TPU
Material, knurls		-	Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67	IP65 / IP67
Temperature data			
Male connector/female connector	[°C]	-20 ... 85	-25 ... 90
Valve connectors	[°C]	-20 ... 85	-20 ... 85

Sensor/actuator cabling

Assembled cables

Valve connectors, pressure switches with 2 LEDs, cable type: PUR

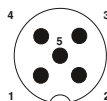
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Type AD		Ordering data		Ordering data		Ordering data	
			Order No.		Order No.		Order No.
		1.5 m	1435085	0.3 m	1435030		
		3 m	1435098	0.6 m	1435043		
		5 m	1435108	1.5 m	1435056		
		10 m	1435111	3 m	1435069		
		Variable	1435124	Variable	1435072		

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for type AD valve connector cables with 2 LEDs and variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, type AD valve connector with 2 LEDs, and a 5-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] 40 m, maximum
1435072	PUR	4.5
Minimum order amount: 25 pcs.		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description		Cable type	Color coding		Pin assignment	
PUR, halogen-free – black, 0.5 mm ²		PUR	BK1	1		1
PUR, halogen-free – yellow, 0.5 mm ²		240	BK2	2		2
PUR, halogen-free – gray, 0.5 mm ²		280	BK3	3		4
PUR irradiated – orange, 0.5 mm ²		150	BK2	4		3
PUR highly flexible – gray, 0.5 mm ²		800	GNYE			5
PVC – black, 0.5 mm ²		PVC				
PVC – black, 0.75 mm ²		534				
PVC – gray, 0.5 mm ²		500				

Technical data

Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	4
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90
Valve connectors	-20 ... 85

Valve connectors, pressure switches with 2 LEDs, cable type: PVC

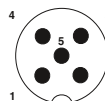
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Type AD		Ordering data		Ordering data	
		Order No.	Order No.	Order No.	Order No.
		1.5 m	1415945		
		3 m	1415946		
		5 m	1438639		
		10 m	1438671		
		Variable	1435124	Variable	1435072

Information for products with fixed cable length:

Products with fixed cable length are produced with the PVC cable type and are available from stock.

Ordering data for type AD valve connector cables with 2 LEDs and variable cable:

For a 4.5 m long sensor/actuator cable, PVC - black, type AD valve connector with 2 LEDs, and a 5-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m]
1435072	PVC	4.5
Minimum order amount:		25 pcs.
Increments:		0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PVC – black, 0.5 mm ²	PVC	BK1 1	1
PVC – black, 0.75 mm ²	534	BK2 2	2
PVC – gray, 0.5 mm ²	500	BK3 3	4
		BK2 4	3
		GNYE	5
PUR, halogen-free – black, 0.5 mm ²	PUR		
PUR, halogen-free – yellow, 0.5 mm ²	240		
PUR, halogen-free – gray, 0.5 mm ²	280		
PUR irradiated – orange, 0.5 mm ²	150		
PUR highly flexible – gray, 0.5 mm ²	800		

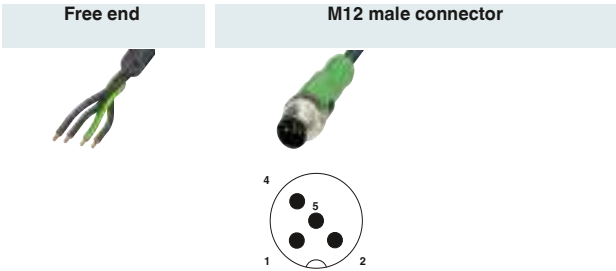
Technical data	
Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	4
Contact material	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material of grip body	TPU
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	[-25 ... 90
Valve connectors	[-20 ... 85

Sensor/actuator cabling

Assembled cables

Valve connectors, pressure switches without wiring

Notes:
For information about the cable qualities, see page 318



Type AD		Ordering data		Ordering data		Ordering data	
			Order No.		Order No.		Order No.
 	3 m		1438956				
		Variable	1400899	Variable	1400898		

Ordering data for unwired type AD valve connector cables with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, unwired type AD valve connector, and a 4-pos. straight M12 connector, the ordering data is as follows:

Cable description		Cable type	Color coding		Pin assignment	
PUR, halogen-free – black, 0.5 mm ²		PUR	BK1	1	1	
PVC – black, 0.5 mm ²		PVC	BK2	2	2	
PVC – black, 0.75 mm ²		534	BK3	3	4	
			GNYE		5	

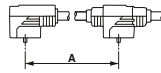
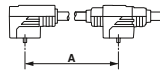
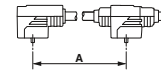
Order No.	Cable type	Length [m] 40 m, maximum
1400898	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

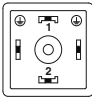
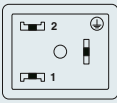
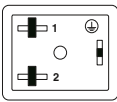
		Technical data	Technical data
		Free end	Connector
Rated voltage		230 V AC / 230 V DC	48 V AC / 60 V DC
Rated current	[A]	4	4
Contact material		-	CuSn
Material contact surface M12		-	Ni/Au
Material contact surface valve connector		Sn	Sn
Material of grip body		-	TPU
Material, knurls		-	Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67	IP65 / IP67
Temperature data			
Male connector/female connector	[°C]	- ... -	-25 ... 90
Valve connectors	[°C]	-20 ... 85	-20 ... 85

Double valve connectors
with Zener diode

Notes:

For information about the cable qualities, see page 318

Free end
A = 10 cmFree end
A = 15 cmFree end
A = 20 cm

		Ordering data		Ordering data		Ordering data		Ordering data	
Type A		Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	1457982	1.5 m	1458020		1.5 m	1458062	
		3 m	1457995	3 m	1458033		3 m	1458075	
		5 m	1458004	5 m	1458046		5 m	1458088	
		10 m	1458017	10 m	1458059		10 m	1458091	
		1.5 m	1458169	1.5 m	1458208		1.5 m	1458240	
		3 m	1458172	3 m	1458211		3 m	1458253	
		5 m	1458185	5 m	1458224		5 m	1458266	
		10 m	1458198	10 m	1458237		10 m	1458279	
		1.5 m	1458347	1.5 m	1458389		1.5 m	1458428	
		3 m	1458350	3 m	1458392		3 m	1458431	
		5 m	1458363	5 m	1458402		5 m	1458444	
		10 m	1458376	10 m	1458415		10 m	1458457	

Technical data

Connector

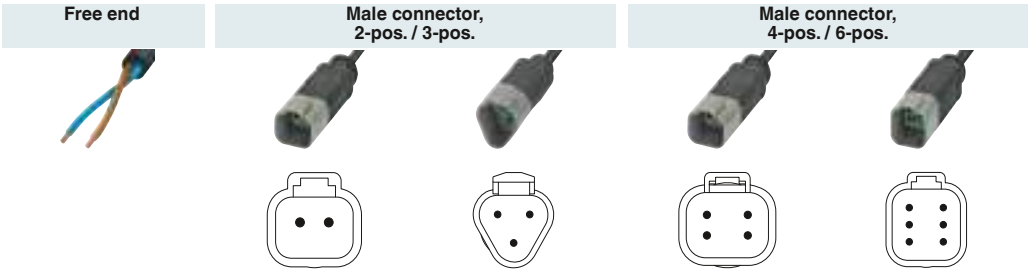
Rated voltage		24 V AC / 24 V DC
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-25 ... 85

Sensor/actuator cabling

Assembled cables

Valve connectors, Deutsch DT06 and DT04, without wiring

Notes:
For information about the cable qualities, see page 318



		Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.		Order No.		Order No.	
						1.5 m	1414999	1.5 m	1415012	1.5 m	1415030
						3 m	1415000	3 m	1415013	3 m	1415031
						5 m	1415001	5 m	1415014	5 m	1415032
						10 m	1415002	10 m	1415015	10 m	1415033
Female connector, 2-pos.			1.5 m	1410723	0.3 m	1414991					
	3 m		1410724	0.6 m	1414992						
	5 m		1410726	1.5 m	1414993						
	10 m		1410727	3 m	1414994						
Female connector, 3-pos.			1.5 m	1414995		0.3 m	1415003				
	3 m		1414996		0.6 m	1415004					
	5 m		1414997		1.5 m	1415005					
	10 m		1414998		3 m	1415006					
Female connector, 4-pos.			1.5 m	1415007				0.3 m	1415016		
	3 m		1415008				0.6 m	1415017			
	5 m		1415010				1.5 m	1415019			
	10 m		1415011				3 m	1415025			
Female connector, 6-pos.			1.5 m	1415026						0.3 m	1415035
	3 m		1415027						0.6 m	1415036	
	5 m		1415028						1.5 m	1415037	
	10 m		1415029						3 m	1415038	

Technical data	
Connector	
Rated voltage	48 V AC / 48 V DC
Rated current	8
Contact material	Cu alloy
Material contact surface M12	Nickel-plated
Material of grip body	PA
Material, knurls	not available
Degree of protection	IP67
Temperature data	
Male connector/female connector	-20 ... 85

Valve connectors,
Deutsch DT06-2S with LED

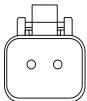
Free end



Notes:

For information about the cable qualities, see page 318

Female, 2-pos.



Ordering data

Order No.

1.5 m	1410728
3 m	1410729
5 m	1410730
10 m	1410731

Technical data

Connector

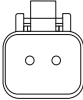
Rated voltage	24 V AC / 24 V DC
Rated current	8
Contact material	Cu alloy
Material contact surface M12	Nickel-plated
Material of grip body	PA
Material, knurls	not available
Degree of protection	IP67
Temperature data	
Male connector/female connector	-20 ... 85

Assembled cables

Valve connectors, Deutsch DT06-2S with freewheeling diode

Notes:
For information about the cable qualities, see page 318



Female connector, 2-pos.		Ordering data	
			Order No.
		1.5 m	1410732
		3 m	1410733
		5 m	1410734
		10 m	1410735

		Technical data
		Connector
Rated voltage		24 V AC / 24 V DC
Rated current	[A]	3
Contact material		Cu alloy
Material contact surface M12		Nickel-plated
Material of grip body		PA
Material, knurls		not available
Degree of protection		IP67
Temperature data		
Male connector/female connector	[°C]	-20 ... 85

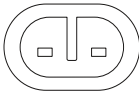
Valve connectors,
Superseal

Notes:
For information about the cable qualities, see page 318

Free end



Connector



		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.	
				1.5 m	1410752		
				3 m	1410753		
				5 m	1410755		
				10 m	1410756		
Female connector, straight							
		1.5 m	1410748	0.3 m	1410757		
		3 m	1410749	0.6 m	1410759		
		5 m	1410750	1.5 m	1410760		
		10 m	1410751	3 m	1410761		

Technical data	
Connector	
Rated voltage	24 V AC / 24 V DC
Rated current	8
Contact material	CuZn
Material of grip body	PA
Material, knurls	not available
Degree of protection	IP67
Temperature data	
Male connector/female connector	-20 ... 85

M8 Y cable, 3-pos., two cable outlets

M8 Y male connector

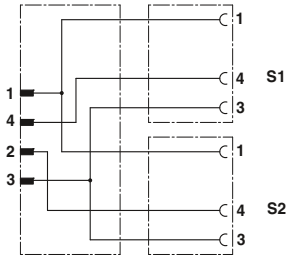


Notes:
For information about the cable qualities, see page 318

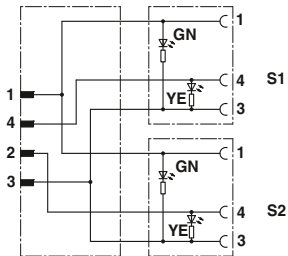
Ordering data

Free end		Order No.
	1.5 m	1458622
	3 m	1458635
	5 m	1458648
	10 m	1458651
M8 female connector, straight 	0.3 m	1458664
	0.6 m	1458677
	1.5 m	1458680
	3 m	1458693
M8 female connector, angled 	0.3 m	1458703
	0.6 m	1458716
	1.5 m	1458729
	3 m	1458732
M8 female connector, angled, with 2 LEDs 	0.3 m	1458745
	0.6 m	1458758
	1.5 m	1458761
	3 m	1458774

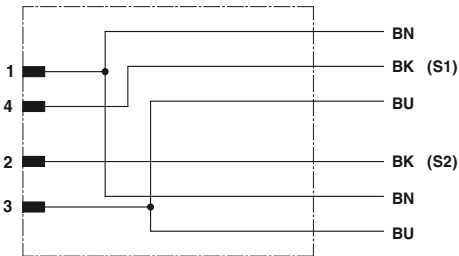
Cable description	Cable type	Color coding	Pin assignment, 3-pos.	
			Male	Female
PUR, halogen-free - black	PUR	BN	1	1
		BK	2 + 4	4
		BU	3	3



Contact assignment of the M8 connector and the M8 female connectors



Contact assignment of the M8 connector and the M8 female connectors, with LEDs



Contact assignment of the M8 Y connector

	Technical data	
	Y-M8	Y-M8 with LEDs
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC
Rated current	4	4
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Material, knurls	Zinc die-cast, nickel-plated	Zinc die-cast, nickel-plated
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Male connector/female connector	-25 ... 90	-25 ... 90

M12 Y distributors, 4-pos., one cable outlet

Notes:

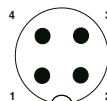
For information about the cable qualities, see page 318

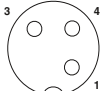
Further combinations on request.

Free end

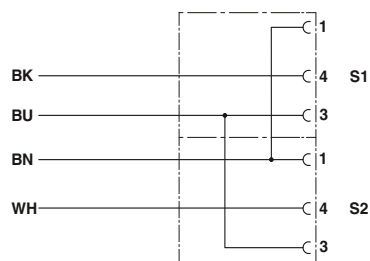


M12 male connector

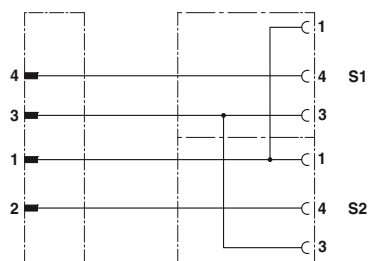


Y connector with 2 x M12 female connectors		Ordering data		Ordering data		Ordering data	
			Order No.		Order No.		Order No.
		1.5 m	1436165	0.3 m	1436204		
		3 m	1436178	0.6 m	1436217		
		5 m	1436181	1.5 m	1436220		
		10 m	1436194	3 m	1436233		

Cable description	Cable type	Suitable for:	Color coding	Pin assignment		
				M12 4-pos.	M12-Y S1	M12-Y S2
PUR, halogen-free - black	PUR	M12 4-pos.	BN	1	1	1
			BK	4	4	–
			WH	2	–	4
			BU	3	3	3



Contact assignment: Y-distributor to free end



Contact assignment: Y-distributor to M12 SPEEDCON

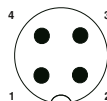
Technical data	
Y-M12	
Rated voltage	48 V AC / 60 V DC
Rated current	4 [A]
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
M12 circular connector in accordance with:	IEC 61076-2-101
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90 [°C]

Sensor/actuator cabling

Distributors and adapters

M12 Y-cable, 4-pos., two cable outlets

M12 Y male connector



Notes:

For information about the cable qualities, see page 318

Ordering data

Free end		Order No.
	1.5 m	1669686
	3 m	1669699
	5 m	1669754
	10 m	1694473
	Variable	1697357
M8 female connector, straight		
	0.3 m	1671331
	0.6 m	1671344
	1.5 m	1671357
	3 m	1671360
	Variable	1697399
M8 female connector, angled		
	0.3 m	1671373
	0.6 m	1671386
	1.5 m	1671399
	3 m	1671409
	Variable	1697409
M8 female connector, angled, with 2 LEDs		
	0.3 m	1671412
	0.6 m	1671425
	1.5 m	1671438
	3 m	1671441
	Variable	1697412
M12 female connector, straight		
	Variable	1699766
M12 female connector, angled		
	Variable	1506419
M12 female connector, straight, pin 2 – 4 bridged		
	0.3 m	1668959
	0.6 m	1668962
	1.5 m	1668975
	3 m	1668988
	Variable	1697360
M12 female connector, angled, pin 2 – 4 bridged		
	0.3 m	1668991
	0.6 m	1669000
	1.5 m	1669013
	3 m	1669026
	Variable	1697373
M12 female connector, angled, with LED, pin 2 – 4 bridged		
	0.3 m	1669039
	0.6 m	1669042
	1.5 m	1669055
	3 m	1669068
	Variable	1697386

Information for products with fixed cable length:

Products with fixed cable length are produced with the halogen-free **PUR** cable type and are available from stock.

Ordering data for products with variable cable:

For a 4.5 m long sensor/actuator cable, PUR, halogen-free, black, with a straight 4-pos. M12 Y-connector and two straight M12 females, the ordering data is as follows:

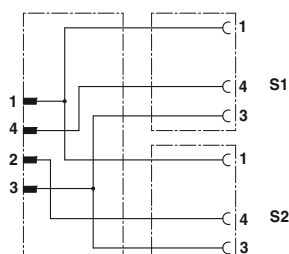
Order No.	Cable type	Length [m]
1699766	PUR	4.5
Minimum order amount: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Suitable for:
PUR, halogen-free – black E221474	PUR	M8/M12
PUR, halogen-free – gray E221474	280	M12
TPE-U highly flexible – gray E221474	800	M8/M12
PUR irradiated – orange E221474	150	M12
PVC – black E221474	PVC	M8/M12
PVC – gray E221474	500	M8/M12
PVC – yellow E221474	540	M12
PVC 105° – yellow E221474	542	M12

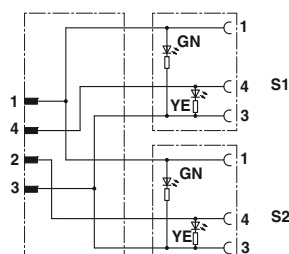
Color coding		Pin assignment, 3-pos.	
		Male	Female
BN		1	1
BK		2 + 4	4
BU		3	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

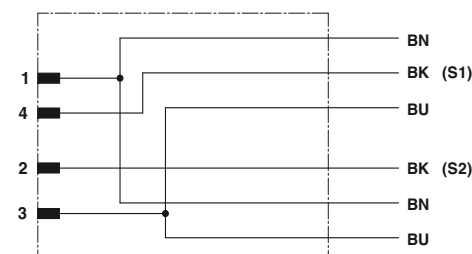
	Technical data	Technical data	Technical data	Technical data
	Y-M8	Y-M8 with LEDs	Y-M12	Y-M12 with LEDs
Rated voltage	48 V AC / 60 V DC	24 V / 24 V DC	250 V AC / 250 V DC	24 V / 24 V DC
Rated current	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector in accordance with:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-101	IEC 61076-2-101
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data				
Male connector/female connector	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



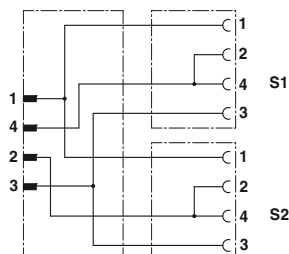
Contact assignment of the M12 male and the M8/M12 female connectors



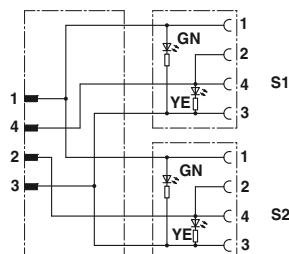
Contact assignment of the M12 male and the M8 female connectors, with LEDs



Contact assignment of the M12 Y connector



Contact assignment of the M12 male and the M12 female connector, bridged



Contact assignment of the M12 male and the M12 female connectors, with LEDs, bridged

Sensor/actuator cabling

Distributors and adapters

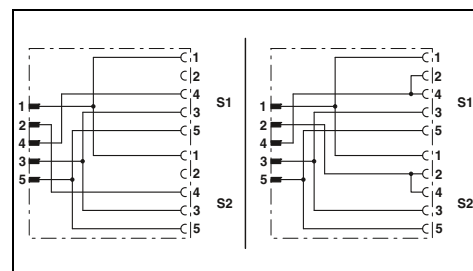
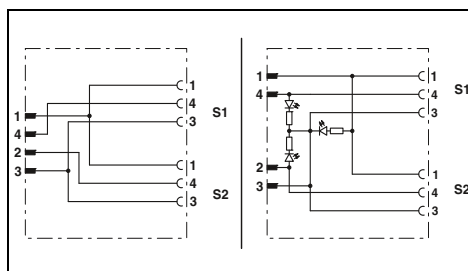
M8 and M12 Y distributors, M12 T distributors



3-pos.



3+PE-pos.



Technical data

Without LED	With 3 LEDs
IEC 61076-2-104	-
	IEC 61076-2-101
	3
	IP65 / IP67
48 V AC / 60 V DC	24 V DC
	4 A
	CuZn
	Ni/Au
	HB
	-25 ... 90

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Without LED		With 3 LEDs	

General data
M8 circular connector in accordance with:
M12 circular connector in accordance with:
Degree of pollution
Degree of protection
Electrical data
Rated voltage
Rated current
Material data
Contact material
Contact surface material
Flammability rating in accordance with UL 94
Temperature data
Male connector/female connector

[°C]

Technical data

Not bridged	Pins 2 and 4 bridged
	-
	IEC 61076-2-101
	3
	IP65 / IP67
48 V AC / 60 V DC	24 V DC
	4 A
	CuZn
	Ni/Au
	HB
	-25 ... 90

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Not bridged		Pins 2 and 4 bridged	

M8/M12 Y-distributor

M8 male to 2x M8 female	12 mm
M12 male to 2x M8 female	12 mm

M12 Y-distributor

M12 male to 2x M12 female	18 mm
M12 male to 2x M12 female	21 mm

M12 T-distributor

M12 male to 2x M12 female	21 mm

T-distributor

M12 male to 2x M12 female	

1696183 5
1683471 5

1683455 5
1511789 5

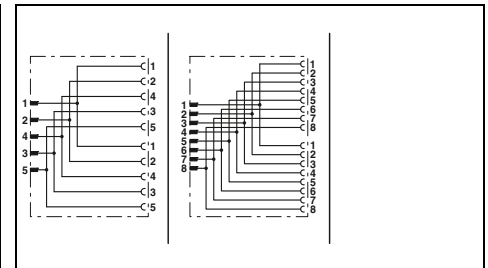
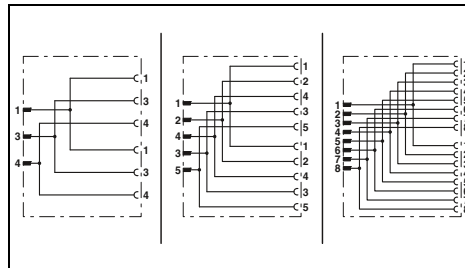
1683413 5
1514016 5

1403627 5

1519723 1

**M8 and M12 Y distributors, parallel,
M12 T distributors, parallel**


3-, 5-, 8-pos.

5-, 8-pos.,
shielded**Technical data**

3-pos.	5-pos.	8-pos.
IEC 61076-2-104	IEC 61076-2-101	-
	3	
	IP65 / IP67	
	48 V AC / 60 V DC	30 V AC / 30 V DC
	4 A	2 A
	CuZn	
	Ni/Au	
	-25 ... 90	

General data	
M8 circular connector in accordance with:	
M12 circular connector in accordance with:	
Degree of pollution	
Degree of protection	
Electrical data	
Rated voltage	
Rated current	
Material data	
Contact material	
Contact surface material	
Temperature data	
Male connector/female connector	

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
3-pos.		5-pos.		8-pos.	

M8/M12 Y-distributor

M8 male to 2x M8 female	12 mm	1696222	5
M12 male to 2x M8 female	12 mm	1683549	5

M12 Y-distributor

M12 male to 2x M12 female	18 mm	1683468	5
M12 male to 2x M12 female	21 mm	1514029	5

M12 Y-distributor

M12 male to 2x M12 female	18 mm	1546068	5
M12 male to 2x M12 female	21 mm	1454972	5
M12 male to M12 male/M12 female	21 mm		
M12 female to 2x M12 male	21 mm		
M12 female to M12 male/M12 female	21 mm		

M12 T distributor

M12 male to 2x M12 female		1541186	1

M12 T distributor, with two mounting holes

M12 female to M12 male/M12 female		1424712	1

Technical data

5-pos.	8-pos.
IEC 61076-2-101	-
3	
IP65 / IP67	
48 V AC / 60 V DC	30 V AC / 30 V DC
4 A	2 A
CuZn	
Ni/Au	
-25 ... 90	

General data	
M8 circular connector in accordance with:	
M12 circular connector in accordance with:	
Degree of pollution	
Degree of protection	
Electrical data	
Rated voltage	
Rated current	
Material data	
Contact material	
Contact surface material	
Temperature data	
Male connector/female connector	

Ordering data

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
5-pos.		8-pos.			

M12 T distributor

M12 male to 2x M12 female	18 mm	1419920	5
M12 male to 2x M12 female	21 mm	1438079	5
M12 male to M12 male/M12 female	21 mm	1419946	5
M12 female to 2x M12 male	21 mm	1419933	5
M12 female to M12 male/M12 female	21 mm		

M12 T distributor

M12 male to 2x M12 female	18 mm	1454969	5
M12 male to 2x M12 female	21 mm		
M12 male to M12 male/M12 female	21 mm		
M12 female to 2x M12 male	21 mm		
M12 female to M12 male/M12 female	21 mm		

M12 T distributor

M12 male to 2x M12 female	18 mm	1419920	5
M12 male to 2x M12 female	21 mm	1438079	5
M12 male to M12 male/M12 female	21 mm	1419946	5
M12 female to 2x M12 male	21 mm	1419933	5
M12 female to M12 male/M12 female	21 mm		

M12 T distributor

M12 male to 2x M12 female		1541186	1

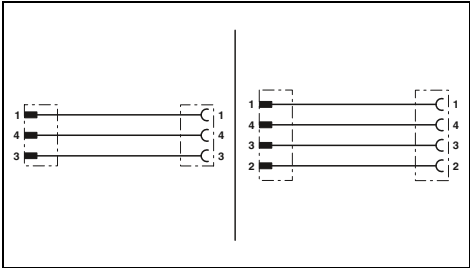
M12 T distributor, with two mounting holes

M12 female to M12 male/M12 female		1424712	1

M8/M12 adapters



3-, 4-pos.



General data	
M8 circular connector in accordance with:	
M12 circular connector in accordance with:	
Degree of pollution	
Degree of protection	
Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Flammability rating in accordance with UL 94	
HB	
Temperature data	
Male connector/female connector	[-25 ... 90 °C]

Technical data	
3-pos.	4-pos.
IEC 61076-2-104	
IEC 61076-2-101	
3	
IP65 / IP67	
48 V AC / 60 V DC	30 V AC / 30 V DC
4 A	
CuSn	
Ni/Au	
HB	
-25 ... 90	

Description
Adapter
M8 male to M12 female
M12 male to M8 female
M12 male to M8 snap-in female

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1519749	5	1519736	5
1519752	5	1519765	5
1519781	5	1519778	5



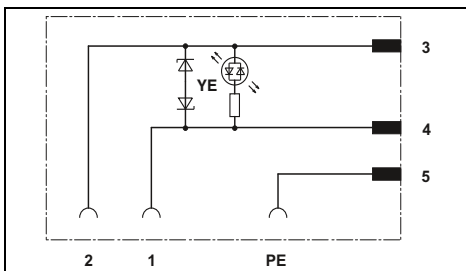
Valve connector type B



Valve connector type BI



DESINA valve connector type A



Technical data

IEC 61076-2-101
EN 175301-803
3
IP65 / IP67

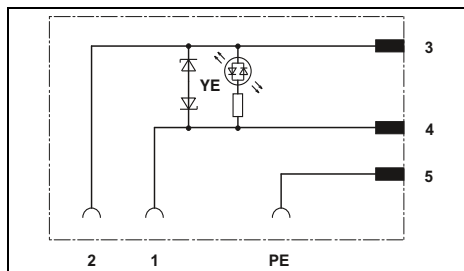
24 V AC / 24 V DC
4 A
Yellow LED

CuSn
CuSn
Ni/Au
Sn
HB

-25 ... 85

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-3P-MS/B-1L-Z SCO	1458541	1
SAC-3P-MR/B-1L-Z SCO	1458554	1



Technical data

IEC 61076-2-101
-
3
IP65 / IP67

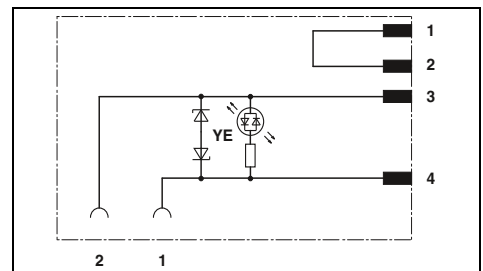
24 V AC / 24 V DC
4 A
Yellow LED

CuSn
CuSn
Ni/Au
Sn
HB

-25 ... 85

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-3P-MS/BI-1L-Z SCO	1458567	1
SAC-3P-MR/BI-1L-Z SCO	1458570	1



Technical data

IEC 61076-2-101
EN 175301-803
3
IP65 / IP67

24 V AC / 24 V DC
4 A
Yellow LED

CuSn
CuSn
Ni/Au
Sn
HB

-25 ... 85

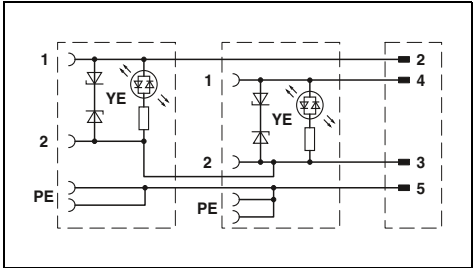
Ordering data

Type	Order No.	Pcs./Pkt.
SAC-4P-MS/A-1L-Z D SCO	1458583	1

Double valve connector adapters
with M12 male connector, type A



Type A



General data	
M12 circular connector in accordance with:	
Valve connector in accordance with:	
Degree of protection	
Electrical data	
Rated voltage	
Rated current	
Material data	
Material contact M12	
Material contact valve connector	
Material contact surface M12	
Material contact surface valve connector	
Material housing valve connector	
Temperature data	
Valve connectors	[°C]

Technical data	
IEC 61076-2-101	
EN 175301-803	
IP65 / IP67	
24 V AC / 24 V DC	
4 A	
CuSn	
CuSn	
Ni/Au	
Sn	
TPU	
-25 ... 85	

Description
Double valve connector , plug distance: 10 cm, valve connector leading to valve connector adapter with: – Vertical M12 male connector – Horizontal M12 male connector Double valve connector , plug distance: 15 cm, valve connector leading to valve connector adapter with: – Vertical M12 male connector – Horizontal M12 male connector Double valve connector , plug distance: 20 cm, valve connector leading to valve connector adapter with: – Vertical M12 male connector – Horizontal M12 male connector

Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-MS/0,1-116/2XA-1L-Z SCO	1458101	1
SAC-MR/0,1-116/2XA-1L-Z SCO	1458130	1
SAC-MS/0,15-116/2XA-1L-Z SCO	1458114	1
SAC-MR/0,15-116/2XA-1L-Z SCO	1458143	1
SAC-MS/0,2-116/2XA-1L-Z SCO	1458127	1
SAC-MR/0,2-116/2XA-1L-Z SCO	1458156	1

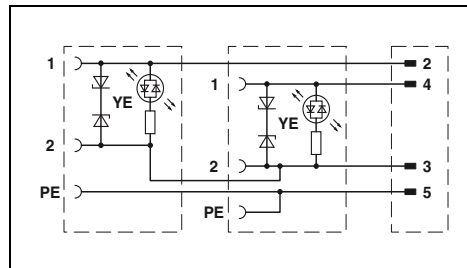
Double valve connector adapters with M12 male, type B and BI



Type B



Type BI



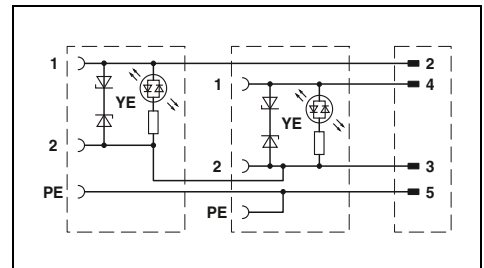
Technical data

General data	
M12 circular connector in accordance with:	IEC 61076-2-101
Valve connector in accordance with:	EN 175301-803
Degree of protection	IP65 / IP67
Electrical data	
Rated voltage	24 V AC / 24 V DC
Rated current	4 A
Material data	
Material contact M12	CuSn
Material contact valve connector	CuSn
Material contact surface M12	Ni/Au
Material contact surface valve connector	Sn
Material housing valve connector	TPU
Temperature data	
Valve connectors	-25 ... 85 [°C]

Ordering data

Description
Double valve connector , plug distance: 10 cm, valve connector leading to valve connector adapter with:
– Vertical M12 male connector
– Horizontal M12 male connector
Double valve connector , plug distance: 15 cm, valve connector leading to valve connector adapter with:
– Vertical M12 male connector
– Horizontal M12 male connector
Double valve connector , plug distance: 20 cm, valve connector leading to valve connector adapter with:
– Vertical M12 male connector
– Horizontal M12 male connector

Type	Order No.	Pcs./Pkt.
SAC-MS/0,1-116/2XB-1L-Z SCO	1458282	1
SAC-MR/0,1-116/2XB-1L-Z SCO	1458318	1
SAC-MS/0,15-116/2XB-1L-Z SCO	1458295	1
SAC-MR/0,15-116/2XB-1L-Z SCO	1458321	1
SAC-MS/0,2-116/2XB-1L-Z SCO	1458305	1
SAC-MR/0,2-116/2XB-1L-Z SCO	1458334	1



Technical data

General data	
IEC 61076-2-101	
-	
IP65 / IP67	
Electrical data	
24 V AC / 24 V DC	
4 A	
Material data	
CuSn	
CuSn	
Ni/Au	
Sn	
TPU	
Temperature data	
-25 ... 85	

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-MS/0,1-116/2XBI-1L-Z SCO	1458460	1
SAC-MR/0,1-116/2XBI-1L-Z SCO	1458499	1
SAC-MS/0,15-116/2XBI-1L-Z SCO	1458473	1
SAC-MR/0,15-116/2XBI-1L-Z SCO	1458509	1
SAC-MS/0,2-116/2XBI-1L-Z SCO	1458486	1
SAC-MR/0,2-116/2XBI-1L-Z SCO	1458512	1

M8 distributors with metal thread



With a master cable



M12 male-in connection, vertical



M12 male-in connection, vertical

General data

Degree of protection in acc. with IEC 60529/EN 60529

M8 circular connector in accordance with:

M12 circular connector in accordance with:

Electrical data

Rated current for each I/O signal

[A]

Rated current per slot

[A]

Rated current, total

[A]

Dimensions

Width x height

[mm]

(Length (4 / 6 / 8 / 10 slots)

[mm]

Temperature data

Distributor box

[°C]

Master cable, fixed installation

[°C]

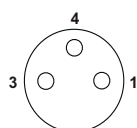
Master cable, flexible installation

[°C]

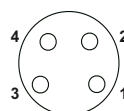
Status indication	Signal type	Rated voltage	Slots	Cable length
With LED	PNP	24 V DC	4	-
With LED	PNP	24 V DC	4	5 m
With LED	PNP	24 V DC	4	10 m
With LED	PNP	24 V DC	6	-
With LED	PNP	24 V DC	6	5 m
With LED	PNP	24 V DC	6	10 m
With LED	PNP	24 V DC	8	-
With LED	PNP	24 V DC	8	5 m
With LED	PNP	24 V DC	8	10 m
With LED	PNP	24 V DC	10	-
With LED	PNP	24 V DC	10	5 m
With LED	PNP	24 V DC	10	10 m

For accessories, see page
For master cable coils, see page
For master cable data, see page

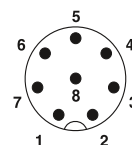
Technical data		Technical data		Technical data	
IP65 / IP67 IEC 61076-2-104 -		IP65 / IP67 IEC 61076-2-104 IEC 61076-2-101		IP65 / IP67 IEC 61076-2-104 IEC 61076-2-101	
2		2		1.5	
2		2		1.5	
6		4		1.5	
Ordering data		Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1516234	-	-	-
1516014	-	-	-	-	-
1516027	-	-	-	-	-
-	-	1516247	-	-	-
1516030	-	-	-	-	-
1516043	-	-	-	-	-
-	-	-	-	1434840	-
1516056	1516111	-	-	-	-
1516069	1516124	-	-	-	-
-	-	-	-	1434853	-
1516072	-	-	-	-	-
1516085	-	-	-	-	-
Notes:		Notes:		Notes:	
311		311		311	
330		305		305	



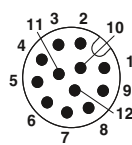
Pin assignment M8 female, 3-pos.



Pin assignment M8 female, 4-pos.



Connector pin assignment for M12 male-in connection, 8-pos.



Pin assignment for M12 male-in connection, 12-pos.

M16 plug-in connection,
verticalSpring connection,
horizontalPlug-in screw connection,
horizontalHeader for plug-in
screw connectionConnector hood,
with a master cableConnector hood,
without master cable

Technical data

IP65 / IP67
IEC 61076-2-1042
2
630 x 26
93 / 113 / 132 / 152-30 ... 80
-

Ordering data

Single occupancy
1516182Double occupancy
--
-

1516195

-

-
-

1516205

-

-
-

1516218

-

-
-

Notes:

310
305

Technical data

IP65 / IP67
IEC 61076-2-1042
2
630 x 44
122 / 142 / 176 / 196-30 ... 80
-

Ordering data

Single occupancy
1503386Double occupancy
--
-

1503399

-

-
-

1511747 1503454

-

-
-

1503409

-

-
-

Notes:

310
305

Technical data

IP65 / IP67
IEC 61076-2-1042
2
830 x 44
122 / 142 / 176 / 196-30 ... 80
-

Ordering data

Single occupancy
1503412Double occupancy
--
-

1503425

-

-
-

1511750 1503467

-

-
-

1503438

-

-
-

Notes:

310
305

Technical data

IP65 / IP67
IEC 61076-2-1042
2
830 x 20
122 / 142 / 176 / 196-30 ... 80
-

Ordering data

Single occupancy
1516250Double occupancy
--
-

1516263

-

-
-

1516276

-

-
-

1516289

-

-
-

Notes:

310



Technical data

IP65 / IP67
-2
2
830 x 24
60 / 60 / 74 / 74-30 ... 80
-40 ... 90
-5 ... 80

Ordering data

Single occupancy
-Double occupancy
-1516292
1516302-
-

-

1516315
1516328-
-

-

1516331
1516344-
-

-

1516357
1516360-
-

Notes:

310
330

Technical data

IP65 / IP67
-2
2
-30 x 24
- / - / - / --30 ... 80
-

Ordering data

Single occupancy
1521229Double occupancy
--
-

1521216

-

-
-

1516425

-

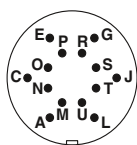
-
-

1516412

-

-
-

Notes:

Connector pin assignment for
M16 plug-in connection, 14-pos.

Sensor/actuator cabling

Distributor boxes

M12 distributors with plastic thread, middle duty



With a master cable



Spring connection, horizontal



Push-in spring connection, horizontal



Technical data

IP65 / IP67
IEC 61076-2-101

2
4
12

54 x 23
117 / 123 / 149 / -

-25 ... 80
-40 ... 90
-5 ... 80

Ordering data

Single occupancy	Double occupancy
-	-
1452398	1452424



Technical data

IP65 / IP67
IEC 61076-2-101

2
4
12

54 x 42
117 / 123 / 149 / -

-25 ... 80
-
-

Ordering data

Single occupancy	Double occupancy
1452929	1452932
-	-



Technical data

IP65 / IP67
IEC 61076-2-101

2
4
-

54 x 43
117 / 123 / 149 / -

-25 ... 80
-
-

Ordering data

Single occupancy	Double occupancy
-	-
-	-

General data

Degree of protection in acc. with IEC 60529/EN 60529
M12 circular connector in accordance with:

Electrical data

Rated current for each I/O signal [A]
Rated current per slot [A]
Rated current, total [A]

Dimensions

Width x height [mm]
(Length (4 / 6 / 8 / 10 slots) [mm]

Temperature data

Distributor box [°C]
Master cable, fixed installation [°C]
Master cable, flexible installation [°C]

Status indication	Signal type	Rated voltage	Slots	Cable length
Without LED	Universal	120 V	4	-
Without LED	Universal	120 V	4	5 m
Without LED	Universal	120 V	6	-
Without LED	Universal	120 V	6	5 m
Without LED	Universal	120 V	6	10 m
Without LED	Universal	120 V	8	-
Without LED	Universal	120 V	8	5 m
Without LED	Universal	120 V	8	10 m
With LED	PNP	24 V DC	4	-
With LED	PNP	24 V DC	4	1.5 m
With LED	PNP	24 V DC	4	5 m
With LED	PNP	24 V DC	4	10 m
With LED	PNP	24 V DC	4	15 m
With LED	PNP	24 V DC	4	20 m
With LED	PNP	24 V DC	6	-
With LED	PNP	24 V DC	6	5 m
With LED	PNP	24 V DC	6	10 m
With LED	PNP	24 V DC	8	-
With LED	PNP	24 V DC	8	1.5 m
With LED	PNP	24 V DC	8	3 m
With LED	PNP	24 V DC	8	5 m
With LED	PNP	24 V DC	8	10 m
With LED	PNP	24 V DC	8	15 m
With LED	PNP	24 V DC	8	20 m
-	-	120 V	8	25 m
-	-	120 V	8	30 m
-	-	120 V	8	50 m
With LED	NPN	24 V DC	8	5 m
With LED	NPN	24 V DC	8	10 m

Notes:

312
331

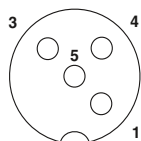
Notes:

312
305

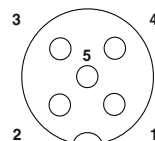
Notes:

312
305

For accessories, see page
For master cable coils, see page
For master cable data, see page



Pin assignment of
M12 female, 4-pos.



Pin assignment of
M12 female, 5-pos.

Plug-in screw connection,
horizontalHeader for plug-in
screw connectionConnector hood,
with master cable, with
plug-in screw connectionConnector hood,
without master cable, with
plug-in screw connection

Technical data	
IP65 / IP67 IEC 61076-2-101	
2	
4	
10	
54 x 43	
117 / 123 / 149 / -	
-25 ... 80	
-	
-	



Technical data	
IP65 / IP67 IEC 61076-2-101	
2	
4	
10	
54 x 19	
117 / 123 / 149 / -	
-25 ... 80	
-	
-	



Technical data	
IP65 / IP67 -	
2	
4	
10	
54 x 25	
34 / 34 / 34 / -	
-25 ... 80	
-40 ... 90	
-5 ... 80	



Technical data	
IP65 / IP67 -	
2	
4	
-	
54 x 25	
34 / 34 / 34 / -	
-25 ... 80	
-	
-	

Ordering data

Single occupancy	Double occupancy
1452741	1452754
-	-
1452767	1452770
-	-
-	-
1452783	1452796
-	-
-	-

Ordering data

Single occupancy	Double occupancy
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Ordering data

Single occupancy	Double occupancy
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Ordering data

Single occupancy	Double occupancy
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

1452806	1452819
-	-
-	-
-	-
-	-
-	-

1452864	1452877
-	-
-	-
-	-
-	-
-	-

-	-
-	-
-	1453083
-	1453096
-	1422784
-	-

1453229	1453229
-	-
-	-
-	-
-	-
-	-

1452822	1452835
-	-

1452880	1452893
-	-

-	-
-	1453148
1453122	-

1453229	1453229
-	-

1452848	1452851
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

1452903	1452916
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

-	-
-	-
-	-
1453177	1453203
1453180	1453216
-	1422787
-	1097653
-	1097661
-	1097665
-	1097669

1453229	1453229
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Notes:

Notes:

Notes:

Notes:

312
305

312

312
331

312

Distributor boxes

M12 distributors with metal thread, heavy-duty



With a master cable



With halogen-free master line



Plug-in screw connection, horizontal



Technical data

IP65 / IP67 / IP69K
IEC 61076-2-101

2
4
12
-



Technical data

IP65 / IP67 / IP69K
IEC 61076-2-101

2
4
12
-



Technical data

IP65 / IP67 / IP69K
IEC 61076-2-101

2
4
10
2x 8

General data

Degree of protection in acc. with IEC 60529/EN 60529
M12 circular connector in accordance with:

Electrical data

Rated current for each I/O signal [A]
Rated current per slot [A]
Rated current, total [A]
Total rated current for electrical isolation [A]

Dimensions

Width x height [mm]
(Length (4 / 6 / 8 / 10 slots) [mm])

Temperature data

Distributor box [°C]
Master cable, fixed installation [°C]
Master cable, flexible installation [°C]

Ordering data

Single occupancy	Double occupancy
-	-
1516962	1516988
1516975	1516991

Ordering data

Single occupancy	Double occupancy
-	-
-	1517204
-	1517217

Ordering data

Single occupancy	Double occupancy
1516849	1516852
-	-
-	-

Status indication	Signal type	Rated voltage	Slots	Cable length
Without LED	Universal	120 V	4	-
Without LED	Universal	120 V	4	5 m
Without LED	Universal	120 V	4	10 m
Without LED	Universal	120 V	6	-
Without LED	Universal	120 V	6	5 m
Without LED	Universal	120 V	6	10 m
Without LED	Universal	120 V	8	-
Without LED	Universal	120 V	8	5 m
Without LED	Universal	120 V	8	10 m
With LED	PNP	24 V DC	4	-
With LED	PNP	24 V DC	4	5 m
With LED	PNP	24 V DC	4	10 m
With LED	PNP	24 V DC	6	-
With LED	PNP	24 V DC	6	5 m
With LED	PNP	24 V DC	6	10 m
With LED	PNP	24 V DC	8	-
With LED	PNP	24 V DC	8	1.5 m
With LED	PNP	24 V DC	8	5 m
With LED	PNP	24 V DC	8	10 m
With LED	NPN	24 V DC	4	-
With LED	NPN	24 V DC	6	-
With LED	NPN	24 V DC	8	-

Notes:

313
331

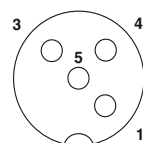
Notes:

313
333

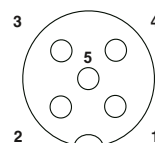
Notes:

313
305

For accessories, see page
For master cable coils, see page
For master cable data, see page



Pin assignment of M12 female, 4-pos.



Pin assignment of M12 female, 5-pos.



Header for plug-in screw connection



Connector hood, with a master cable



Connector hood, without master cable



With master cable connection, rear



Plug-in spring connection, back



With FLK pin strip, rear



Technical data

IP65 / IP67 / IP69K
IEC 61076-2-1012
4
10
2x 858 x 26
117 / 126 / 153 / --30 ... 80
-
-

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -1516726 1516739
- -
- -1516742 1516755
- -
- -1516768 1516771
- -
- -
- -- -
- -
- -- -
- -

Notes:

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Technical data

IP65 / IP67 / IP69K
-2
4
10
-58 x 21
34 / 34 / 34 / --30 ... 80
-40 ... 90
-5 ... 80

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -- -
1516353 1516593
1516548 1516603- -
1516551 1516616
1516564 1516629- -
1516577 1516632
1516580 1516645- -
- -
- -- -
- -

Notes:

313

331



Technical data

IP65 / IP67 / IP69K
-2
4
-58 x 21
- / - / - / --30 ... 80
-
-

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -1516713 1516713
- -
- -1516713 1516713
- -
- -1516713 1516713
- -
- -- -
- -
- -- -
- -

Notes:

313



Technical data

IP54
IEC 61076-2-1012
4
12
-58 x 28
- / - / 159 / --30 ... 80
-
-

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
1437245 -
- -- -
- -
- -- -
- -

Notes:

313



Technical data

IP54
IEC 61076-2-1012
4
8
-58 x 28
- / - / 159 / --30 ... 80
-
-

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
1437232 -
- -- -
- -
- -- -
- -

Notes:

313

331



Technical data

IP54
IEC 61076-2-1010.5
0.5
4
858 x 28
- / - / 159 / --30 ... 80
-
-

Ordering data

Single occupancy Double occupancy

- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
- -
- -- -
1547928 -
- -- -
- -
- -- -
- -

Notes:

313

Sensor/actuator cabling

Distributor boxes

**QUICKON distributors,
connection cross section:
0.14 mm² ... 0.34 mm²**



With a master cable



Plug-in screw connection,
horizontal

General data

Degree of protection in acc. with IEC 60529/EN 60529

Electrical data

Rated current for each I/O signal

[A]

Rated current per slot

[A]

Rated current, total

[A]

Total rated current for electrical isolation

[A]

Dimensions

Width x height

[mm]

(Length (4 / 6 / 8 / 10 slots)

[mm]

Temperature data

Distributor box

[°C]

Master cable, fixed installation

[°C]

Master cable, flexible installation

[°C]

Status indication	Signal type	Rated voltage	Slots	Cable length
Without LED	Universal	48 V	4	-
Without LED	Universal	48 V	6	-
Without LED	Universal	48 V	8	-
With LED	PNP	24 V DC	4	-
With LED	PNP	24 V DC	4	5 m
With LED	PNP	24 V DC	4	10 m
With LED	PNP	24 V DC	6	-
With LED	PNP	24 V DC	8	-
With LED	PNP	24 V DC	8	5 m
With LED	PNP	24 V DC	8	10 m

For accessories, see page

For master cable coils, see page

For master cable data, see page



Technical data

IP65 / IP67 / IP69K

2

4

12

-

58 x 45

116 / - / 153 / -

-30 ... 80

-40 ... 90

-5 ... 80

Ordering data

Single occupancy

Double occupancy

-

-

-

-

-

-

1548448

1548532

1548451

1548545

-

-

-

-

-

-

1548480

1548574

1548493

1548587

Notes:

315

330



Technical data

IP65 / IP67 / IP69K

2

4

10

2x 8

58 x 45

117 / 126 / 153 / -

-30 ... 80

-

-

Ordering data

Single occupancy

Double occupancy

1548354

1548419

1548367

1548422

1548370

1548435

1548325

1548383

-

-

-

-

1548338

1548396

1548341

1548406

-

-

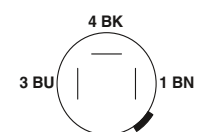
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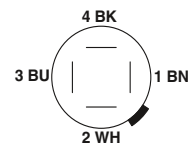
Notes:

315

305



Pin assignment for
QUICKON connection, 3-pos.



Pin assignment for
QUICKON connection, 4-pos.

**QUICKON distributors,
connection cross section:
0.34 mm² ... 0.75 mm²**



With a master cable

Spring connection,
horizontal**General data**

Degree of protection in acc. with IEC 60529/EN 60529

Electrical data

Rated current for each I/O signal [A]

Rated current per slot [A]

Rated current, total [A]

Dimensions

Width x height [mm]

(Length (4 / 6 / 8 / 10 slots) [mm])

Temperature data

Distributor box [°C]

Master cable, fixed installation [°C]

Master cable, flexible installation [°C]

**Technical data**

IP65 / IP67

4

4

12

60 x 44

97 / 134 / 170 / -

-25 ... 60

-40 ... 90

-5 ... 80

**Technical data**

IP65 / IP67

4

4

12

60 x 44

132 / 168 / 205 / -

-25 ... 60

-

-

Ordering data

Single occupancy

Double occupancy

-

1683662

1683675

-

-

-

-

Ordering data

Single occupancy

Double occupancy

1683633

-

-

-

-

1683646

-

-

-

1683659

-

-

-

1662939

-

-

-

1662942

-

-

-

1662955

-

-

-

1680856

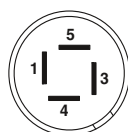
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1680869

-

1680872

-

Pin assignment for
QUICKON connection, 4-pos.



Fast and secure connection

The M12 connectors snap into place quickly and securely with a single click thanks to the push-pull fast locking system. This offers significant advantages in particular in confined spaces or when the mating connector is difficult to see. The 360° shield connection and high vibration resistance also enable use in rail vehicles.



Connectors for assembly

With our M12 connectors for assembly, you can adapt the cabling flexibly to your requirements. In addition to connectors with convenient QUICKON (IDC) connection, we also offer versions with robust crimp and spring connection.



Assembled cables

The molded connectors in our M12 RAIL series provide a reliable cabling system for all control levels in the train. Choose your cabling from assembled sensor/actuator cables and data cables for communication networks and passenger information systems.



Flame-retardant

An important aspect in the selection of the plastics used in the railway industry is their flame retardancy. We satisfy stringent requirements regarding behavior in fire, thanks to our irradiated railway cables and PA 6.6 molding material.



Securely locked

The special vibration brake prevents the unintentional loosening of the plug-in connection in the event of vibrations.

The connectors are tested in accordance with EN 50155 for resistance to shock and vibrations.



Temperature-resistant

Particularly high or low temperatures and temperature shocks may not affect the electrical function of the components used either.

Our products are intensively tested for an extended temperature range and for resistance to temperature shocks.



Certified in accordance with IRIS

The Phoenix Contact Group is currently IRIS-certified. IRIS is an international rail industry standard for quality management systems.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.





Resistance to cleaning agents

The connectors in a hygienic and washdown design are tested for resistance to cleaning agents commonly used in the food industry in accordance with Diversey and ECOLAB standards.



Product-contacting area

The components and devices used here must meet the highest hygienic requirements. Our cabling in a hygienic design is suitable for use in this area.



Splash zone

The products in a washdown design are suitable for the splash zone. Cost-effective features include resistance to cleaning agents and cleaning methods.



Connectors for the splash zone

For the special requirements of the food industry, we offer flush-type connectors and connectors with stainless steel components for assembly.



Assembled cables for all areas

Molded cables are available with connectors in sizes M8 and M12 in a hygienic or washdown design.



Distributor boxes for the splash zone

Distributor boxes with stainless steel housing and permanently connected PVC master cable in a washdown design are available for the splash zone.



Mechanical resistance

All components for the food industry are IP69K tested. This means guaranteed sealing for applications with steam jets, even after repeated temperature shocks.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.





Adapted to the relevant requirements

Through the selection of special materials, the components are designed for use outdoors. The materials are resistant to UV, ozone, corrosion, and heat.



For a variety of applications

Outdoor components are particularly suitable for use in traffic management systems, snow cats and snow cannons, photovoltaic systems, and wind turbine generators.



UV and ozone testing

Testing with special climate cabinets ensures that the connectors and cables are suitable for the control of solar plants, for example, without any restrictions.



Connectors for assembly

The connector knurls are made from stainless steel and the plastics are resistant to atmospheric influences. The connectors are available with insulation displacement connection and screw connection.



Assembled cables

In addition to 3- to 8-pos. shielded and unshielded versions, PROFINET and Ethernet cables are also available for data applications.



Distributor boxes

Robust, fully molded sensor/actuator distributor boxes with 8 slots are available with fixed master cable or plug-in screw connection.



IP69K protection

For outdoor applications, a high IP protection class is essential because products are exposed to direct atmospheric influences.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.





High level of durability

With their special design, our cables provide a high level of durability under alternating bending stress, e.g., in drag chains.



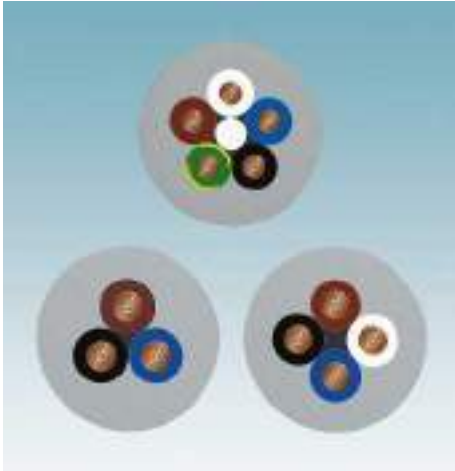
High level of resistance to welding sparks

The robust TPE-U outer sheath of the highly flexible cables is resistant to welding sparks. The cables can therefore be used in resistance welding processes.



High level of durability under torsional stress

Our cables achieve a high level of durability – even with large angles of torsion and simultaneous bending stress.



Large selection of number of positions

Our sensor/actuator cables for robots and drag chains are available in 3-, 4-, and 5-pos. versions.



Large selection of connectors

Sensor/actuator cables with molded plug-in plugs are available both as male and female connectors and with a straight or angled cable outlet.



Highly flexible master cables

For the distribution or grouping of signals at industrial robots, we offer a corresponding sensor/actuator box with special master cable.



100% tested

All supplied components are 100% electrically tested by Quality Assurance.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.





Maximum power in a compact design

You can use the compact M12 POWER connectors to supply devices with up to 16 A or up to 630 V depending on the version. The M12 size therefore opens up new areas of application for supplying energy to your electrical devices.



DC application

The M12 POWER T and L DC codings are particularly suitable for the supply connection for decentral I/O modules and for DC motors.



AC application

The M12 POWER S, K, and M codings are designed for AC applications such as the power connection of a three-phase motor.

**Connectors for assembly**

The M12 connectors in straight and angled versions with crimp and screw connection are available for power transmission.

**Safe transmission**

With 360° shielded connectors and cables, you can transmit signals reliably even in critical EMI applications.

**Power distributors**

An M12 box with and without diagnostics function plus a Y-distributor with T-coding are available for power distribution.

**100% tested**

All supplied components are 100% electrically tested by Quality Assurance.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.



new

new



**T-coded,
4-pos.**



L-coded,
4-pos., 4-pos.+FE



M12 POWER connectors, screw connection, crimp connection

Further power codings can be found on
our website under web code:

i Your web code: **#0024**



**S-coded,
2-, 3-pos.+PE**



**K-coded,
4-pos.+PE**



	Technical data			Technical data		
	2-pos. + PE, unshielded	3-pos. + PE, unshielded	3-pos. + PE, shielded	4-pos. + PE, unshielded	4-pos. + PE, shielded	
General data						
Degree of pollution	3	3	3	3	3	
Degree of protection	IP67	IP67	IP65	IP67	IP65	
Connection method	Screw connection	Screw connection	Crimp connection	Screw connection	Crimp connection	
Connection cross section [mm²]	0.75 mm² ... 1.5 mm²	0.75 mm² ... 1.5 mm²	1.5 mm² ... 2.5 mm²	1.5 mm² ... 2.5 mm²	1.5 mm² ... 2.5 mm²	
Electrical data						
Rated voltage	230 V AC	630 V AC	690 V AC	630 V AC	690 V AC	
Rated current	16 A (when using 1.5 mm² conductors)	12 A (when using 1.5 mm² conductors)	12 A (when using 1.5 mm² conductors)	12 A (when using 2.5 mm² conductors)	16 A (when using 2.5 mm² conductors)	
Insulation resistance	> 10 GΩ	> 10 GΩ	≥ 100 MΩ	> 10 GΩ	≥ 100 MΩ	
Material data						
Material contact/contact surface	CuZn / Au	CuZn / Au	- / -	CuZn / Au	- / -	
Contact carrier material	PA	PA	PA	PA	PA	
Flammability rating in accordance with UL 94	V0	V0	V0	V0	V0	
Temperature data						
Male connector/female connector	-40 ... 85	-40 ... 85	-40 ... 85	-40 ... 85	-40 ... 85	
	Ordering data			Ordering data		
	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
	2-pos. + PE, unshielded		3-pos. + PE, unshielded		3-pos. + PE, shielded	
	4-pos. + PE, unshielded		4-pos. + PE, shielded			
Connector, cable diameter: 6 mm ... 8 mm						
Female, straight	1419640	1				
Male, straight	1419639	1				
Female, angled	1419642	1				
Male, angled	1419641	1				
Connector, cable diameter: 8 mm ... 10 mm						
Female, straight			1404642	1		
Male, straight			1404641	1		
Female, angled			1408987	1		
Male, angled			1408985	1		
Connector, without contacts, cable diameter: 6.5 mm ... 11 mm						
Female, straight			1027469	1		
Male, straight			1027467	1		
Connector, without contacts, cable diameter: 8 mm ... 13 mm						
Female, straight					1027476	1
Male, straight					1027474	1
Crimp contacts for male connector, gold-plated, for conductor cross-section:						
Male, 1.5 mm², AWG 14			1029394	1	1029394	1
Male, 2.5 mm²			1029388	1	1029388	1
PE male, 1.5 mm², AWG 14			1029398	1		
PE male, 2.5 mm²			1029389	1		
PE female, 1.5 mm², AWG 14					1029401	1
PE female, 2.5 mm²					1029393	1
Crimp contacts for female connector, gold-plated, for conductor cross-section:						
Female, 1.5 mm², AWG 14			1029395	1	1029396	1
Female, 2.5 mm²			1029390	1	1029392	1
PE female, 1.5 mm², AWG 14			1029400	1		
PE female, 2.5 mm²			1029391	1		
PE male, 1.5 mm², AWG 14					1029398	1
PE male, 2.5 mm²					1029389	1

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER device connectors, modular, 25 mm square flange, pre-assembled



Flange housing,
2.7 mm housing bore holes



Preassembled contact carrier
and insulating body
with 0.5 m long litz wires

ERC

ERC

Technical data

General data		
Degree of pollution	-	
Degree of protection	-	
Connection method	-	
Electrical data		
Rated voltage		
Rated current	-	
Overvoltage category	-	
Material data		
Material contact/contact surface	- / -	
Contact carrier material	-	
Cable gland material	Zinc die-cast, nickel-plated	
Cable type	-	
Temperature data		
Male connector/female connector	-40 ... 85	[°C]

Ordering data

Description	Order No.	Pcs./Pkt.
Square flange housing, with flat gasket	1424131	10
Assembled contact carrier and insulating body, with 0.5 m litz wires and crimp contacts		
Male		

Technical data

S-coded, 3-pos. + PE	T-coded, 4-pos.
3	3
IP67	IP67
Individual wires	Individual wires
630 V	63 V
12 A	12 A
III	III
CuZn / Au	CuZn / Au
PA6	PA6
-	-
UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire
-25 ... 85	-25 ... 85

Ordering data

S-coded, 3-pos. + PE	T-coded, 4-pos.
Order No.	Order No.
Pcs./Pkt.	Pcs./Pkt.
1424129	1
1424130	1

M12 POWER device connectors, 2-pos.+PE, S-coded

- M16 fastening thread
- With 0.5 m long litz wires
- S-coded



S-coded,
2-pos. + PE



		Technical data			
		Front mounting	Rear mounting		
General data					
Degree of pollution		3	3		
Degree of protection		-	IP65 / IP67		
Connection method		Individual wires	Individual wires		
Electrical data					
Rated voltage		630 V	630 V		
Rated current		16 A	16 A		
Material data					
Material contact/contact surface		CuZn / Au	CuZn / Au		
Contact carrier material		PA	PA		
Flammability rating in accordance with UL 94		V0	V0		
Cable type		UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire		
Conductor cross section		1.31 mm ²	1.31 mm ²		
Conductor cross section	[AWG]	16	16		
Temperature data					
Male connector/female connector	[°C]	-25 ... 85	-25 ... 85		
		Ordering data			
Description	Coding	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		Front mounting		Rear mounting	
Power device connectors					
Female	S power	1411654	1	1411652	1
Male	S power	1411655	1	1411653	1
		Accessories			
Flat nut, with: M16 thread		SACC-E-MU-M16		1504097	100

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER device connectors, 3-pos.+PE, S-coded, 4-pos., T-coded

- M16 fastening thread
- With 0.5 m long litz wires



S-coded,
3-pos. + PE



T-coded,
4-pos.



Technical data

General data	
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	630 V
Rated current	12 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA
Flammability rating in accordance with UL 94	V0
Cable type	UL/cUL flexible hook-up wire
Conductor cross section	1.31 mm ²
Conductor cross section	16
Temperature data	
Male connector/female connector	-25 ... 85

Front mounting

Rear mounting

[AWG]

[°C]



Technical data

General data	
Degree of pollution	3
Degree of protection	IP67
Connection method	Individual wires
Electrical data	
Rated voltage	63 V
Rated current	12 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA
Flammability rating in accordance with UL 94	V0
Cable type	UL/cUL flexible hook-up wire
Conductor cross section	1.31 mm ²
Conductor cross section	16
Temperature data	
Male connector/female connector	-25 ... 85

Front mounting

Rear mounting

Ordering data

Description
Power device connectors
Female
Male

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Front mounting		Rear mounting	
1424137	1	1424133	1
1424139	1	1424132	1

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Front mounting		Rear mounting	
1424138	1	1424134	1
1424140	1	1424136	1

Accessories

Flat nut, with: M16 thread

SACC-E-MU-M16	1504097	100

Accessories

SACC-E-MU-M16	1504097	100

**M12 POWER XL device connectors,
3-pos.+PE, S-coded,
4-pos., T-coded**

- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19



S-coded,
3-pos. + PE



T-coded,
4-pos.



Technical data			
Front mounting		Rear mounting	
General data			
Degree of pollution	3	3	
Degree of protection	IP65/IP67	IP65/IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	630 V	630 V	
Rated current	12 A	12 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA	PA	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire	
Conductor cross section	1.31 mm ²	1.31 mm ²	
Conductor cross section [AWG]	16	16	
Temperature data			
Male connector/female connector [°C]	-25 ... 85	-25 ... 85	

Ordering data			
Front mounting		Rear mounting	
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.

Accessories		
SACC-E-MU-M16	1504097	100



Technical data			
Front mounting		Rear mounting	
General data			
Degree of pollution	3	3	
Degree of protection	IP65/IP67	IP65/IP67	
Connection method	Individual wires	Individual wires	
Electrical data			
Rated voltage	63 V	63 V	
Rated current	12 A	12 A	
Material data			
Material contact/contact surface	CuZn / Au	CuZn / Au	
Contact carrier material	PA	PA	
Flammability rating in accordance with UL 94	V0	V0	
Cable type	UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire	
Conductor cross section	1.31 mm ²	1.31 mm ²	
Conductor cross section [AWG]	16	16	
Temperature data			
Male connector/female connector [°C]	-25 ... 85	-25 ... 85	

Ordering data			
Front mounting		Rear mounting	
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.

Accessories		
SACC-E-MU-M16	1504097	100

Description

Power device connectors

Female	1411605	1
Male	1411607	1

Flat nut, with:
M16 thread

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER XL device connectors, 4-pos.+PE, K-coded

- M16 fastening thread
- With 0.2 m long litz wires
- Tightening limitation
- Wrench size 19

new



K-coded,
cable cross section:
2.5 mm², 4-pos.+PE



K-coded,
cable cross section:
1.31 mm², 4-pos.+PE

	Technical data				Technical data			
	Front mounting		Rear mounting		Front mounting		Rear mounting	
General data								
Degree of pollution	3		3		3		3	
Degree of protection	IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67	
Connection method	Individual wires		Individual wires		Individual wires		Individual wires	
Electrical data								
Rated voltage	630 V		630 V		630 V		630 V	
Rated current	16 A		16 A		12 A		12 A	
Material data								
Material contact/contact surface	CuZn / Au		CuZn / Au		CuZn / Au		CuZn / Au	
Contact carrier material	PA		PA		PA		PA	
Flammability rating in accordance with UL 94	V0		V0		V0		V0	
Cable type	PEX litz wire		PEX litz wire		UL/cUL flexible hook-up wire		UL/cUL flexible hook-up wire	
Conductor cross section	2.5 mm²		2.5 mm²		1.31 mm²		1.31 mm²	
Conductor cross section	[AWG]		14		16		16	
Temperature data								
Male connector/female connector	[°C]		-25 ... 85		-25 ... 85		-25 ... 85	
	Ordering data				Ordering data			
Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	Front mounting		Rear mounting		Front mounting		Rear mounting	
Power device connectors								
Female	1415292	1	1415294	1	1425636	1	1425638	1
Male	1415291	1	1415293	1	1425635	1	1425637	1
	Accessories				Accessories			
Flat nut, with: M16 thread	SACC-E-MU-M16		1504097	100	SACC-E-MU-M16		1504097	100

M12 POWER XL device connectors, 4-pos., L-coded

- M16 fastening thread
- With 0.2 m long litz wires
- Tightening limitation
- Wrench size 19
- PROFINET-specified versions




L-coded,
cable cross section:
2.5 mm², 4-pos.

new




L-coded,
cable cross section:
1.31 mm², 4-pos.

new

	Technical data		Technical data	
	Front mounting	Rear mounting	Front mounting	Rear mounting
General data				
Degree of pollution	3	3	3	3
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires	Individual wires	Individual wires
Electrical data				
Rated voltage	63 V	63 V	63 V	63 V
Rated current	16 A	16 A	12 A	12 A
Material data				
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA	PA	PA	PA
Flammability rating in accordance with UL 94	V0	V0	V0	V0
Cable type	PEX litz wire	PEX litz wire	UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire
Conductor cross section	2.5 mm ²	2.5 mm ²	1.31 mm ²	1.31 mm ²
Conductor cross section [AWG]	14	14	16	16
Temperature data				
Male connector/female connector [°C]	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85
	Ordering data		Ordering data	
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Description				
	Front mounting		Rear mounting	
POWER device connector, PROFINET-specified				
Female	1425587	1	1425589	1
Male	1425586	1	1425588	1
	Accessories		Accessories	
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097	100	

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER XL device connectors, 4-pos.+FE, L-coded

- M16 fastening thread
- With 0.2 m long litz wires
- Tightening limitation
- Wrench size 19
- PROFINET-specified versions



L-coded,
cable cross section:
2.5 mm², 4-pos.+FE



L-coded,
cable cross section:
1.31 mm², 4-pos.+FE

Technical data	
General data	
Degree of pollution	
Degree of protection	
Connection method	
Electrical data	
Rated voltage	63 V
Rated current	16 A
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA
Flammability rating in accordance with UL 94	V0
Cable type	PEX litz wire
Conductor cross section	2.5 mm ²
Conductor cross section [AWG]	14
Temperature data	
Male connector/female connector	-25 ... 85 [°C]

Technical data	
Front mounting	Rear mounting
3	3
IP65/IP67	IP65/IP67
Individual wires	Individual wires
63 V	63 V
16 A	16 A
CuZn / Au	CuZn / Au
PA	PA
V0	V0
PEX litz wire	PEX litz wire
2.5 mm ²	2.5 mm ²
14	14
-25 ... 85	-25 ... 85

Technical data	
Front mounting	Rear mounting
3	3
IP65/IP67	IP65/IP67
Individual wires	Individual wires
63 V	63 V
12 A	12 A
CuZn / Au	CuZn / Au
PA	PA
V0	V0
UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire
1.31 mm ²	1.31 mm ²
16	16
-25 ... 85	-25 ... 85

Ordering data	
Description	
Power device connectors	
Female	1415296 1
Male	1415295 1
POWER device connector, PROFINET-specified	
Female	1425583 1
Male	1425582 1

Ordering data	
Order No.	Pcs./Pkt.
Front mounting	
1415296	1
1415295	1
Rear mounting	
1415299	1
1415297	1
1425583	1
1425582	1

Ordering data	
Order No.	Pcs./Pkt.
Front mounting	
1425628	1
1425627	1
Rear mounting	
1425630	1
1425629	1

Accessories	
Flat nut, with:	
M16 thread	SACC-E-MU-M16

Accessories	
SACC-E-MU-M16	1504097 100

Accessories	
SACC-E-MU-M16	1504097 100

M12 POWER XL device connectors, 5-pos.+PE, M-coded

- M16 fastening thread
- With 0.2 m long litz wires
- Tightening limitation
- Wrench size 19



M-coded,
5-pos.+PE

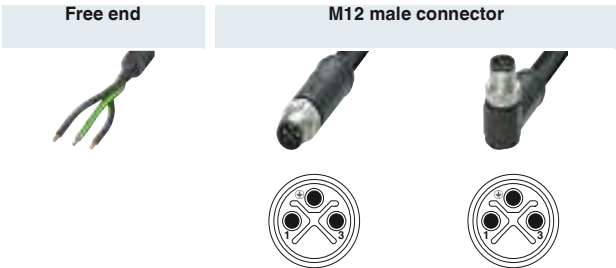
Technical data			
		Front mounting	Rear mounting
General data			
Degree of pollution		3	3
Degree of protection		IP65/IP67	IP65/IP67
Connection method		Individual wires	Individual wires
Electrical data			
Rated voltage		630 V	630 V
Rated current		8 A	8 A
Material data			
Material contact/contact surface		CuZn / Au	CuZn / Au
Contact carrier material		PA	PA
Flammability rating in accordance with UL 94		V0	V0
Cable type		UL/cUL flexible hook-up wire	UL/cUL flexible hook-up wire
Conductor cross section		1.31 mm ²	1.31 mm ²
Conductor cross section	[AWG]	16	16
Temperature data			
Male connector/female connector	[°C]	-25 ... 85	-25 ... 85
Ordering data			
Description		Order No.	Pcs./Pkt.
		Front mounting	Rear mounting
Power device connectors			
Female		1415301	1
Male		1415300	1
Accessories			
Flat nut, with: M16 thread		SACC-E-MU-M16	1504097 100

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER cables,
2-pos.+PE, S-coded,
cable type: PVC, unshielded

Notes:
For information about the cable qualities, see page 318



		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.	
				1 m	1411636	1 m	1411640
				2 m	1411637	2 m	1411641
				5 m	1411638	5 m	1411642
				10 m	1411639	10 m	1411643
M12 female connector, straight							
		1 m	1411644				
		2 m	1411645				
		5 m	1411646				
		10 m	1411647				
M12 female connector, connector, angled							
		1 m	1411648				
		2 m	1411649				
		5 m	1411650				
		10 m	1411651				

Cable description	Cable type	Color coding		Pin assignment
PVC – black	PVC	BK1	1	1
		BK2	2	3
		GNYE		PE

Technical data	
M12	
Rated voltage	230 V AC
Rated current	16
Material contact M12	CuSn
Material contact surface M12	Ni/Au
Material handle M12	PA
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 85

**M12 POWER cables,
3-pos.+PE, S-coded,
cable type: PUR**
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector

M12 male connector,
360° shielded

Ordering data

Ordering data

Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	1 m	1408835	1 m	1408839	1.5 m
	2 m	1408836	2 m	1408840	3 m
	5 m	1408837	5 m	1408841	5 m
	10 m	1408838	10 m	1408842	10 m
M12 female connector, straight					
	1 m	1408843			
	2 m	1408844			
	5 m	1408845			
	10 m	1408846			
M12 female connector, angled					
	1 m	1408848			
	2 m	1408852			
	5 m	1408853			
	10 m	1408854			
M12 female connector, straight, 360° shielded					
	1.5 m	1424096			
	3 m	1424097			
	5 m	1424098			
	10 m	1424099			
M12 female connector, angled, 360° shielded					
	1.5 m	1424100			
	1.5 m	1424101			
	1.5 m	1424102			
	1.5 m	1424103			

Cable description	Cable type	Color coding		Pin assignment
PUR, halogen-free – black (unshielded)	PUR	BK1	1	1
		BK2	2	2
		BK3	3	3
PUR, halogen-free – orange (shielded)	PUR	GNYE		PE

Technical data

	M12
Rated voltage	690 V AC
Rated current	12
Material contact M12	CuZn
Material contact surface M12	Ni/Au
Material handle M12	PA
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Male connector/female connector	-25 ... 85

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER cables, 4-pos., T-coded, cable type: PUR

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



M12 male connector, 360° shielded



	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	1 m	1408812	1 m	1408816	1.5 m
	2 m	1408813	2 m	1408819	1.5 m
	5 m	1408814	5 m	1408820	1.5 m
	10 m	1408815	10 m	1408822	1.5 m
	1 m	1408823	1 m	1408808	1.5 m
	2 m	1408824	2 m	1408809	1.5 m
	5 m	1408825	5 m	1408810	1.5 m
	10 m	1408826	10 m	1408811	1.5 m
	1 m	1408827	1 m	1415196	1.5 m
	2 m	1408828	2 m	1415197	1.5 m
	5 m	1408829	5 m	1415198	1.5 m
	10 m	1408830	10 m	1415199	1.5 m
	1.5 m	1424112			
	3 m	1424113			
	5 m	1424114			
	10 m	1424115			
	1.5 m	1424116			1.5 m
	3 m	1424117			1.5 m
	5 m	1424118			1.5 m
	10 m	1424128			1.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black	PUR	BN	1
		WH	2
		BK	4
		BU	3

Technical data		
M12		
Rated voltage	[A]	63 V DC
Rated current		12
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

M12 POWER cables, 4-pos., T-coded, cable type: PVC, unshielded

Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end



Order No.

Order No.

Order No.

1 m

[1089952](#)

1 m

[1089958](#)

2 m

[1089953](#)

2 m

[1089961](#)

5 m

[1089955](#)

5 m

[1089965](#)

10 m

[1089956](#)

10 m

[1089968](#)

M12 female connector, straight



1 m

[1089970](#)

1 m

[1089988](#)

2 m

[1089971](#)

2 m

[1089997](#)

5 m

[1089972](#)

5 m

[1089998](#)

10 m

[1408826](#)

10 m

[1089973](#)

M12 female connector, angled



1 m

[1089977](#)

2 m

[1089981](#)

5 m

[1089984](#)

10 m

[1089987](#)

Cable description

Cable type

Color coding

Pin assignment

PVC – black (unshielded)

PVC

BN



1

WH



2

BK



4

BU



3

Technical data

M12

Rated voltage

63 V DC

Rated current

12

Material contact M12

CuSn

Material contact surface M12

Ni/Au

Material handle M12

PA

Material, knurls

Zinc die-cast, nickel-plated

Degree of protection

IP65 / IP67 / IP68

Temperature data

Male connector/female connector

[°C]

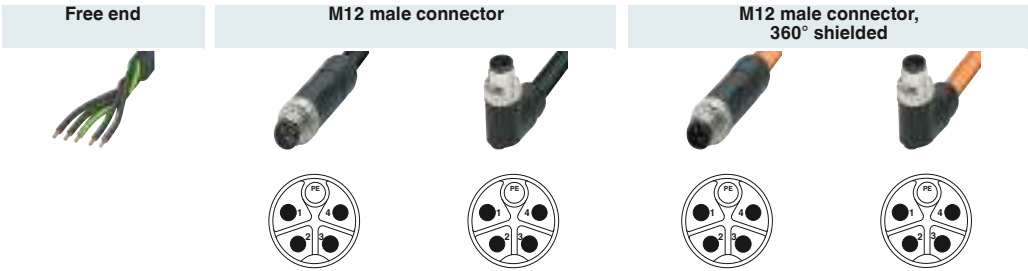
-25 ... 85

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER cables,
4-pos.+PE, K-coded,
cable type: PUR

Notes:
For information about the cable qualities, see page 318



		Ordering data		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.		Order No.	
		1.5 m	1414866	1.5 m	1414833	1.5 m	1414867	1.5 m	1414834
		3 m	1414870	3 m	1414837	3 m	1414871	3 m	1414838
		5 m	1414875	5 m	1414841	5 m	1414876	5 m	1414842
		10 m	1414879	10 m	1414846	10 m	1414880	10 m	1414847
M12 female connector, straight									
		1.5 m	1414770						
		3 m	1414788						
		5 m	1414804						
		10 m	1414821						
M12 female connector, angled									
		1.5 m	1414766						
		3 m	1414784						
		5 m	1414800						
		10 m	1414817						
M12 female connector, straight, 360° shielded									
		1.5 m	1414771						
		3 m	1414789						
		5 m	1414805						
		10 m	1414822						
M12 female connector, angled, 360° shielded									
		1.5 m	1414767						
		3 m	1414785						
		5 m	1414801						
		10 m	1414818						

Cable description	Cable type	Color coding		Pin assignment
PUR, halogen-free – black (unshielded)	PUR	BK1	1	1
		BK2	2	2
		BK3	3	3
PUR, halogen-free – orange (shielded)	PUR	BK4	4	4
		GNYE		PE

Technical data		
M12		
Rated voltage	[A]	690 V AC
Rated current		16
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

**M12 POWER cables,
4-pos.+PE, K-coded,
cable type: PVC**
Notes:

For information about the cable qualities, see page 318

Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	1.5 m	1414868	1.5 m	1414835	
	3 m	1414872	3 m	1414839	
	5 m	1414877	5 m	1414843	
	10 m	1414881	10 m	1414848	

M12 female connector, straight



1.5 m	1414780
3 m	1414796
5 m	1414812
10 m	1414829

M12 female connector, angled



1.5 m	1414774
3 m	1414792
5 m	1414808
10 m	1414825

Cable description	Cable type	Color coding	Pin assignment
PVC – black (unshielded)	PVC	BK1	1
		BK2	2
		BK3	3
		BK4	4
		GNYE	PE

Technical data

	M12
Rated voltage	690 V AC
Rated current	16
Material contact M12	CuSn
Material contact surface M12	Ni/Au
Material handle M12	PA
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 85

Sensor/actuator cabling

M12 cabling for power applications

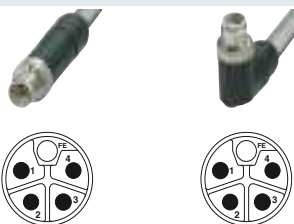
M12 POWER cables, 4-pos.+FE, L-coded, cable type: PUR, unshielded

Notes:
For information about the cable qualities, see page 318
For shielded power cables, visit phoenixcontact.net/products

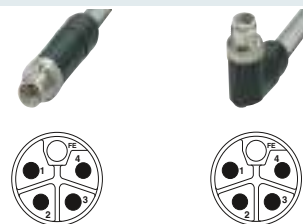
Free end



M12 male connector, wire cross section 2.5 mm²



M12 male connector, wire cross section 1.5 mm²



Free end	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
	1.5 m 1414883	1.5 m 1414850	1.5 m 1424593	1.5 m 1424597	
	3 m 1414887	3 m 1414854	3 m 1424594	3 m 1424598	
	5 m 1414891	5 m 1414858	5 m 1424595	5 m 1424599	
	10 m 1414895	10 m 1414862	10 m 1424596	10 m 1424600	
M12 female connector, straight, wire cross section 2.5 mm²	1.5 m 1414772	0.3 m 1425009			
	3 m 1414790	0.6 m 1425010			
	5 m 1414806	1.5 m 1425011			
	10 m 1414823	3 m 1425012			
M12 female connector, angled, wire cross section 2.5 mm²	1.5 m 1414768				
	3 m 1414786				
	5 m 1414802				
	10 m 1414819				
M12 female connector, straight, wire cross section 1.5 mm²	1.5 m 1424601		0.3 m 1425017		
	3 m 1424602		0.6 m 1425018		
	5 m 1424603		1.5 m 1425019		
	10 m 1424604		3 m 1425020		
M12 female connector, angled, wire cross section 1.5 mm²	1.5 m 1424605				
	3 m 1424606				
	5 m 1424607				
	10 m 1424608				

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – gray Cable type 280 for 2.5 mm ²	280	BN	1
		WH	2
PUR, halogen-free – gray Cable type 290 for 1.5 mm ²	290	BU	3
		BK	4
		GY	5

Technical data		
M12		
Rated voltage	[A]	63 V DC
Rated current		16
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

M12 POWER cables, 4-pos.+FE, L-coded, cable type: PVC, unshielded

Notes:

For information about the cable qualities, see page 318

For shielded power cables, visit
phoenixcontact.net/products

Free end

M12 male connector,
wire cross section 2.5 mm²M12 male connector,
wire cross section 1.5 mm²

		Ordering data		Ordering data		Ordering data		Ordering data		
Free end		Order No.		Order No.		Order No.		Order No.		
			1.5 m	1414885	1.5 m	1414852	1.5 m	1424609	1.5 m	1424613
			3 m	1414889	3 m	1414856	3 m	1424610	3 m	1424614
			5 m	1414893	5 m	1414860	5 m	1424611	5 m	1424615
			10 m	1414897	10 m	1414864	10 m	1424612	10 m	1424616
M12 female connector, straight, wire cross section 2.5 mm²										
		1.5 m	1414782	0.3 m	1425013					
		3 m	1414798	0.6 m	1425014					
		5 m	1414814	1.5 m	1425015					
		10 m	1414831	3 m	1425016					
M12 female connector, angled, wire cross section 2.5 mm²										
		1.5 m	1414777							
		3 m	1414794							
		5 m	1414810							
		10 m	1414827							
M12 female connector, straight, wire cross section 1.5 mm²										
		1.5 m	1424617				0.3 m	1425021		
		1.5 m	1424618				0.6 m	1425022		
		1.5 m	1424619				1.5 m	1425023		
		1.5 m	1424620				3 m	1425024		
M12 female connector, angled, wire cross section 1.5 mm²										
		1.5 m	1424621							
		3 m	1424622							
		5 m	1424623							
		10 m	1424624							

Cable description	Cable type	Color coding		Pin assignment
PVC – gray Cable type 500 for 2.5 mm ²	500	BN		1
		WH		2
PVC – gray Cable type 510 for 1.5 mm ²		BU		3
	510	BK		4
		GY		5

Technical data

		M12
Rated voltage	[A]	63 V DC
Rated current		16
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

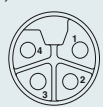
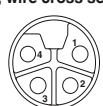
Sensor/actuator cabling

M12 cabling for power applications

M12 POWER cables, 4-pos., L-coded, cable type: PUR, unshielded

Notes:
For information about the cable qualities, see page 318
For shielded power cables, visit phoenixcontact.net/products



	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m 1425065	1.5 m 1425069	1.5 m 1425025	1.5 m 1425029
		3 m 1425066	3 m 1425070	3 m 1425026	3 m 1425030
		5 m 1425067	5 m 1425071	5 m 1425027	5 m 1425031
		10 m 1425068	10 m 1425072	10 m 1425028	10 m 1425032
M12 female connector, straight, wire cross section 2.5 mm²					
		1.5 m 1425073	0.3 m 1425081		
		3 m 1425074	0.6 m 1425082		
		5 m 1425075	1.5 m 1425083		
		10 m 1425076	3 m 1425084		
M12 female connector, angled, wire cross section 2.5 mm²					
		1.5 m 1425077			
		3 m 1425078			
		5 m 1425079			
		10 m 1425080			
M12 female connector, straight, wire cross section 1.5 mm²					
		1.5 m 1425033		0.3 m 1425041	
		3 m 1425034		0.6 m 1425042	
		5 m 1425035		1.5 m 1425043	
		10 m 1425036		3 m 1425044	
M12 female connector, angled, wire cross section 1.5 mm²					
		1.5 m 1425037			
		3 m 1425038			
		5 m 1425039			
		10 m 1425040			

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free – black	PUR	BN	1
Cable type PUR for 2.5 mm²		WH	2
PUR, halogen-free – black	105	BU	3
Cable type 105 for 1.5 mm²		BK	4

Technical data		
M12		
Rated voltage	[A]	63 V (DC) / 63 V DC
Rated current		16
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

M12 POWER cables, 4-pos., L-coded, cable type: PVC, unshielded

Notes:

For information about the cable qualities, see page 318

For shielded power cables, visit
phoenixcontact.net/products

Free end

M12 male connector,
wire cross section 2.5 mm²M12 male connector,
wire cross section 1.5 mm²

Free end	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.		Order No.		Order No.	
			1.5 m	1425085	1.5 m	1425089	1.5 m	1425045	1.5 m	1425049
			3 m	1425086	3 m	1425090	3 m	1425046	3 m	1425050
			5 m	1425087	5 m	1425091	5 m	1425047	5 m	1425051
			10 m	1425088	10 m	1425092	10 m	1425048	10 m	1425052
M12 female connector, straight, wire cross section 2.5 mm²										
			1.5 m	1425093	0.3 m	1425101				
			3 m	1425094	0.6 m	1425102				
			5 m	1425095	1.5 m	1425103				
			10 m	1425096	3 m	1425104				
M12 female connector, angled, wire cross section 2.5 mm²										
			1.5 m	1425097						
			3 m	1425098						
			5 m	1425099						
			10 m	1425100						
M12 female connector, straight, wire cross section 1.5 mm²										
			1.5 m	1425053			0.3 m	1425061		
			3 m	1425054			0.6 m	1425062		
			5 m	1425055			1.5 m	1425063		
			10 m	1425056			3 m	1425064		
M12 female connector, angled, wire cross section 1.5 mm²										
			1.5 m	1425057						
			3 m	1425058						
			5 m	1425059						
			10 m	1425060						

Cable description	Cable type	Color coding	Pin assignment
PVC – black	PVC	BN	1
Cable type PVC for 2.5 mm ²		WH	2
PVC – black	110	BU	3
Cable type 110 for 1.5 mm ²		BK	4

Technical data

M12	
Rated voltage	63 V DC
Rated current	16
Material contact M12	CuSn
Material contact surface M12	Ni/Au
Material handle M12	PA
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 85

Sensor/actuator cabling

M12 cabling for power applications

M12 POWER cables,
5-pos.+PE, M-coded,
cable type: PUR

Notes:
For information about the cable qualities, see page 318

Free end	M12 male connector		M12 male connector, 360° shielded	
				
				

Free end	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m 1414949	1.5 m 1414932	1.5 m 1414950	1.5 m 1414933
		3 m 1414953	3 m 1414936	3 m 1414954	3 m 1414937
		5 m 1414957	5 m 1414941	5 m 1414958	5 m 1414942
		10 m 1414961	10 m 1414945	10 m 1414962	10 m 1414946

M12 female connector, straight					
		1.5 m	1414901		
		3 m	1414910		
		5 m	1414918		
		10 m	1414926		
M12 female connector, angled					
		1.5 m	1414899		
		3 m	1414907		
		5 m	1414916		
		10 m	1414924		
M12 female connector, straight, 360° shielded					
		1.5 m	1414902		
		3 m	1414911		
		5 m	1414919		
		10 m	1414927		
M12 female connector, angled, 360° shielded					
		1.5 m	1414900		
		3 m	1414908		
		5 m	1414917		
		10 m	1414925		

Cable description	Cable type	Color coding		Pin assignment
PUR, halogen-free – black (unshielded)	PUR	BK1	1	1
		BK2	2	2
		BK3	3	3
PUR, halogen-free – orange (shielded)	PUR	BK4	4	4
		BK5	5	5
		GNYE		PE

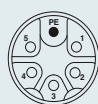
Technical data		
M12		
Rated voltage	[A]	690 V AC
Rated current		8
Material contact M12		CuSn
Material contact surface M12		Ni/Au
Material handle M12		PA
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Male connector/female connector	[°C]	-25 ... 85

**M12 POWER cables,
5-pos.+PE, M-coded,
cable type: PVC**
Notes:

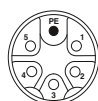
For information about the cable qualities, see page 318

Free end**M12 male connector****M12 male connector,
360° shielded****Ordering data****Ordering data****Ordering data****Ordering data****Ordering data**

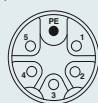
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	1414951	1.5 m	1414934
		3 m	1414955	3 m	1414939
		5 m	1414959	5 m	1414943
		10 m	1414963	10 m	1414947
		1.5 m	1414952	1.5 m	1414935
		3 m	1414956	3 m	1414940
		5 m	1414960	5 m	1414944
		10 m	1414964	10 m	1414948

M12 female connector, straight

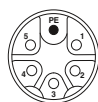
1.5 m	1414905
3 m	1414914
5 m	1414922
10 m	1414930

M12 female connector, angled

1.5 m	1414903
3 m	1414912
5 m	1414920
10 m	1414928

M12 female connector, straight, 360° shielded

1.5 m	1414906
3 m	1414915
5 m	1414923
10 m	1414931

M12 female connector, angled, 360° shielded

1.5 m	1414904
3 m	1414913
5 m	1414921
10 m	1414929

Cable description	Cable type	Color coding		Pin assignment
PVC – black (unshielded)	PVC	BK1	1	1
		BK2	2	2
		BK3	3	3
PVC – orange (shielded)	PVC	BK4	4	4
		BK5	5	5
		GNYE		PE

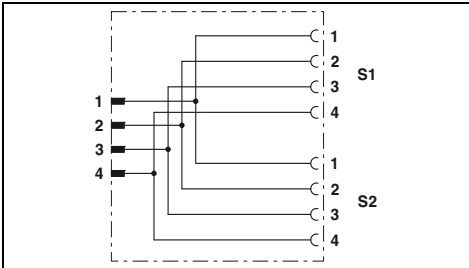
Technical data

M12	
Rated voltage	690 V AC
Rated current	8
Material contact M12	CuSn
Material contact surface M12	Ni/Au
Material handle M12	PA
Material, knurls	Zinc die-cast, nickel-plated
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 85

Y distributors
for M12 POWER connectors



Y-distributor, T-coded, 4-pos.



General data	
Degree of pollution	3
Degree of protection	IP65 / IP67
Electrical data	
Rated voltage	63 V DC
Rated current	2x 12 A (at 40°C)
Material data	
Contact material	CuZn
Contact surface material	Ni/Au
Flammability rating in accordance with UL 94	HB
Temperature data	
Male connector/female connector	[°C] -25 ... 80

Technical data

3	
IP65 / IP67	
63 V DC	
2x 12 A (at 40°C)	
CuZn	
Ni/Au	
HB	
-25 ... 80	

Ordering data

Description	Center distance
Y distributor, unshielded, M12 male to 2 x M12 female	
21 mm	

Type	Order No.	Pcs./Pkt.
SAC-4PY-MT/2XFT VP	1410632	5

Power distributors for M12 POWER connectors



**Power distributor
with plug-in crimp connection,
horizontal**

		Technical data		
General data				
Degree of protection		IP66 / IP67		
Electrical data				
Rated voltage		24 V DC		
Perm. operating voltage		30.5 V DC		
Rated current for each I/O signal		10 A (M12 diagnostic socket for each channel max. 50 mA)		
Rated current per slot		2x 9.25 A (at 40°C)		
Total rated current		-		
Housing material		PBT		
Dimensions				
Width x height x length	[mm]	60 x 52 x 212		
Temperature data				
Distributor box		-25°C ... 60°C		
Ordering data				
Description		Type	Order No.	Pcs./Pkt.
Power distributor , M12 female, 4 slots, 4-pos., unshielded, status indicator: yes				
- with diagnostics port		SACB-4/T-L-8FUSE DIAG CT AXL	1411048	1
- without diagnostic port		SACB-4/T-L-8FUSE CT AXL	1413929	1
Accessories				
M12 screw plug fast locking system		PROT-MS SCO	1553129	5
for unused M12 sockets of sensor/actuator cables, boxes, and device connectors				
UniCard, for labeling Phoenix Contact devices, Axioline				
Lettering field size: 7 x 10 mm, 30 individual labels		UCT-EM (7X10)	0830765	10
Torque screwdriver				
With preset torque of 0.4 Nm and 4 mm hexagonal drive		TSD 04 SAC	1208429	1
Nut				
for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive		SAC BIT M12-D15	1208432	1
Nut				
for assembling M12 connectors for assembly, with a knurl diameter of 20 mm, for 4 mm hexagonal drive		SACC BIT M12-D20	1208445	1

Sensor/actuator cabling

By the meter

Cable coils for sensor cables

The standard SAC cables are also available in 100 m cable coils for connecting the M8 and M12 connectors for assembly.

Cables between 110 m and 500 m in length are supplied on cable drums. Please refer to the ordering example below.

Notes:

For information about the cable qualities, see page 318



Cable coil, 100 m, unshielded

Ordering data			
Description	Type	Order No.	Pcs./Pkt.
PUR, halogen-free - black, cable type: PUR			
3 x 0.25 mm ² , conductor colors: BN/BU/BK	SAC-3P-100,0-PUR/0,25	1501689	1
3 x 0.34 mm ² , conductor colors: BN/BU/BK	SAC-3P-100,0-PUR/0,34	1501650	1
4 x 0.25 mm ² , conductor colors: BN/WH/BU/BK	SAC-4P-100,0-PUR/0,25	1501692	1
4 x 0.34 mm ² , conductor colors: BN/WH/BU/BK	SAC-4P-100,0-PUR/0,34	1501663	1
5 x 0.34 mm ² , conductor colors: BN/WH/BU/BK/GN/YE	SAC-5P-100,0-PUR/0,34	1501676	1
6 x 0.25 mm ² , conductor colors: BN/WH/BU/BK/GY/PK	SAC-6P-100,0-PUR/0,25	1550614	1
8 x 0.25 mm ² , conductor colors: WH/BN/GN/YE/GY/PK/BU/RD	SAC-8P-100,0-PUR/0,25	1550630	1
PVC - black, cable type: PVC			
3 x 0.25 mm ² , conductor colors: BN/BU/BK	SAC-3P-100,0-PVC/0,25	1501854	1
3 x 0.34 mm ² , conductor colors: BN/BU/BK	SAC-3P-100,0-PVC/0,34	1501825	1
4 x 0.25 mm ² , conductor colors: BN/WH/BU/BK	SAC-4P-100,0-PVC/0,25	1501867	1
4 x 0.34 mm ² , conductor colors: BN/WH/BU/BK	SAC-4P-100,0-PVC/0,34	1501838	1
5 x 0.34 mm ² , conductor colors: BN/WH/BU/BK/GN/YE	SAC-5P-100,0-PVC/0,34	1501841	1
8 x 0.25 mm ² , conductor colors: WH/BN/GN/YE/GY/PK/BU/RD	SAC-8P-100,0-PVC/0,25	1550698	1
12 x 0.14 mm ² , conductor colors: BN/BU/WH/GN/PK/YE/BK/GY/RD/VT/GYPK/RDBU	SAC-12P-100,0-PVC/0,14	1441532	1
17 x 0.14 mm ² , conductor colors: BN/BU/WH/GN/PK/YE/BK/GY/RD/VT/GYPK/RDBU/WHGN/BNGN/WHYE/YEBN/WHGY	SAC-17P-100,0-PVC/0,14	1441545	1
PUR/PVC - black, twisted pair, cable type: 35T			
12 x 0.14 mm ² , conductor colors: (BN/BU)/(WH/GN)/(PK/YE)/(BK/GY)/(RD/VT)/(GYPK/RDBU)			

Ordering example for cable drums with variable cable length:

For cable type: PVC, black, 5 x 0.34 mm², shielded and 340 m in length, the ordering data is as follows:

Order No.	Length [m]
1408527	340
Increment: 10 m	
Minimum length: 110 m	
Maximum length: 500 m	



Cable drum, 110 m to 500 m,
unshielded



Cable coil, 100 m,
shielded



Cable drum, 110 m to 500 m,
shielded

Ordering data			Ordering data			Ordering data		
Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
SAC-3P-PUR-0,25/...	1408505	1	SAC-3P-100,0-PUR/SH-0,25	1526525	1	SAC-3P-PUR-0,25-SH/...	1408511	1
SAC-3P-PUR-0,34/...	1408506	1	SAC-3P-100,0-PUR/SH-0,34	1501702	1	SAC-3P-PUR-0,34-SH/...	1408512	1
SAC-4P-PUR-0,25/...	1408507	1	SAC-4P-100,0-PUR/SH-0,25	1535794	1	SAC-4P-PUR-0,25-SH/...	1408513	1
SAC-4P-PUR-0,34/...	1408508	1	SAC-4P-100,0-PUR/SH-0,34	1501715	1	SAC-4P-PUR-0,34-SH/...	1408514	1
SAC-5P-PUR-0,34/...	1408509	1	SAC-5P-100,0-PUR/SH-0,34	1501728	1	SAC-5P-PUR-0,34-SH/...	1408515	1
SAC-8P-PUR-0,25/...	1408510	1	SAC-6P-100,0-PUR/SH-0,14	1550627	1	SAC-8P-PUR-0,25-SH/...	1408516	1
SAC-8P-PUR-0,25/...	1408510	1	SAC-8P-100,0-PUR/SH-0,25	1550643	1			
SAC-3P-PVC-0,25/...	1408518	1				SAC-3P-PVC-0,34-SH/...	1408525	1
SAC-3P-PVC-0,34/...	1408519	1	SAC-3P-100,0-PVC/SH-0,34	1550656	1	SAC-4P-PVC-0,34-SH/...	1408526	1
SAC-4P-PVC-0,25/...	1408521	1	SAC-4P-100,0-PVC/SH-0,34	1550669	1	SAC-5P-PVC-0,34-SH/...	1408527	1
SAC-4P-PVC-0,34/...	1408522	1	SAC-5P-100,0-PVC/SH-0,34	1550672	1	SAC-8P-PVC-0,25-SH/...	1408528	1
SAC-5P-PVC-0,34/...	1408523	1	SAC-8P-100,0-PVC/SH-0,25	1550708	1			
SAC-8P-PVC-0,25/...	1408524	1						
			SAC-12P-100,0-35T/SH-0,14	1405789	1			

Sensor/actuator cabling

By the meter

Cable coils for valve connector cables

The special SAC cables are also available in 100 m cable coils for connecting the valve connectors for assembly.

Cables between 110 m and 500 m in length are supplied on cable drums. Please refer to the ordering example below.

Notes:

For information about the cable qualities, see page 318



Cable coil, 100 m,
unshielded



Cable drum, 110 m to 500 m,
unshielded

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
PUR, halogen-free - black, cable type: PUR						
3 x 0.5 mm ² , conductor colors: BK 1/BK 2/GN YE	SAC-3P-100,0-PUR/0,5	1457393	1	SAC-3P-PUR-0,5/...	1408529	1
5 x 0.5 mm ² , conductor colors: BK 1/BK 2/BK 3/BK 4/GN YE	SAC-5P-100,0-PUR/0,5	1457403	1	SAC-5P-PUR-0,5/...	1408530	1
PVC - black, cable type: 534						
3 x 0.75 mm ² , conductor colors: BK 1/BK 2/GN YE	SAC-3P-100,0-534/0,75	1457432	1			
5 x 0.75 mm ² , conductor colors: BK 1/BK 2/BK 3/BK 4/GN YE	SAC-5P-100,0-534/0,75	1457445	1			

Ordering example for cable drums with variable cable length:

For cable type: PUR, halogen-free, black,
5 x 0.5 mm², unshielded and 340 m in length,
the ordering data is as follows:

Order No.	Length [m]
1408530	340
	Increment: 10 m Minimum length: 110 m Maximum length: 500 m

Master cable coils for sensor/actuator boxes

Master cable coils are available for distributor boxes with spring connection or plug-in screw connection. Similarly, master cables can also be connected to hoods and M23 sockets for assembly.

Notes:

For information about the cable qualities, see page 330



Description	Ordering data		
	Type	Order No.	Pcs./Pkt.
Master cable coil with PE conductor, PUR/PVC, unshielded, length: 50 m			
4 x 0.34 mm ² / 3 x 0.75 mm ²	SACB- 4X0,34/ 3X0,75-50,0 PUR	1503328	1
6 x 0.34 mm ² / 3 x 0.75 mm ²	SACB- 6X0,34/ 3X0,75-50,0 PUR	1503331	1
8 x 0.34 mm ² / 3 x 0.75 mm ²	SACB- 8X0,34/ 3X0,75-50,0 PUR	1503344	1
8 x 0.5 mm ² / 3 x 1.0 mm ²	SACB- 8X0,5/ 3X1,0-50,0 PUR	1503357	1
12 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-12X0,5/ 3X1,0-50,0 PUR	1503360	1
16 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-16X0,5/ 3X1,0-50,0 PUR	1503373	1
Master cable coil with PE conductor, PUR/PVC, unshielded, length: 200 m			
16 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-16X0,5/ 3X1,0-200,0 PUR	1559893	1
Master cable coil with PE conductor, PUR/PVC, shielded, length: 50 m			
8 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-8X0,5/3X1,0-50 PUR SH	1401240	1
16 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-16X0,5/3X1,0-50 PUR SH	1539156	1
Master cable coil with PE conductor, PUR/PP halogen-free, unshielded, length: 50 m			
8 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-8X0,5/3X1,0-50,0 HPUR	1401690	1
16 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-16X0,5/ 3X1,0-50,0 VPUR	1430938	1
Master cable coil with PE conductor, PUR/PP, halogen-free, highly flexible, unshielded, length: 50 m			
16 x 0.5 mm ² / 3 x 1.0 mm ²	SACB-16X0,5/ 3X1,0-50,0 80MC	1402304	1
Master cable coil without PE conductor, PUR/PVC, unshielded, length: 50 m			
4 x 0.34 mm ² / 2 x 0.75 mm ²	SACB- 4X0,34/2X0,75-50 PUR	1517576	1
6 x 0.34 mm ² / 2 x 0.75 mm ²	SACB- 6X0,34/2X0,75-50 PUR	1517589	1
8 x 0.34 mm ² / 2 x 0.75 mm ²	SACB- 8X0,34/2X0,75-50 PUR	1517592	1
10 x 0.34 mm ² / 2 x 0.75 mm ²	SACB-10X0,34/2X0,75-50 PUR	1517602	1
16 x 0.34 mm ² / 2 x 0.75 mm ²	SACB-16X0,34/2X0,75-50 PUR	1539350	1

Accessories

Assembly tools
for sensor/actuator cables

The screwdriver with preset torque is the ideal tool for screwing in all M12 and M8 circular connectors with lengthwise knurl. The advantage of this tool becomes particularly evident when connecting distributor boxes. The tight arrangement and the large number of slots rarely makes it possible to install them correctly by hand. Thanks to the open design of the top unit, tracking is especially easy when screwing in.



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Torque screwdriver ① with preset torque of 0.2 Nm and 4 mm hexagonal drive	TSD 02 SAC	1208487	1
Nut ② for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive	SAC BIT M8-D10	1208461	1
Nut ③ for assembling M8 connectors with longitudinal knurl and a knurl diameter of 12 mm, for 4 mm hexagonal drive	SACC BIT M8-D12	1208474	1
Torque screwdriver ④ With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1
Nut ⑤ for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive	SAC BIT M12-D15	1208432	1
for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 16 mm, for 4 mm hexagonal drive	SAC BIT M12-D16	1200305	1
Nut ⑥ for assembling M12 connectors for assembly, with a knurl diameter of 20 mm, for 4 mm hexagonal drive	SACC BIT M12-D20	1208445	1

Assembly tools for sensor/actuator cables

To achieve tight plug-in connections, we recommend using assembly tools. M12 and 7/8" circular connectors can be assembled using a torque screwdriver and plug attachment.

The benefits of the plug attachment become particularly clear when connecting the connectors to the distributor boxes. Thanks to the open design, it enables quick adjustment and installation even when space is at a premium.

The version for M12 connectors with hexagonal high-grade steel knurl is also made from high-grade steel. This prevents the connector knurls from being contaminated by corrosive materials.

For greater flexibility, screwdrivers with adjustable torque are available. When used in conjunction with the adapter insert, the available nuts can also be accommodated.



Description	
Torque screwdriver with a preset torque of 0.8 Nm and a 4 mm hexagonal drive	①
Nut for assembling 7/8" connectors, with a knurl diameter of 25 mm, with 4 mm hexagonal drive	②
Torque screwdriver with preset torque of 0.4 Nm and 4 mm hexagonal drive	③
Nut for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a hexagonal knurl wrench size of 14 mm, with 4 mm hexagonal drive	④
Torque screwdriver , accuracy in accordance with standard EN ISO 6789 adjustable from 0.3 ... 1.2 Nm adjustable from 1.2 ... 3 Nm adjustable from 3 ... 6 Nm	⑤
Adapter insert for torque screwdrivers with adjustable torque, for accommodating plug attachments with 4 mm hexagonal drive	⑥

Ordering data			
Type	Order No.	Pcs./Pkt.	
TSD 08 SAC	1212597	1	
SAC BIT MIN-D25	1212512	1	
TSD 04 SAC	1208429	1	
SAC BIT M12-W14	1212513	1	
TSD-M 1,2NM	1212224	1	
TSD-M 3NM	1212225	1	
TSD-M 6NM	1212226	1	
TSD-M SAC-BIT ADAPTER	1212600	1	

Sealing elements

During transport or when in the field, unused plug-in connections must be protected or sealed. Plastic or metal screw plugs, sealing caps, and sealing plugs can be used for this. IP65/IP67 and IP69K protection is achieved.



Description	Ordering data		
	Type	Order No.	Pcs./Pkt.
M5 screw plug ① for unused M5 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M5	1533288	10
M8 screw plug ② for unused M8 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M8	1682540	5
M12 screw plug ③ for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M12	1680539	5
M12 screw plug fast locking system ④ for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-MS SCO	1553129	5
M12 sealing cap ⑤ for unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	PROT-M12 FS	1560251	5
M12 screw plug, metal ⑥ for unused M12 sockets of shielded sensor/actuator cables, boxes, and device connectors	PROT-M12 SH	1503302	5
Metal M12 sealing cap ⑦ for unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	PROT-M12 FS-M	1430488	10
Stainless steel M12 screw plug ⑧ for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M12 FB	1555538	5
Closing cap ⑨ for Pg9/ Pg11, to close unoccupied connections	Q-PROT 9/11	1670235	10
M16 screw plug ⑩ with flat nut for oval housing cutouts	SACC-M16-SEALING PLUG SET	1453368	10

Sealing elements with holding band or fixing chain

All IP67 interfaces can be closed tightly using the screw plugs and sealing caps in the sizes M8, M12 and 7/8". The holding bands are fastened on the cable or the housing and are thus held captive.

The M12 metal protective cap with fixing chain is suitable for all pin versions. It is used in harsh industrial environments or for EMC applications.



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Screw plug made from plastic with retaining strap, for sealing unused sockets ①			
M8 for SAC cables	PROT-M 8 MS-PA-CHAIN	1430860	10
M8 with 3 mm fastening eye	PROT-M 8 MS-PA-CHAIN-EYE-DM3	1441105	10
M8 with 12 mm fastening eye	PROT-M 8 MS-PA-CHAIN-EYE	1441095	10
M12 for SAC cables	PROT-M12 MS-PA-CHAIN	1430899	5
M12 with 15 mm fastening eye	PROT-M12 MS-PA-CHAIN-EYE-DM14	1456200	5
7/8" for SAC cables	PROT-MINMS-PA-CHAIN	1430925	10
Plastic sealing cap with holding band, for closing unoccupied connectors ②			
M8 for SAC cables	PROT-M 8 FS-PA-CHAIN	1430857	10
M8 with 8 mm fastening eye	PROT-M 8 FS-PA-CHAIN-EYE	1441082	10
M12 for SAC cables	PROT-M12 FS-PA-CHAIN	1430873	5
M12 with 12 mm fastening eye	PROT-M12 FS-PA-CHAIN-EYE-DM12	1456187	5
M12 with 15 mm fastening eye	PROT-M12 FS-PA-CHAIN-EYE-DM14	1456190	5
7/8" for SAC cables	PROT-MINFS-PA-CHAIN	1430912	10
Sealing cap made of metal with fixing chain and 16 mm fastening eye, for sealing: ③			
unused M12 connectors	PROT-M12 FS-M-CHAIN	1430491	10

Accessories for M8 distributor boxes with M12 and M16 plug-in connection

Corresponding sockets in angled format for distributors with 4 to 10 slots are available in the ordering data. In order to use a master cable in accordance with the specific requirements, sockets for free assembly are available in straight and angled format.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.

The torque screwdriver with matching nuts is the ideal tool for screwing together all M8 connectors with lengthwise knurl.

The PROT M8 screw plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.



Notes:

Additional marking material and tools can be found in Catalog 3.

Ordering data			
Description	Type	Order No.	Pcs./Pkt.
M16 socket , angled, with master cable, for sensor/actuator box with: ①			
4 slots, cable length: 5 m	SAC-8P- 5,0-PUR/M16FR	1693681	1
4 slots, cable length: 10 m	SAC-8P-10,0-PUR/M16FR	1693694	1
6 slots, cable length: 5 m	SAC-10P- 5,0-PUR/M16FR	1693704	1
6 slots, cable length: 10 m	SAC-10P-10,0-PUR/M16FR	1693717	1
8 slots, cable length: 5 m	SAC-12P- 5,0-PUR/M16FR	1693720	1
8 slots, cable length: 10 m	SAC-12P-10,0-PUR/M16FR	1693733	1
10 slots, cable length: 5 m	SAC-14P- 5,0-PUR/M16FR	1693746	1
10 slots, cable length: 10 m	SAC-14P-10,0-PUR/M16FR	1693759	1
M12 socket , angled, with connected master cable, for sensor/actuator box with: ②			
4 slots, cable length: 5 m	SAC-6P- 5,0-PURMC/M12FR	1407820	1
4 slots, cable length: 10 m	SAC-6P-10,0-PURMC/M12FR	1407821	1
4 slots, cable length: variable	SAC-6P-M12FR-PURMC/	1520987	1
6 slots, cable length: 5 m	SAC-8P- 5,0-PURMC/M12FR	1407822	1
6 slots, cable length: 10 m	SAC-8P-10,0-PURMC/M12FR	1407823	1
6 slots, cable length: variable	SAC-8P-M12FR-PURMC/	1520990	1
M16 socket , 14-pos., straight, freely configurable, with solder connection, for external cable diameter of 6.0 mm ... 8.0 mm ③			
	SACC-M16FS-14CON-M	1500554	1
M16 socket , 14-pos., angled, freely configurable, with solder connection, for external cable diameter of 6.0 mm ... 8.0 mm ④			
	SACC-M16FR-14CON-M	1500253	1
M8 screw plug ⑤	PROT-M8	1682540	5
Labeling material , 10-section ⑥			
- Unprinted	ZBF10:UNBEDRUCKT	0809997	10
- Configurable	ZBF10 CUS	0825031	1
Torque screwdriver ⑦	TSO 02 SAC	1208487	1
Nut ⑧			
for assembling M8 connectors with longitudinal knurl and a knurl diameter of 10 mm, for 4 mm hexagonal drive	SAC BIT M8-D10	1208461	1
Nut ⑨			
for assembling M8 connectors with longitudinal knurl and a knurl diameter of 12 mm, for 4 mm hexagonal drive	SACC BIT M8-D12	1208474	1

Ordering example for a socket with variable master cable:

For an M12 socket for 4 slots and a master cable length of 15 m, the ordering data is as follows:

Order No.	Length [m]
1520987	40 m, maximum
	15.0
	Increments:
	0.2 ... 3 m = 0.1 m
	> 3 m = 0.5 m

Accessories

Accessories for M12 distributor boxes with plastic thread and connector hood

The torque screwdriver with M12 nut is the ideal tool for screwing all M12 connectors with longitudinal knurl.

A replacement connector hood is available for the distributors. The corresponding screwdriver, torque screwdriver, and W24 nut for defined tightening of the pressure nut can be found in the ordering data.

The PROT-MS SCO screw plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.



Notes:		Ordering data		
Additional marking material and tools can be found in Catalog 3.		Type	Order No.	Pcs./Pkt.
Description Connector hood with integrated connector, ① for M12 sensor/actuator boxes with plastic thread and plug-in screw connection, for 4, 6 or 8 slots		SACB-C-H180-8/16 SCO P	1453229	1
M12 screw plug fast locking system ② for unused M12 sockets of sensor/actuator cables, boxes, and device connectors		PROT-MS SCO	1553129	5
Labeling material, 5-section ③ - Unprinted, white - Unprinted, yellow - Configurable, white - Configurable, yellow		UC-EM (17,5X9) UC-EM (17,5X9) YE UC-EM (17,5X9) CUS UC-EM (17,5X9) YE CUS	0827490 0827494 0828238 0828239	10 10 1 1
Torque screwdriver ④ with preset torque of 0.4 Nm and 4 mm hexagonal drive		TSD 04 SAC	1208429	1
Nut ⑤ for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive		SAC BIT M12-D15	1208432	1
Nut ⑥ for assembling M12 connectors for assembly, with a knurl diameter of 20 mm, for 4 mm hexagonal drive		SACC BIT M12-D20	1208445	1
Screwdriver ⑦ Size: PZ2 x 100 mm, length: 205 mm		SZK PZ2 VDE	1206463	10
Torque screwdriver ⑧ with a preset torque of 2.5 Nm and 4 mm hexagonal drive		TSD 25 SAC	1212315	1
Nut ⑨ for secure tightening of the pressure nuts with 24 mm wrench size, for TSD 25 SAC, for 2.5 Nm		SAC BIT HOOD-W 24	1212486	1
Screwdriver, suitable for all screw terminal blocks up to 1.5 mm² connection cross section, without VDE approval ⑩ Blade: 0,4 x 2,0 x 60 mm, length: 157 mm		SZS 0,4X2,0	1205202	10
Ferrules, without plastic sleeves, CSA-certified ⑪ 0.5 mm² 0.75 mm² 1.0 mm² 1.5 mm²		A 0,5 - 6 A 0,75-10 A 1 -10 A 1,5 -10	3200218 3200234 3200250 3200276	1000 1000 1000 1000

Accessories for M12 distributor boxes with metal thread and pluggable screw connection

The torque screwdriver with M12 nut is the ideal tool for screwing all M12 connectors with longitudinal knurl.

A replacement connector hood is available for the distributors. The corresponding screwdriver, torque screwdriver, and W24 nut for defined tightening of the pressure nut can be found in the ordering data.

The PROT-MS SCO screw plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.



Notes:

Additional marking material and tools can be found in Catalog 3.

Ordering data	
Type	Order No. Pcs./Pkt.
Description	
Connector hood with integrated connector, for M12 sensor/actuator boxes with metal thread and plug-in screw connection, for 4, 6 or 8 slots ①	
M12 screw plug fast locking system ②	
for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	
Labeling material, 5-section ③	
- Unprinted, white	
- Unprinted, yellow	
- Configurable, white	
- Configurable, yellow	
Torque screwdriver ④	
with preset torque of 0.4 Nm and 4 mm hexagonal drive	
Nut ⑤	
for assembling sensor/actuator cables with M12 connector and M12 connectors for assembly, with a knurl diameter of 15 mm, for 4 mm hexagonal drive	
Nut ⑥	
for assembling M12 connectors for assembly, with a knurl diameter of 20 mm, for 4 mm hexagonal drive	
Screwdriver ⑦	
Size: PZ1 x 80 mm, length: 178 mm	
Torque screwdriver ⑧	
with a preset torque of 2.5 Nm and 4 mm hexagonal drive	
Nut ⑨	
for secure tightening of the pressure nuts with 24 mm wrench size, for TSD 25 SAC, for 2.5 Nm	
SACB-C-H180 8/16 SCO	1516713 10
PROT-MS SCO	1553129 5
UC-EM (17,5X9)	0827490 10
UC-EM (17,5X9) YE	0827494 10
UC-EM (17,5X9) CUS	0828238 1
UC-EM (17,5X9) YE CUS	0828239 1
TSD 04 SAC	1208429 1
SAC BIT M12-D15	1208432 1
SACC BIT M12-D20	1208445 1
SZK PZ1 VDE	1206450 10
TSD 25 SAC	1212315 1
SAC BIT HOOD-W 24	1212486 1

For the distributors, suitable shielded female connectors are available in angled design with a pre-assembled master cable. Further accessories include straight and angled M23 sockets for free assembly.

The PROT M12 SH screw plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.

The torque screwdriver with matching nuts is the ideal tool for screwing together all M12 connectors with lengthwise knurl.



Additional marking material and tools can be found in Catalog 3.

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Accessories for QUICKON distributor boxes with a connection cross section of 0.14 mm² ... 0.34 mm²

The Q-PROT 9/11 sealing plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.

A torque screwdriver with W13 nut is available for the fast connection pressure nut. The handling of the tools is self-explanatory.

A replacement connector hood is available for the distributors. The corresponding screwdriver, torque screwdriver, and W24 nut for defined tightening of the pressure nut can be found in the ordering data.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.

The QUICKON replacement set, consisting of splice ring, pressure nut, and cable seal.



Notes:

Additional marking material and tools can be found in Catalog 3.

Description	
Connector hood with an integrated connector, for sensor/actuator boxes with QUICKON fast connection technology and plug-in screw connection, for 4, 6 or 8 slots	①
Closing cap for Pg9/ Pg11, to close unoccupied connections	②
Labeling material , 5-section - Unprinted, white - Unprinted, yellow - Configurable, white - Configurable, yellow	③
QUICKON set for replacement purposes, consisting of splice ring, pressure nut and conductor seal	④
Screwdriver Size: PZ1 x 80 mm, length: 178 mm	⑤
Torque screwdriver with a preset torque of 2.0 Nm and 4 mm hexagonal drive	⑥
Nut for secure tightening of the pressure nuts with 13 mm wrench size, for TSD 20 SAC, for 0.8 Nm, and 2.0 Nm	⑦
Torque screwdriver with a preset torque of 2.5 Nm and 4 mm hexagonal drive	⑧
Nut for secure tightening of the pressure nuts with 24 mm wrench size, for TSD 25 SAC, for 2.5 Nm	⑨

Ordering data

Type	Order No.	Pcs./Pkt.
SACB-C-H180 8/4 QO-0,34	1560235	1
Q-PROT 9/11	1670235	10
UC-EM (17,5X9)	0827490	10
UC-EM (17,5X9) YE	0827494	10
UC-EM (17,5X9) CUS	0828238	1
UC-EM (17,5X9) YE CUS	0828239	1
QO-SET	1548626	20
SZK PZ1 VDE	1206450	10
TSD 20 SAC	1212020	1
SAC BIT QUICKON-W13	1212033	1
TSD 25 SAC	1212315	1
SAC BIT HOOD-W 24	1212486	1

Accessories for QUICKON distributor boxes with a connection cross section of 0.34 mm² ... 0.75 mm²

The distributors are supplied as standard with a black rubber seal for an external cable diameter of 6.5 mm to 9.5 mm. Further rubber seals for master cables from 4.0 mm to 6.5 mm (yellow seal) or 9.0 mm to 13.0 mm (red seal) are available in the ordering data. The torque screwdriver with W24 nut is suitable for the defined tightening of the pressure nut.

The QUICKON replacement set consists of pressure nut, cap, cable seal, and splice ring.

The socket wrench is used to conveniently loosen and fasten the QUICKON pressure nut.

The Q-PROT 9/11 sealing plug, for unused slots, protects the distributor against foreign objects and water. IP65/IP67 protection is therefore achieved.

The slots can be marked using the marking material. Marking can be carried out by hand or using a plotter.

Notes:
Additional marking material and tools can be found in Catalog 3.



Description	
Rubber seal for Pg13.5 screw connection	①
for cable Ø: 4.0 mm ... 6.5 mm	
Rubber seal for Pg13.5 screw connection	②
for cable Ø: 6.5 mm ... 9.5 mm	
Rubber seal for Pg13.5 screw connection	③
for cable Ø: 9.0 mm ... 13.0 mm	
Closing cap for Pg9/ Pg11, to close unoccupied connections	④
Labeling material	⑤
- Unprinted, white	
- Unprinted, yellow	
- Configurable, white	
- Configurable, yellow	
QUICKON set for replacement purposes, consisting of pressure nut, cap, conductor seal and splice ring	⑥
Screwdriver	⑦
Size: PZ1 x 80 mm, length: 178 mm	
Slotted socket wrench for QUICKON nuts and panel feed-throughs	⑧
1.5 mm², 5-pos. / 2.5 mm², 4-pos. / wrench size 22 mm	
Torque screwdriver with a preset torque of 2.5 Nm and 4 mm hexagonal drive	⑨
Nut	⑩
for secure tightening of the pressure nuts with 24 mm wrench size, for TSD 25 SAC, for 2.5 Nm	

Ordering data		
Type	Order No.	Pcs./Pkt.
SACB-D PG 13,5 (4,0-6,5) YE	1680377	10
SACB-D PG 13,5 (6,5-9,5) BK	1680380	10
SACB-D PG 13,5 (9,0-13,0) RD	1680393	10
Q-PROT 9/11	1670235	10
ZBN 18:UNBEDRUCKT	2809128	10
UC-TMF 16 YE	0819259	10
ZBN 18 CUS	0825059	1
ZBN 18 YE CUS	0825058	1
Q SET-11/4 COD1 SACB-Q	1670743	25
SZK PZ1 VDE	1206450	10
QSS 22	1670206	1
TSD 25 SAC	1212315	1
SAC BIT HOOD-W 24	1212486	1

Symbol key

	With UL style		Suitable for drag chain applications		Resistant to welding sparks
	UV-resistant		Flame-retardant		High temperature resistance
	Good oil resistance		Good resistance to chemicals		Suitable for torsional stress
	Halogen-free		Suitable for the food industry		Suitable for railway applications

PUR, halogen-free – PHOENIX CONTACT standard



Permanently flexible control cables designed for use in drag chains, revolving/swivel tables, and as machine control cables for extreme operating conditions. The control cables are suitable for bending cycle loads with long-term durability. The special PUR outer sheath offers excellent resistance to oils in accordance with DIN EN 60811-2-1, lubricants, cooling agents, and other aggressive substances.

Additional features of the control cables: halogen- and PVC-free, free of silicone and substances that would hinder coating with paint or varnish, resistant to hydrolysis, and flame-retardant in accordance with UL-FT2.

Outer sheath material	PUR
Minimum bending cycles	4 million
Minimum bending radius	10 x D
Traverse path	10 m
Acceleration	10 m/s²
Speed	3 m/s
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	3-pos.	M8	3 x 0.25 mm ² (32 x 0.1 mm)		Brown, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	186 248 250 302
		M8 Shielded	3 x 0.25 mm ² (32 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	193 302
		M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	186 250 302
		M12 Shielded	3 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	193
		Valve connectors	3 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Moving: -15°C ... +80°C Fixed: -40°C ... +80°C	230 to 238 304

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	4-pos.	M8	4 x 0.25 mm ² (32 x 0.1 mm)		Brown, white, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	186 194 302
		M8 Shielded	4 x 0.25 mm ² (32 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	199 302
		M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	194 249 302
		M12 Shielded	4 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	199 302
		M12 POWER	4 x 1.5 mm ² (84 x 0.15 mm)		Brown, white, blue, black	PP	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C	290
		M12 POWER	4 x 1.5 mm ² (84 x 0.15 mm)		Black 1, black 2, black 3, green-yellow	PP	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C	289
		M12 POWER Shielded	4 x 1.5 mm ² (78 x 0.15 mm) Shielding: copper braid		Brown, white, blue, black	PP	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C	290
		M12 POWER	4 x 2.5 mm ² (141 x 0.15 mm)		Brown, white, blue, black	PP	Moving: -30°C ... +80°C Fixed: -50°C ... +80°C	296
		Valve connectors	4 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, green-yellow	PP	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, green-yellow	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	201 302
		M12 Shielded	5 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	204 302
		Valve connectors	5 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	Moving: -15°C ... +80°C Fixed: -40°C ... +80°C	242 304

Sensor/actuator cabling

Sensor/actuator cabling – cable range

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	5-pos.	M12 Power	5 x 2.5 mm ² (141 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	292
		M12 Power Shielded	5 x 2.5 mm ² (141 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	292
	6-pos.	M8	6 x 0.25 mm ² (32 x 0.1 mm)		Brown, white, blue, black, gray, pink	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	205 302
		M8 Shielded	6 x 0.14 mm ² (18 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray, pink	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	206 302
		M12 Power	6 x 1.5 mm ² (78 x 0.15 mm)		Black 1, black 2, black 3, black 4, black 5, green-yellow	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	See: phoenix contact.net/ products
		M12 Power Shielded	6 x 1.5 mm ² (78 x 0.15 mm)		Black 1, black 2, black 3, black 4, black 5, green-yellow	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	See: phoenix contact.net/ products
	8-pos.	M8	8 x 0.14 mm ² (18 x 0.1 mm)		In accordance with DIN 47100	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	207
		M8 Shielded	8 x 0.14 mm ² (18 x 0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	210
		M12	8 x 0.25 mm ² (32 x 0.1 mm)		In accordance with DIN 47100	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	208 302
		M12 Shielded	8 x 0.25 mm ² (32 x 0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	211 302
	12-pos.	M12	12 x 0.14 mm ² (18 x 0.1 mm)		In accordance with DIN 47100	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	212
	17-pos.	M12	17 x 0.14 mm ² (18 x 0.1 mm)		In accordance with DIN 47100	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	212

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Orange	4-pos.	M12 Power Shielded	4 x 1.5 mm ² (78 x 0.15 mm) Shielding: copper braid		Black 1, black 2, black 3, green-yellow	PP	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C	289
115 Black	5-pos.	M8	5 x 0.25 mm ² (32 x 0.1 mm)		Brown, white, blue, black, gray	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	200
		M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, gray	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	201
121 Black	3-pos.	Valve connectors	3 x 1.0 mm ² (32 x 0.20 mm)		Black 1, black 2, green-yellow	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	230 232
240 Yellow	3-pos.	Valve connectors	3 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Mobile: -15°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	194
	5-pos.	Valve connectors	5 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	Mobile: -15°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
280 Gray	3-pos.	M8	3 x 0.25 mm ² (32 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	186 188 250
		M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	188 250
		Valve connectors	3 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Mobile: -15°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	194

Sensor/actuator cabling

Sensor/actuator cabling – cable range

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
280 Gray	5-pos.	Valve connectors	5 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	Moving: -15°C ... +80°C Fixed: -40°C ... +80°C	242
		M12 POWER	5 x 2.5 mm ² (141 x 0.15 mm)		Brown, white, blue, black, gray	PP	Moving: -30°C ... +80°C Fixed: -50°C ... +80°C	294
	8-pos.	M12 Shielded	8 x 0.25 mm ² (32 x 0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PP	Moving: -25°C ... +80°C Fixed: -40°C ... +80°C	211
290 Gray	5-pos.	M12 POWER	5 x 1.5 mm ² (78 x 0.15 mm)		Brown, white, blue, black, gray	PP	Moving: -30°C ... +80°C Fixed: -50°C ... +80°C	294

PUR/PVC (also applies to type PUR for M5 connectors)



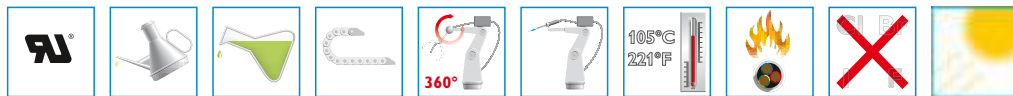
The cables are designed for robust use in machine tools, assembly/production lines, as well as production involving metal cutting. The cables are free of silicone and substances that would hinder coating with paint or varnish and have a high resistance to abrasion. The outer sheath also offers excellent resistance to chemicals and oil in accordance with DIN EN 60811-2-1 and

is flame-retardant in accordance with DIN EN 50265. The outer sheath is manufactured using the coextrusion process.

Outer sheath material	PUR
Inner sheath material	PVC
Minimum bending cycles	2 million
Minimum bending radius	10 x D
Traverse path	5 m
For type 35 T	10 m
Acceleration	5 m/s²
For type 35 T	10 m/s²
Speed	3 m/s
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
35T Black Twisted pair	12-pos.	M12 Shielded	6 x 2 x 0.14 mm ² (18 x 0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	214
	17-pos.	M12 Shielded	7 x 2 x 0.14 mm ² 1 x 3 x 0.14 mm ² (18 x 0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	215
PUR Black For M5	3-pos.	M5	3 x 0.14 mm ² (18 x 0.1 mm)		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -15°C ... +80°C	See: phoenix contact.net/ products
	4-pos.	M5	4 x 0.14 mm ² (18 x 0.1 mm)		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -15°C ... +80°C	See: phoenix contact.net/ products

PUR cross-linking through irradiation, resistant to welding sparks



Due to the cross-linking of the PUR outer sheath through irradiation, the properties typical of PUR, e.g., resistance to temperature, UV, and welding sparks, are greatly improved. The cables are designed for robust use in the field of robot technology. Thanks to their very high durability, the cables are particularly suitable for welding robots.

Flame-retardant in accordance with DIN VDE 0472, Part 804, test type B.

Outer sheath material PUR irradiated

Minimum bending cycles	5 million
Minimum bending radius	10 x D
Traverse path	10 m
Acceleration	10 m/s ²
Speed	3 m/s
Torsion	±360°
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
150 Orange	3-pos.	M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	188 250
		Valve connectors	3 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, green-yellow	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	230 to 238
	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	194
	5-pos.	M12	4 x 0.34 mm ² + 1 x 0.5 mm ² (42 x 0.1 mm, 24 x 0.15 mm)		Brown, white, blue, black, green-yellow	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	201
		Valve connectors	5 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	242
160 Yellow	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	Moving: -40°C ... +105°C Fixed: -50°C ... +105°C	194

TPE-U highly flexible



Permanently flexible control cables excellent for use in drag chains and industrial robots. The cables can be used wherever extreme bending and torsional stress are present at the same time, and considerably longer durability has to be achieved. The control cables are resistant to welding sparks and are thus the only type suitable for use in resistance welding processes. The use of new materials eliminates irradiation cross-linking, which makes the cables easier to recycle. The cables thus meet the requirements of DIN EN ISO 14001.

Further features of the control cables: halogen and PVC-free, flame-retardant in accordance with UL-FT1, VW1 and 1581 §1061, very good resistance to oils in accordance with VDE 0250 Part 407 and chemicals, lubricants, and coolants as well as other aggressive substances.

Due to the very robust outer sheath, the cable sheath is only removed in 5 cm increments.

Outer sheath material	TPE-U
Minimum bending cycles	10 million
Minimum bending radius	
Fixed	5 x D
Moving	7.5 x D
Traverse path	5 m
Acceleration	20 m/s²
Speed	3.33 m/s
Torsion angle	±360°
Min. torsion cycles	13 million
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
800 Gray	3-pos.	M8	3 x 0.25 mm ² (32 x 0.1 mm)		Brown, blue, black	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	186 188 250
		M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	188 250 192
	4-pos.	M8	4 x 0.25 mm ² (32 x 0.1 mm)		Brown, white, blue, black	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	186 194
		M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	194 198
	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, gray	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	201
	8-pos.	M12	8 x 0.25 mm ² (32 x 0.1 mm)		In accordance with DIN 47100	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	208
802 Gray	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, green-yellow	Polyester	Moving: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3,000 h	203

PVC – 80°C and 105°C



This very reasonably priced high-quality cable is suitable for use under dry conditions and average mechanical strain associated with machine tools, packaging machines, and assembly/production lines. The cable offers a certain degree of resistance to chemicals and oil and is less susceptible to wear. Flame-retardant to VW-1 in accordance with UL 758.

VW-1 is the toughest flame test for single cables.

Outer sheath material PVC

Minimum bending radius 10 x D

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PVC Black	3-pos.	M8	3 x 0.25 mm ² (14 x 0.15 mm)		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	188 250 302
		M12	3 x 0.34 mm ² (19 x 0.15 mm)		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	188 250 302
		M12 Shielded	3 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	193 302
		Valve connectors	3 x 0.5 mm ² (16 x 0.2 mm)		Black 1, black 2, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
	4-pos.	M8	4 x 0.25 mm ² (14 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	194 302
		M12	4 x 0.34 mm ² (19 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	194 302
		M12 Shielded	4 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	199 302
		Valve connectors	4 x 0.5 mm ² (16 x 0.2 mm)		Black 1, black 2, black 3, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	242
		M12 POWER	4 x 2.5 mm ² (141 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	297

Sensor/actuator cabling

Sensor/actuator cabling – cable range

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PVC Black	5-pos.	M12	5 x 0.34 mm ² (19 x 0.15 mm)		Brown, white, blue, black, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	201 302
		M12 Shielded	5 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	204 302
		Valve connectors	5 x 0.5 mm ² (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	230 to 238
		M12 POWER	5 x 2.5 mm ² (141 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	293
		M12 POWER Shielded	5 x 2.5 mm ² (141 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	293
	6-pos.	M12 POWER	6 x 1.5 mm ² (78 x 0.15 mm)		Black 1, black 2, black 3, black 4, black 5, green-yellow	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	See: phoenix contact.net/ products
		M12 POWER Shielded	6 x 1.5 mm ² (78 x 0.15 mm)		Black 1, black 2, black 3, black 4, black 5, green-yellow	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	See: phoenix contact.net/ products
	8-pos.	M12	8 x 0.25 mm ² (14 x 0.15 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	208 302
		M12 Shielded	8 x 0.25 mm ² (32 x 0.1 mm) Shielding: copper braid and flexible filler lead		White, brown, green, yellow, gray, pink, blue, red	PVC	Moving: -5°C ... +105°C Fixed: -25°C ... +105°C	211 302
	12-pos.	M12	12 x 0.14 mm ² (18 x 0.1 mm)		In accordance with DIN 47100	PVC	Moving: -5°C ... +90°C Fixed: -40°C ... +90°C	213 302
	17-pos.	M12	17 x 0.14 mm ² (18 x 0.1 mm)		In accordance with DIN 47100	PVC	Moving: -5°C ... +90°C Fixed: -25°C ... +90°C	213 302
110 Black	4-pos.	M12 POWER	4 x 1.5 mm ² (78 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	291 297

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
500 Gray	3-pos.	M8	3 x 0.25 mm ² (14 x 0.15 mm)		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	188 250
		M12	3 x 0.34 mm ² (19 x 0.15 mm)		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	188 250
		M12 Shielded	3 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	193
	4-pos.	M8	4 x 0.25 mm ² (14 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	194
		M12	4 x 0.34 mm ² (19 x 0.15 mm)		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	194
		M12 Shielded	4 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	199
	5-pos.	M12	5 x 0.34 mm ² (19 x 0.15 mm)		Brown, white, blue, black, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	201
		M12 Shielded	5 x 0.34 mm ² (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	204
		M12 POWER	5 x 2.5 mm ² (141 x 0.15 mm)		Brown, white, blue, black, gray	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	295
	8-pos.	M12	8 x 0.25 mm ² (14 x 0.15 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	Moving: -5°C ... +80°C Fixed: -25°C ... +80°C	208
510 Gray	5-pos.	M12 POWER	5 x 1.5 mm ² (78 x 0.15 mm)		Brown, white, blue, black, gray	PVC	Moving: -20°C ... +80°C Fixed: -40°C ... +80°C	295
515 Black	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +80°C	201

Sensor/actuator cabling

Sensor/actuator cabling – cable range

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
534 Black	3-pos.	Valve connectors	3 x 0.75 mm ² (24 x 0.2 mm)		Black 1, black 2, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	230 to 238 304
	4-pos.	Valve connectors	4 x 0.75 mm ² (24 x 0.2 mm)		Black 1, black 2, black 3, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	242
	5-pos.	Valve connectors	5 x 0.75 mm ² (24 x 0.2 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	242 304
540 Yellow	3-pos.	M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	188 250
	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	194
	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	201
542 Yellow	3-pos.	M12	3 x 0.34 mm ² (42 x 0.1 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	188 250
	4-pos.	M12	4 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	194
	5-pos.	M12	5 x 0.34 mm ² (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	201

PUR/PVC (for sensor/actuator boxes)



The cables are designed for robust use in machine tools, assembly/production lines, as well as production involving metal cutting. The cables are free of silicone and substances that would hinder coating with paint or varnish and have a high resistance to abrasion. The outer sheath also offers excellent resistance to chemicals and oil in accordance with VDE 0472 Part 803, is flame-retardant in accordance with DIN EN 50265, and is resistant to hydrolysis. The outer sheath is

manufactured using the coextrusion process.

Outer sheath material	PUR
Inner sheath material	PVC
Minimum bending cycles	1.5 ... 2 million
Minimum bending radius	10 x D
Traverse path	2 m
Speed	2 m/s
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR/PVC Black	3-pos., single- occupancy	M8 and QUICKON up to 0.34 mm ² 4 slots	4 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	260 266 305
		M8 and QUICKON up to 0.34 mm ² 6 slots	6 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, pink, red, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	260 266 305
		M8 and QUICKON up to 0.34 mm ² 8 slots	8 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, pink, red, black, violet, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	260 266 305
		M8 10 slots	10 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, pink, red, black, violet, white-pink, pink-brown, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	260 305
	4-pos., double- occupancy	QUICKON up to 0.34 mm ² 4 slots	8 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	266
		M8 and QUICKON up to 0.34 mm ² 8 slots	16 x 0.34 mm ² 2 x 0.75 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	260 266 305

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR/PVC Black	4-pos., single- occupancy	M12 and QUICKON up to 0.75 mm ² 4 slots	4 x 0.34 mm ² 3 x 0.75 mm ²		White, green, yellow, gray, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 267 305
		M12 and QUICKON up to 0.75 mm ² 6 slots	6 x 0.34 mm ² 3 x 0.75 mm ²		White, green, yellow, gray, pink, red, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 267 305
		M12 and QUICKON up to 0.75 mm ² 8 slots	8 x 0.34 mm ² 3 x 0.75 mm ²		White, green, yellow, gray, pink, red, black, violet, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 267 305
	5-pos., double- occupancy	M12 4 slots	8 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 305
		M12 6 slots	12 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 305
		M12 8 slots	16 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	262 264 305

Sensor/actuator cabling

Sensor/actuator boxes – cable range

PUR/PVC shielded (for sensor/actuator boxes)



The cables are designed for robust use in machine tools, assembly/production lines, as well as production involving metal cutting. Thanks to the tin-plated copper braid with 85% coverage, the cables reliably protect analog signals against electromagnetic influences. The cables are free of silicone and substances that would hinder coating with paint or varnish and have a high

resistance to abrasion. The outer sheath also offers excellent resistance to oil and resistance to chemicals in accordance with VDE 0472 Part 803, is flame-retardant in accordance with DIN EN 50265, and is resistant to hydrolysis.

Outer sheath material	PUR
Inner sheath material	PVC
Minimum bending cycles	1.5 ... 2 million
Minimum bending radius	10 x D
Traverse path	2 m
Speed	2 m/s
Tested at	+20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR/PVC shielded Black	5-pos., double-occupancy	M12 4 slots	8 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	305
		M12 6 slots	12 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	305
		M12 8 slots	16 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PVC	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	305

PVC – for the food industry (for sensor/actuator boxes)



Master cable resistant to cleaning agents designed for use in the splash zone. Can be used together with our stainless steel sensor/actuator box to implement signal distribution in a washdown design. The cable is flame-retardant in accordance with IEC 60332-1-2 and UL 758 FT2 and has an oil-resistant outer sheath in accordance with DIN EN 60811-404.

Outer sheath material	PVC
Minimum bending radius	
Fixed	5 x D
Moving	10 x D

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PVC Black	5-pos., double-occupancy	M12 8 slots	16 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PVC	Moving: -5°C ... +90°C Fixed: -40°C ... +90°C	See: phoenix contact.net/ products

PUR, halogen-free (for sensor/actuator boxes)

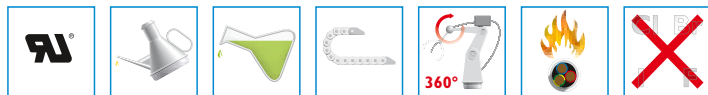
Permanently flexible control cables designed for use in drag chains and as machine control cables for extreme operating conditions. The cables are suitable for bending cycle loads with long-term durability. The special PUR outer sheath offers excellent resistance to oils in accordance with VDE 0472 Part 803, lubricants, cooling agents, and other

aggressive substances. Additional features: halogen and PVC-free, free of silicone and substances that would hinder coating with paint or varnish, resistant to hydrolysis, and flame-retardant in accordance with DIN EN 50265.

Outer sheath material PUR

Minimum bending cycles 1.5 ... 2 million
Minimum bending radius 10 x D
Traverse path 2 m
Speed 2 m/s
Tested at +20°C ... +25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	5-pos., double- occupancy	M12 4 slots	8 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PP	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	264 305
		M12 6 slots	12 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PP	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	264 305
		M12 8 slots	16 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PP	Moving: -5°C ... +80°C Fixed: -40°C ... +90°C	264 305

80 MC – highly flexible (for sensor/actuator boxes)

Permanently flexible cables designed for use in drag chains, industrial robots or portal tables. The cables are suitable for bending cycle loads and torsional stress with long-term durability. The special PUR outer sheath offers excellent resistance to oils in accordance with DIN EN 60811-2-1, chemicals, and hydrolysis.

The cable is also flame-retardant in accordance with DIN EN 50265-2-1 and is halogen-free.

Outer sheath material PUR
Minimum bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 5 m
Acceleration 5 m/s²
Speed 3 m/s
Torsion angle +/- 120°
Min. torsion cycles 3 million
Test length 1 m
Tested at +20°C ... +25°C

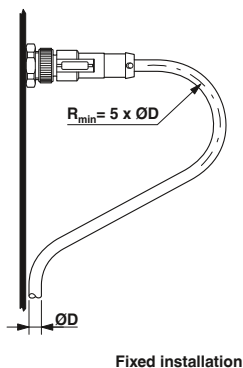
Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
80MC Black	5-pos., double- occupancy	M12 8 slots	16 x 0.50 mm ² 3 x 1.00 mm ²		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PP	Moving: +5°C ... +70°C Fixed: -30°C ... +70°C	305



The following pages provide an overview of the appropriate installation of SAC cables in harsh industrial environments that will guarantee a long service life and reduce costs.

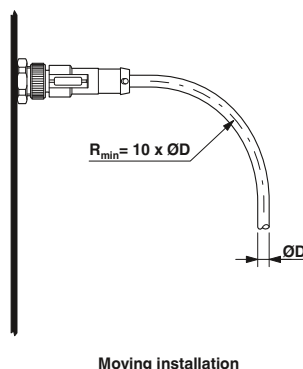
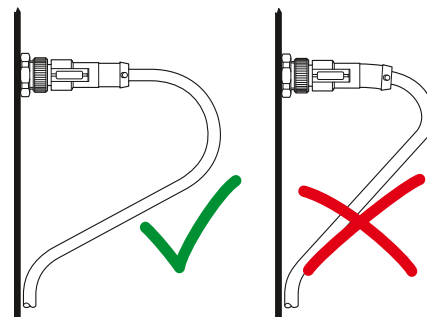
Bending radius

In the case of a moving installation, a generous bending radius can be advantageous. The greater the bending radius, the lower the stress that occurs as a result of movement. The result is an increased cable service life (take into account the minimum cable-specific bending radii).



Load

Prevent the material from aging prematurely by creating a sufficient cable loop at the connection point. This provides sufficient play for absorbing any additional stress that may occur.

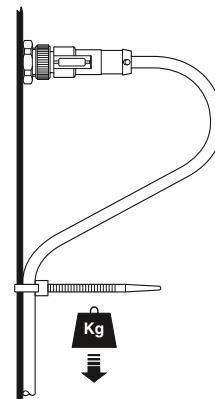


Strain relief for connectors

When installing connectors, make sure that they are protected against tensile loads that may occur. This applies in particular to moveable installations. Support the cables with cable ties, for example.

Moving installation

In the case of a moving installation, the cable length should be sufficient to adequately absorb the tensile loads as efficiently as possible. This can be realized, for example, via cable loops and C drag chains.



Cables in power track chains

Where possible, cables should be laid individually and loosely next to each other within power track chains. Isolating segments or bridges should be placed between the various cables. Or the cables may be arranged in separate drill holes in the neutral zone.

The laying of cables that have very different outer diameters next to or across each other is not recommended. If, however, this cannot be avoided for design reasons, isolating segments or bridges should be installed to ensure a long service life. If it is not possible to install isolating segments between each cable, we recommend that cables with an outer diameter of <10 mm are laid loose in a guide tube. When doing so, combine cables with similar cross sections.

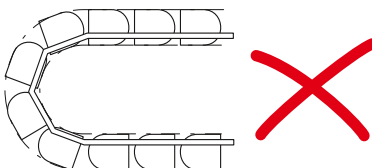
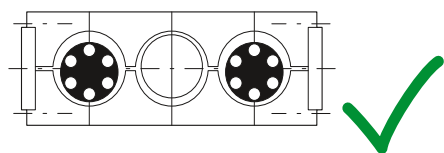
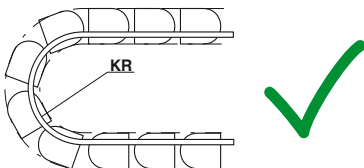
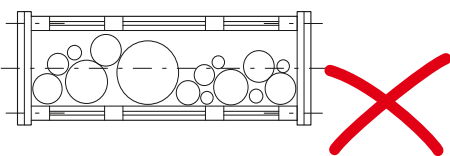
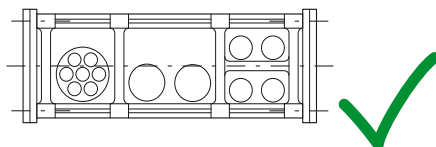
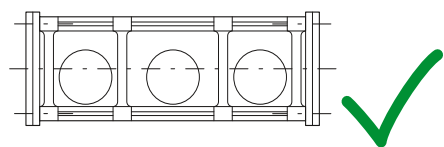
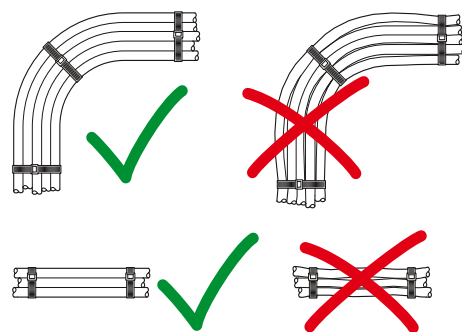
When arranging the cables, it is important to ensure that heavy cables are routed on the outside and light cables, such as the SAC cables, are routed on the inside. Ensure that there is strain relief on both sides, or at least on the movable end of the drag chain. As a guide value, the distance between the bending motion end and the attachment should be 20 to 30 times the outer diameter.

The cables must be able to move completely freely within the radius of curvature in order to prevent forced guidance of the drag chain. Guide value: 10% of the outer diameter should be allocated as free space.

Note: When laying the cables, observe the information provided by the drag chain manufacturer.

Cable bundling

When bundling several individual cables, it is important to ensure that the cables can move freely within the bundle. The cables must not become deformed. Round cables with greatly varying outer diameters should only be laid next to each other when bridges are used.



KR = radius of curvature



Data connectors and cables

Complex automation processes call for high volumes of data at ever-increasing transmission speeds. Transmit this data safely and reliably using connectors from Phoenix Contact which are suitable for industrial use.

When it comes to implementing networks, we offer solutions for Industrial Ethernet and PROFINET as well as EtherCAT®. Furthermore, we offer components for fieldbus systems such as PROFIBUS, CANopen®/DeviceNet™, and FOUNDATION Fieldbus.

The product range includes assembled cables, cable connectors, device connectors, and connectors for field assembly. For FO and copper-based cabling we also offer connector systems with innovative connection technologies. These can be wired quickly and securely without special tools.

Active components for networks and fieldbus systems can be found in Catalog 6.

Copper-based data connectors

- Future-proof high-speed cabling up to 10 Gbps
- Solutions for IP20, IP65/IP67, and IP69K
- IDC, Push-in, crimp, spring, or pierce connection

Fiber optic-based data connectors

- Transmission speeds of up to 40 Gbps
- Solutions for IP20 and IP65/IP67
- POF, PCF, and GOF fiber types (multi and single mode)

 Your web code: **#0296**

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	Ethernet PROFINET EtherCAT	Ethernet	Ethernet	Ethernet	Ethernet																																																																																																													
				CAT 6A 10 Gigabit																																																																																																														
Area of application	Ethernet M8 (4-pos.) All industrial environments	Ethernet M12 (4-pos.) All industrial environments	Ethernet M12 (8-pos.) All industrial environments	Ethernet M12/10G (8-pos.) All industrial environments	Ethernet hybrid M12 (8-pos.) All industrial environments																																																																																																													
Topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology	Star, tree, or line topology																																																																																																													
Data transmission	Up to 100 Mbps	Up to 100 Mbps	Up to 1 Gbps	Up to 10 Gbps	Up to 100 Mbps																																																																																																													
Special connectors				M12 with shield crossover	M12 with Y-shield																																																																																																													
Pin assignment	<table><tr><th rowspan="2">Signal des.</th><th colspan="2">Connector</th></tr><tr><th>RJ45</th><th>M8</th></tr><tr><td>TD+</td><td>1</td><td>1</td></tr><tr><td>TD-</td><td>2</td><td>4</td></tr><tr><td>RD+</td><td>3</td><td>2</td></tr><tr><td>RD-</td><td>6</td><td>3</td></tr></table>	Signal des.	Connector		RJ45	M8	TD+	1	1	TD-	2	4	RD+	3	2	RD-	6	3	<table><tr><th rowspan="2">Signal des.</th><th colspan="2">Connector</th></tr><tr><th>RJ45</th><th>M12</th></tr><tr><td>TD+</td><td>1</td><td>1</td></tr><tr><td>TD-</td><td>2</td><td>3</td></tr><tr><td>RD+</td><td>3</td><td>2</td></tr><tr><td>RD-</td><td>6</td><td>4</td></tr></table>	Signal des.	Connector		RJ45	M12	TD+	1	1	TD-	2	3	RD+	3	2	RD-	6	4	<table><tr><th rowspan="2">Signal des.</th><th colspan="2">Connector</th></tr><tr><th>RJ45</th><th>M12</th></tr><tr><td>D1+</td><td>1</td><td>6</td></tr><tr><td>D1-</td><td>2</td><td>4</td></tr><tr><td>D3-</td><td>5</td><td>1</td></tr><tr><td>D3+</td><td>4</td><td>7</td></tr><tr><td>D2+</td><td>3</td><td>5</td></tr><tr><td>D2-</td><td>6</td><td>8</td></tr><tr><td>D4+</td><td>7</td><td>2</td></tr><tr><td>D4-</td><td>8</td><td>3</td></tr></table>	Signal des.	Connector		RJ45	M12	D1+	1	6	D1-	2	4	D3-	5	1	D3+	4	7	D2+	3	5	D2-	6	8	D4+	7	2	D4-	8	3	<table><tr><th rowspan="2">Signal des.</th><th colspan="2">Connector</th></tr><tr><th>RJ45</th><th>M12</th></tr><tr><td>D1+</td><td>1</td><td>1</td></tr><tr><td>D1-</td><td>2</td><td>2</td></tr><tr><td>D3-</td><td>5</td><td>7</td></tr><tr><td>D3+</td><td>4</td><td>8</td></tr><tr><td>D2+</td><td>3</td><td>3</td></tr><tr><td>D2-</td><td>6</td><td>4</td></tr><tr><td>D4+</td><td>7</td><td>5</td></tr><tr><td>D4-</td><td>8</td><td>6</td></tr></table>	Signal des.	Connector		RJ45	M12	D1+	1	1	D1-	2	2	D3-	5	7	D3+	4	8	D2+	3	3	D2-	6	4	D4+	7	5	D4-	8	6	<table><tr><th rowspan="2">Signal des.</th><th colspan="2">Connector</th></tr><tr><th></th><th>M12</th></tr><tr><td>TD+</td><td></td><td>1</td></tr><tr><td>TD-</td><td></td><td>2</td></tr><tr><td>RD+</td><td></td><td>3</td></tr><tr><td>RD-</td><td></td><td>4</td></tr></table>	Signal des.	Connector			M12	TD+		1	TD-		2	RD+		3	RD-		4
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User organization			www.odva.org (EtherNet/IP™)	www.odva.org (EtherNet/IP™)																																																																																																														
Standardization of cabling	ISO/IEC 24702	ISO/IEC 24702	ISO/IEC 24702 (Ethernet) IEC 61784-5-2 (EtherNet/IP™)	ISO/IEC 24702 (Ethernet) IEC 61784-5-2 (EtherNet/IP™)																																																																																																														
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RJ45 connectors	-	Page 372	Page 372	Page 372	-																																																																																																													
M12 connectors	-	Page 343	Page 343	Page 342	-																																																																																																													
Cables	Page 394	Page 398	Page 400	Page 402	Page 405																																																																																																													
Web code	#0957	#0957	#0957	#0957	#0957																																																																																																													



Production, process automation in the automotive industry	Production, process automation in the automotive industry	Production, process automation in the automotive industry	Automation technology	Motion control applications	Automation technology
Typically active star topology	Star, line, tree, and ring structures. Hybrid forms also supported	Star, line, tree, and ring structures. Hybrid forms also supported	Line, tree, star, and combinations of these	Line, ring, and hierarchical, cascaded network structures	Tree, line, and star topology
Up to 10 Gbps	100 Mbps	1 Gbps to 10 Gbps	100 Mbps, upgrade to Gigabit Ethernet possible	Fast Ethernet with 100 Mbps	Up to Gigabit Ethernet

M12 with shield crossover

2+4 Power/Ethernet connection technology (IP65 and IP67)

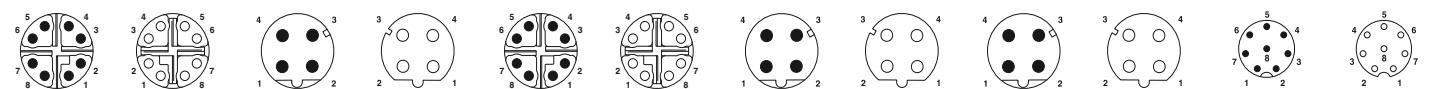
Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector	
	RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12
D1+	1	1	TD+	1	1	D1+	1	1	TD+	1	1	TD+	1	1	TD+	2	2
D1-	2	2	TD-	2	3	D1-	2	2	TD-	2	3	TD-	2	3	TD-	1	3
D3-	5	7	RD+	3	2	D3-	5	7	RD+	3	2	RD+	3	5	RD+	3	5
D3+	4	8	RD-	6	4	D3+	4	8	RD-	6	4	RD-	6	8	RD-	6	8
D2+	3	3				D2+	3	3									
D2-	6	4				D2-	6	4									
D4+	7	5				D4+	7	5									
D4-	8	6				D4-	8	6									

Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal
WHOG	D1+	YE	TD+	WHOG	D1+	YE	TD+	YE	TD+	n. c.		n. c.	
OG	D1-	OG	TD-	OG	D1-	OG	TD-	OG	TD-	OG	TD-	OG	TD-
WHBU	D3-	WH	RD+	WHBU	D3-	WH	RD+	WH	RD+	WHOG	TD+	WHOG	TD+
BU	D3+	BU	RD-	BU	D3+	BU	RD-	BU	RD-	n. c.		n. c.	
WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	D2+	WHGN	RD+	WHGN	RD+
GN	D2-	GN	D2-	GN	D2-	GN	D2-	GN	D2-	BU		BU	
WHBN	D4+	WHBN	D4+	WHBN	D4+	WHBN	D4+	WHBN	D4+	BN		BN	
BN	D4-	BN	D4-	BN	D4-	BN	D4-	BN	D4-	GN	RD-	GN	RD-

Up to 100 m from hub/switch to terminal device	Up to 100 m from hub/switch to terminal device	Up to 100 m from hub/switch to terminal device	Up to 100 m from hub/switch to terminal device	Up to 100 m from hub/switch to terminal device	Up to 100 m from hub/switch to terminal device

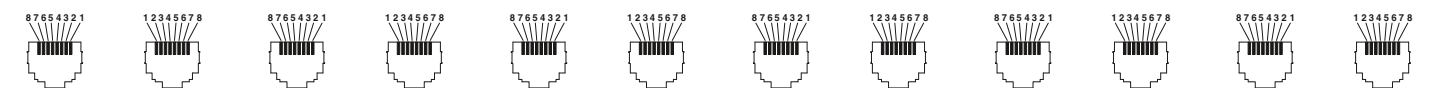
www.cc-link.org	www.profinet.com	www.profinet.com	www.ethercat.org	www.sercos.de	www.varan-bus.net

IEEE 802.3	IEC 61784-5-3	IEC 61784-5-3	IEC 61784-5-12	IEC 61784-5-16	



Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female

M12, 8-pos., X-coded	M12, 4-pos., D-coded	M12, 8-pos., X-coded	M12, 4-pos., D-coded	M12, 4-pos., D-coded	M12, 4-pos., D-coded	M12, 4-pos., D-coded	M12, 4-pos., D-coded	M12, 8-pos., A-coded	M12, 8-pos., A-coded



Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female

RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.

Page 372	Page 373	Page 373	Page 373	Page 373	Page 372
Page 342	Page 343	Page 342	Page 343	Page 343	Page 343
Page 402	Page 396	-	Page 396	-	-
#0957	#0957	#0957	#0957	#0957	#0957



Area of application	Sensor/actuator level, process automation, monitoring PC		Decentral I/O devices for networking several controllers		Process automation for potentially explosive areas (Ex zones 0 and 1)		Automation technology																																																																																
Topology	Active ring structure		Line, tree, ring, or star, depending on the physical network design		Line, tree, or ring		Line																																																																																
Data transmission	Between 500 kbps and 16 Mbps, depending on the segment length		Up to 12 Mbps		Up to 31.25 kbps		Up to 500 kBaud																																																																																
Special connectors																																																																																							
Pin assignment	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>D-SUB 9</th><th>M12</th></tr><tr><td>DO</td><td>1</td><td>2</td></tr><tr><td>DO</td><td>6</td><td>1</td></tr><tr><td>DI</td><td>2</td><td>4</td></tr><tr><td>DI</td><td>7</td><td>3</td></tr><tr><td>GND</td><td>3</td><td>5</td></tr></table>		Signal designation	Connector		D-SUB 9	M12	DO	1	2	DO	6	1	DI	2	4	DI	7	3	GND	3	5	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>D-SUB 9</th><th>M12</th></tr><tr><td>A cable</td><td>8</td><td>2</td></tr><tr><td>B cable</td><td>3</td><td>4</td></tr></table>		Signal designation	Connector		D-SUB 9	M12	A cable	8	2	B cable	3	4	<table><tr><th rowspan="2">Signal designation</th><th colspan="2">Connector</th></tr><tr><th>M12</th><th></th></tr><tr><td>DATA+</td><td>1</td><td></td></tr><tr><td>DATA-</td><td>3</td><td></td></tr><tr><td>Shield</td><td>4</td><td></td></tr></table>		Signal designation	Connector		M12		DATA+	1		DATA-	3		Shield	4		<table><tr><th rowspan="2">Signal designation</th><th colspan="4">Connector</th></tr><tr><th>COMBICON</th><th>M12</th><th>7/8"</th><th>M8</th></tr><tr><td>CAN_L</td><td>2</td><td>5</td><td>5</td><td>5</td></tr><tr><td>CAN_H</td><td>4</td><td>4</td><td>4</td><td>3</td></tr><tr><td>V+</td><td>5</td><td>2</td><td>2</td><td>2</td></tr><tr><td>V-</td><td>1</td><td>3</td><td>3</td><td>4</td></tr><tr><td>Drain</td><td>3</td><td>1</td><td>1</td><td>1</td></tr></table>		Signal designation	Connector				COMBICON	M12	7/8"	M8	CAN_L	2	5	5	5	CAN_H	4	4	4	3	V+	5	2	2	2	V-	1	3	3	4	Drain	3	1	1	1
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V-	1	3	3	4																																																																																			
Drain	3	1	1	1																																																																																			
Signal designation, wire assignment	<table><tr><th>Wire color</th><th></th><th>Signal</th></tr><tr><td>YE</td><td></td><td>DO</td></tr><tr><td>GN</td><td></td><td>DO</td></tr><tr><td>GY</td><td></td><td>DI</td></tr><tr><td>PK</td><td></td><td>DI</td></tr><tr><td>BN</td><td></td><td>GND</td></tr><tr><td>WH</td><td></td><td>NC</td></tr></table>		Wire color		Signal	YE		DO	GN		DO	GY		DI	PK		DI	BN		GND	WH		NC	<table><tr><th>Wire color</th><th></th><th>Signal</th></tr><tr><td>GN</td><td></td><td>A cable</td></tr><tr><td>RD</td><td></td><td>B cable</td></tr></table>		Wire color		Signal	GN		A cable	RD		B cable	<table><tr><th>Wire color</th><th></th><th>Signal</th></tr><tr><td>OG</td><td></td><td>DATA+</td></tr><tr><td>BU</td><td></td><td>DATA-</td></tr><tr><td></td><td></td><td>Flexible filler lead</td></tr></table>		Wire color		Signal	OG		DATA+	BU		DATA-			Flexible filler lead	<table><tr><th>Wire color</th><th></th><th>Signal</th></tr><tr><td>BU</td><td></td><td>CAN_L</td></tr><tr><td>WH</td><td></td><td>CAN_H</td></tr><tr><td>RD</td><td></td><td>V+</td></tr><tr><td>BK</td><td></td><td>V-</td></tr></table>		Wire color		Signal	BU		CAN_L	WH		CAN_H	RD		V+	BK		V-																						
Wire color		Signal																																																																																					
YE		DO																																																																																					
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	Shield on housing		Shield on housing		Shield on pin		Shield on pin																																																																																
Segment length	400 m segment length between two devices; max. 13 km total length		Up to 1200 m with copper installation, up to 15 km with fiber optic installation		Max. 1900 m		Up to 500 m																																																																																
User organization	www.interbusclub.com		www.profibus.com		www.profibus.com		www.odva.org																																																																																
Standardization of cabling	IEC 61158		IEC 61158 / IEC 61784		IEC 61158 / IEC 61784		IEC 61158 IEC 61784-1 CPF2/3																																																																																
Connector pin assignments	<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">D-SUB 9</td></tr></table>				Male	Female	M12, 5-pos., B-coded				Male	Female	D-SUB 9		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">D-SUB 9</td></tr></table>				Male	Female	M12, 5-pos., B-coded				Male	Female	D-SUB 9		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 3-pos., A-coded</td></tr></table>				Male	Female	M12, 3-pos., A-coded		<table><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M8, 5-pos., B-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">M12, 5-pos., A-coded</td></tr><tr><td></td><td></td></tr><tr><td>Male</td><td>Female</td></tr><tr><td colspan="2">7/8" 16UNF, 5-pos.</td></tr></table>				Male	Female	M8, 5-pos., B-coded				Male	Female	M12, 5-pos., A-coded				Male	Female	7/8" 16UNF, 5-pos.																																
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7/8" 16UNF, 5-pos.																																																																																							
Connectors	Page 422		Page 422		Page 423		Page 423																																																																																
Cables	Page 428		Page 429		Page 430		Page 432																																																																																
Web code	#0957		#0957		#0957		#0957																																																																																



Automation technology and for networking within complex devices

Line or tree (when using repeaters)

10 kBaud to 1 Mbaud

Sensor/actuator level

Bus, star, ring, and tree structures

167 kbps

Process automation

Point-to-point line (with branch lines), tree structure, combination of all topologies

H1: 31.25 kbps, IEC physical transmission channel, including Ex bus
H2: 1.0 and 2.5 Mbps data rate, via two-wire cable or fiber optics

All industrial environments

Star topology; the connection is established at the star nodes via hubs

Up to 480 Mbps

Production level applications

Bus, multi-drop, T-branching, star

Up to 10 Mbps

Signal designation	Connector					Signal designation	Connector	Signal designation	Connector		Signal designation	Connector			Signal designation	Connector
	COMBICON	D-SUB 9	M12	RJ45	7/8"		M12		M12	7/8"		M12, MINI-USB	USB			M12
CAN_L	2	2	5	2	5	AS-ii	1	DATA+	2	2	V _{BUS}	1	1	SLD	1	
CAN_H	4	7	4	1	4	AS-i-	3	DATA-	1	1	D-	2	2	DB	2	
V+	5	9	2	8	2			Shield	3	3	D+	3	3	DG	3	
V-	1	3	3	3	3						ID	4	4	DA	4	
Drain	3	4	1	6	1						GND	5	4			

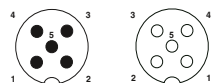
Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal
BU	CAN_L	BN	AS-i-	OG	DATA+	WHOG	D-	Shield	SLD
WH	CAN_H	WH				WH	V _{BUS}	WH	DB
RD	V+	BU	AS-ii	BU	DATA-	OG	D+	YE	DG
BK	V-	BK		Flexible filler lead		n.c.	ID	BU	DA
						BK	GND		

Shield on pin

Up to 1000 m depending on the transmission speed, can be increased by using repeaters

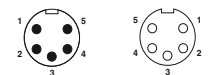
www.can-cia.de

EN 50325-4



Male Female

M12, 5-pos., A-coded



Male Female

7/8" 16UNF, 5-pos.



Male Female

D-SUB 9

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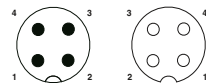
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#0957

Max. 100 m cable length, 300 m with termination resistors, 500 m with repeaters

www.as-interface.net

EN 50295 and IEC 62026-2



Male Female

M12, 4-pos., A-coded

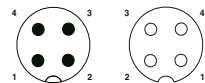


Shield on pin 3

Max. 1900 m; max. 9500 m when using repeaters depending on the selected cable

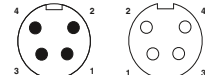
www.fieldbus.org

IEC 1158 IEC 61158



Male Female

M12, 4-pos., A-coded



Male Female

7/8" 16UNF, 4-pos.



Male Female

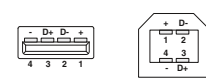
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5 m per segment

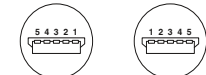
www.usb.org

Not specified



Male, type A Female, type B

USB, 4-pos.



Male Female

M12 mini-USB, 5-pos.



Male Female

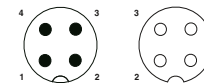
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#0957

Max. 1200 m; max. 13.2 km with repeaters

www.clpa-europe.com

IEC 61784-1 CPF 8



Male Female

M12, 4-pos., A-coded



Male Female

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#0957

Connectors and cable connectors, for assembly



Insulation displacement connection QUICKON



Piercecon® and crimp connection

ERC

Technical data	
Ethernet/PROFINET	Ethernet/PROFINET
IEC 61076-2-109	-
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
0.14 mm ² ... 0.34 mm ²	0.14 mm ² ... 0.34 mm ²
5 mm ... 9.7 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	50 V AC / 60 V DC
0.5 A	0.5 A (30 W)
≥ 100 MΩ	≥ 100 MΩ
CAT6 _A	CAT6 _A
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
X - data	-
8	8
-40 ... 85	-40 ... 85

Ordering data	
Order No.	Pcs./Pkt.
Ethernet/PROFINET	Ethernet/PROFINET

1411043	1
1414586	1
1414412	1

ERC

Technical data	
Ethernet	Ethernet/PROFINET
IEC 61076-2-109	IEC 61076-2-109
3	3
IP65	IP65 / IP67
Piercecon®	Crimp connection
0.14 mm ² ... 0.14 mm ²	0.14 mm ² ... 0.34 mm ²
4 mm ... 8 mm	6.5 mm ... 10 mm
50 V AC / 60 V DC	48 V AC / 60 V DC
0.5 A (30 W)	0.5 A
≥ 100 MΩ	≥ 100 Ω
CAT6 _A	CAT6 _A
CuSn	-
Ni/Au	-
PP	PA 6.6
V0	V0
X - data	X - data
8	8
-40 ... 85	-40 ... 85

Ordering data	
Order No.	Pcs./Pkt.
Ethernet	Ethernet/PROFINET

1417430	1
1417443	1
1422844	1
1422845	1

Accessories	
VS-CABLE-STRIP-VARIO	1657407

Accessories	
CC0,6-TS-0,34M AU	1423643
CRIMPFOX-TC MP	1212510
VS-CABLE-STRIP-VARIO	1657407

M12 circular connector in accordance with:

Degree of pollution	
Degree of protection	
Connection method	
Connection cross section	
External cable diameter	
Electrical data	
Rated voltage	
Rated current	
Insulation resistance	
Transmission characteristics (category)	
Material data	
Contact material	
Contact surface material	
Contact carrier material	
Flammability rating in accordance with UL 94	
Coding	
Number of positions	
Temperature data	
Male connector/female connector	[°C]

Connector, shielded, color-coded and numbered connection area

Male, straight

Female, straight

Cable connector, shielded, color-coded and numbered connection area

Connector, shielded, color-coded connection area

Male, straight

Male, angled

Connector, without contacts, color-coded and numbered contact manager

Male, straight

Male, angled

Crimp contacts, gold-plated

Male, for X-coded, 0.14 mm² ... 0.34 mm²

Crimping pliers, for turned contacts, universal cross section setting, up to a maximum of 2.5 mm², digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool

for turned contacts, four-mandrel crimping

Stripping tool, for multiple-stage repositioning of shielded conductors

Connectors and cable connectors,
for assembly

Insulation displacement connection QUICKON



Push-in connection

ERIC

ERIC

M12 circular connector in accordance with:

Degree of pollution
Degree of protection
Connection method

Electrical data

Insulation resistance
Transmission characteristics (category)

Material data

Contact material
Contact surface material
Flammability rating in accordance with UL 94
Temperature data

Male connector/female connector [°C]

Technical data

D-coded	A-coded
in accordance with IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
≥ 100 MΩ	≥ 100 MΩ
CAT5	CAT5
CuSn	CuSn
Ni/Au	Ni/Au
V0	V0
-40 ... 85	-40 ... 85

Technical data

D-coded
IEC 61076-2-101
3
IP65 / IP67
Push-in connection
≥ 100 MΩ
CAT5
CuSn
Ni/Au
V0
-40 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
D-coded		A-coded	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
D-coded			

Description

Connector, 100 Mbps, **Ethernet CAT5**, 4-pos., shielded,
color-coded connection area

Male, straight	1411066	1
Male, angled	1553624	1
Female, straight	1411069	1
Female, angled	1553637	1

Connector, 100 Mbps, **PROFINET CAT5**, 4-pos., shielded,
color-coded connection area

Male, straight	1411068	1
Male, angled	1554539	1
Female, straight	1411071	1
Female, angled	1554542	1

Connector, 1 Gbps, **Ethernet CAT5**, 8-pos., shielded,
color-coded connection area

Male, straight	1421679	1
Male, angled	1553653	1
Female, straight	1421680	1
Female, angled	1553666	1

Connector, **VARAN**, 6-pos., shielded,
color-coded connection area

Male, straight	1429130	1
Male, angled	1429156	1
Female, straight	1429143	1
Female, angled	1429169	1

Cable connector, 100 Mbps, **Ethernet CAT5**, 4-pos., shielded,
color-coded and numbered connection area

1414415 1

Cable connector, 100 Mbps, **PROFINET CAT5**, 4-pos., shielded,
color-coded and numbered connection area

1414416 1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1

Stripping tool, for multiple-stage repositioning of
shielded conductors

M12 push-pull connectors, for assembly

new



Ethernet



Crimp connection

ERC

Technical data

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Connection method

External cable diameter

Electrical data

Rated voltage

Rated current

Insulation resistance

Transmission characteristics (category)

Material data

Contact carrier material

Flammability rating in accordance with UL 94

Coding

Number of positions

Temperature data

Male connector/female connector

[°C]

PROFINET

-

3

IP65 / IP67 / IP68 / IP69K

Crimp connection

4.5 mm ... 7.5 mm

Ethernet/PROFINET

-

3

IP65 / IP67 / IP68 / IP69K

Crimp connection

6.5 mm ... 10 mm

48 V AC / 60 V DC

4 A

≥ 100 Ω

CAT5

PA 6.6

V0

D - data

4

48 V AC / 60 V DC

0.5 A

≥ 100 Ω

CAT6_A

PA 6.6

V0

X - data

8

-40 ... 85

-40 ... 85

Ordering data

Description

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

PROFINET

Ethernet/PROFINET

Push-pull connector, 100 Mbps, 4-pos., shielded

Male, straight

1021830

1

Male, angled

1021831

1

Push-pull connector, 8-pos., shielded

Male, straight

1021783

1

Male, angled

1021784

1

Accessories

Crimp contacts, gold-plated

Male, for A-/D-coded, 0.14 mm² ... 0.34 mm²

Male, for A/D-coded, 0.34 mm² ... 1.0 mm²

Male, for X-coded, 0.14 mm² ... 0.34 mm²

Crimping pliers, for turned contacts, universal cross section setting, up to a maximum of 2.5 mm², digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool

for turned contacts, four-mandrel crimping

Stripping tool, for multiple-stage repositioning of shielded conductors

CC1,0-TS-0,34M AU

1064040

100

CC1,0-TS-1,00M AU

1423645

100

CC0,6-TS-0,34M AU

1423643

100

CRIMPFOX-TC MP

1212510

1

VS-CABLE-STRIP-VARIO

1657407

1

**M12 push-pull locking,
with 0.5 m litz wires**

- Front mounting
- Manufacturer-independent
M12 push-pull locking system

**4-pos.**

new

**5-pos.**

new



Technical data	
4-pos.	
-	
3	
IP65/IP67	
Individual wires	
250 V	
4 A	
CuZn / Ni/Au	
PA 6.6	
V0	
TPE litz wire	
-25 ... 85	
Ordering data	
Order No.	Pcs./Pkt.
4-pos.	



Technical data			
5-pos.			
-			
3			
IP65/IP67			
Individual wires			
60 V			
4 A			
CuZn / Ni/Au			
PA 6.6			
V0			
TPE litz wire			
-25 ... 85			
Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
5-pos.			

Device connectors

Female	A-coded
Female	D-coded

1027686

1

1027683

1

- Rear mounting
- Manufacturer-independent M12 push-pull locking system

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**Device connectors,
with 0.5 m litz wires**

**Front mounting,
4-pos.**

**Rear mounting,
4-pos.**


Technical data		
	4-pos.	4-pos.
General data		
M12 circular connector in accordance with:	IEC 61076-2-101	IEC 61076-2-101
Degree of pollution	3	3
Degree of protection	IP65/IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	250 V	250 V
Rated current	4 A	4 A
Material data		
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 6.6	PA 6.6
Flammability rating in accordance with UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Male connector/female connector	-25 ... 85	-25 ... 85

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		4-pos.	

Description	Coding

Bus system flush-type socket, PROFINET, 4-pos., M12 SPEEDCON, D-coded, front/screw mounting with M16 thread, with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data **1535202** 1

Bus system flush-type socket, PROFINET, 4-pos., M12 SPEEDCON, D-coded, front/screw mounting with M16 thread, can be positioned, with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data **1535215** 1

Bus system flush-type socket, PROFINET, 4-pos., M12 SPEEDCON, D-coded, rear/screw mounting with Pg9 thread, with 0.5 m TPE litz wire, 4 x 0.34 mm²

Female D - data **1551529** 1



Technical data		
	4-pos.	
General data		
M12 circular connector in accordance with:	IEC 61076-2-101	
Degree of pollution	3	
Degree of protection	IP65/IP67	
Connection method	Individual wires	
Electrical data		
Rated voltage	250 V	
Rated current	4 A	
Material data		
Material contact/contact surface	CuZn / Ni/Au	
Contact carrier material	PA 6.6	
Flammability rating in accordance with UL 94	V0	
Cable type	TPE litz wire	
Temperature data		
Male connector/female connector	-25 ... 85	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.			

Control cabinet feed-throughs, bulkhead, M12 to RJ45 socket



**Bulkhead,
10 Gbps**



**Bulkhead,
100 Mbps and 1 Gbps**



Technical data

VS-BH-M12FSX-10G-RJ45...

Electrical data

Nominal voltage U_N
Rated current
Transmission characteristics (category)
Contact material
Material of grip body
Flammability rating in accordance with UL 94
Insertion/withdrawal cycles

60 V
0.5 A
CAT6_A
Copper alloy
PA
V0
≥ 100

Temperature data

Male connector/female connector

[°C] -25 ... 85

Ordering data

Description

Control cabinet feed-through, CAT6_A, M12, 8-pos., X-coded to RJ45 socket

Female exit 90°
Female exit 180°

Control cabinet feed-through, M12, 8-pos., A-coded on RJ45 socket

Female exit 90°
Female exit 180°

Control cabinet feed-through, M12, 4-pos., D-coded on RJ45 socket

Female exit 90°
Female exit 180°

Type

VS-BH-M12FSX-10G-RJ45/90
VS-BH-M12FSX-10G-RJ45/180

Order No.

1404548
1404549

Pcs./Pkt.

1
1



Technical data

CUC-BH-M12A1PBK-A/R4BE

CUC-BH-M12D1PBK-A/R4BE

60 V
0.5 A
CAT5 (IEC 11801:2002)
Copper alloy
PA
V0
≥ 100

60 V
0.5 A
CAT5 (IEC 11801:2002)
Copper alloy
PA
V0
≥ 100

-25 ... 85

-25 ... 85

Ordering data

Type

CUC-BH-M12A1PBK-A/R4BE
CUC-BH-M12A1PBK-S/R4BE

Order No.

1414393
1414396

Pcs./Pkt.

1
1

CUC-BH-M12D1PBK-A/R4BE
CUC-BH-M12D1PBK-S/R4BE

1414397
1414398

1
1

Terminal outlets, IP65/IP67

- Easy installation, thanks to captive cover screws
- Robust design
- Integrated cable management system



**Terminal outlet
with 2 x M12 slots**

EAC

Technical data			
Electrical data	VS-TO-RO-MCBK-F142...		
Transmission characteristics (category)	CAT5 (IEC 11801:2002)		
Material data			
Housing material	Aluminum cast alloy, powder-coated		
Mechanical data			
Color	black		
Degree of protection	IP65/IP67		
Ordering data			
Description	Type	Order No.	Pcs./Pkt.
	Terminal outlet, M12, IP65/67, 2 slots, with protective plugs, 2 cable entries		
	M12 with 2 x female, 8-pos., A-keyed	1404304	1
	M12 with 2 x female, 4-pos., D-coded	1404294	1

RJ45 connectors, IP65/67



RJ45 connector



RJ45 connector
with field and crimp connection

Technical data	
Electrical data	
Rated voltage	72 V (DC)
Rated current	1.75 A
Overvoltage category	I
Material data	
Housing material	PA
Contact material	Copper alloy
Flammability rating in accordance with UL 94	V0
Degree of pollution	2
Connection data	
Connection method	IDC fast connection
Connection cross section AWG	26 ... 23 (rigid)
Connection cross section AWG	26 ... 23 (flexible)
External cable diameter	5 mm ... 8.5 mm
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

Technical data	
VS-08-RJ45-5-Q/IP67...	CUC-V06-C1...-S/R4...8:1
72 V (DC)	72 V (DC)
1.75 A	1 A
I	I
PA	PA
Copper alloy	Phosphor bronze
V0	V0
2	2
IDC fast connection	Crimp connection
26 ... 23 (rigid)	27 ... 24 (flexible)
26 ... 23 (flexible)	-
5 mm ... 8.5 mm	5 mm ... 8.5 mm
≥ 1000	≥ 750
-20°C ... 70°C	-25°C ... 60°C

Technical data	
VS-08-T-H-RJ45...	VS-08-ST-H21P-RJ45
72 V (DC)	72 V (DC)
-	1 A
I	I
PA	-
-	Phosphor bronze
V0	V2
2	2
-	IDC connection technology
-	27 ... 24 (flexible)
-	-
5 mm ... 8.5 mm	-
≥ 1000	≥ 750
-40°C ... 80°C	-25°C ... 60°C

Ordering data	
Description	
RJ45 connector , 8-pos., CAT5, with QUICKON fast connection technology, for 26 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
RJ45 connector , 8-pos., CAT6, 1 Gbps, with crimp connection, for 27 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
RJ45 connector , 8-pos., CAT6 _A , 10 Gbps, with crimp connection, for 27 ... 24 AWG	
Military gray RAL 7042 deep black RAL 9005	
Sleeve housing , for VS-08-ST-H...-RJ45 male insert, for cable diameter of 5.0 mm ... 8.5 mm	
Military gray RAL 7042 deep black RAL 9005	
RJ45 male insert , 8-pos., shielded, IDC connection technology, for 27 ... 26 AWG litz wires, with strain relief	
CAT5	
CAT6	
RJ45 male insert , 8-pos., shielded, IDC pierce connection, for litz wires AWG 27 ... 24, with strain relief	
CAT6	
RJ45 male insert , CAT6 _A , 10 Gbps	

Ordering data		
Type	Order No.	Pcs./Pkt
VS-08-RJ45-5-Q/IP67	1656990	1
VS-08-RJ45-5-Q/IP67-BK	1658493	1
CUC-V06-C1PGY-S/R4CE8:1	1414383	1
CUC-V06-C1PBK-S/R4CE8:1	1414408	1
CUC-V06-C1PGY-S/R4CEA:1	1414406	1
CUC-V06-C1PBK-S/R4CEA:1	1414410	1

Ordering data		
Type	Order No.	Pcs./Pkt
VS-08-T-H-RJ45/IP67	1652732	5
VS-08-T-H-RJ45/IP67-BK	1658671	5
VS-08-ST-H11-RJ45	1652716	5
VS-08-ST-H21-RJ45	1652729	5
VS-08-ST-H21P-RJ45	1404388	5
VS-08-RJ45-10G/C	1418853	5

Accessories	
Stripping tool , for multiple-stage repositioning of shielded conductors	
Crimp tool , pliers with die, for VS-08-ST-H...-RJ45	

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
VS-CT-RJ45-H	1653265	1

RJ45 panel mounting frames and Freenet socket inserts, IP20



Keystone panel mounting frames and keystones



Freenet panel mounting frames and modules

Technical data				Technical data					
VS-08-...-RJ45-...				CUC-F-...-S/R4IDC8VS-08-BU-RJ45-5-F/PK					
Electrical data									
Nominal voltage U _N				72 V (DC)		50 V			
Rated current				1.5 A		1 A			
Housing material				Zinc die-cast		Copper alloy			
Contact material				CuSn		Copper alloy			
Flammability rating in accordance with UL 94				V0		V0			
Number of positions				8		8			
Connection method				IDC connection		IDC			
Insertion/withdrawal cycles				≥ 750		≥ 750			
Temperature data									
Ambient temperature (operation)				-10°C ... 60°C		-20°C ... 70°C			
Ordering data				Ordering data					
Description				Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
RJ45 socket insert, 8-pos., shielded, female to female									
CAT5				VS-08-BU-RJ45/BU	1689064	5			
CAT6				VS-08-BU-RJ45-6-MOD/BU	1653155	5			
RJ45 keystone panel mounting frame, Version 6, for round mounting cutout, with seal and central nut									
Military gray RAL 7042				VS-08-A-RJ45/MOD-1-R-IP67	1689844	1			
deep black RAL 9005				VS-08-A-RJ45/MOD-1-R-IP67 BK	1658053	5			
RJ45 keystone panel mounting frame, Version 6, with rectangular mounting cutout, with seal, without mounting screws									
Military gray RAL 7042				VS-08-A-RJ45/MOD-1-IP67	1689080	5			
deep black RAL 9005				VS-08-A-RJ45/MOD-1-IP67-BK	1658642	5			
RJ45 Freenet socket insert, 8-pos., shielded, with cable connection							CUC-F-J1ZNI-S/R4IDC8	1418984	1
10 Gbps, CAT6 _A									
RJ45 Freenet socket insert, 8-pos., shielded, with cable connection									
1 Gbps, CAT5							VS-08-BU-RJ45-5-F/PK	1652936	1
RJ45 Freenet socket insert, 8-pos., shielded, female to female									
1 Gbps, CAT6							CUC-F-D1ZNI-S/R4GC8	1419022	1
Freenet panel mounting frame, Version 6, for round mounting cutout, with seal, without mounting screws									
Military gray RAL 7042							VS-A-F-IP67	1653744	5
deep black RAL 9005							VS-A-F-IP67-BK	1658668	5
Accessories				Accessories					
Protective cover for Version 6 panel mounting frame									
Military gray RAL 7042				VS-08-SD-F	1652606	5	VS-08-SD-F	1652606	5
deep black RAL 9005				VS-08-SD-F-BK	1658066	5	VS-08-SD-F-BK	1658066	5
Stripping tool, for multiple-stage repositioning of shielded conductors				VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1

RJ45 terminal outlets,
IP65/IP67

- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet
with 2 x RJ45 slots

ERC

Electrical data
Transmission characteristics (category)
Material data
Housing material
Mechanical data
Color

Technical data
VS-TO-RO-MCBK-F141...
CAT6
Aluminum cast alloy, powder-coated
black

Description
Terminal outlet RJ45 IP65/67, 2 slots version 6, with protective plugs, 2 cable entries
2x RJ45

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-TO-RO-MCBK-F1418/1418	1404278	1

Field couplings, IP65/67

- Fixed mounting is also an option
- Including covers to protect against environmental influences



Field coupling
with RJ45



Technical data	
	VS-08-KU-IP67
Electrical data	
Rated voltage	72 V (DC)
Rated current	1 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Material data	
Housing material	PBT
Contact material	Copper alloy
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	8
Temperature data	
Ambient temperature (operation)	-10°C ... 60°C

Ordering data			
Type	Order No.	Pcs./Pkt.	
Description			
	RJ45 coupling, IP67, CAT5, with protective cover		
Military gray RAL 7042	VS-08-KU-IP67	1689268	1
deep black RAL 9005	VS-08-KU-IP67-BK	1658684	1

FO connectors, IP65/67

Notes:

For further technical data, see:
phoenixcontact.net/products



SC-RJ connector
for polymer fiber 980/1000 µm



SC-RJ connector
for PCF fibers 200 / 230 µm and
polymer fibers 980 / 1000 µm

ERC®

Technical data

Material data	
Housing material	PA
Ferrule material	Copper alloy
Flammability rating in accordance with UL 94	V0
Color	gray
Degree of protection	IP67
External cable diameter	5 mm ... 8.5 mm
Wire diameter	2.2 mm
Ferrule diameter	2.50 mm
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
FO connector SC-RJ , duplex, with fast connection			
POF fiber 980/1000 µm SC-RJ socket insert , duplex, for VARIOSUB IP67 panel mounting frame, can be used for GOF multimode, GOF single mode, PCF, and POF fiber types	VS-SCRJ-POF-FA-IP67	1657009	1
1x SC-RJ/SC-RJ (duplex) VS-SC-RJ panel mounting frame , for use with an AVAGO transceiver, type: AFBR 5978Z			
Freenet panel mounting frame , Version 6, for round mounting cutout, with seal, without mounting screws			
Military gray RAL 7042 deep black RAL 9005			

Accessories

Protective cover SC-RJ/IP67 , for covering the SC-RJ male insert on the SC-RJ/IP67 sleeve housing	VS-SCRJ-PC	1653757	5
Protective cover for Version 6 panel mounting frame Military gray RAL 7042 deep black RAL 9005			
Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1

ERC

Technical data

PBT
Zirconia ceramics
V0
black
IP20
-
2.50 mm
≥ 500
-25°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SCRJ-GOF-BU/BU	1652978	1
VS-SCRJ-A-TC-IP67	1658545	1
VS-A-F-IP67	1653744	5
VS-A-F-IP67-BK	1658668	5

Accessories

VS-08-SD-F	1652606	5
VS-08-SD-F-BK	1658066	5

**SC-RJ terminal outlets,
IP65/67**

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



**Terminal outlet, IP67,
with 2 x SC-RJ slots**

EAC

Technical data

Material data	
Housing material	Aluminum cast alloy, powder-coated
Ferrule material	Zirconia ceramics
Mechanical data	
Color	black
Degree of protection	IP65/IP67
Fiber type	GOF, PCF, POF
Connection profile	SCRJ in accordance with DIN EN 50377-6-1
Insertion/withdrawal cycles	≥ 500

Ordering data

Description	Type	Order No.	Pcs./Pkt.
SC-RJ terminal outlet, IP65/IP67, 2 slots, Version 6, with protective plugs, 2 cable entries	VS-TO-RO-MCBK-F1420/1420	1404317	1

SC-RJ couplings,
IP65/67

- Fixed mounting is also an option
- Including covers to protect against environmental influences
- Can be used for all fiber types



SC-RJ field coupling

ERC

Technical data	
Material data	
Housing material	PBT
Contact material	-
Ferrule material	Zirconia ceramics
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	2
Color	gray
Degree of protection	IP65/IP67
Temperature data	
Ambient temperature (operation)	-10°C ... 60°C
Ordering data	
Description	TypeOrder No.Pcs./Pkt.
SC-RJ coupling, IP67, duplex, can be used for GOF (multimode and single mode), PCF, and polymer fiber types	FOC-V06-D1PGY-S/SJBE414100501

Push-Pull ADVANCE connectors, IP65/IP67

- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal
- Consistent 360° shielding concept



RJ45 connector,
straight cable outlet



RJ45 connector,
cable outlet at the top

ERC

Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data			
Ethernet		PROFINET	
IP65/IP67		IP65/IP67	
26 ... 24 (rigid)		23 ... 22 (rigid)	
1 Gbps		1 Gbps	
Zinc die-cast		Zinc die-cast	
5.5 mm ... 10 mm		5.5 mm ... 10 mm	
≥ 750		≥ 750	
-40°C ... 70°C		-40°C ... 70°C	

Description

Push-pull ADVANCE, RJ45 industrial connector, IP67, 8-pos.

Single pack

Stripping tool, for multiple-stage repositioning of shielded conductors

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422661 1 1422664 1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Technical data			
Ethernet		PROFINET	
IP65/IP67		IP65/IP67	
26 ... 24 (rigid)		23 ... 22 (rigid)	
1 Gbps		1 Gbps	
Zinc die-cast		Zinc die-cast	
5.5 mm ... 10 mm		5.5 mm ... 10 mm	
≥ 750		≥ 750	
-40°C ... 70°C		-40°C ... 70°C	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422663 1 1422667 1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Push-Pull ADVANCE connectors, IP65/IP67



RJ45 connector,
cable outlet at the bottom



RJ45 connector,
straight cable outlet

ERC

Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data	
Ethernet IP65/IP67	PROFINET IP65/IP67
26 ... 24 (rigid)	23 ... 22 (rigid)
1 Gbps	1 Gbps
Zinc die-cast	Zinc die-cast
5.5 mm ... 10 mm	5.5 mm ... 10 mm
≥ 750	≥ 750
-40°C ... 70°C	-40°C ... 70°C

Technical data	
Ethernet IP65/IP67	PROFINET IP65/IP67
27 ... 24 (flexible)	26 ... 22 (rigid)
10 Gbps	-
Plastic	PA-GF
5 mm ... 8 mm	5 mm ... 8 mm
≥ 200	≥ 500
-25°C ... 60°C	-10°C ... 60°C

Description

Push-pull ADVANCE, RJ45 industrial connector, IP67, 8-pos.

Single pack

Push/pull connector (version 14) for 10 Gbps, with RJ45 crimp connection, for 26 ... 24 AWG flexible conductors, 5.0 mm ... 8.0 mm cable diameter

8-pos., 10 Gbps

Push-pull connector (version 14) for PROFINET with RJ45 QUICKON fast connection technology, for 22 AWG 1 and 7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 100 Mbps

4-pos., 1 Gbps

8-pos., 1 Gbps

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422662

1

1422665

1

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	

1422205

1

1608126

1

1404142

1

1657834

1

Stripping tool, for multiple-stage repositioning of shielded conductors

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

Protective cover, IP65, with push/pull locking, for covering the contact insert in the push/pull connector for RJ45 and SC-RJ, plastic

Shielding foil set, 25 pcs., replacement for VS-PN-RJ45-5-Q/IP20

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
VS-PPC-F1-PC-POBK	1405316	1
VS-08-RJ45-FOLIEN-SET	1417184	1

Push-pull connectors, IP65/IP67



RJ45 connector,
straight cable outlet



RJ45 connectors, EMC,
straight cable outlet



Degree of protection
Connection cross section AWG
Transmission speed
Housing material
External cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data

PROFINET
IP65/IP67
26 ... 22 (rigid)
100 Mbps
Zinc die-cast
5 mm ... 8 mm
≥ 500

PROFINET
IP65/IP67
26 ... 22 (rigid)
-
Zinc die-cast
5 mm ... 8 mm
≥ 500

-40°C ... 70°C -40°C ... 70°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
PROFINET		PROFINET	

Description

Push-pull connector (version 14) for PROFINET with RJ45 QUICKON fast connection technology, for 22 AWG 1 and 7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 100 Mbps
8-pos., 100 Mbps

1608100 1
1608016 1

Push-pull connector (version 14) for PROFINET with RJ45 QUICKON fast connection technology, for 22 AWG 1 and 7-wire conductors, cable diameter of 5.0 mm ... 8.0 mm

4-pos., 1 Gbps
8-pos., 1 Gbps

1405141 1
1404126 1

Push/pull connector (Version 14) optimized for use in environments subject to EMI, with RJ45 QUICKON fast connection technology, for 5.0 mm ... 8.0 mm cable diameter

4-pos., 100 Mbps
8-pos., 100 Mbps

Technical data

PROFINET
IP65/IP67
22 ... 22 (rigid)
-
Zinc die-cast
5 mm ... 8 mm
≥ 500

-40°C ... 70°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
PROFINET			

1403366 1
1403367 1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1

Stripping tool, for multiple-stage repositioning of shielded conductors

Accessories

VS-CABLE-STRIP-VARIO	1657407	1

RJ45 panel mounting frames and Freenet socket inserts, IP20



Panel mounting frame and modules



Freenet panel mounting frame with central nut and modules

	Technical data			Technical data		
Electrical data	VS-08-BU-RJ45-5-F/PK			CUC-F-...-S/R4IDC8		
Nominal voltage U_N	50 V			-		
Rated current	1 A			-		
Housing material	Copper alloy			Zinc die-cast		
Contact material	Copper alloy			Spring steel		
Flammability rating in accordance with UL 94	V0			-		
Number of positions	8			8		
Connection method	IDC			Female		
Insertion/withdrawal cycles	≥ 750			≥ 750		
Temperature data						
Ambient temperature (operation)	-20°C ... 70°C			-10°C ... 60°C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
10 Gbps, CAT6 _A	CUC-F-J1ZNI-S/R4IDC8	1418984	1	CUC-F-J1ZNI-S/R4IDC8	1418984	1
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection						
1 Gbps, CAT5	VS-08-BU-RJ45-5-F/PK	1652936	1	VS-08-BU-RJ45-5-F/PK	1652936	1
RJ45 Freenet socket insert , 8-pos., shielded, female to female						
1 Gbps, CAT6	CUC-F-D1ZNI-S/R4GC8	1419022	1	CUC-F-D1ZNI-S/R4GC8	1419022	1
RJ45 Freenet panel mounting frame , Version 14, IP65/IP67, for rectangular mounting cutout, with seal, without mounting screws						
Metal housing	VS-PPC-F1-RJ45-MNNA-1R-F	1405358	1			
RJ45 Freenet panel mounting frame , Version 14, IP65/IP67, for round mounting cutout, with seal and central nut						
Metal housing				VS-PPC-F1-RJ45-MNNA-1C-F	1405222	1
RJ45 panel mounting frame with socket insert, Version 14, IP65/IP67, for rectangular mounting cutout, with seal and mounting screws, 8-pos., shielded, with cable connection, CAT6 _A						
Zinc die-cast housing	CUC-V14-F1ZNI-EM/R4F8	1413961	1			
RJ45 panel mounting frame with socket insert, Version 14, IP65/IP67, for rectangular mounting cutout, with seal and mounting screws, 8-pos., shielded, female to female, CAT6						
Zinc die-cast housing	CUC-V14-F1ZNI-EM/R4B8	1413962	1			
Adapter , zinc die-cast						
45°	CUC-V14-A1ZNI-R45	1413988	1			
180°	CUC-V14-A1ZNI-S180	1413989	1			
	Accessories			Accessories		
Protective cover , for data port	VS-PPC-C1-PC-ROBK-L	1405293	1	VS-PPC-C1-PC-ROBK-L	1405293	1
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1
Adapter , with filler plug and marking element	CUC-V14-A1RBK-PC	1413985	1			
Marking element , without filler plug	CUC-V14-A1PBK-BA:50	1413979	50			
Protective cover , with spring lid	CUC-V14-A1PBK-PC	1413970	1			
Screw set , M3x20 V2A, including plastic washers, toothed lock washers, and nuts	CUC-V14-A-SCREW-M3:20	1413987	20			
Strain relief plate	CUC-V14-A3ST-SR	1413990	1			

Field couplings, IP65/67



RJ45 and power field coupling
with cable connection



RJ45 field coupling
with cable connection

Electrical data
Transmission characteristics (category)
Material data
Housing material
Connection data
Connection method
Connection cross section AWG
Cable diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data		
VS-MP-PPC/CG-PO/10G		
CAT6 _A		
Aluminum press-drawn section / die-cast zinc		
Spring connection / IDC		
-		
5 mm ... 8 mm (Data cable gland)		
> 1000 (Data)		
-40°C ... 70°C		

Description
Multi-port connection , for passive PROFINET cabling to robots, including mounting foot, for cable diameter :
1 Gbps
10 Gbps
Multi-port power connection : push-pull power, for passive PROFINET cabling to robots, including mounting foot

Ordering data			
Type	Order No.	Pcs./Pkt.	
VS-MP-PPC/PPC-PO/1G	1406395	1	
VS-MP-PPC/CG-PO/10G	1403682	1	
VS-MP-PPC/CG-PO	1403681	1	

Protective cover for data port
Stripping tool , for multiple-stage repositioning of shielded conductors

Accessories			
VS-PPC-C1-PC-ROBK-L	1405293	1	
VS-CABLE-STRIP-VARIO	1657407	1	

Technical data		
VS-MP-PPC/CG-10G		
CAT6 _A		
Aluminum press-drawn section / die-cast zinc		
IDC		
-		
5 mm ... 8 mm (Data cable gland)		
> 1000 (Data)		
-40°C ... 70°C		

Ordering data			
Type	Order No.	Pcs./Pkt.	
VS-MP-PPC/CG-10G	1403678	1	

Accessories			
VS-PPC-C1-PC-ROBK-L	1405293	1	
VS-CABLE-STRIP-VARIO	1657407	1	

Power and data field couplings,
IP65/67

- Fixed mounting is also an option
- Robust design
- Including covers to protect against environmental influences



RJ45 and power field coupling

ERC

		Technical data		
		VS-MP-PPC/PPC-1G		
Electrical data				
Rated voltage		72 V (DC)		
Rated current		-		
Transmission characteristics (category)		CAT5		
Material data				
Housing material		Aluminum press-drawn section / die-cast zinc		
Contact material		Phosphor bronze		
Flammability rating in accordance with UL 94		V0		
Mechanical data				
Number of positions		8		
Degree of protection		IP65		
Temperature data				
Ambient temperature (operation)		-40°C ... 70°C		
Ordering data				
Description		Type	Order No.	Pcs./Pkt.
Multi-port data coupling: for passive PROFINET cabling to robots, including mounting foot				
Metal housing				
Multi-port power coupling: for passive PROFINET cabling to robots, including mounting foot		VS-MP-PPC/PPC-1G	1403685	1
		VS-MP-PPC/PPC-PO	1403684	1

Terminal outlets, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet
with 2 x RJ45 slots



Terminal outlet
with RJ45 and power slots

EAC

Technical data		
72 V (DC)		
-		
CAT6		
Aluminum cast alloy, powder-coated		
black		
IP65/IP67		
Ordering data		
Type	Order No.	Pcs./Pks
VS-TO-RO-MCBK-F1411/1411	1404281	1

EAC

Technical data		
72 V (DC)		
-		
CAT6		
Aluminum cast alloy, powder-coated		
black		
IP65/IP67		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-TO-RO-MCBK-F1411/1413	1404333	1

Data connectors and cables

Network components – version 14 connectors

Push-pull power connectors, IP65/IP67

- Fixed coding for PROFINET
- Flexible coding
- Various solder versions
- Spring connection



Push-pull connector



Push-pull panel mounting side

	Technical data			Technical data		
	CUC-PPC-C2ZNI-S.../24FKP5			VS-MSTBA...-BK-A VS-PPC-F2-MSTB-MNNA...		
Electrical data	16 A (at 20°C)			16 A -		
Rated current						
Material data	Zinc die-cast			Zinc die-cast		
Housing material	V0			V0		
Flammability rating in accordance with UL 94	0.75 mm ² ... 2.5 mm ²			-		
Conductor cross section	18 ... 13			-		
Connection cross section AWG	≥ 100			≥ 100 ≥ 500		
Insertion/withdrawal cycles						
Temperature data	-40°C ... 85°C			-40°C ... 70°C -40°C ... 80°C		
Ambient temperature (operation)						
	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Description						
MSTB connector, IP67 , with push-pull interlocking, 5-pos., with spring connection, metal housing, 24 V, molded coding						
for cable diameter of 6.5 mm ... 9 mm	CUC-PPC-C2ZNI-SX/24FKP5	1421783	1			
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SS/24FKP5	1421785	1			
MSTB connector, IP67, without logo , with push-pull locking, 5-pos., with spring connection, metal housing, 24 V, molded coding						
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:WO	1032276	1			
MSTB connector, IP67 , with push-pull interlocking, 5-pos., with spring connection, metal housing, 24 V, variable coding						
for cable diameter of 6.5 mm ... 9 mm	CUC-PPC-C2ZNI-SS/24FKP5:FC	1425515	1			
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:FC	1425514	1			
MSTB connector, IP67, without logo , with push-pull locking, 5-pos., with spring connection, metal housing, 24 V, variable coding						
for cable diameter of 9 mm ... 13 mm	CUC-PPC-C2ZNI-SX/24FKP5:FCWO	1032275	1			
Blind plug , for MSTB connectors	CUC-PPC-C2ZNI-DC	1001432	1			
MSTB contact insert , for PCB mounting, 24 V, 5-pos., RAL 9005 (black), for panel mounting frame						
VS-PPC-F2-MSTB-...-1R-P				VS-MSTBAH 2,5/ 5-GB-5,08-BK-A	1657915	50
Angled solder pins				VS-MSTBVA 2,5/ 5-GB-5,08-BK-A	1609565	50
Straight solder pins						
MSTB panel mounting frame, IP67 , for Push-Pull locking, for PCB connection, for rectangular assembly opening, with gasket, without mounting screws						
Metal housing				VS-PPC-F2-MSTB-MNNA-1R-P	1608087	1
MSTB panel mounting frame, IP67 , for push-pull interlocking, with integrated contact insert for conductor connection, spring connection, for rectangular mounting cutout, with seal, without mounting screws						
24 V, metal				VS-PPC-F2-MSTB-MNNA-1R-SPSA5	1608249	1
MSTB panel mounting frame, IP67 , for push-pull interlocking, metal, with integrated contact insert for conductor connection, spring connection, for round mounting cutout, with seal, without mounting screws						
24 V				VS-PPC-F2-MSTB-MNNA-1C-SPSA5	1405248	1
Protective cover , for MSTB panel mounting frame				CUC-PPC-A2RBK-PC	1424989	1
Protective cap , IP65, with push-pull locking for covering the contact insert in the push-pull connector for Power, plastic				VS-PPC-F2-PC-POBK	1405329	1

Push-pull power distributors, IP65/IP67



Push-pull Y-distributor



Push-pull H-distributor

EAC

Technical data		
Electrical data	VS-PPC-J-1220-1227-1020-0,2	
Rated voltage	24 V	
Rated current	16 A	
Material data	Aluminum die-cast	
Housing material	Aluminum die-cast	
Mechanical data	5	
Number of positions	IP65/IP67	
Degree of protection	IP65/IP67	
Temperature data	-40°C ... 70°C (cable, fixed installation)	
Ambient temperature (operation)	-40°C ... 70°C (cable, fixed installation)	

Ordering data

Type	Order No.	Pcs./Pkt.
VS-PPC-J-1220-1227-1020-0,2	1404799	1
VS-PPC-J-1220-1227-1020-...	1405484	1

Accessories

VS-PPC-J-M	1405390	1

EAC

Technical data		
Electrical data	VS-PPC-J-4X-1227	
Rated voltage	24 V	
Rated current	16 A (at 20°C)	
Material data	Zinc die-cast	
Housing material	Zinc die-cast	
Mechanical data	5	
Number of positions	IP65/IP67	
Degree of protection	IP65/IP67	
Temperature data	-40°C ... 85°C	
Ambient temperature (operation)	-40°C ... 85°C	

Ordering data

Type	Order No.	Pcs./Pkt.
VS-PPC-J-4X-1227	1405387	1

Accessories

VS-PPC-J-M	1405390	1

Description
PROFINET Y-distributor with assembled power cable, 5-pos., IP65/IP67, MSTB connector with metal housing to 2 x socket in the metal housing, cable length:
0.2 m
Variable
Power H distributor , 4 x MSTB contact inserts, metal housing, without mounting screws

Mounting foot for power distributors, plastic

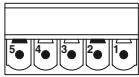
Ordering example for products with variable cable length:

For a distributor with a cable length of 34.5 m,
the ordering data is as follows:

Order No.	Length [m]
1405484	34.5
	Increment: 0.5 m
	Maximum length: 50 m

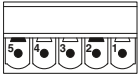
Assembled power cables
2.5 mm²

Power, metal, 24 V
2.5 mm²



Ordering data

Power, metal, 24 V, 2.5 mm²



Order No.

1609170

1609183

1609196

Variable

1609206

Ordering example for cables with
variable cable length:

Assembled PROFINET power cable for 24 V, with two metal
push-pull connectors and a cable length of 34.5 m.

Order No.	Length [m] Max. 100 m
1609206	34.5
Increments: 1.0 m ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Technical data		Technical data
Technical data		Power, metal, 24 V 1.5 mm²
Housing material		Zinc die-cast
Outer sheath, material		PVC
Conductor cross section	[mm²]	2.5
External cable diameter	[mm]	11.8
Degree of protection		IP65
Ambient temperature		
Fixed installation	[°C]	-40 ... 70
Flexible installation	[°C]	-5 ... 70
Male connector/female connector	[°C]	-40 ... 70

Push-Pull ADVANCE connectors, IP65/IP67

- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal



SC-RJ connector, cable outlet straight,
for polymer fibers 980 / 1000 μm



SC-RJ connector, cable outlet at the top,
for polymer fibers 980 / 1000 μm



Technical data

Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 100
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Push-pull ADVANCE , SC-RJ connector			
Single pack	FOC-V14-C1ZNI-S/SJFP	1407896	1

Accessories

Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1



Technical data

Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 100
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Push-pull ADVANCE , SC-RJ connector			
Single pack	FOC-V14-C1ZNI-T/SJFP	1408028	1

Accessories

Tool set for POF assembly , for field installation of SC connectors.	TF-SCRJ-POF KONF SET	1405246	1

Push-Pull ADVANCE connectors,
IP65/IP67



SC-RJ connector, cable outlet at the bottom,
for polymer fibers 980 / 1000 µm



Technical data	
Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 100
Temperature data	
Ambient temperature (operation)	-25°C ... 70°C
Ordering data	
Description	TypeOrder No.Pcs./Pkt.
Push-pull ADVANCE, SC-RJ connector	FOC-V14-C1ZNI-B/SJFP14079021
Single pack	
Accessories	
Tool set for POF assembly, for field installation of SC connectors.	TF-SCRJ-POF KONF SET14052461

FO connectors, panel mounting frames, and couplings



SC-RJ panel mounting side



Housing material
Flammability rating in accordance with UL 94
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Zinc die-cast
V0
IP65/IP67
≥ 50

-40°C ... 70°C

Technical data

Ordering data

Description

SC-RJ panel mounting frame, IP67, for push-pull interlocking, for rectangular mounting cutout, for **AVAGO** transceiver (type: **AFBR5978BZ**) on PCB, with seal and mounting screws

Zinc die-cast housing

SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling, for push-pull interlocking, for rectangular mounting cutout, with seal and mounting screws

Zinc die-cast housing

SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling, for push-pull interlocking, for round mounting cutout, with seal

Adapter, zinc die-cast

45°

180°

Type	Order No.	Pcs./Pkt.
FOC-V14-F1ZNI-EM/SJO	1413981	1
FOC-V14-F1ZNI-EM/SJB	1413964	1
VS-PPC-F1-SCRJ-MNNA-1C-F	1405235	1
CUC-V14-A1ZNI-R45	1413988	1
CUC-V14-A1ZNI-S180	1413989	1

Accessories

Protective cover, for data port
Adapter, with filler plug and marking element

VS-PPC-C1-PC-ROBK-L	1405293	1
CUC-V14-A1RBK-PC	1413985	1

Marking element, without filler plug

Protective cover, with spring lid

Screw set, M3x20 V2A, including plastic washers, toothed lock washers, and nuts

CUC-V14-A1PBK-BA:50	1413979	50
CUC-V14-A1PBK-PC	1413970	1
CUC-V14-A-SCREW-M3:20	1413987	20

Power and data field couplings, IP65/67



SC-RJ and power field coupling
with cable connection



SC-RJ field coupling
with cable connection

ERC

Technical data

VS-MP-PPC/CG-PO/FO	VS-MP-PPC/CG-PO
Aluminum press-drawn section / die-cast zinc	Aluminum press-drawn section / die-cast zinc
Data/power: SCRJ/5-pos. ≥ 500 (Data)	Power: 5-pos. ≤ 100 (Power)
-40°C ... 70°C	-40°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-MP-PPC/CG-PO/FO	1404321	1
VS-MP-PPC/CG-PO	1403681	1
VS-MP-PPC/PPC-PO	1403684	1

Accessories

VS-PPC-C1-PC-ROBK-L	1405293	1
VS-CABLE-STRIP-VARIO	1657407	1

ERC

Technical data

VS-MP-PPC/CG-FO
Aluminum press-drawn section / die-cast zinc
Data: SCRJ ≥ 500 (Data)
-40°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-MP-PPC/CG-FO	1404319	1

Accessories

VS-CABLE-STRIP-VARIO	1657407	1

Material data
Housing material
Connection data
Connection profile
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
Multi-port connection , for passive PROFINET cabling to robots, including mounting foot
Multi-port power connection , push-pull power, for passive PROFINET cabling to robots, including mounting foot
Multi-port power coupling , for passive PROFINET cabling to robots, including mounting foot

Protective cover for data port
Stripping tool, for multiple-stage repositioning of shielded conductors

Terminal outlets and couplings, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Including covers to protect against environmental influences
- Integrated cable management system



Terminal outlet
with SC-RJ and power slots



SC-RJ field coupling

EAC

Technical data		
Aluminum cast alloy, powder-coated		
-		
-		
-40°C ... 70°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-TO-RO-MCBK-F1417/1413	1404346	1
VS-TO-RO-MCBK-F1417/1417	1404320	1

EAC

Technical data		
Zinc die-cast		
-		
>= 500		
-40°C ... 70°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-PPC-J-1-SCRJ-MNBK	1405206	1

Material data

Housing material

Aluminum cast alloy, powder-coated

Zinc die-cast

Connection data

Connection profile

-

-

Insertion/withdrawal cycles

-

≥ 500

Temperature data

Ambient temperature (operation)

-40°C ... 70°C

-40°C ... 70°C

Description

Terminal outlet SC-RJ/Power IP65/67 Push-Pull,
2 slots version 14, with protective plugs, 2 cable entries

Terminal outlet SC-RJ IP65/67 Push-Pull, 2 slots version 14,
with protective plugs, 2 cable entries

SC-RJ push/pull coupling, IP67, metal, with protective cover,
color: nickel-plated

RJ45 connectors, IP20



RJ45 crimp connectors



RJ45 field connection connectors

ERC

ERC

	Technical data	
	VS-08-RJ45-10G/C	VS-08-ST-H21P-RJ45
Electrical data		
Transmission characteristics (category)	CAT6 _A	-
Overvoltage category	I	I
Material data		
Housing material	-	-
Contact material	Phosphor bronze	Copper alloy
Flammability rating in accordance with UL 94	V2	V2
Degree of pollution	-	2
External cable diameter	-	-
Insertion/withdrawal cycles	≥ 750	≥ 750
Temperature data		
Ambient temperature (operation)	-25°C ... 60°C	-25°C ... 60°C

	Ordering data		
Description	Type	Order No.	Pcs./Pkt.
RJ45 connector , IP20, CAT5, 8-pos., with QUICKON fast connection technology, for 1-wire and 7-wire 26 to 23 AWG conductors, color:			
gray			
black			
RJ45 connector , IP20, CAT6 _A , 8-pos., with QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors, color:			
black			
RJ45 connector , 4-pos., with QUICKON fast connection technology, for 22 AWG, color:			
gray			
RJ45 connector , IP20, CAT6, 8-pos., with crimp connection, for 27 ... 24 AWG, color:			
gray			
green			
RJ45 connector , IP20, CAT6 _A , 8-pos., with crimp connection, for 27 ... 24 AWG, color:			
gray			
green			
RJ45 male insert , CAT6 _A , 10 Gbps	CUC-STD-C1PGY-S/R4E8:1 CUC-STD-C1PGN-S/R4E8:1	1414382 1414400	1 1
	CUC-STD-C1PGY-S/R4EA:1 CUC-STD-C1PGN-S/R4EA:1	1414395 1414402	1 1
RJ45 male insert , 8-pos., shielded, IDC connection technology, for 27 ... 26 AWG litz wires, with strain relief	VS-08-RJ45-10G/C	1418853	5
CAT5	VS-08-ST-H11-RJ45	1652716	5
RJ45 bend protection sleeve , for VS-08-ST-H11-RJ45 and VS-08-RJ45-10G/C male inserts, for cable diameter up to 7 mm, color:			
gray	VS-08-KS-H/GY	1654743	5
green	VS-08-KS-H/GN	1654756	5

	Accessories		
Crimp tool , pliers with die, for VS-08-ST-H...-RJ45	VS-CT-RJ45-H	1653265	1
Stripping tool , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1
Shielding foil set , 25 pcs., replacement for VS-PN-RJ45-5-Q/IP20			

	Technical data	
	VS-08-RJ45-5-Q/IP20...	CUC-STD-C1P...
Electrical data		
Transmission characteristics (category)	CAT5 (IEC 11801:2002)	CAT6
Overvoltage category	I	-
Material data		
Housing material	PA	PA
Contact material	Cu/Sn	Phosphor bronze
Flammability rating in accordance with UL 94	V0	V2
Degree of pollution	1	2
External cable diameter	4.5 mm ... 8 mm	7 mm
Insertion/withdrawal cycles	≥ 1000	≥ 750
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-25°C ... 60°C

	Ordering data		
Description	Type	Order No.	Pcs./Pkt.
VS-08-RJ45-5-Q/IP20		1656725	1
VS-08-RJ45-5-Q/IP20 BK		1658008	1
VS-08-RJ45-10G/Q		1419001	1
VS-PN-RJ45-5-Q/IP20		1658435	1

	Accessories		
VS-CABLE-STRIP-VARIO		1657407	1
VS-08-RJ45-FOLIEN-SET		1417184	1

RJ45 industrial connectors, IP20

- Optimized for industrial use with a high degree of resistance to vibration
- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Metal locking mechanism



RJ45 industrial,
straight cable outlet



RJ45 industrial,
cable outlet at the bottom and top



Technical data

Degree of protection	IP20
Connection cross section AWG	26 ... 24 (rigid)
Connection cross section AWG	26 ... 24 (flexible)
Transmission speed	1 Gbps
Housing material	Zinc die-cast
External cable diameter	5 mm ... 9 mm
Insertion/withdrawal cycles	≥ 750
Temperature data	
Ambient temperature (operation)	-40°C ... 70°C

Ethernet	PROFINET
IP20	IP20
26 ... 24 (rigid)	23 ... 22 (rigid)
26 ... 24 (flexible)	23 ... 22 (flexible)
1 Gbps	1 Gbps
Zinc die-cast	Zinc die-cast
5 mm ... 9 mm	5 mm ... 9 mm
≥ 750	≥ 750

Ordering data

Description
RJ45 industrial connector, 8-pos.
RJ45 industrial connector, 8-pos., cable outlet at the bottom
RJ45 industrial connector, 8-pos., cable outlet at the top

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	
1421607	1	1421126	1



Technical data

Ethernet	PROFINET
IP20	IP20
26 ... 24 (rigid)	23 ... 22 (rigid)
26 ... 24 (flexible)	23 ... 22 (flexible)
1 Gbps	1 Gbps
Zinc die-cast	Zinc die-cast
5 mm ... 9 mm	5 mm ... 9 mm
≥ 750	≥ 750

-40°C ... 70°C	-40°C ... 70°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Ethernet		PROFINET	
1421877	1	1421128	1

1421876	1	1421127	1

Accessories

Stripping tool, for multiple-stage repositioning of shielded conductors

Electronic diagonal cutter, tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version

Markers for terminal blocks, roll, unmarked, can be marked with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1

white

Marker for terminal blocks, sheet, white, unmarked, can be marked with: BLUEMARK CLED, BLUEMARK LED, plotter

VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
UC-TMF 5	0818153	10

Accessories

VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
UC-TMF 5	0818153	10

RJ45 panel mounting frames and inserts, IP20



Keystone panel mounting frame and keystones

ERC

Technical data

VS-08-BU-RJ45-6/KA/LSA

Electrical data

Rated current

2 A

Transmission characteristics (category)

CAT6

Material data

Housing material

PC+ABS

Contact material

Phosphor bronze

Flammability rating in accordance with UL 94

V0

Mechanical data

Number of positions

8

Connection method

LSA

Conductor cross section

0.13 mm² ... 0.25 mm² (rigid)

Connection cross section AWG

26 ... 23 (rigid)

Temperature data

Ambient temperature (operation)

-20°C ... 70°C

Ordering data

Description

RJ45 socket insert, 8-pos., shielded, female to female

CAT5

RJ45 socket insert, 8-pos., shielded, female to female

CAT6

RJ45 socket insert, 8-pos., shielded, with cable connection

CAT6_A

RJ45 panel mounting frame, single, for modular female inserts (Keystone), without mounting screws

Type

VS-08-BU-RJ45/BU

Order No.

1689064

Pcs./Pkt.

5

VS-08-BU-RJ45-6-MOD/BU

1653155

5

CUC-K-J1ZNI-S/R4IDC8

1419021

1

VS-08-A-RJ45/MOD-1-IP20

1689433

5

Accessories

Stripping tool, for multiple-stage repositioning of shielded conductors

VS-CABLE-STRIP-VARIO

1657407

1

DIN rail adapters

new



DIN rail adapter

DIN rail adapter housing,
inserts

EAC

	Technical data			Technical data		
	FL-PP-RJ45-...			FOC-I-D1PGN-S/...	CUC-I-...1ZNI-S/R4...	
Electrical data						
Transmission characteristics (category)	CAT6			-	CAT6 _A	
Material data						
Housing material	PC-GF			PBT	Zinc die-cast	
Contact material	CuSn			-	CuSn	
Flammability rating in accordance with UL 94	V0			V0	-	
Mechanical data						
Number of positions	8			-	8	
Color	gray			-	-	
Degree of protection	IP20			IP20	IP20	
Connection method	Coupling			Coupling	IDC connection	
Connection cross section AWG	-			-	26 ... 22 (rigid)	
Temperature data						
Ambient temperature (operation)	-10°C ... 60°C			-10°C ... 70°C	-25°C ... 70°C	
	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
DIN rail adapter , IP20, coupler module						
CAT6 for 1 Gbps	CUC-PP-D1PGY/R4GC8	1418094	1			
DIN rail adapter , IP20, CAT6 _A , connection cross section: 26 ... 22 AWG						
CAT6 _A for 10 Gbps	CUC-PP-D1PGY/R4IDC8	1419024	1			
DIN rail adapter , patch panel, SC-RJ, IP20, female/female, can be used with glass, multimode, HCS, and polymer fibers						
	VS-PP-F-SCRJ	1658121	1			
DIN rail adapter housing				NBC-PP-G1PGY	1041740	1
Insert , for DIN rail adapter housings						
LC duplex coupling				FOC-I-D1PGN-S/LCGCSM	1041780	1
SC simplex coupling				FOC-I-D1PGR-S/SCGCSM	1041800	1
MTP coupling, type A				FOC-I-D1PGY-S/MPAGC	1041820	1
MTP coupling, type B				FOC-I-D1PGY-S/MPBGC	1041840	1
RJ45 female insert, CAT6 _A				CUC-I-J1ZNI-S/R4IDC8	1417274	1
RJ45 coupling, CAT6 _A				CUC-I-D1ZNI-S/R4GC8	1041760	1
	Accessories			Accessories		
Plug Guard Security frame , white, for DIN rail adapters, for securing the RJ45 interface against unauthorized disconnection, with key element				NBC-PP-F1PWH:10	1041881	10
Dust protection flap , gray, for DIN rail adapters				NBC-PP-P1PGY:10	1041860	10
Port Guard Security element , red, for securing the RJ45 interface against unauthorized access, with key element				NBC-PP-A1PRD:10	1041900	10

FO connectors, IP20



POF, 980/1000 μm



PCF, 200/230 μm, 2.9 mm

ERC

Technical data

Material data
Housing material
Ferrule material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

PBT
Copper alloy
V0
black
IP20
≥ 500

-25°C ... 70°C

Ordering data

Description
FO connector SC-RJ, duplex, with fast connection
IP20
IP20, for single wire diameter: 2.9 mm
FO connector for 200/230 μm PCF fibers, crimp connection
- SC-RJ
- SC duplex
Connector set for polymer fibers (diameter of the individual elements: 2.2 mm), for self-assembly, with bend protection
- F-SMA set, 4 connectors
Connector set for PCF fibers (diameter of the individual elements: 2.9 mm), for self-assembly, with bend protection
- F-SMA set, 4 connectors
- B-FOC (ST®) set, 4 connectors
Connector set for PROFINET PCF fibers (diameter of the individual elements: 2.2 mm), for self-assembly, with bend protection
- SC duplex set, 2 duplex connectors
- B-FOC (ST®) set, 4 connectors

Type	Order No.	Pcs./Pkt.
VS-SCRJ-POF-FA-IP20	1654879	1
PSM-SET-FSMA/4-KT	2799720	1

Accessories

Tool set for POF assembly , for field installation of SC connectors.
Tool set for PCF assembly , for field installation of SC connectors
PCF (GI) DIY case for SC-RJ and SC duplex quick mounting connectors, stripping blade, stripping pliers, aramid yarn scissors, fiber stripper, fiber cleaving tool, and microscope

TF-SCRJ-POF KONF SET	1405246	1

ERC

Technical data

PBT
Copper alloy
V0
black
IP20
≥ 1000

-20°C ... 70°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SCRJ-HCS-FA-IP20	1654866	1
PSM-SET-FSMA/4-HCS	2799487	1
PSM-SET-B-FOC/4-HCS	2708481	1

Accessories



PCF, 200/230 µm, 2.2 mm



PCF, 200/230 µm

EAC

Technical data		
PBT		
Copper alloy		
V0		
black		
IP20		
≥ 1000		
-20°C ... 70°C		

Ordering data		
Type	Order No.	Pcs./Pkt.
PSM-SET-SC-DUPLEX/2-HCS/PN	2313779	1
PSM-SET-B-FOC/4-HCS/PN	2313782	1

Accessories		
PSM-HCS-KONFTOOL/SC-RJ	2708876	1

EAC

Technical data		
PBT		
Zirconia ceramics		
V0		
beige		
IP20		
≥ 500		
-40°C ... 70°C		

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SCRJ-PCF	1411304	1
FOC-C-SCDU-PCF	1411305	1

Accessories		
FOC-TOOL-PCF KONF SET	1411051	1
PSM-HCS-KONFTOOL/SC-RJ	2708876	1

Data connectors and cables

Network components – IP20 connectors

FO connectors, IP20, field connection

- Cleave technology
- Reusable connectors
- Optimum attenuation values with easy assembly
- No bonding or polishing



LC duplex connector,
1.25 mm - ferrules



LC simplex connector for pigtails,
1.25 mm - ferrules

Material data
Housing material
Ferrule material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data
PBT
Zirconia ceramics
V0
beige
IP20
≥ 500 (in accordance with IEC 61300-2-2)
-10°C ... 60°C (IEC 61300-2)

Description
FO connector , fast connection, reusable
GOF, 50/125 µm, multimode
GOF, 9/125 µm, single mode (APC)
GOF, 9/125 µm, single mode (PC)
FO connector , fast connection, reusable, value pack
GOF, 50/125 µm, multimode
GOF, 9/125 µm, single mode (APC)
GOF, 9/125 µm, single mode (PC)

Ordering data		
Type	Order No.	Pcs./Pks
FOC-C-LCDU-GOF-MM	1411052	1
FOC-C-LCDU-GOF-SM-APC	1412472	1
FOC-C-LCDU-GOF-SM-PC	1411053	1
FOC-C-LCDU-GOF-MM/10	1411298	1
FOC-C-LCDU-GOF-SM-APC/10	1412479	1
FOC-C-LCDU-GOF-SM-PC/10	1411299	1

Tool set for GOF assembly , for field installation of LC and SC connectors

Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Technical data
-
Zirconia ceramics
V0
beige
IP20
≥ 500 (in accordance with IEC 61300-2-2)
-10°C ... 60°C (IEC 61300-2)

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-LC:P-GOF-MM	1411294	1
FOC-C-LC:P-GOF-SM-APC	1412476	1
FOC-C-LC:P-GOF-SM-PC	1411295	1

Accessories		
FOC-TOOL-GOF KONF SET	1411049	1



SC duplex connector,
2.5 mm - ferrules



SC simplex connector for pigtails,
2.5 mm - ferrules



SC-RJ connector,
2.5 mm - ferrules

ERC

ERC

ERC

Technical data		
-		
Zirconia ceramics		
V0		
green		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SCDU-GOF-MM	1411292	1
FOC-C-SCDU-GOF-SM-APC	1412474	1
FOC-C-SCDU-GOF-SM-PC	1411293	1
FOC-C-SCDU-GOF-MM/10	1411302	1
FOC-C-SCDU-GOF-SM-APC/10	1412481	1
FOC-C-SCDU-GOF-SM-PC/10	1411303	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Technical data		
-		
Zirconia ceramics		
V0		
blue		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SC:P-GOF-MM	1411296	1
FOC-C-SC:P-GOF-SM-APC	1412478	1
FOC-C-SC:P-GOF-SM-PC	1411297	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Technical data		
-		
Zirconia ceramics		
V0		
beige		
IP20		
≥ 500 (in accordance with IEC 61300-2-2)		
-10°C ... 60°C (IEC 61300-2)		
Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-C-SCRJ-GOF-MM	1411290	1
FOC-C-SCRJ-GOF-SM-APC	1412473	1
FOC-C-SCRJ-GOF-SM-PC	1411291	1
FOC-C-SCRJ-GOF-MM/10	1411300	1
FOC-C-SCRJ-GOF-SM-APC/10	1412480	1
FOC-C-SCRJ-GOF-SM-PC/10	1411301	1
Accessories		
FOC-TOOL-GOF KONF SET	1411049	1

Fiber optic couplings

Suitable for fiber types:

- POF (980/1000 µm), PCF (200/230 µm), GOF MM (50/125 µm), GOF SM (9/125 µm)



SC-RJ coupling



Couplings for connecting FO cables

Material data
Housing material
Ferrule material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data
PBT
Zirconia ceramics
V0
black
IP20
≥ 500
-25°C ... 70°C

Description
SC-RJ coupling , for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F
1x SC-RJ (duplex)
Coupling ; set, consisting of:
2 x F-SMA/F-SMA
2 x B-FOC (ST®)/B-FOC (ST®)
1x SC-RJ/SC-RJ (duplex)
1 x LC/LC (duplex, multimode fiber)
1x LC/LC (duplex, single-mode fiber (PC))
1x SC duplex/SC duplex

Ordering data		
Type	Order No.	Pcs./Pkt
VS-SCRJ-GOF-KU	1654358	1

Technical data
-
-
V0
bare metallic
IP20
-
-25°C ... 85°C

Ordering data		
Type	Order No.	Pcs./Pkt.
PSM-SET-FSMA-LINK/2	2799416	1
PSM-SET-BFOC-LINK/2	2799429	1
VS-SCRJ-GOF-BU/BU	1652978	1
FL MM PATCH COUPLER LC-LC	2700312	1
FL SM PATCH COUPLER LC-LC	2700313	1
FL COUPLER SC-DUPLEX	2901788	1

FO splice boxes, FDX 20 series, IP20

- Compact dimensions despite large splice comb
- Snap-in adapter for easy DIN rail mounting
- Ready for equipotential bonding
- Suitable for industrial applications
- Up to twelve duplex front connections
- Preassembly ready for splicing
- Intuitive front operation



new

FDX 20 splice box,
DIN rail mounting

Technical data			
Material data			
Housing material	Sheet steel		
Ferrule material	Zirconia ceramics		
Flammability rating in accordance with UL 94	V0		
Color	traffic gray A RAL 7042		
Degree of protection	IP20		
Insertion/withdrawal cycles	≥ 500		
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C		
Ordering data			
Description	Type	Order No.	Pcs./Pkt.
DIN rail splice box , for 6 x LC duplex			
Without pigtails	FOC-FDX20-PP-LCD6-MM	1019710	1
OM2 (G50 / 125 µm)	FOC-FDX20-PP-LCD6-OM2-PT9	1019713	1
OM4 (G50 / 125 µm)	FOC-FDX20-PP-LCD6-OM4-PT9	1019712	1
OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-LCD6-OSP-PT9	1019711	1
OS2 (APC) (E9 / 125 µm)	FOC-FDX20-PP-LCD6-OSA-PT9	1083665	1
DIN rail splice box , for 12 x LC duplex			
Without pigtails	FOC-FDX20-PP-LCQ6-MM	1019705	1
OM2 (G50 / 125 µm)	FOC-FDX20-PP-LCQ6-OM2-PT9	1019709	1
OM4 (G50 / 125 µm)	FOC-FDX20-PP-LCQ6-OM4-PT9	1019708	1
OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-LCQ6-OSP-PT9	1019707	1
DIN rail splice box , for 6 x SC duplex			
Without pigtails	FOC-FDX20-PP-SCD6-MM	1019686	1
OM2 (G50 / 125 µm)	FOC-FDX20-PP-SCD6-OM2-PT9	1019700	1
OM4 (G50 / 125 µm)	FOC-FDX20-PP-SCD6-OM4-PT9	1019698	1
OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-SCD6-OSP-PT9	1019692	1
DIN rail splice box , for 6 x ST duplex			
Without pigtails	FOC-FDX20-PP-STD6-MM	1019681	1
OM1 (G62,5 / 125 µm)	FOC-FDX20-PP-STD6-OM1-PT9	1019684	1
OM2 (G50 / 125 µm)	FOC-FDX20-PP-STD6-OM2-PT9	1019683	1
OS2 (PC) (E9 / 125 µm)	FOC-FDX20-PP-STD6-OSP-PT9	1019682	1
DIN rail splice box , for 6 x LSH duplex			
OS2 (APC) (E9 / 125 µm)	FOC-FDX20-PP-E2D6-OSA-PT9	1019680	1
Accessories			
Shrink splice protection , for FDX 20 splice boxes	FOC-SHRINKSPLICE-PROTECT	1019676	12
Crimp splice protection , for FDX 20 splice boxes	FOC-CRIMPSPLICE-PROTECT	1019678	12

Data connectors and cables

Network components – IP20 connectors

FO 19" splice boxes



19" splice box

Material data

Housing material
Flammability rating in accordance with UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data

Sheet steel
V0
light gray RAL 7035
IP20
min. 1000

-10°C ... 60°C

Ordering data

Description

19" splice box, 1 RU, fully pre-assembled ready to splice, for 12x LC duplex

gray, OM2
black, OM4

19" splice box, 1 RU, fully pre-assembled ready to splice, for 24x LC duplex

gray, OM2
black, OM4

Type	Order No.	Pcs./Pkt.
FOC-SB-FR19:1U-LCD12-OM2 GY	1418815	1
FOC-SB-FR19:1U-LCD12-OM4 BK	1418817	1
FOC-SB-FR19:1U-LCD24-OM2 GY	1418816	1
FOC-SB-FR19:1U-LCD24-OM4 BK	1418818	1

Accessories for fiber optic assembly



Ferrule cleaner



Fiber stripper

Ordering data

Description

Ferrule cleaner, approx. 500 cleaning cycles

1.25 mm, for LC
2.50 mm, for ST, SC, FC

Stick cleaner for couplings and plug end faces

1.25 mm, for LC
2.50 mm, for ST, SC, FC

Type	Order No.	Pcs./Pkt.
FOC-TOOL-FERRULECLEANER-1.25	1407032	1
FOC-TOOL-FERRULECLEANER-2.50	1407029	1

Ordering data

Type	Order No.	Pcs./Pkt.
FOC-TOOL-STICKCLEANER-1.25	1407000	1
FOC-TOOL-STICKCLEANER-2.50	1407002	1

Tools for processing fiber optics



Fiber and T-stripper



Solvent dispenser and ceramic blade

Ordering data				Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Fiber stripper , for stripping the coating from 250 µm to 125 µm						
For 1 fiber	FOC-TOOL-STRIPPING-1HOLE-250	1407004	1			
For 2 fibers	FOC-TOOL-STRIPPING-2HOLE-250	1407008	1			
T-stripper						
AWG 18 ... 10/1.0 mm ... 2.6 mm	FOC-TOOL-STRIPPING-T-1	1407016	1			
AWG 30 ... 22 / 0.25 mm ... 0.64 mm	FOC-TOOL-STRIPPING-T-2	1407014	1			
Solvent dispenser , 100 ml, lockable pump dispenser						
				FOC-TOOL-DISPENSER	1406995	1
Ceramic blade				FOC-TOOL-CERAMIC-BLADE	1407019	1

Polishing accessories fiber optic connectors



Polishing film



Polishing disc

Ordering data				Ordering data		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Polishing film , silicon carbide						
15 µm	FOC-POLISHINGFILM-SK-15.0	1407034	25			
Polishing film , AL ₂ O ₃						
1 µm	FOC-POLISHINGFILM-AO-01.0	1407037	25			
3 µm	FOC-POLISHINGFILM-AO-03.0	1407039	25			
Polishing film , diamond						
0.1 µm	FOC-POLISHINGFILM-D-00.1	1407046	10			
1 µm	FOC-POLISHINGFILM-D-01.0	1407042	10			
9 µm	FOC-POLISHINGFILM-D-09.0	1407044	10			
Polishing disc						
1.25 mm, for LC				FOC-POLISHINGDISC-1.25	1407024	1
2.50 mm, for ST, SC, FC				FOC-POLISHINGDISC-2.50	1407021	1

Data connectors and cables

Network components – Accessories

Tools for FO cabling, POF

- For quick and easy field assembly
- No bonding or polishing
- Blade can be replaced easily on site
- Optimum attenuation values with easy assembly
- Reusable connectors



ERC

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Polymer fiber DIY Case , consisting of: Stripping knife, stripping pliers, polishing wheel for F-SMA and SC-RJ quick mounting connectors, polishing pad and emery paper						
Power meter measuring case , comprising an optical power meter, F-SMA and B-FOC (ST®) coupling, reference fibers, and operating instructions	PSM-POF-KONFTOOL	2744131	1			
Powermeter supplementary set for devices with SC-RJ interface, comprising one-meter polymer reference fiber (SC Simplex connector to F-SMA connector), one-meter PCF GI reference fiber (SC Simplex connector to B-FOC (ST®) connector), and SC-RJ coupling				PSM-FO-POWERMETER	2799539	1
Tool set for POF assembly , for field installation of SC connectors.				PSM-FO-POWERMETER SCRJ-SET	2901560	1
Cutting tool , SC-RJ, for polymer fiber				TF-SCRJ-POF KONF SET	1405246	1
Sheath stripping tool , for polymer fiber				CUTFOX-SCRJ-POF	1405247	1
Electrician's scissors , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum (flexible), Kevlar® fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint				WIREFOX-PN POF	1405249	1
				CUTFOX-ES	1212621	1

Tools for FO cabling, PCF

- Cleave technology
- For quick and easy field assembly
- No bonding or polishing
- A real alternative to splicing
- Optimum attenuation values with easy assembly



Description	Ordering data		
	Type	Order No.	Pcs./Pkt.
Tool set for PCF assembly , for field installation of SC connectors			
PCF assembly case , stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope	FOC-TOOL-PCF KONF SET	1411051	1
- For SCRJ/SC duplex connectors	PSM-HCS-KONFTOOL/SC-RJ	2708876	1
- For B-FOC (ST®) connectors	PSM-HCS-KONFTOOL/B-FOC	2708465	1
- For F-SMA connectors	PSM-HCS-KONFTOOL	2799526	1
Fiber cleaving tool for PCF fiber			
- For SCRJ/SC duplex connectors	PSM-HCS-CLEAVETOOL/SCRJ	2313122	1
- For B-FOC (ST®) connectors	PSM-HCS-CLEAVETOOL/B-FOC	2708478	1
- For F-SMA connectors	PSM-HCS-CLEAVETOOL	2744995	1

Tools for FO cabling, GOF

- Cleave technology
- For quick and easy field assembly
- No bonding or polishing
- A real alternative to splicing
- Optimum attenuation values with easy assembly
- Reusable connectors



Description	Ordering data		
	Type	Order No.	Pcs./Pkt.
Tool set for GOF assembly , for field installation of LC and SC connectors			
	FOC-TOOL-GOF KONF SET	1411049	1

RJ45 Ethernet cables

Notes:

For accessories, see page: 388

Ethernet



**RJ45 Ethernet cable
for IP20 applications**

		Technical data		
Cable, properties				
Transmission characteristics (category)		CAT5		
Conductor structure		7x 0.16 mm		
Conductor cross section		4x 2x 0.14 mm ²		
Conductor structure for signal		7x 0.16 mm		
AWG signal line		26		
Cable diameter		6.2 mm		
Conductor resistance		≤ 290 Ω/km (at 20°C)		
Type of shield		Tinned copper braided shield		
Conductor material		Bare Cu litz wires		
Outer sheath material		PUR		
Color of outer sheath		water blue RAL 5021		
Color, single wire		white/blue-blue, white/orange-orange, white/green-green, white/brown-brown		
General data				
Ambient temperature (operation)		-20°C ... 70°C (RJ45 connector)		
		Ordering data		
Description	Length of cable	Type	Order No.	Pcs./Pkt.
Ethernet cable, CAT5, pre-assembled				
	0.3 m	NBC-R4AC/0,3-94Z/R4AC	1423032	1
	0.5 m	NBC-R4AC/0,5-94Z/R4AC	1403926	1
	1 m	NBC-R4AC/1,0-94Z/R4AC	1403927	1
	1.75 m	NBC-R4AC/1,75-94Z/R4AC	1423433	1
	2 m	NBC-R4AC/2,0-94Z/R4AC	1403929	1
	3 m	NBC-R4AC/3,0-94Z/R4AC	1403930	1
	5 m	NBC-R4AC/5,0-94Z/R4AC	1403933	1
	10 m	NBC-R4AC/10,0-94Z/R4AC	1403934	1
	15 m	NBC-R4AC/15,0-94Z/R4AC	1410797	1
	20 m	NBC-R4AC/20,0-94Z/R4AC	1423033	1

RJ45 patch cables

Notes:

For accessories, see page: 388

Ethernet

RJ45 patch cable
for IP20 applications

ERC

		Technical data		
Cable, properties		CAT6 _A		
Transmission characteristics (category)		6.00 mm +0.2 mm -0.1 mm		
Conductor structure		6.00 mm +0.2 mm -0.1 mm		
Conductor structure for signal		26		
AWG signal line		S/FTP		
Type of shield		PUR		
Outer sheath material				
General data				
Ambient temperature (operation)		-25°C ... 70°C (RJ45 connector)		
		Ordering data		
Description	Length of cable	Type	Order No.	Pcs./Pkt.
Patch cable, CAT6 _A , pre-assembled, outer sheath color: water blue	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-BU	1413158	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-BU	1413159	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-BU	1413160	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-BU	1413161	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-BU	1413162	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-BU	1413163	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-BU	1413164	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-BU	1413165	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-BU	1413166	1
Patch cable, CAT6 _A , pre-assembled, outer sheath color: yellow	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-YE	1421168	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-YE	1421169	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-YE	1421170	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-YE	1421171	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-YE	1421172	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-YE	1421173	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-YE	1421174	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-YE	1421175	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-YE	1421176	1
Patch cable, CAT6 _A , pre-assembled, outer sheath color: red	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-RD	1421138	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-RD	1421139	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-RD	1421140	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-RD	1421141	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-RD	1421143	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-RD	1421144	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-RD	1421145	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-RD	1421146	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-RD	1421147	1

Data connectors and cables

Network components – patch cables

Accessories

The reliability of networks is becoming more and more important and is a decisive factor for the future of entire companies. Independent studies show that more than 70% of network errors and crashes are due to faulty cabling infrastructure and manipulation of the connecting cables.

With the new accessories for Factoryline patch cables, the various safety requirements for automation are comprehensively met.



Dust protection for SFN switches and FL MC 1000 and 2000 media converters



Security lock for SFN switches and FL MC 1000 and 2000 media converters

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Dust protection with color marking , for SFN switch and angled patch connector						
- Black	FL DUST CVR BK	2891107	10			
- Blue	FL DUST CVR BU	2891204	10			
- Brown	FL DUST CVR BN	2891301	10			
- Yellow	FL DUST CVR YE	2891408	10			
- Gray	FL DUST CVR GY	2891505	10			
- Green	FL DUST CVR GN	2891602	10			
- Red	FL DUST CVR RD	2891709	10			
- Violet	FL DUST CVR VT	2891806	10			
- White	FL DUST CVR WH	2891903	10			
Security frame for SFN switch and patch fields						
- Green				FL PLUG GUARD GN	2891615	20
- Red				FL PLUG GUARD RD	2891712	20
- White				FL PLUG GUARD WH	2891819	20
Locking element for security frame FL PLUG GUARD...						
- Locking element						
- Key						
Color marking for FL CAT... Patch...						
- Black						
- Blue						
- Brown						
- Yellow						
- Gray						
- Green						
- Red						
- Violet						
Security element for FL CAT ...patch...						
- Security element						
- Security element, lockable						
- Key						
Dust protection cap for RJ45 socket						
- Black						
- Gray						





Color coding for RJ45 FL patch cables



Security element for RJ45 FL patch cables



Dust protection for RJ45 sockets

Ordering data		
Type	Order No.	Pcs./Pkt.
FL PATCH CCODE BK	2891194	20
FL PATCH CCODE BU	2891291	20
FL PATCH CCODE BN	2891495	20
FL PATCH CCODE YE	2891592	20
FL PATCH CCODE GY	2891699	20
FL PATCH CCODE GN	2891796	20
FL PATCH CCODE RD	2891893	20
FL PATCH CCODE VT	2891990	20

[illegible][illegible]

19" patch bays

new

new



19" patch bay



19" mounting frame

Material data
Housing material
Flammability rating in accordance with UL 94
Temperature data
Ambient temperature (operation)

Technical data		
FOC-FR19:1U-20S12-LCD12-OM1		
Aluminum alloy		
V0		
-10°C ... 60°C (IEC 61300-2-22)		

Description
19" patch bay , 1 RU, 2 x Q-ODC-12 female to 12 x LC duplex coupling
19" mounting frame , 3 RU, modular, unassembled
Module insert , marshalling panel, for 19" mounting frame, 3 RU, 1 x Q-ODC-12 female to 6 x LC duplex coupling

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-FR19:1U-20S12-LCD12-OM1	1419973	1

Patch cable , IP68, 10 meters, Q-ODC-12 male to Q-ODC-12 male

Accessories		
FOC-OP12-OP12-GL02/10	1415353	1

Technical data		
FOC-FR19:3U		
Aluminum alloy		
V0		
-20°C ... 60°C (IEC 61300-2-22)		

Ordering data		
Type	Order No.	Pcs./Pkt.
FOC-FR19:3U	1419976	1
FOC-MODUL:3U-OS12-LCD6-OM1	1419978	1

Accessories		
FOC-OP12-OP12-GL02/10	1415353	1

19" patch bays



Ethernet

Patch bay for 19" rack
and matching female inserts

Ethernet

Patch bay for 19" rack
and matching female inserts

	Technical data			Technical data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Material data	VS-PP-19-1HE-16-F			CUC-PP-FR19:1U-I-EMPTY:24		
Housing material	PC-GF			PC-GF		
Flammability rating in accordance with UL 94	V0			V0		
Temperature data	5°C ... 55°C			5°C ... 55°C		
Ambient temperature (operation)						
	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Description						
Patch panel , 19" mounting, IP20, with 16 installation slots for contact inserts with Freenet system	VS-PP-19-1HE-16-F	1652994	1			
Patch bay , 19" mounting, IP20, with 24 installation slots for RJ45 cable connection module, adapter-free						
gray				CUC-PP-FR19:1U-I-EMPTY:24	1422978	1
black				CUC-PP-FR19:1U-I-EMPTY:24 BK	1422979	1
	Accessories			Accessories		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
RJ45 Freenet socket insert , 8-pos., shielded, with cable connection	VS-08-BU-RJ45-5-F/PK	1652936	1			
1 Gbps, CAT5						
SC-RJ coupling , for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F	VS-SCRJ-GOF-KU	1654358	1			
1x SC-RJ (duplex)						
LC/LC coupling for mounting in angled patch connectors and patch panels with Freenet slots	FL MM PATCH COUPLER LC-LC	2700312	1			
1x LC/LC (duplex, multimode fiber)	FL SM PATCH COUPLER LC-LC	2700313	1			
1x LC/LC (duplex, single-mode fiber (PC))						
Insert , for patch bay						
MTP coupling, type A				FOC-I-D1PGY-S/MPAGC	1041820	1
MTP coupling, type B				FOC-I-D1PGY-S/MPBGC	1041840	1
LC duplex coupling				FOC-I-D1PGN-S/LCGCSM	1041780	1
SC simplex coupling				FOC-I-D1PGR-S/SCGCSM	1041800	1
RJ45 female insert, CAT6 _A				CUC-I-J1ZNI-S/R4IDC8	1417274	1
USB socket insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, socket, type A	VS-04-BUA-FK-F/IP67	1653854	1			
USB socket insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, socket, type B	VS-04-BUB-FK-F/IP67	1653867	1			

Data connectors and cables

Network components – Assembled cables

Network cables, sold by the meter, PROFINET, EtherCAT®, shielded

Notes:

For information about the cable qualities, see page 454



4-wire, star quad,
cable coil



4-wire, star quad,
cable drum

ERC

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
PVC rigid - green , 1 x 4 x 22 AWG, CAT5, SF/TQ, type A						
Cable coil: 100 m	VS-OE-OE-93A-100,0	1416392	1			
Cable coil: 1 m ... 100 m	VS-93A/...	1416486	1			
PVC flexible - green , 1 x 4 x 22 AWG, CAT5, SF/TQ, type B						
Cable coil: 100 m	VS-OE-OE-93B-100,0	1416389	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93B/...	1417362	1			
Cable drum: 110 m ... 500 m				NBC-93B/...	1408537	1
PUR suitable for use with drag chain - green, 1 x 4 x 22 AWG, CAT5, SF/TQ, type C						
Cable coil: 100 m	VS-OE-OE-93C-100,0	1416376	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93C/...	1417491	1			
Cable drum: 110 m ... 500 m				NBC-93C/...	1408538	1
PUR suitable for use with robots - green, 1 x 4 x 22 AWG, CAT5, S/TQ						
Cable coil: 100 m	VS-OE-OE-93R-100,0	1416363	1			
Cable coil: 1 m ... 100 m	VS-OE-OE-93R/...	1417388	1			
Cable drum: 110 m ... 500 m				NBC-93R/...	1408539	1
RADOX® for railway applications - black, 1 x 4 x 22 AWG, CAT5, SF/TQ						
Cable coil: 1 m ... 100 m	VS-OE-OE-937/...	1402687	1			
Cable drum: 110 m ... 500 m				NBC-937/...	1408540	1

Ordering example for cables with variable cable length:

For a 34.0 m long **type 93A** network cable,
the ordering data is as follows:

Order No.	Length [m]
	100 m, maximum
1416486	34.0
	Increment:
	1.0 m ... 100 m = 1.0 m
	110 m ... 500 m = 10 m

Network cables, sold by the meter, Ethernet, shielded

Notes:

For information about the cable qualities, see page 454

Ethernet



2-pair,
twisted pair

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
PUR flexible - blue, 2 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m	VS-OE-OE-93E-100,0	1416295
Cable coil: 1 m ... 100 m	VS-OE-OE-93E/...	1417320
Cable drum: 110 m ... 500 m	NBC-93E/...	1408534
PUR rigid - blue, 4 x 2 x 24 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
PUR flexible - blue, 4 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
Cable drum: 110 m ... 500 m		
PUR suitable for use with drag chain - blue, 4 x 2 x 26 AWG, CAT5, S/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
Cable drum: 110 m ... 500 m		
PVC flexible, outdoor - black, 4 x 2 x 26 AWG, CAT5, SF/UTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
FRNC rigid - blue, 4 x 2 x 23 AWG, CAT7, S/FTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		
PUR flexible - blue, 4 x 2 x 26 AWG, CAT6 _A , S/FTP		
Cable coil: 100 m		
Cable coil: 1 m ... 100 m		

Ethernet



4-pair,
twisted pair

ERC

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-OE-OE-94A-100,0	1416305	1
VS-94A/...	1416415	1
VS-OE-OE-94B-100,0	1416567	1
VS-OE-OE-94B/...	1417333	1
NBC-94B/...	1408535	1
VS-OE-OE-94C-100,0	1416318	1
VS-OE-OE-94C/...	1417346	1
NBC-94C/...	1408536	1
VS-OE-OE-94D-100,0	1416334	1
VS-94D/...	1416444	1
VS-OE-OE-94E-100,0	1416350	1
VS-94E/...	1416460	1
VS-OE-OE-94F-100,0	1416347	1
VS-OE-OE-94F/...	1417359	1

Ordering example for cables with variable cable length:

For a 34.0 m long **type 94A** network cable,
the ordering data is as follows:

Order No.	Length [m]
1416415	100 m, maximum
	34.0
	Increment:
	1.0 m ... 100 m = 1.0 m
	110 m ... 500 m = 10 m

Data connectors and cables

Network components – Assembled cables

Assembled cables,
PROFINET, EtherCAT®, Ethernet,
4-pos., shielded, A-coded



Ethernet

EtherCAT®



Open cable end



OE

M8 male connector



M8MS

RJ45 connector, IP20



R4AC

M8 male connector



M8 female connector



M8MS

M8FS

Ordering data

Ordering data

Order No.

Order No.

1 m 1407344

2 m 1407345

5 m 1407346

10 m 1407347

Variable 1408719

Variable 1408716

1 m 1407348

2 m 1407349

5 m 1407350

10 m 1407351

Variable 1408718

Variable 1408715

1 m 1407352

2 m 1407353

5 m 1407354

10 m 1407355

Variable 1408717

Variable 1408714

Information for products with fixed cable length:

Products with fixed cable length are produced with the **93B** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m** long type **93B** network cable with **M8 male connector**, **straight** and **RJ45 connector**, **IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408717	93B	4.5
Minimum order qty: 25 pcs.		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		
Pin	Wire color	Signal
M8	RJ45	
2	1	YE
3	2	OG
1	3	WH
4	6	BU

Technical data

PROFINET PVC flexible CAT5 [93B]
CAT5
1x4xAWG22/7; SF/TQ
4x 0.34 mm ²
7x 0.25 mm
22
6.5 mm
-
Aluminum-coated foil, tinned copper braided shield
Tin-plated Cu litz wires
PVC
green RAL 6018
White, yellow, blue, orange

Transmission characteristics (category)
Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature

Fixed installation [°C] -40 ... 70
Flexible installation [°C] -40 ... 70

Assembled cables,
PROFINET, EtherCAT®, Ethernet,
4-pos., shielded, D-coded

PROFI
NET

EtherCAT®

M8 male connector



M8 male connector



M8MSD

M8MRD

Ordering data

Ordering data

Order No.

Order No.

Open cable end



OE

M8 male connector



M8MSD

M8 male connector



M8MRD

RJ45 connector, IP20



R4AC

1 m 1423703
2 m 1423704
5 m 1423705
10 m 1423706

1 m 1080526
2 m 1080528
5 m 1080530
10 m 1080531

1 m 1423707
2 m 1423708
5 m 1423709
10 m 1423710

1 m 1080538
2 m 1080539
5 m 1080540
10 m 1080542

1 m 1080532
2 m 1080535
5 m 1080536
10 m 1080537

1 m 1423711
2 m 1423712
5 m 1423713
10 m 1423714

1 m 1080543
2 m 1080544
5 m 1080545
10 m 1080546

Information for products with fixed cable length:

Products with fixed cable length are produced with the 93C cable type and are available from stock.

Pin	Wire color	Signal
M8	RJ45	
1	1	YE
3	2	OG
2	3	WH
4	6	BU

Transmission characteristics (category)
Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature

Fixed installation [°C]
Flexible installation [°C]

Technical data

**PROFINET drag chain
CAT5 [93C]**

CAT5
1x4xAWG22/7; SF/TQ
4x 0.34 mm²
7x 0.25 mm
22
6.5 mm
-
Aluminum-coated foil, tinned
copper braided shield

Tin-plated Cu litz wires
PUR
green RAL 6018
White, yellow, blue, orange

-40 ... 70
-40 ... 70

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
PROFINET, EtherCAT®,
4-pos., shielded, CAT5**



**PROFI
NET**

EtherCAT

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, IP20



R4ACR

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MSD SCO

M12 male connector



MRD SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

RJ45 connector,
IP20



R4ACR

Ordering data

Order No.

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m **1416162**

Variable **1411857**

1.00 m **1408968**

2.00 m **1408969**

5.00 m **1408970**

10.00 m **1408971**

Variable **1411861**

Variable **1411858**

1.00 m **1418248**

2.00 m **1418277**

Variable **1411862**

1.00 m **1409002**

2.00 m **1409003**

5.00 m **1409004**

10.00 m **1409005**

Variable **1411865**

Variable **1411859**

5.00 m **1416138**

Variable **1411863**

1.00 m **1408974**

2.00 m **1408975**

5.00 m **1408972**

10.00 m **1408976**

Variable **1411866**

Information for products with fixed cable length:

Products with fixed cable length are produced with the **93B** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m** long type **93C** network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408639	93C	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:
The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description		Cable type		Pin		Wire color		Signal
				M12	RJ45			
PVC flexible – green, 1 x 4, CAT5		93B		1	1	YE		TD+
PUR suitable for drag chain applications – green, 1 x 4, CAT5		93C		3	2	OG		TD–
PUR for robot applications – green, 1 x 4, CAT5		93R		2	3	WH		RD+
RADOX® for railway applications – black, 1 x 4, CAT5		937		4	6	BU		RD–
PUR flexible – green, 1 x 4, CAT5		93M						

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSD SCO	MRD SCO	FSD SCO	FRD SCO	FSDBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1416168	1 m 1407495 2 m 1407496 5 m 1407497 10 m 1407498	Variable 1408633	1 m 1407528 2 m 1407529 5 m 1407530 10 m 1407531	Variable 1408615	1 m 1437779 2 m 1437782 5 m 1437795
Variable 1411860	Variable 1408640		Variable 1408623		
5.00 m 1416141	1 m 1407499 2 m 1407500 5 m 1407501 10 m 1407502	Variable 1408632	1 m 1407532 2 m 1407533 5 m 1407534 10 m 1407535	Variable 1408613	
Variable 1411864	Variable 1408639		Variable 1408622		
	1 m 1407508 2 m 1407509 5 m 1407510 10 m 1407511	Variable 1408631	1 m 1407536 2 m 1407537 5 m 1407538 10 m 1407539	Variable 1408612	
	Variable 1408638		Variable 1408621		
	1 m 1407516 2 m 1407517 5 m 1407518 10 m 1407519	Variable 1408628	1 m 1407544 2 m 1407545 5 m 1407546 10 m 1407547	Variable 1408610	
	Variable 1408636		Variable 1408619		
1.00 m 1408978 2.00 m 1408979 5.00 m 1408977 10.00 m 1408980	1 m 1407520 2 m 1407521 5 m 1407522 10 m 1407523	Variable 1408626	1 m 1407548 2 m 1407549 5 m 1407551 10 m 1407552	Variable 1408609	
Variable 1411867	Variable 1408635		Variable 1408618		
	1 m 1407524 2 m 1407525 5 m 1407526 10 m 1407527	Variable 1408625	1 m 1407553 2 m 1407554 5 m 1407555 10 m 1407556	Variable 1408608	
	Variable 1408634		Variable 1408617		
		Variable 1408624	Variable 1408616	Variable 1408607	

	Technical data	Technical data	Technical data	Technical data
	PROFINET PVC flexible CAT5 [93B]	PROFINET drag chain CAT5 [93C]	PROFINET robot CAT5 [93R]	PROFINET railway applications [937]
Transmission characteristics (category)	CAT5	CAT5	CAT5	CAT5
Cable structure	1x4xAWG22/7; SF/TQ	1x4xAWG22/7; SF/TQ	1x4xAWG22/19; S/TQ	1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm ²	4x 0.34 mm ²	4x 0.34 mm ²	4x 0.34 mm ²
Conductor structure for signal	7x 0.25 mm	7x 0.25 mm	19x 0.15 mm	7x 0.25 mm
AWG signal line	22	22	22	22
Cable diameter	6.5 mm	6.5 mm	6.5 mm	6.6 mm
Conductor resistance	-	-	-	≤ 54.4 Ω/km
Type of shield	Aluminum-coated foil, tinned copper braided shield	Aluminum-coated foil, tinned copper braided shield	Tinned copper braided shield	Plastic-coated aluminum foil, tinned copper braided shield
Conductor material	Tin-plated Cu litz wires	Tin-plated Cu litz wires	Tin-plated Cu litz wires	silver-plated Cu litz wires
Outer sheath material	PVC	PUR	PUR	PE-X
Color of outer sheath	green RAL 6018	green RAL 6018	green RAL 6018	black RAL 9005
Color, single wire	White, yellow, blue, orange	White, yellow, blue, orange	White, yellow, blue, orange	white-blue, orange-yellow
Ambient temperature				
Fixed installation	[°C] -40 ... 70	-40 ... 70	-40 ... 80	-50 ... 90
Flexible installation	[°C] -40 ... 70	-40 ... 70	-40 ... 80	-40 ... 90

Data connectors and cables

Network components – Assembled cables

Assembled cables, Ethernet, 4-pos., shielded, CAT5



Ethernet

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MSD SCO

M12 male connector



MRD SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

1.00 m 1405633

Variable 1411827

1.00 m 1408933

2.00 m 1408934

5.00 m 1408935

10.00 m 1408936

Variable 1411831

RJ45 connector,
Version 6



R4MC

Ordering data

Order No.

2.00 m 1405675

Variable 1411828

2.00 m 1405921

Variable 1411832

1.00 m 1408937

2.00 m 1408938

5.00 m 1408939

10.00 m 1408940

Variable 1411835

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m 1405743

Variable 1411829

5.00 m 1405992

Variable 1411833

1.00 m 1408941

2.00 m 1408942

5.00 m 1408943

10.00 m 1408945

Variable 1411836

Information for products with fixed cable length:

Products with fixed cable length are produced with the 93E cable type and are available from stock.

Ordering data for cables with variable cable length:

For a 4.5 m long type 93E network cable with M12 male connector, straight and RJ45 connector, IP20, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408712	93E	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:
The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description

PUR flexible – blue, 2 x 2, CAT5

Cable type

93E

Pin	Wire color		Signal
	M12	RJ45	
1	1	WHOG	TD+
3	2	OG	TD–
2	3	WHGN	RD+
4	6	GN	RD–

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSD SCO	MRD SCO	FSD SCO	FRD SCO	FSDBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1405772	1 m 1407356 2 m 1407357 5 m 1407358 10 m 1407359 Variable 1411830	Variable 1408705	1 m 1407380 2 m 1407381 5 m 1407382 10 m 1407383 Variable 1408697	Variable 1408690	2 m 1405866
5.00 m 1406030	1 m 1407360 2 m 1407361 5 m 1407362 10 m 1407363 Variable 1408712	Variable 1408704	1 m 1407384 2 m 1407385 5 m 1407386 10 m 1407387 Variable 1408696	Variable 1408689	2.00 m 1406085
	1 m 1407364 2 m 1407365 5 m 1407366 10 m 1407367 Variable 1408710	Variable 1408703	1 m 1407388 2 m 1407389 5 m 1407390 10 m 1407391 Variable 1408695	Variable 1408688	2.00 m 1406247
	1 m 1407368 2 m 1407369 5 m 1407370 10 m 1407371 Variable 1408709	Variable 1408702	1 m 1407392 2 m 1407393 5 m 1407394 10 m 1407395 Variable 1408694	Variable 1408687	2.00 m 1406519
1.00 m 1408947 2.00 m 1408948 5.00 m 1408946 10.00 m 1408949 Variable 1411837	1 m 1407372 2 m 1407373 5 m 1407374 10 m 1407375 Variable 1408707	Variable 1408701	1 m 1407396 2 m 1407397 5 m 1407398 10 m 1407399 Variable 1408693	Variable 1408686	2.00 m 1406603
	1 m 1407376 2 m 1407377 5 m 1407378 10 m 1407379 Variable 1408706	Variable 1408700	1 m 1407400 2 m 1407401 5 m 1407402 10 m 1407403 Variable 1408692	Variable 1408684	
		Variable 1408699	Variable 1408691	Variable 1408683	

Technical data

PUR ETHERNET 2x2
FLEX [93E]

CAT5

2x2xAWG26/7; SF/UTP

2x 2x 0.14 mm²

7x 0.16 mm

26

6.4 mm

-

Aluminum-coated foil,
tinned copper braided shield

Bare Cu litz wires

PUR

water blue RAL 5021

white/orange-orange,

white/green-green

Ambient temperature

Fixed installation [°C]

Flexible installation [°C]

-40 ... 80

-20 ... 80

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
Ethernet, 8-pos.,
shielded, CAT5**



Ethernet

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

RJ45 connector, Version 14, metal



R4RC

RJ45 connector, Version 14, plastic



R4QC

M12 male connector



MS SCO

M12 male connector



MR SCO

RJ45 connector,
IP20



R4AC

Ordering data

Order No.

5.00 m 1407699

Variable 1411838

1.00 m 1408950

2.00 m 1408951

5.00 m 1408952

10.00 m 1408953

Variable 1411842

RJ45 connector,
Version 6



R4MC

Ordering data

Order No.

5.00 m 1407725

Variable 1411839

5.00 m 1407932

Variable 1411843

1.00 m 1408955

2.00 m 1408956

5.00 m 1408954

10.00 m 1408958

Variable 1411846

RJ45 connector,
Version 14,
metal



R4RC

Ordering data

Order No.

5.00 m 1407783

Variable 1411840

5.00 m 1407990

Variable 1411844

1.00 m 1408961

2.00 m 1408962

5.00 m 1408959

10.00 m 1408963

Variable 1411847

Information for products with fixed cable length:

Products with fixed cable length are produced with the **94B** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m long type 94C** network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408681	94C	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:
The maximum length is 100 m for 2 x RJ45 connectors and 1 x RJ45 connector with open cable end.

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PUR flexible – blue, 4 x 2, CAT5	94B	6	1	WHOG	D1+
		4	2	OG	D1–
PUR suitable for drag chain applications – blue, 4 x 2, CAT5	94C	1	5	WHBU	D3–
		7	4	BU	D3+
		5	3	WHGN	D2+
		8	6	GN	D2–
		2	7	WHBN	D4+
		3	8	BN	D4–

Network components – Assembled cables

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MS SCO	MR SCO	FS SCO	FR SCO	FSBP
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
5.00 m 1407819	1 m 1407404 2 m 1407405 5 m 1407406 10 m 1407407	Variable 1408675	1 m 1407439 2 m 1407440 5 m 1407441 10 m 1407442	Variable 1408657	5 m 1407877
Variable 1411841	Variable 1408682		Variable 1408665		
5.00 m 1412024	1 m 1407414 2 m 1407415 5 m 1407416 10 m 1407417	Variable 1408674	1 m 1407443 2 m 1407444 5 m 1407445 10 m 1407446	Variable 1408655	5.00 m 1412082
Variable 1411845	Variable 1408681		Variable 1408664		
	2 m 1407423 5 m 1407424 10 m 1407425	Variable 1408671	1 m 1407451 2 m 1407452 5 m 1407453 10 m 1407454	Variable 1408653	
	Variable 1408679		Variable 1408662		
	1 m 1407426 2 m 1407427 5 m 1407428 10 m 1407429	Variable 1408670	1 m 1407455 2 m 1407456 5 m 1407457 10 m 1407458	Variable 1408652	5.00 m 1412503
	Variable 1408678		Variable 1408661		
1.00 m 1408965 2.00 m 1408966 5.00 m 1408964 10.00 m 1408967	1 m 1407430 2 m 1407431 5 m 1407432 10 m 1407433	Variable 1408668	1 m 1407459 2 m 1407460 5 m 1407461 10 m 1407462	Variable 1408651	5.00 m 1412590
Variable 1411848	Variable 1408677		Variable 1408660		
	1 m 1407434 2 m 1407435 5 m 1407436 10 m 1407438	Variable 1408667	1 m 1407463 2 m 1407464 5 m 1407465 10 m 1407466	Variable 1408650	
	Variable 1408676		Variable 1408659		
		Variable 1408666	Variable 1408658	Variable 1408649	

	Technical data	Technical data
	Ethernet, flexible, CAT5 [94B]	Ethernet drag chain CAT5 [94C]
Transmission characteristics (category)	CAT5	CAT5
Cable structure	4x2xAWG26/7; SF/UTP	4x2xAWG26/19; S/UTP
Conductor cross section	4x 2x 0.14 mm ²	4x 2x 0.14 mm ²
Conductor structure for signal	7x 0.16 mm	19x 0.10 mm
AWG signal line	26	26
Cable diameter	6.4 mm	6.9 mm
Conductor resistance	≤ 290 Ω/km	-
Type of shield	Aluminum-coated foil, tinned copper braided shield	Tinned copper braided shield
Conductor material	Bare Cu litz wires	Bare Cu litz wires
Outer sheath material	PUR	PUR
Color of outer sheath	water blue RAL 5021	water blue RAL 5021
Color, single wire	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown	white/blue-blue, white/orange-orange, white/green-green, white/brown-brown
Ambient temperature		
Fixed installation	[°C] -40 ... 80	-40 ... 80
Flexible installation	[°C] -20 ... 80	-20 ... 80

Data connectors and cables

Network components – Assembled cables

**Assembled cables,
Ethernet, CC-Link IE, 8-pos.,
shielded, CAT6_A**



Ethernet



CC-Link IE

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, Version 6



R4MC

**RJ45 connector, Version 14,
metal**



R4RC

**RJ45 connector, Version 14,
plastic**



R4QC

M12 male connector



MSX SCO

M12 male connector



M12MRX

**RJ45 connector,
IP20**



R4AC

Ordering data

Order No.

**RJ45 connector,
Version 6**



R4MC

Ordering data

Order No.

**RJ45 connector,
Version 14,
metal**



R4RC

Ordering data

Order No.

Variable **1411853**

1.00 m **1418866**

2.00 m **1408360**

5.00 m **1418879**

10.00 m **1408367**

Variable **1411854**

Variable **1415639**

Variable **1414321**

Variable **1414322**

Variable **1415637**

Variable **1411855**

Variable **1414323**

Information for products with fixed cable length:

Products with fixed cable length are produced with
the **94F** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a **4.5 m long type 94F** network cable with
M12 male connector, straight and **RJ45 connector, IP20**,
the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408647	94F	4.5
Minimum order qty: 25 pcs.		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Note:

The maximum length is 100 m for 2 x RJ45 connectors and
1 x RJ45 connector with open cable end.

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PUR flexible – blue, 4 x 2, CAT6 _A	94F	1	1	WHOG	D1+
		2	2	OG	D1–
		7	5	WHBU	D3–
		8	4	BU	D3+
		3	3	WHGN	D2+
		4	6	GN	D2–
		5	7	WHBN	D4+
		6	8	BN	D4–

RJ45 connector, Version 14, plastic	M12 male connector	M12 male connector	M12 female connector	M12 female connector	M12 flush-type female connector, rear mounting
					
R4QC	MSX SCO	M12MRX	M12FSX	M12FRX	FSBPX
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
	1 m 1407467 2 m 1407468 5 m 1407469 10 m 1407470 Variable 1415638	1 m 1080716 2 m 1080717 5 m 1080718 10 m 1080719	1 m 1080728 2 m 1080729 5 m 1080731 10 m 1080732	1 m 1080746 2 m 1080747 5 m 1080748 10 m 1080750	0.5 m 1424135 1 m 1424148 2 m 1424151 5 m 1424164
	1 m 1407471 2 m 1407472 5 m 1407473 10 m 1407474 Variable 1411856		1 m 1080733 2 m 1080734 5 m 1080736 10 m 1080737		
	1 m 1407475 2 m 1407476 5 m 1407477 10 m 1407478 Variable 1408646		1 m 1080738 2 m 1080739 5 m 1080740 10 m 1080741		
	1 m 1407479 2 m 1407480 5 m 1407481 10 m 1407482 Variable 1414324				
	1 m 1407483 2 m 1407484 5 m 1407485 10 m 1407486 Variable 1408644	1 m 1080724 2 m 1080725 5 m 1080726 10 m 1080727	1 m 1080742 2 m 1080743 5 m 1080744 10 m 1080745	1 m 1080751 2 m 1080752 5 m 1080753 10 m 1080754	
		1 m 1080720 2 m 1080721 5 m 1080722 10 m 1080723			

Technical data

Ethernet 10 Gbit [94F]

Transmission characteristics (category)
Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

CAT6_A
4x2xAWG26/7; S/FTP
4x 2x 0.14 mm²
7x 0.16 mm
26
6.4 mm
-
Tinned copper braided shield

Type of pair shielding
Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Aluminum-lined foil
Bare Cu litz wires
PUR
water blue RAL 5021
white/blue-blue,
white/orange-orange,
white/green-green,
white/brown-brown

Ambient temperature

Fixed installation [°C]
Flexible installation [°C]

-40 ... 80
-20 ... 80

Assembled cables for
railway applications, Ethernet,
shielded, CAT6_A



Ethernet



Open cable end



OE

M12 male connector, straight



MSX SCO

M12 male connector



MSX SCO

Ordering data

Order No.

2 m	1415599
5 m	1415600
10 m	1415601

2 m	1415595
5 m	1415598

Pin M12	Wire color	Signal
1	WHOG	D1+
2	OG	D1–
7	WHBU	D3–
8	BU	D3+
3	WHGN	D2+
4	GN	D2–
5	WHBN	D4+
6	BN	D4–

Transmission characteristics (category)
Cable structure
Conductor cross section
Conductor structure for signal
AWG signal line
Cable diameter
Conductor resistance
Type of shield

Type of pair shielding

Conductor material
Outer sheath material
Color of outer sheath
Color, single wire

Ambient temperature
Fixed installation

Technical data
Ethernet for rail applications [94S]
CAT7
4x2xAWG26/7; S/FTP
4x 2x 0.14 mm ²
7x 0.16 mm
26
6.6 mm
≤ 145 Ω/km
Tinned copper braided shield
Aluminum-lined polyester foil
Tin-plated Cu litz wires
PE-X
black
White-blue, white-orange, white-green, white-brown
–40 ... 80

Assembled cables, Ethernet hybrid, 4+4-pos., shielded, CAT5



Ethernet

Open cable end



OE

M12 male connector



MSY SCO

M12 male connector



MSY SCO

Ordering data

Order No.

1 m	1407487
2 m	1407488
5 m	1407489
10 m	1407490
Variable	1408642

M12 flush-type female connector, rear mounting



FSBPY

Ordering data

Order No.

0.5 m	1407504
1 m	1407505
2 m	1407506
5 m	1407507

Notes:

For H, Y, and T distributors, see page 436

Information for products with fixed cable length:

Products with fixed cable length are produced with the **94H** cable type and are available from stock.

Ordering data for cables with variable cable length:

For a 4.5 m long type 94H network cable with **M12 male connector, straight** and **RJ45 connector, IP20**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1408717	94H	4.5

Minimum order qty:
25 pcs.

Increments:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Pin M12	Wire color	Signal
1	WHOG	TD+
2	OG	TD-
3	WHGN	RD+
4	GN	RD-
5	BU	
6	WH	
7	BN	
8	BK	

Transmission characteristics (category)

Cable structure

Conductor cross section for signal

[mm²]

Conductor structure for signal

AWG signal line

Conductor cross section for power

[mm²]

Conductor structure for power

AWG power supply

Cable diameter

[mm]

Type of shield

Conductor material

Outer sheath material

Color of outer sheath

Color, single wire

Ambient temperature

Fixed installation

[°C]

Flexible installation

[°C]

Technical data

Ethernet hybrid [94H]

CAT5

1x4xAWG26+1x4xAWG20

0.15

19x 0.10 mm

26

0.6

19x 0.20 mm

20

7.6 mm

Tinned copper braided shield

Bare Cu litz wires

PUR

black RAL 9005

White/orange, orange, white/green, green, white, blue, brown, black

Fiber optics patch cables

Connectors:

- LC
- SC duplex
- B-FOC (ST®)

Fixed lengths:

- 1 m
- 2 m
- 5 m

Fiber types:

- Single-mode fiberglass (SM)

Sheath colors:

- Single-mode: yellow

Technical Data:

- Halogen-free
- Flame-retardant
- No corrosive or toxic fumes
- External dimensions: 2.8 mm x 5.7 mm



LC connector

ERC

Cable, properties	
Individual wire diameter	900 µm
Outer sheath, material	FRNC
External sheath, strain relief elements	Non-metallic, aramide fiber
Lateral pressure, long-term	60.00 N/cm
Tensile strength short-term/long-term	600 N
Halogen-free	In accordance with IEC 60754-2
General data	
Ambient temperature (storage/transport)	-25°C ... 70°C
Ambient temperature (installation)	-5°C ... 50°C
Ambient temperature (operation)	-5°C ... 70°C

Technical data

Individual wire diameter	900 µm
Outer sheath, material	FRNC
External sheath, strain relief elements	Non-metallic, aramide fiber
Lateral pressure, long-term	60.00 N/cm
Tensile strength short-term/long-term	600 N
Halogen-free	In accordance with IEC 60754-2
Ambient temperature (storage/transport)	-25°C ... 70°C
Ambient temperature (installation)	-5°C ... 50°C
Ambient temperature (operation)	-5°C ... 70°C

Ordering data

Description	Length of cable	Type	Order No.	Pcs./Pkt.
FO patch cable with single mode fiberglass (OS1) - LC plug to LC, SC duplex or B-FOC plug				
	1 m	FL SM PATCH 1,0 LC-LC	2989187	1
	2 m	FL SM PATCH 2,0 LC-LC	2989284	1
	5 m	FL SM PATCH 5,0 LC-LC	2901826	1
FO patch cable with single mode fiberglass (OS1) - SC duplex plug to SC duplex or B-FOC plug				
	1 m			
	2 m			
	5 m			
FO patch cable with single mode fiberglass (OS1) - B-FOC plug to B-FOC plug				
	1 m			
	2 m			
	5 m			



SC duplex connector



B-FOC connector

ERIC

Technical data			Technical data		
900 µm FRNC Non-metallic, aramide fiber 60.00 N/cm 600 N In accordance with IEC 60754-2			900 µm FRNC Non-metallic, aramide fiber 60.00 N/cm 600 N In accordance with IEC 60754-2		
-25°C ... 70°C -5°C ... 50°C -5°C ... 70°C			-25°C ... 70°C -5°C ... 50°C -5°C ... 70°C		
Ordering data			Ordering data		
Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
FL SM PATCH 1,0 LC-SC	2989190	1	FL SM PATCH 1,0 LC-ST	2989242	1
FL SM PATCH 2,0 LC-SC	2989297	1	FL SM PATCH 2,0 LC-ST	2989349	1
FL SM PATCH 5,0 LC-SC	2901827	1	FL SM PATCH 5,0 LC-ST	2901828	1
FL SM PATCH 1,0 SC-SC	2901829	1	FL SM PATCH 1,0 SC-ST	2901832	1
FL SM PATCH 2,0 SC-SC	2901830	1	FL SM PATCH 2,0 SC-ST	2901833	1
FL SM PATCH 5,0 SC-SC	2901831	1	FL SM PATCH 5,0 SC-ST	2901834	1
			FL SM PATCH 1,0 ST-ST	2901836	1
			FL SM PATCH 2,0 ST-ST	2901837	1
			FL SM PATCH 5,0 ST-ST	2901838	1

Data connectors and cables

Network components – Assembled fiber optic cables

Fiber optic outdoor cables, sold by the meter

- Robust round cables for outdoor installation
- Ozone and UV resistant
- Watertight lengthwise
- Integrated vapor barrier and rodent-proof scrim



GOF fiber type



PCF fiber type

	Technical data		Technical data	
	FOC-OE-OE-GB01/...	FOC-OE-OE-GB02/...	FOC-OE-OE-GB03/...	FOC-OE-OE-HB01/...
Cable data				
Cable abbreviation in accordance with IEC 61977:2010	02-G50/FJ(ZNG)H-...22	02-G50/FJ(ZN)Z-...22	04-G50/FJ(ZNG)H-...22	02-H200/VJ(ZNG)H-...22
Fibers	50/125 µm OM2	50/125 µm OM2	50/125 µm OM2	200/230 µm
Attenuation, typical	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	2.7 dB/km (at 850 nm); 0.8 dB/km (at 1300 nm)	10 dB/km (at 660 nm), 8 dB/km (at 850 nm)
Outer sheath				
Material	PE	PUR	PE	PE
Color	black	black	black	black
Strain relief elements	Aramide/glass fibers	Non-metallic, aramide fiber	Aramide/glass fibers	Aramide/glass fibers
Diameter	7.5 mm	7.5 - 8 mm	9 mm	7.5 mm
Individual wire				
Color	Black/orange	Black/orange	Black/orange	Black/orange
Diameter	2.2 mm	2.2 mm	2.15 mm	2.2 mm
Strain relief elements	Non-metallic, aramide fibers	Non-metallic, aramide fibers	Non-metallic, aramide fibers	Non-metallic, aramide fibers
General data				
Weight	59.00 kg/km	46.00 kg/km	90.00 kg/km	67.00 kg/km
Ambient temperature (operation)	-40°C ... 70°C	-40°C ... 85°C	-40°C ... 70°C	-20°C ... 70°C
Ambient temperature (storage/transport)	-45°C ... 70°C	-45°C ... 85°C	-40°C ... 70°C	-25°C ... 70°C
Ambient temperature (installation)	-20°C ... 60°C	-20°C ... 60°C	-20°C ... 60°C	-10°C ... 60°C
Halogen-free:	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2	In acc. with IEC 60754-1/2
Ordering data				
	Type	Order No.	Pcs./Pkt.	
Description				Type
GOF outdoor cable, 2-wire, full breakout cable for fixed installation	FOC-OE-OE-GB01/...	1406429	1	Order No.
GOF outdoor cable, 2-wire, full breakout cable for flexible installation	FOC-OE-OE-GB02/...	1406430	1	Pcs./Pkt.
GOF outdoor cable, 4-wire, full breakout cable for fixed installation	FOC-OE-OE-GB03/...	1406431	1	
PCF outdoor cable, 2-wire, full breakout cable for fixed installation				FOC-OE-OE-HB01/...
				1406432
				1

Ordering example for cables by the meter:

For a 34.0 m long FO outdoor type **GB02** cable, the ordering data is as follows:

Order No.	Length [m] Max. 1000 m
1406430	34
	Increment: 1 m ... 1000 m = 1 m

Assembled FO cables

- Universal installation cables for fixed installation indoors
- 2.2 mm individual wires made from extremely hard-wearing polyvinyl chloride (PVC)
- Ozone and UV resistant
- PVC outer cable sheath
- PROFINET type B

Ethernet



Assembled FO cable,
SC-RJ to BFOC (ST®)

Technical data

FOC-SJ:14-ST/.../.../...

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

Outer sheath

Material

Color

Strain relief elements

Diameter

Individual wire

Color

Diameter

Strain relief elements

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

AT-V(ZN)YY 2K200/230 HCS

200/230 µm

10 dB/km (at 660 nm), 8 dB/km (at 850 nm)

PVC

green

Non-metallic, aramide fiber

6.7 - 7.7 mm

Black and orange with arrow labeling

2.2 mm ±0.1 mm

Non-metallic, aramide fibers

45.00 kg/km

-30°C ... 70°C

-40°C ... 70°C

-5°C ... 50°C

yes

Ordering data

Description

Assembled FO cable, PROFINET cable type B with
SC-RJ Push-Pull metal housing to BFOC (ST®) male connector

Type

Order No.

Pcs./Pkt.

FOC-SJ:14-ST/.../.../...

1417723

1

Ordering example for a configured cable:

For an **HCS cable**, fitted with an **SC-RJ push-pull male connector** on one end and a **B-FOC(ST®) male connector, IP20** on the other end, and a **length of 15 m**, the ordering data is as follows:

Order No.	Length [m] Max. 2000 m
1417723	15
Increment:	
1 m ... 5 m = 0.25 m	
5 m ... 1000 m = 1 m	

Network components – Assembled fiber optic cables

SC duplex connector, IP20	B-FOC (ST®) connector, IP20	LC connector	Push/pull SC-RJ, plastic	Push/pull SC-RJ, metal
				
SCDUP	BFOC	LC	PPCPL	PPCME
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.

Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190
Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190

Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190
Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190

Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190
Variable	2901556	Variable	2901556	Variable	2901556	Variable	1402190	Variable	1402190

Variable	1402190	Variable	1402190	Variable	1402190	Variable	1402190	Variable	1402190
Variable	1402190	Variable	1402190	Variable	1402190	Variable	1402190	Variable	1402190

Cable data		Technical data
Cable abbreviation in accordance with IEC 61977:2010		AT-V(ZN)YY 2K200/230 HCS
Fibers		HCS, 200/230 µm
Attenuation, typical		10 dB/km
Outer sheath		
Material		PVC
Color		green
Diameter		6.7 - 7.7 mm
Strain relief elements		Non-metallic, aramide fiber
Individual wire		
Structure		PVC
Color		Black and orange with arrow labeling
Diameter		2.2 mm ±0.1 mm
Strain relief elements		Non-metallic, aramide fibers
General data		
Weight		45 kg/km
Ambient temperature (operation)		-40°C ... 90°C
Ambient temperature (storage/transport)		-40°C ... 90°C
Ambient temperature (installation)		-5°C ... 50°C
Halogen-free:		-

- Robust installation cables for indoor use
- Highly tear-resistant aramid strain relief elements
- 2.9 mm individual wires made from highly flexible FRNC material
- Halogen-free, ozone and UV resistant
- Robust polyurethane (PUR) outer cable sheath

	Free end	FSMA connector, IP20	SC-RJ connector, IP20
			
	OE	FSMA	SCRJ
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end			
	OE		
FSMA connector, IP20			
	FSMA		
SC-RJ connectors, IP20			
	SCRJ		
SC duplex connector, IP20			
	SCDUP		
B-FOC (ST®) connector, IP20			
	BFOC		
LC connector			
	LC		
Push/pull SC-RJ, plastic			
	PPCPL		
Push/pull SC-RJ, metal			
	PPCME		
SC-RJ male connector, IP67			
	IP67		

For an **HCS cable**, fitted at one end with an **SC-RJ connector** and a **B-FOC(ST®) connector**, **IP20** at the other end, and a **length of 15 m**, the ordering data is as follows:

Length:	Min. 1 m Max. 2000 m
Increment:	0.25 m 1 m ... 5 m 1 m 5 m ... 2000 m

For an **HCS cable** with a **length of 70 m**, the ordering data is as follows:

Length:	Min. 1 m Max. 2000 m/cable drum
Increment:	0.25 m 1 m ... 5 m 1 m 5 m ... 2000 m

Network components – Assembled fiber optic cables

SC duplex connector, IP20	B-FOC (ST®) connector, IP20	LC connector	Push/pull SC-RJ, plastic	Push/pull SC-RJ, metal	SC-RJ male connector, IP67
					
SCDUP	BFOC	LC	PPCPL	PPCME	IP67
Ordering data	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
Variable 2901555	Variable 2901555	Variable 2901555	Variable 1402191	Variable 1402191	Variable 1402191
Variable 2901555	Variable 2901555	Variable 2901555	Variable 1402191	Variable 1402191	Variable 1402191
Variable 2901555	Variable 2901555	Variable 2901555	Variable 1402191	Variable 1402191	Variable 1402191
Variable 2901555	Variable 2901555	Variable 2901555	Variable 1402191	Variable 1402191	Variable 1402191
Variable 2901555	Variable 2901555	Variable 2901555	Variable 1402191	Variable 1402191	Variable 1402191
Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191
Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191
Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191
Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191
Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191	Variable 1402191

Cable data	Technical data
Cable abbreviation in accordance with IEC 61977:2010	I-VH11Y 2K200/230 HCS
Fibers	HCS, 200/230 µm
Attenuation, typical	10 dB/km
Outer sheath	
Material	PUR
Color	orange
Diameter	7.5 - 8.5 mm
Individual wire	
Structure	FRNC material
Color	Red/Green
Diameter	2.9 mm ±0.1 mm
Strain relief elements	Non-metallic, aramide fibers
General data	
Weight	54 kg/km
Ambient temperature (operation)	-40°C ... 70°C
Ambient temperature (storage/transport)	-40°C ... 70°C
Ambient temperature (installation)	-20°C ... 60°C

Data connectors and cables

Network components – Assembled fiber optic cables

Zip cord fiberglass cables for assembly, OM1



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada

	Free end	FSMA connector, IP20	SC duplex connector, IP20
			
	OE	FSMA	SCDUP
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end	Variable 1411566		
FSMA connector, IP20		1.00 m 1409855	1.00 m 1409857
FSMA		Variable 1406532	Variable 1406536
SC duplex connector, IP20		1.00 m 1409857	1.00 m 1413828
SCDUP		Variable 1406536	Variable 1413790
B-FOC (ST®) connector, IP20		1.00 m 1409856	1.00 m 1413830
BFOC		Variable 1406535	Variable 1413791
LC duplex connector, IP20		1.00 m 1413825	1.00 m 1413827
LC		Variable 1413787	Variable 1413789

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an FSMA male connector, IP20, at one end and an SC Duplex connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1406536	15

Length:	Min. 1 m Max. 1000 m
Increment:	1 m 1 m ... 1000 m

**B-FOC (ST®) connector,
IP20****BFOC****Ordering data****Order No.****LC duplex connector,
IP20****LC****Ordering data****Order No.**1.00 m **1409856**Variable **1406535**1.00 m **1413830**Variable **1413791**1.00 m **1413832**Variable **1413821**1.00 m **1413831**Variable **1413792**1.00 m **1413825**Variable **1413787**1.00 m **1413827**Variable **1413789**1.00 m **1413831**Variable **1413792**1.00 m **1413826**Variable **1413788****Technical data****Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

3.2 dB/km (at 850 nm);
0.9 dB/km (at 1300 nm)**Outer sheath**

Material

Color

Diameter

Strain relief elements

Individual wire

Structure

Color

Diameter

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

-

orange

2.8 - 5.7 mm

-

-

-

-

15.80 kg/km

-10°C ... 60°C

-10°C ... 60°C

-5°C ... 50°C

In accordance with IEC 60754-2

Zip cord fiberglass cables for assembly, OM2



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada

	Free end	SC-RJ connector, IP20	SC duplex connector, IP20
	OE	SCRJ	SCDUP
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Free end			
	OE		
SC-RJ connector, IP20			
	SCRJ		
SC duplex connector, IP20			
	SCDUP		
B-FOC (ST®) connector, IP20			
	BFOC		
LC duplex connector, IP20			
	LC		
Variable	1411561		
		1.00 m 1409813 2.00 m 1400697	1.00 m 1409810 2.00 m 1400690
		Variable 1405703	Variable 1405700
			1.00 m 1409798 2.00 m 1400685
			Variable 1405697
			1.00 m 1409790 2.00 m 1400639
			Variable 1405691

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405700	15

Length:	1 m, minimum 1000 m, maximum
Increment:	1 m 1 m ... 1000 m

B-FOC (ST®) connector,
IP20

BFOC

Ordering data

Order No.

LC duplex connector,
IP20

LC

Ordering data

Order No.

1.00 m 1409822
2.00 m 1400706

Variable 1405710

1409819
1400703

Variable 1405708

1.00 m 1409824
2.00 m 1404768

Variable 1405712

1.00 m 1409816
2.00 m 1400701

Variable 1405706

1.00 m 1409793
2.00 m 1400682

Variable 1405694

1.00 m 1409787
2.00 m 1400604

Variable 1405688

Technical data

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

2.7 dB/km (at 850 nm);
0.8 dB/km (at 1300 nm)

Outer sheath

Material

Color

Diameter

Strain relief elements

Individual wire

Structure

Color

Diameter

General data

Weight

Ambient temperature (operation)

Ambient temperature (storage/transport)

Ambient temperature (installation)

Halogen-free:

-

orange

2.8 - 5.7 mm

-

-

-

900 µm

15.80 kg/km

-10°C ... 60°C

-10°C ... 60°C

-5°C ... 50°C

In acc. with IEC 60754-1/2

Data connectors and cables

Network components – Assembled fiber optic cables

Zip cord fiberglass cables for assembly, OM3



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada
- Low-bend fiber
- Data rate: up to 10 Gbps up to 300 m

Free end	SC-RJ male connector, IP20	SC duplex connector, IP20
OE	SCRJ	SCDUP
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
Free end		
OE		
SC-RJ connector, IP20		
SCRJ		
SC duplex connector, IP20		
SCDUP		
LC duplex connector, IP20		
LC		

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405701	15

Length:	1 m, minimum 1000 m, maximum
Increment:	1 m 1 m ... 1000 m

**B-FOC (ST®) connector,
IP20****BFOC****Ordering data****Order No.****LC duplex connector,
IP20****LC****Ordering data****Order No.**

1.00 m 1409823
2.00 m 1400711

Variable 1405711

1.00 m 1409821
2.00 m 1400705

Variable 1405709

1.00 m 1409818
2.00 m 1400702

Variable 1405707

1.00 m 1409796
2.00 m 1400683

Variable 1405695

1.00 m 1409788
2.00 m 1400621

Variable 1405695

Technical data**Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

2.5 dB/km (at 850 nm),
0.7 dB/km (at 1300 nm)

Smallest bending radius, fixed installation

15 mm

Smallest bending radius, movable installation

30 mm

Outer sheath

Material

-

Color

aqua

Diameter

2.8 - 5.7 mm

Strain relief elements

-

Individual wire

Structure

-

Color

-

Diameter

-

General data

Weight

15.80 kg/km

Ambient temperature (operation)

-10°C ... 60°C

Ambient temperature (storage/transport)

-10°C ... 60°C

Ambient temperature (installation)

-5°C ... 50°C

Halogen-free:

In acc. with IEC 60754-1/2

Zip cord fiberglass cables for assembly, OM4



- Multimode patch cables for indoor installation
- Ideal for use in distributor systems and for connecting termination devices
- 2.8 mm single elements made from halogen-free and flame-retardant material
- UL approval type OFNR (riser) for USA and Canada
- Low-bend fiber
- Data rate: up to 10 Gbps up to 550 m

Free end		SC-RJ connector, IP20	SC duplex connector, IP20
OE		SCRJ	SCDUP
Ordering data		Ordering data	Ordering data
Order No.		Order No.	Order No.
Free end			
OE			
SC-RJ connector, IP20			
SCRJ			
SC duplex connector, IP20			
SCDUP			
LC duplex connector, IP20			
LC			

Variable	1411564		
		1.00 m 1409815	1.00 m 1409812
		2.00 m 1400700	2.00 m 1400695
		Variable 1405705	Variable 1405702
			1.00 m 1409801
			2.00 m 1400689
			Variable 1405699
			1.00 m 1409792
			2.00 m 1400681
			Variable 1405693

Ordering example for a configured cable:

For a 15 m long zip cord fiberglass cable, fitted with an SC duplex connector, IP20, at one end and an SC-RJ connector, IP20, at the other end, the ordering data is as follows:

Order No.	Length [m]
1405702	15

Length:	1 m, minimum	1000 m, maximum
Increment:	1 m	1 m ... 1000 m

**LC duplex connector,
IP20****LC****Ordering data****Order No.**

1.00 m	1409797
2.00 m	1400684

Variable	1405696

1.00 m	1409789
2.00 m	1400622

Variable	1405690

Technical data**Cable data**

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

-

2.5 dB/km (at 850 nm),
0.7 dB/km (at 1300 nm)

Smallest bending radius, fixed installation

15 mm

Smallest bending radius, movable installation

30 mm

Outer sheath

Material

-

Color

Violet

Diameter

2.8 - 5.7 mm

Strain relief elements

-

Individual wire

Structure

-

Color

-

Diameter

-

General data

Weight

15.80 kg/km

Ambient temperature (operation)

-10°C ... 60°C

Ambient temperature (storage/transport)

-10°C ... 60°C

Ambient temperature (installation)

-5°C ... 50°C

Halogen-free:

In acc. with IEC 60754-1/2

Connectors, for assembly



INTERBUS



PROFIBUS DP



Technical data	
Push-in connection	Screw connection
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65 / IP67	IP67
Push-in connection	Screw connection
0.14 mm² ... 0.75 mm²	0.25 mm² ... 0.75 mm²
4 mm ... 8 mm	6.5 mm ... 8.5 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuZn
Ni/Au	Au
PA 6.6	PA 6.6
V0	HB
B - inverse	B - inverse
5	5
-40 ... 85	-40 ... 85

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Screw connection	

Description

Connectors

Female, straight
Male, straight
Female, angled
Male, angled

Cable connector, shielded, color-coded and
numbered connection area

1424676 1 1507777 1
1424674 1 1507764 1
1424677 1 1430420 1
1424675 1 1430417 1



Technical data	
Push-in connection IEC 61076-2-101	Screw connection IEC 61076-2-101
3	3
IP65 / IP67	IP67
Push-in connection	Screw connection
0.14 mm² ... 0.75 mm²	0.25 mm² ... 0.75 mm²
4 mm ... 8 mm	6.5 mm ... 8.5 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuZn
Ni/Au	Au
PA 6.6	PA 6.6
V0	HB
B - inverse	B - inverse
2	5
-40 ... 85	-40 ... 85

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Screw connection	

1424680 1 1507777 1
1424678 1 1507764 1
1424681 1 1430420 1
1424679 1 1430417 1

Accessories

Description

Stripping tool, for multiple-stage repositioning of
shielded conductors

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Accessories

Type

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1



PROFIBUS DP, PROFIBUS PA



CANopen®, DeviceNet™



CC-Link

ERC

ERC

ERC

Technical data

PROFIBUS DP	PROFIBUS PA
in accordance with IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Insulation displacement connection	Insulation displacement connection
0.25 mm ² ... 0.75 mm ²	0.25 mm ² ... 0.75 mm ²
5 mm ... 9.7 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	30 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
B - inverse	A - standard
2	2
-40 ... 85	-40 ... 85

Technical data

Push-in connection	Insulation displacement connection
IEC 61076-2-101	in accordance with IEC 61076-2-101
3	3
IP65 / IP67	IP65 / IP67
Push-in connection	Insulation displacement connection
0.14 mm ² ... 0.75 mm ²	0.14 mm ² ... 0.75 mm ²
4 mm ... 8 mm	5 mm ... 9.7 mm
48 V AC / 60 V DC	48 V AC / 60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Ni/Au
PA 6.6	PA 6.6
V0	V0
A - standard	A - standard
5	5
-40 ... 85	-40 ... 85

Technical data

Push-in connection
IEC 61076-2-101
3
IP65 / IP67
Push-in connection
0.14 mm ² ... 0.75 mm ²
4 mm ... 8 mm
48 V AC / 60 V DC
4 A
≥ 100 MΩ
CuSn
Ni/Au
PA 6.6
V0
A - standard
4
-40 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
PROFIBUS DP		PROFIBUS PA	
1413932	1	1413934	1
1413931	1	1413933	1
1420426	1		

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection		Insulation displacement connection	
1424672	1	1422760	1
1424670	1	1422759	1
1424673	1		
1424671	1		

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Push-in connection			
1424700	1		
1424699	1		

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Accessories

Type	Order No.	Pcs./Pkt.
VS-CABLE-STRIP-VARIO	1657407	1

Device connectors, shielded



With 0.5 m long litz wires,
front mounting



M12 circular connector in accordance with:
Degree of pollution
Degree of protection
Connection method

IEC 61076-2-101
3
IP67
Individual wires

Electrical data

Rated voltage
Rated current
Contact resistance
Insulation resistance

250 V
4 A
≤ 3 mΩ
≥ 100 MΩ

Material data

Material contact/contact surface
Contact carrier material
Flammability rating in accordance with UL 94
Temperature data

CuZn / Ni/Au
PA66 GF
V0

Male connector/female connector

[°C]

-25 ... 85

Technical data

Ordering data

Description

Coding

Type

Order No.

Pcs./Pkt.

Device connectors

Female A - standard
Male A - standard

SACC-E-M12FS-4CON-PG9/0,5 FFVA
SACC-E-M12MS-4CON-PG9/0,5 FFVA

1431429
1431432

1
1

**Device connectors,
with assembled cable,
type 900**


Rear mounting

Front mounting,
can be positioned

EAC

Technical data	
M16 fastening thread	Pg9 fastening thread
IEC 61076-2-101	IEC 61076-2-101
3	3
IP67	IP67
60 V	60 V
4 A	4 A
≤ 3 mΩ	≤ 3 mΩ
≥ 100 MΩ	≥ 100 MΩ
CuZn / Ni/Au	CuZn / Ni/Au
PA 6.6	PA 6.6
V0	V0
-25 ... 85	-25 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
M16 fastening thread		Pg9 fastening thread	
1534546	1	1437601	1
1534504	1	1437643	1
1534559	1	1437614	1
1534517	1	1437656	1
1534562	1	1437627	1
1534520	1	1437669	1
1534575	1	1437630	1
1534533	1	1437672	1
1440164	10	1440177	10

EAC

Technical data	
M16 fastening thread	
IEC 61076-2-101	
3	
IP67	
60 V	
4 A	
≤ 3 mΩ	
≥ 100 MΩ	
CuZn / Ni/Au	
PA 6.6	
V0	
-25 ... 85	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
M16 fastening thread			
1529742	1		
1529629	1		
1529755	1		
1530223	1		
1529768	1		
1529726	1		
1529771	1		
1529739	1		

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Electrical data

Rated voltage

Rated current

Contact resistance

Insulation resistance

Material data

Material contact/contact surface

Contact carrier material

Flammability rating in accordance with UL 94

Temperature data

Male connector/female connector

[°C]

Description

Cable length

Device connector, B-coded, with bus system cable, 6-wire,
shielded, PUR, halogen-free, green outer sheath, 3 x 2 x 0.25 mm²

Female	0.5 m	1534546	1	1437601	1	1529742	1
Male	0.5 m	1534504	1	1437643	1	1529629	1
Female	1 m	1534559	1	1437614	1	1529755	1
Male	1 m	1534517	1	1437656	1	1530223	1
Female	2 m	1534562	1	1437627	1	1529768	1
Male	2 m	1534520	1	1437669	1	1529726	1
Female	5 m	1534575	1	1437630	1	1529771	1
Male	5 m	1534533	1	1437672	1	1529739	1

EMC hexagonal nut with fine toothing,
for all device connectors with:

M16 fastening thread

Pg9 fastening thread

Device connectors, with assembled cable, type 910



Rear mounting



Front mounting,
can be positioned

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Electrical data

Rated voltage

Rated current

Contact resistance

Insulation resistance

Material data

Material contact/contact surface

Contact carrier material

Flammability rating in accordance with UL 94

Temperature data

Male connector/female connector

[°C]

ERC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

≤ 3 mΩ

≥ 100 MΩ

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

Pg9 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

≤ 3 mΩ

≥ 100 MΩ

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

ERC

Technical data

M16 fastening thread

IEC 61076-2-101

3

IP67

60 V

4 A

≤ 3 mΩ

≥ 100 MΩ

CuZn / Ni/Au

PA 6.6

V0

-25 ... 85

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Pg9 fastening thread

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

M16 fastening thread

Device connector, B-coded, with bus system cable, 2-wire,
shielded, PUR, halogen-free, violet outer sheath, 1 x 2 x 0.25 mm²

Female	0.5 m
Male	0.5 m
Female	1 m
Male	1 m
Female	2 m
Male	2 m
Female	5 m
Male	5 m

EMC hexagonal nut with fine toothing,
for all device connectors with:

M16 fastening thread

Pg9 fastening thread

1440164

10

1440177

10

1525597

1

1525555

1

1525607

1

1525568

1

1519574

1

1519561

1

1525610

1

1525571

1

**Device connectors,
with assembled cable,
type 920**


EAC

Technical data	
M16 fastening thread	Pg9 fastening thread
IEC 61076-2-101	IEC 61076-2-101
3	3
IP67	IP67
60 V	60 V
4 A	2 A
≤ 3 mΩ	≤ 3 mΩ
≥ 100 MΩ	≥ 100 MΩ
CuZn / Ni/Au	CuZn / Ni/Au
PA 6.6	PA 6.6
V0	V0
-25 ... 85	-25 ... 85

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
M16 fastening thread		Pg9 fastening thread	

EAC

Technical data	
M16 fastening thread	
IEC 61076-2-101	
3	
IP67	
60 V	
4 A	
≤ 3 mΩ	
≥ 100 MΩ	
CuZn / Ni/Au	
PA 6.6	
V0	
-25 ... 85	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
M16 fastening thread			

M12 circular connector in accordance with:

Degree of pollution

Degree of protection

Electrical data

Rated voltage

Rated current

Contact resistance

Insulation resistance

Material data

Material contact/contact surface

Contact carrier material

Flammability rating in accordance with UL 94

Temperature data

Male connector/female connector

[°C]

Description

Cable length

Device connector, A-coded, with bus system cable, 4-wire,
shielded, PUR, halogen-free, violet outer sheath, 2 x 0.34 mm²;
2 x 0.25 mm²

Female	0.5 m	1534465	1	1437520	1	1525678	1
Male	0.5 m	1534423	1	1437562	1	1525623	1
Female	1 m	1534478	1	1437533	1	1525681	1
Male	1 m	1534436	1	1437575	1	1525636	1
Female	2 m	1534481	1	1437546	1	1525694	1
Male	2 m	1534449	1	1437588	1	1525649	1
Female	5 m	1534494	1	1437559	1	1525704	1
Male	5 m	1534452	1	1437591	1	1525652	1

EMC hexagonal nut with fine toothing,
for all device connectors with:

M16 fastening thread

1440164

10

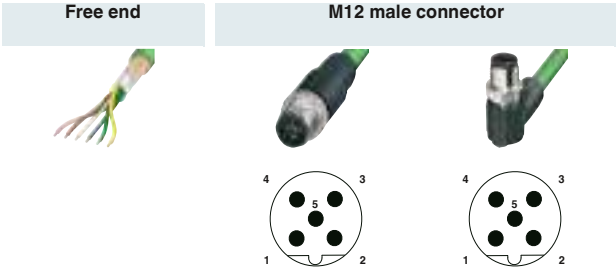
Pg9 fastening thread

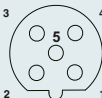
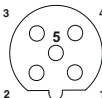
1440177

10

Assembled cables,
INTERBUS, M12

Notes:
For information about the cable qualities, see page 454



		Ordering data		Ordering data		Ordering data	
Free end		Order No.		Order No.		Order No.	
				2 m	1507065		
				5 m	1507078		
				10 m	1507081		
				15 m	1507094		
	Variable	2723123	Variable	1537983	Variable	1430970	
M12 female connector, straight							
				0.3 m	1507162		
				0.5 m	1507175		
				1 m	1507188		
		2 m	1507117	2 m	1507191		
		5 m	1507120	5 m	1507201		
		10 m	1507133	10 m	1507214		
		15 m	1507146	15 m	1507227		
Variable	1538005	Variable	1538021	Variable	1431005		
M12 female connector, angled							
							
		Variable	1430983	Variable	1430996	Variable	1431018

Ordering example for cable with
connector assembly:

For an INTERBUS bus cable, straight M12 socket to straight
M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538021	34.5
Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Ordering example for cable without
connector assembly:

For an INTERBUS bus cable with 34.5 m cable length,
the ordering data is as follows:

Order No.	Length [m]
2723123	34.5
Increments: 0.5 ... 400.0 m = 0.5 m	

Technical data	
M12	
Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

Assembled cables, PROFIBUS DP, M12

Notes:

For information about the cable qualities, see page 454

For H, Y, and T distributors, see page 436

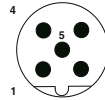
For termination resistors, see page 437



Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		2 m	1507243
		5 m	1507256
		10 m	1507269
		15 m	1507272
	Variable	Variable	1538047
M12 female connector, straight			
		0.3 m	1507340
		0.5 m	1507353
		1 m	1507366
		2 m	1507379
		5 m	1507382
	2 m	10 m	1507395
	5 m	15 m	1507405
	10 m	Variable	1538089
	15 m		
	Variable		

Ordering example for cable with connector assembly:

For a PROFIBUS bus cable, straight M12 socket to straight M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538089	40 m, maximum
	34.5
	Increments:
	0.2 ... 3.0 m = 0.1 m
	> 3.0 m = 0.5 m

Ordering example for cable without connector assembly:

For a PROFIBUS bus cable with 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1511491	400 m, maximum
	34.5
	Increments:
	0.5 ... 400.0 m = 0.5 m

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

Data connectors and cables

Fieldbus components – Assembled cables

Assembled cables, PROFIBUS PA, M12 stainless steel

Notes:
For information about the cable qualities, see page 456
For H, Y, and T distributors, see page 436



Free end



M12 male connector



Free end



Ordering data

Order No.

Ordering data

Order No.

Ordering data

Order No.

2 m	1419092	2 m	1419097
5 m	1419093	5 m	1419098
10 m	1419094	10 m	1419099
15 m	1419095	15 m	1419100
20 m	1419096	20 m	1419101

M12 female connector, straight



2 m	1419082	0.3 m	1419102	0.3 m	1419110
5 m	1419083	0.5 m	1419103	0.5 m	1419111
10 m	1419084	1 m	1419104	1 m	1419112
15 m	1419085	2 m	1419105	2 m	1419113
20 m	1419086	5 m	1419106	5 m	1419114
		10 m	1419107	10 m	1419115
		15 m	1419108	15 m	1419116
		20 m	1419109	20 m	1419117

M12 female connector, angled



2 m	1419087	0.3 m	1419118	0.3 m	1419126
5 m	1419088	0.5 m	1419119	0.5 m	1419127
10 m	1419089	1 m	1419120	1 m	1419128
15 m	1419090	2 m	1419121	2 m	1419129
20 m	1419091	5 m	1419122	5 m	1419130
		10 m	1419123	10 m	1419131
		15 m	1419124	15 m	1419132
		20 m	1419125	20 m	1419133

Color coding

Pin assignment

M12

OG		1
n.c.		2
BU		3
Shield		4

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4 [A]
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing

Degree of protection	IP65 / IP67 / IP68 / IP69K

Temperature data

Male connector/female connector	-25 ... 90 [°C]

Assembled cables, DeviceNet™/CANopen®, M12, unshielded

Notes:

For information about the cable qualities, see page 455

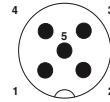
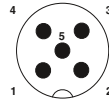
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector



DeviceNet™ CANopen

Ordering data

Ordering data

Ordering data

Free end



Order No.

Order No.

Order No.

2 m

1419039

2 m

1419044

5 m

1419040

5 m

1419045

10 m

1419041

10 m

1419046

15 m

1419042

15 m

1419047

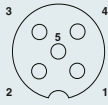
20 m

1419043

20 m

1419048

M12 female connector, straight



2 m

1419081

0.3 m

1419049

0.3 m

1419057

5 m

1419030

0.5 m

1419050

0.5 m

1419058

1 m

1419031

1 m

1419051

1 m

1419059

2 m

1419032

2 m

1419052

2 m

1419060

5 m

1419033

5 m

1419053

5 m

1419061

10 m

1419031

10 m

1419054

10 m

1419062

15 m

1419032

15 m

1419055

15 m

1419063

20 m

1419033

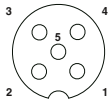
20 m

1419056

20 m

1419064

M12 female connector, angled



2 m

1419034

0.3 m

1419065

0.3 m

1419073

5 m

1419035

0.5 m

1419066

0.5 m

1419074

1 m

1419036

1 m

1419067

1 m

1419075

2 m

1419037

2 m

1419068

2 m

1419076

5 m

1419038

5 m

1419069

5 m

1419077

10 m

1419036

10 m

1419070

10 m

1419078

15 m

1419037

15 m

1419071

15 m

1419079

20 m

1419038

20 m

1419072

20 m

1419080

Color coding

Pin assignment

M12

Shield

1

RD

2

BK

3

WH

4

BU

5

Technical data

M12

Rated voltage

48 V AC / 60 V DC

Rated current

[A]

4

Contact resistance

< 5 mΩ

Contact material

CuSn

Contact surface material

Ni/Au

Material of grip body

TPU

Degree of protection

IP65 / IP67

Temperature data

Male connector/female connector

[°C]

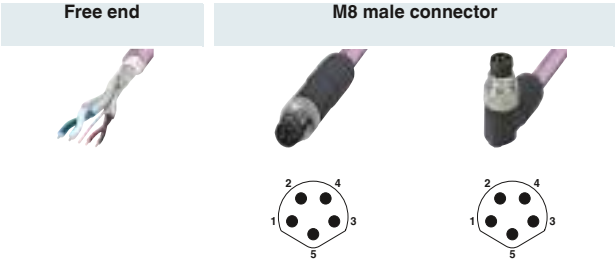
-25 ... 90

Data connectors and cables

Fieldbus components – Assembled cables

Assembled cables,
DeviceNet™/CANopen®, M8

Notes:
For information about the cable qualities, see page 455
For termination resistors, see page 437



	Ordering data		Ordering data		Ordering data	
Free end	Order No.		Order No.		Order No.	
			2 m	1575712		
			5 m	1575725		
			10 m	1575738		
			15 m	1575754		
			Variable	1575767	Variable	1575903
M8 female connector, straight 			0.3 m	1575822		
			0.5 m	1575835		
			1 m	1575848		
	2 m	1575770	2 m	1575851		
	5 m	1575783	5 m	1575864		
	10 m	1575796	10 m	1575877		
	15 m	1575806	15 m	1575880		
M8 female connector, angled 	Variable	1575819	Variable	1575893	Variable	1575932
					Variable	1575945

Ordering example for cable with
variable cable length:

For a DeviceNet™ bus cable, straight M8 female to straight
M8 male and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m] 40 m, maximum
1575893	34.5
Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Technical data	
M8	
Rated voltage	30 V AC / 30 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

Assembled cables, DeviceNet™/CANopen®, M12

Notes:

For information about the cable qualities, see page 455

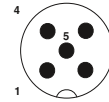
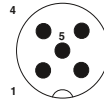
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector

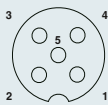
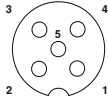


DeviceNet™ CANopen

Ordering data

Ordering data

Ordering data

Free end	Order No.		Order No.		Order No.	
			2 m	1507421		
			5 m	1507434		
			10 m	1507447		
			15 m	1507450		
	Variable	1511504	Variable	1538102	Variable	1431089
M12 female connector, straight						
				0.3 m	1507528	
				0.5 m	1507531	
				1 m	1507544	
				2 m	1507557	
				5 m	1507560	
				10 m	1507573	
				15 m	1507586	
			Variable	1538128	Variable	1538144
M12 female connector, angled						
						
		Variable	1431092	Variable	1431102	Variable

Ordering example for cable with connector assembly:

For a DeviceNet™ bus cable, straight M12 socket to straight M12 pin and 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1538144	34.5
Increments: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Ordering example for cable without connector assembly:

For a DeviceNet™ bus cable with 34.5 m cable length, the ordering data is as follows:

Order No.	Length [m]
1511504	34.5
Increments: 0.5 ... 400.0 m = 0.5 m	

Technical data

M12

Rated voltage	48 V AC / 60 V DC
Rated current	4
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65 / IP67
Temperature data	
Male connector/female connector	-25 ... 90

M12 Y distributors, DeviceNet™/CANopen®, unshielded

Notes:
For information about the cable qualities, see page 455
For H, Y, and T distributors, see page 436
For termination resistors, see page 437



Bus system cable



Bus system cable

ERC

Technical data

Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Flammability rating in accordance with UL 94	HB
Mechanical data	
Number of positions	5
Degree of pollution	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm ²
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm ²
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Male connector/female connector	[-25 ... 90 °C]
Cable, fixed installation	[-40 ... 80 °C]
Cable, flexible installation	[-20 ... 80 °C]

Ordering data

Description
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to straight M12 female and straight M12 connector
- Conductor length 0.3 m
- Conductor length 0.5 m
- Conductor length 1.0 m
- Conductor length 2.0 m
- Conductor length 5.0 m
- Conductor length 10.0 m
- Conductor length 15.0 m
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-connector to free cable ends
- Conductor length 2.0 m
- Conductor length 5.0 m
- Conductor length 10.0 m
- Conductor length 15.0 m
Bus system Y-cable , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-female to free cable ends
- Conductor length 2.0 m
- Conductor length 5.0 m
- Conductor length 10.0 m
- Conductor length 15.0 m

Type	Order No.	Pcs./Pkt.
SAC-5PY-F/2X 0,3-920-MS-FS	1436013	1
SAC-5PY-F/2X 0,5-920-MS-FS	1436026	1
SAC-5PY-F/2X 1,0-920-MS-FS	1436039	1
SAC-5PY-F/2X 2,0-920-MS-FS	1436042	1
SAC-5PY-F/2X 5,0-920-MS-FS	1436055	1
SAC-5PY-F/2X10,0-920-MS-FS	1436068	1
SAC-5PY-F/2X15,0-920-MS-FS	1436071	1

ERC

Technical data

Electrical data	
Rated voltage	48 V AC / 60 V DC
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Flammability rating in accordance with UL 94	HB
Mechanical data	
Number of positions	5
Degree of pollution	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm ²
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm ²
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Male connector/female connector	[-25 ... 90 °C]
Cable, fixed installation	[-40 ... 80 °C]
Cable, flexible installation	[-20 ... 80 °C]

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-5PY-M/2X 2,0-920	1436084	1
SAC-5PY-M/2X 5,0-920	1436097	1
SAC-5PY-M/2X10,0-920	1436107	1
SAC-5PY-M/2X15,0-920	1436110	1
SAC-5PY-F/2X 2,0-920	1436123	1
SAC-5PY-F/2X 5,0-920	1436136	1
SAC-5PY-F/2X10,0-920	1436149	1
SAC-5PY-F/2X15,0-920	1436152	1

Assembled cables, FOUNDATION Fieldbus, M12 stainless steel

Notes:

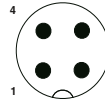
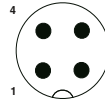
For H, Y, and T distributors, see page 436

For termination resistors, see page 437

Free end



M12 male connector



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		2 m	1431173
		5 m	1431186
		10 m	1431199
		15 m	1431209
	Variable	Variable	Variable
	1432389	1431322	1431335
M12 female connector, straight			
		0.3 m	1431254
		0.5 m	1431267
		1 m	1431270
		2 m	1431283
		5 m	1431296
		10 m	1431306
		15 m	1431319
	Variable	Variable	Variable
	1431348	1431364	1431377
M12 female connector, angled			
	Variable	Variable	Variable
	1431351	1431380	1431393

Ordering example for products with variable cable:

For a 34.5 m long FOUNDATION Fieldbus cable, fitted with a straight M12 male at one end and an M12 female at the other end, the ordering data is as follows:

Order No.	Length [m] max. 50 m
1431364	34.5
	Increment: 0.5 m

Color coding	Pin assignment M12
BU	1
BN	2
Shield	3
n.c.	4

Technical data

Connectors M12

Rated voltage	48 V AC / 60 V DC
Rated current	4 [A]
Contact resistance	≤ 5 mΩ
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
Material, knurls	Stainless steel
Degree of protection	IP65 / IP67 / IP68 / IP69K
Temperature data	
Male connector/female connector	-25 ... 90 [°C]

H, Y, and T distributors



H and Y distributors



T-distributor

ERC

Technical data

H distributor, 5-pos.

Y distributor, hybrid

General data	
Degree of protection	IP65 / IP67
Electrical data	
Rated voltage	48 V AC / 60 V DC
Insulation resistance	≥ 100 MΩ
Overvoltage category / Degree of pollution	II / 3
Material data	
Contact material	CuZn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing
Temperature data	
Male connector/female connector	-25 ... 90

[°C]

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

H distributor, 5-pos.

Y distributor, hybrid

Bus system H distributor, for DeviceNet™ with two mounting holes

M12 male to 3x M12 female

1417414

1

Hybrid Y distributor, 4+4-pos., for data and power

M12 connector (Y-coded) to M12 female (D-coded) and M12 connector (A-coded)

1410630

1

Bus system T distributor, for PROFIBUS, B-coded, shielded 360°

M12 female to 2x M12 connector

1424711

1

M12 female to M12 male and fixed M12 male

1424713

1

Bus system T distributor, for CANopen® and DeviceNet™, M12 female to M12 female and M12 connector

Green

1541186

1

black, with two mounting holes

1424712

1

Bus system T distributor, for CC-Link

M12 female on M12 female and M12 male

1559783

5

Bus system T distributor, for FOUNDATION Fieldbus and PROFIBUS PA (M12), with stainless steel knurl

1431416

5

M12 female on M12 female and M12 male

ERC

Technical data

T distributor, 4-pos.

T distributor, 5-pos.

Degree of protection	IP65 / IP67 / IP68	IP65 / IP67
Electrical data		
Rated voltage	48 V AC / 60 V DC	48 V AC / 60 V DC
Insulation resistance	≥ 100 MΩ	≥ 100 MΩ
Overvoltage category / Degree of pollution	II / 3	II / 3
Material data		
Contact material	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au
Contact carrier material	TPU GF	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Temperature data		
Male connector/female connector	-25 ... 90	-25 ... 90

Ordering data

Order No.

Pcs./Pkt.

Order No.

Pcs./Pkt.

T distributor, 4-pos.

T distributor, 5-pos.

Termination resistors



M8 termination resistor



M12 termination resistor



Technical data		
SAC-5P-M 8MS DN TR		
30 V		
-		
II / 3		
CuSn		
Ni/Au		
TPU GF		
TPU, hardly inflammable, self-extinguishing		
IP65/IP67/IP69K		
-25 ... 90		
Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-5P-M 8MS DN TR	1435988	5



Technical data		
SAC-5P-M12MS PB TR	SAC-4P-M12MS FF TR VA	
48 V AC	24 V	
≥ 100 MΩ	≥ 100 MΩ	
II / 3	II / 3	
CuSn	CuZn	
Ni/Au	Ni/Au	
TPU GF	TPU GF	
TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	
-	IP65/IP68/IP69K	
-25 ... 90	-25 ... 90	
Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-5P-M12MS PB TR	1507803	5
SAC-5P-M12MS CAN TR	1507816	5
SAC-4P-M12MS CCL TR	1558470	1
SAC-4P-M12MS FF TR VA	1431403	5



UL ENEC

Technical data	
Q 1,5/4IDC	Q 1,5/4M20
4	4
IP65 / IP67	IP65 / IP67
-	-
-	-
0.75 mm ² ... 1.5 mm ²	0.75 mm ² ... 1.5 mm ²
18 ... 16	18 ... 16
-25 ... 80	-25 ... 80
-	-
-	-

Ordering data		
Type	Order No.	Pcs./Pkt
Q 1,5/4IDC/24-24KU-KU-ASI-BK	1585058	1
Q 1,5/4FL/24-M20KU-ESA-ASI BK	1437261	1
Q 1,5/4A50/24-M20KU-ESA-ASI BK	1437274	1
HC-M-KV-M20(1ASI) HC-M-KV-M25(1ASI)	1584017 1584020	10 10

Distributors with spring connection
and with round cablesFlat-ribbon conductor distributor
and distributor with spring connectionDistributor with round cable
and over-molded M12 connector

ERC

Technical data	
SAC-ASI-J-Y-B-FFKDS	SAC-ASI-J-Y-Y-N
Rated voltage	≤ 32 V DC
Rated current	4 A
Material specifications for exit	
Material of grip body	-
Material specifications for distributor	
Housing material	PBT
Mechanical data	
Number of positions	4
Degree of protection	IP20
Connection data for spring-cage terminal blocks	
Conductor cross section	0.2 mm ² ... 1.5 mm ² (without ferrule)
Connection cross section AWG	24 ... 16 (without ferrule)
Cable data	
Outer sheath material	-
External cable diameter	-
Conductor cross section	-
Temperature data	
Male connector/female connector	[°C] -25 ... 75
Cable, fixed installation	[°C] -
Cable, flexible installation	[°C] -

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-ASI-J-Y-B-FFKDS	1407579	1
SAC-ASI-J-Y-Y-N	1405622	1
AS-Interface distributor for 2 flat cables, with PUR round cable and molded, straight, A-coded, 4-pos., with spring terminal blocks		
AS-Interface H-distributor with high degree of protection, parallel wired, for distribution from one to two flat-ribbon conductors		
AS-Interface distributor for 1 flat cable, with PUR round cable and molded, straight, A-coded, 2-pos. M12 female		
AS-Interface distributor for 2 flat cables, with PUR round cable and molded, straight, A-coded, 4-pos. M12 female		
AS-Interface distributor for 2 flat cables, with PUR round cable and molded, angled, A-coded, 4-pos. M12 female		
AS-Interface distributor for 1 flat-ribbon conductor, with 2.0 m PUR round cable and open cable end		
AS-Interface distributor for 2 flat-ribbon conductors, with 2.0 m PUR round cable and open cable end		

ERC

Technical data	
SAC-ASI-J-Y-N...	SAC-ASI-J-Y-B...
Rated voltage	≤ 32 V DC
Rated current	4 A
Material specifications for exit	
Material of grip body	TPU
Material specifications for distributor	
Housing material	PBT
Mechanical data	
Number of positions	2
Degree of protection	IP65 / IP67
Connection data for spring-cage terminal blocks	
Conductor cross section	-
Connection cross section AWG	-
Cable data	
Outer sheath material	PUR
External cable diameter	4.3 mm
Conductor cross section	4x 0.34 mm ² (signal line)
Temperature data	
Male connector/female connector	[°C] -25 ... 75
Cable, fixed installation	[°C] -40 ... 80
Cable, flexible installation	[°C] -25 ... 80

Ordering data

Type	Order No.	Pcs./Pkt.
SAC-ASI-J-Y-N-PUR-1,0-FS SCO	1407573	1
SAC-ASI-J-Y-N-PUR-2,0-FS SCO	1407574	1
SAC-ASI-J-Y-B-PUR-1,0-FS SCO	1407575	1
SAC-ASI-J-Y-B-PUR-2,0-FS SCO	1407576	1
SAC-ASI-J-Y-B-PUR-1,0-FR SCO	1407577	1
SAC-ASI-J-Y-B-PUR-2,0-FR SCO	1407578	1
SAC-ASI-J-Y-N-PUR-2,0-OE	1407580	1
SAC-ASI-J-Y-B-PUR-2,0-OE	1407581	1

Distributors with M12-female, with screw connection, pre-assembled round cable



Distributors with M12 slot and with screw connection



PUR round cables with over-molded M12 connectors

ERC

Technical data	
SAC-ASI-J-Y-N-M12FS	VS-ASI-J-Y-N-SWA-LC
PBT	PA
-	-
2	2
IP65 / IP67	IP67
-	0.14 mm² ... 1.5 mm² (without ferrule)
-	26 ... 16 (without ferrule)
-	0.14 mm² ... 0.75 mm² (with ferrule)
-	26 ... 18 (with ferrule)
Cable data	
Conductor cross section	-
Temperature data	-
Male connector/female connector [°C]	-25 ... 75
Cable, fixed installation [°C]	-25 ... 70
Cable, flexible installation [°C]	-

Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-ASI-J-Y-N-M12FS	1405619	1
SAC-ASI-J-Y-B-M12FS	1405621	1
VS-ASI-J-Y-N-M12FS-LC	1433155	1
VS-ASI-J-Y-N-SWA-LC	1433168	1
Voltage supply cable, straight male, unshielded, M12 A-coded, free cable end		
2 m		
5 m		
10 m		
15 m		
Voltage supply cable, straight female, unshielded, M12 A-coded, free cable end		
2 m		
5 m		
10 m		
15 m		
Voltage supply cable, straight male, unshielded, M12 A-coded, straight female, unshielded, M12 A-coded		
0.3 m		
0.5 m		
1 m		
2 m		
5 m		
10 m		
15 m		

ERC

Technical data	
-	-
-	TPU, hardly inflammable, self-extinguishing
4	IP65 / IP67 / IP68
-	-
-	0.75 mm²
-	-25 ... 90
-	-25 ... 80
-	-5 ... 80

Ordering data		
Type	Order No.	Pcs./Pkt.
SAC-4P-M12MS/ 2,0-186	1509445	1
SAC-4P-M12MS/ 5,0-186	1509458	1
SAC-4P-M12MS/10,0-186	1509461	1
SAC-4P-M12MS/15,0-186	1509474	1
SAC-4P- 2,0-186/M12FS	1509487	1
SAC-4P- 5,0-186/M12FS	1509490	1
SAC-4P-10,0-186/M12FS	1509500	1
SAC-4P-15,0-186/M12FS	1509513	1
SAC-4P-M12MS/ 0,3-186/M12FS	1509526	1
SAC-4P-M12MS/ 0,5-186/M12FS	1509539	1
SAC-4P-M12MS/ 1,0-186/M12FS	1509542	1
SAC-4P-M12MS/ 2,0-186/M12FS	1509555	1
SAC-4P-M12MS/ 5,0-186/M12FS	1509568	1
SAC-4P-M12MS/10,0-186/M12FS	1509571	1
SAC-4P-M12MS/15,0-186/M12FS	1509584	1

Digital I/O devices with M8 connection method

The digital I/O devices are particularly suitable for use in machines close to the process.

Features:

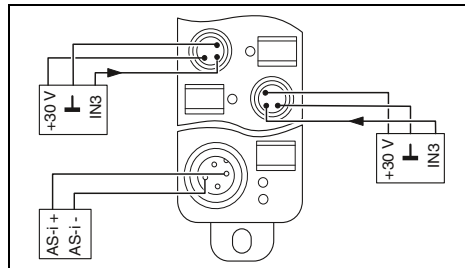
- Optimized for 30 mm mounting profile
- M12 connection technology with fast locking system for the AS-Interface connection
- M8 connection technology for inputs and outputs



4 digital inputs



4 digital inputs and 4 digital outputs



Technical data

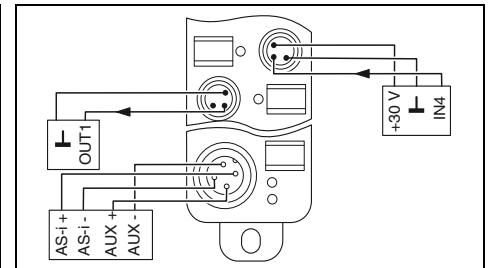
Interface	
Fieldbus system	AS-i
Connection method	M12 connector, (A-coded)
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-0.0
Digital inputs	
Connection method	M8 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	-
Connection technology	-
Maximum number of outputs	-
Maximum output current per channel	-
Maximum output current per module / terminal block	-
General data	
Weight	85 g
Drill hole spacing	93 mm
Dimensions	W / H / D
Degree of protection	30 mm / 26 mm / 103 mm
Ambient temperature (operation)	IP65/IP67
EMC note	-25°C ... 70°C
	Class A product, see page 727

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Fieldline Extension AS-i digital input device			
- 4 inputs	FLX ASI DI 4 M8	2773403	1
Fieldline Extension AS-i digital I/O device			
- 4 inputs, 4 outputs, 1 A			

Accessories

M8 screw plug	PROT-M8	1682540	5
Zack marker strip, flat, 10-section, without color print	ZBF 8:UNBEDRUCKT	0808781	10
Manual addressing device, for AS-Interface devices	ASI CC ADR	2741338	1



Technical data

Interface	
Fieldbus system	AS-i
Connection method	M12 connector, (A-coded)
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-7.0
Digital inputs	
Connection method	M8 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M8 connector
Connection technology	2-wire
Maximum number of outputs	-
Maximum output current per channel	1 A
Maximum output current per module / terminal block	4 A
General data	
Weight	125 g
Drill hole spacing	133 mm
Dimensions	30 mm / 26 mm / 143 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Fieldline Extension AS-i digital I/O device			
- 4 inputs, 4 outputs, 1 A	FLX ASI DIO 4/4 M8-1A	2773416	1

Accessories

M8 screw plug	PROT-M8	1682540	5
Zack marker strip, flat, 10-section, without color print	ZBF 8:UNBEDRUCKT	0808781	10
Manual addressing device, for AS-Interface devices	ASI CC ADR	2741338	1

Digital I/O devices with M12 connection method

The innovative locking mechanism enables quick and easy installation of the I/O devices.

Features:

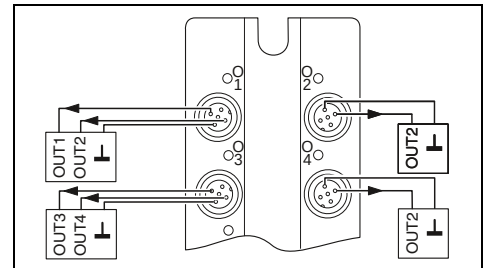
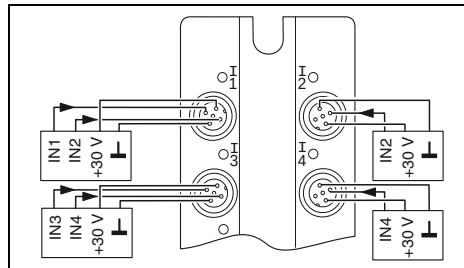
- Optimized for direct mounting and DIN rail mounting
- Tool-free connection to AS-Interface, thanks to piercing technology
- M12 connection technology with fast locking system for the inputs and outputs



4 digital inputs



4 digital outputs



Technical data

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.1
Required master specification	>= 2.0
AS-i profile	S-0.A.2
Digital inputs	
Connection method	M12 connector
Connection technology	2, 3-wire
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	-
Connection technology	-
Maximum number of outputs	-
Maximum output current per channel	-
Maximum output current per module / terminal block	-
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-8.1
Digital inputs	
Connection method	-
Connection technology	-
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M12 connector
Connection technology	2-wire
Maximum number of outputs	4
Maximum output current per channel	2 A
Maximum output current per module / terminal block	4 A
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Technical data

Interface	
Fieldbus system	AS-i
Connection method	Flat-ribbon cable penetration technique
AS-Interface	
AS-i specification	2.0
Required master specification	>= 2.0
AS-i profile	S-8.1
Digital inputs	
Connection method	-
Connection technology	-
Maximum number of inputs	-
Input characteristic curve	-
Digital outputs	
Connection method	M12 connector
Connection technology	2-wire
Maximum number of outputs	4
Maximum output current per channel	2 A
Maximum output current per module / terminal block	4 A
General data	
Weight	195 g
Drill hole spacing	108 mm
Dimensions	58 mm / 118 mm / 35 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25°C ... 70°C
EMC note	Class A product, see page 727

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Fieldline Extension AS-i digital input device			
- 4 inputs	FLX ASI DI 4 M12	2773429	1
Fieldline Extension AS-i digital output device			
- 4 outputs, 2 A			
Fieldline Extension AS-i digital I/O device			
- 2 inputs, 2 outputs, 2 A			
- 4 inputs, 3 outputs, 2 A			
- 4 inputs, 4 outputs, 2 A			

Type	Order No.	Pcs./Pkt.
FLX ASI DI 4 M12	2773429	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DO 4 M12-2A	2773458	1

Accessories

M12 screw plug	PROT-M12	1680539	5
Label sheet for laser printers, 64 x 16 mm, color: white	BMKL 64X16 WH	0821807	2
Manual addressing device , for AS-Interface devices	ASI CC ADR	2741338	1
Programming cable , for addressing the AS-i devices	ASI CC ADR CAB CINCH	2741341	1

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Accessories

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1



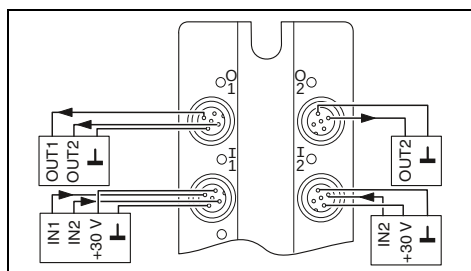
2 digital inputs
and 2 digital outputs



4 digital inputs
and 3 digital outputs



4 digital inputs
and 4 digital outputs



Technical data

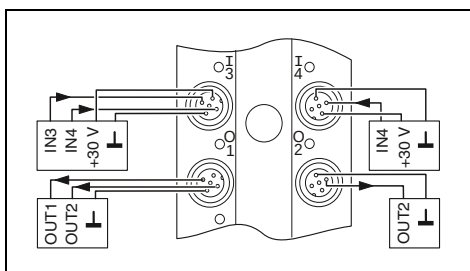
AS-i
Flat-ribbon cable penetration technique

2.1
≥ 2.0
S-B.A.2

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

195 g
108 mm
58 mm / 118 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727



Technical data

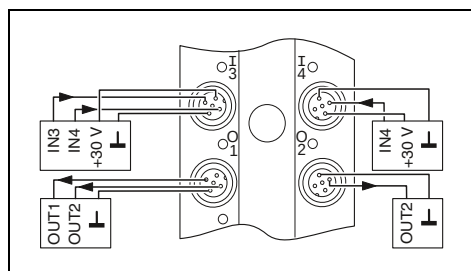
AS-i
Flat-ribbon cable penetration technique

2.1
≥ 2.0
S-7.A.2

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

245 g
108 mm
58 mm / 150 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727



Technical data

AS-i
Flat-ribbon cable penetration technique

3.0
≥ 3.0
S-7.A.7

M12 connector
2, 3-wire
-

M12 connector
2-wire
-
2 A
4 A

245 g
108 mm
58 mm / 150 mm / 35 mm
IP65/IP67
-25°C ... 70°C
Class A product, see page 727

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DIO 2/2 M12-2A	2773432	1

Accessories

PROT-M12	1680539	5
BMKL 64X16 WH	0821807	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI DIO 4/3 M12-2A	2773445	1

Accessories

PROT-M12	1680539	5
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Ordering data

Type	Order No.	Pcs./Pkt.
FLX ASI 3.0 DIO 4/4 M12-2A	2773474	1

Accessories

PROT-M12	1680539	5
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1



EAC

	Technical data
Electrical data	
Rated voltage	63 V
Rated current	1 A
Overvoltage category	II
Material data	
Housing material	PA
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PBTP
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	9
Color	gray
Degree of pollution	2
Degree of protection	IP67
Connection method	Screw connection
Conductor cross section	0.14 mm ² ... 0.5 mm ²
Connection cross section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Temperature data	
Ambient temperature (operation)	-20°C ... 70°C

EAC

Technical data
-
-
-
PA
-
-
-
V0
9
gray
2
IP67
-
-
-
≥ 1000
-40°C ... 80°C

		Ordering data	
Description	Type	Order No.	Pcs./Pkg
D-SUB complete connector , for INTERBUS, shell size 1, screw connection, shielded			
Male	VS-09-IBS-ST	1689271	1
Female	VS-09-IBS-BU	1689284	1
D-SUB complete connector , for PROFIBUS, shell size 1, male, shielded			
Screw connection	VS-09-PROFIBUS-SC	1654549	1
Spring-cage connection	VS-09-PROFIBUS-SP	1654345	1
D-SUB complete connector , for CANopen®, shell size 1, female, screw connection, shielded			
Female	VS-09-CAN	1689307	1
D-SUB panel mounting frame , for taking up D-SUB contact inserts			
D-SUB 09			
D-SUB EMC shroud , for the IP67 panel mounting frame, for shield contacting to the housing panel			
D-SUB 09			
D-SUB connector set			
D-SUB 09			

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-09-A	1688366	5
VS-09-A-EMV-S	1688463	5
VS-09-SET-EMV	1689158	1

**D-SUB connectors,
IP20/IP67**

Screw connection
Fixing: 2.5 mm hole



**D-SUB panel mounting frame IP67,
with integrated gender changer**

EAC

	Technical data
Electrical data	
Rated voltage	60 V
Rated current	5 A
Overvoltage category	III
Material data	
Housing material	Steel
Contact material	Cu
Contact surface material	Au/Ni
Contact carrier material	PBTP
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	9
Color	-
Degree of pollution	2
Degree of protection	IP20
Connection method	Screw connection
Conductor cross section	0.14 mm ² ... 0.5 mm ²
Connection cross section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Temperature data	
Ambient temperature (operation)	-20°C ... 80°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB contact insert			
Male	VS-09-ST-DSUB/10-MPT-0,5	1688379	10
Female	VS-09-BU-DSUB/9-MPT-0,5	1688395	10
D-SUB panel mounting frame, with integrated gender changer, shielded			
D-SUB 09, male/male			
D-SUB 09, female/female			
D-SUB coupling, with integrated gender changer, shielded			
D-SUB 09, male/male			
D-SUB 09, female/female			

EAC

	Technical data	
Electrical data		
Rated voltage	125 V	125 V
Rated current	5 A	5 A
Overvoltage category	III	III
Material data		
Housing material	PA	PA
Contact material	Copper alloy	Copper alloy
Contact surface material	Hard gold-plated over nickel	Hard gold-plated over nickel
Contact carrier material	Polyester GF	Polyester GF
Flammability rating in accordance with UL 94	V0	V0
Mechanical data		
Number of positions	9	9
Color	gray	gray
Degree of pollution	2	2
Degree of protection	IP67	IP67
Connection method	-	-
Conductor cross section	-	-
Connection cross section AWG	-	-
Insertion/withdrawal cycles	≥ 200	≥ 200
Temperature data		
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 80°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB contact insert			
Male	VS-09-ST-DSUB/10-MPT-0,5	1688379	10
Female	VS-09-BU-DSUB/9-MPT-0,5	1688395	10
D-SUB panel mounting frame, with integrated gender changer, shielded			
D-SUB 09, male/male	VS-09-A-GC-ST/ST	1689705	5
D-SUB 09, female/female	VS-09-A-GC-BU/BU	1689695	5
D-SUB coupling, with integrated gender changer, shielded			
D-SUB 09, male/male	VS-09-KU-ST/ST	1689640	5
D-SUB 09, female/female	VS-09-KU-BU/BU	1689637	5



Contacts for standard
D-SUB contact carriers



Contacts for high density
D-SUB contact carriers

ERC

Technical data

AWG 28 ... 26	AWG 24 ... 20
-	-
5 A (at 20°C)	5 A (at 20°C)
Copper alloy	Copper alloy
0.2 µm, gold over nickel	0.2 µm, gold over nickel
Crimp connection	Crimp connection
0.08 mm ² ... 0.12 mm ²	0.2 mm ² ... 0.5 mm ²
28 ... 26	24 ... 20
≥ 200	≥ 200
-55°C ... 130°C	-55°C ... 130°C

Ordering data

Type	Order No.	Pcs./Pkt.
CUC-DSC-C1BAU-S/DSC28	1418784	100
CUC-DSC-C1BAU-S/DSC24	1418786	100
CUC-DSC-J1BAU-S/DSC28	1418787	100
CUC-DSC-J1BAU-S/DSC24	1418788	100

Accessories

CRIMPFOX-TC MP	1212510	1
VS-IET-DSUB-SIGNAL-STD	1658794	1

ERC

Technical data

CUC-DSC-...BAU-S/DSC22
-
3 A
Copper alloy
0.2 µm, gold over nickel
Crimp connection
0.08 mm ² ... 0.34 mm ²
28 ... 22
≥ 200
-55°C ... 115°C

Ordering data

Type	Order No.	Pcs./Pkt.
CUC-DSC-C1BAU-S/DSC22	1418789	100
CUC-DSC-J1BAU-S/DSC22	1418790	100

Accessories

CRIMPFOX RC 2,5	1205448	1
VS-IET-DSUB-SIGNAL-HD	1658503	1

Electrical data
Rated voltage
Rated current
Contact material
Contact surface material
Mechanical data
Connection method
Conductor cross section
Connection cross section AWG
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
Turned male crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface
AWG 28 ... 26
AWG 24 ... 20
Turned female crimp contacts , for D-SUB contact inserts with standard contact density, gold-plated surface
AWG 28 ... 26
AWG 24 ... 20
Turned crimp contacts , for D-SUB contact inserts with high density, gold-plated surface
AWG 28 ... 22, male
AWG 28 ... 22, female

Crimping pliers , for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool
for turned contacts, four-mandrel crimping
Insertion/Extraction Tool , for fitting and removing the D-SUB standard signal contacts
Insertion/Extraction Tool , for fitting and removing the D-SUB High Density signal contacts

Power contacts

With straight solder cups
or angled solder pins

With screw connection

ERC

Technical data	
VS-.../2,6	VS-.../4,6
Electrical data	
Rated voltage	-
Rated current	20 A (at 20°C) 40 A (at 20°C)
Material data	
Contact material	Copper alloy Copper alloy
Contact surface material	Au/Sn Au/Sn
Mechanical data	
Connection method	Solder cup Solder cup
Conductor cross section	2 mm² ... 3.5 mm² 5 mm² ... 8.5 mm²
Connection cross section AWG	14 ... 12 10 ... 8
Insertion/withdrawal cycles	≥ 500 ≥ 500
Temperature data	
Ambient temperature (operation)	-55°C ... 130°C -55°C ... 130°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-ST-LK-3,6/22,4/2,6	1688243	100
VS-ST-LK-3,6/22,4/4,6	1688269	100
VS-BU-LK-3,6/22,8/2,6	1688256	100
VS-BU-LK-3,6/22,8/4,6	1688272	100
CUC-DSC-J1MAU-S/DSLS:100	1426074	100
CUC-DSC-C1MAU-S/DSLS:100	1426073	100
VS-ST-LH-3,6/18/3,8	1655467	100
VS-BU-LH-3,6/18/3,8	1655454	100

Accessories

HC-M4-KOAX-EWZ	1676747	1

ERC

Technical data	
VS-...SC-2,6	
Electrical data	
Rated voltage	-
Rated current	20 A
Material data	
Contact material	Copper alloy
Contact surface material	Hard gold-plated over nickel
Mechanical data	
Connection method	Screw connection
Conductor cross section	0.75 mm² ... 2 mm²
Connection cross section AWG	18 ... 14
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-55°C ... 155°C

Ordering data

Type	Order No.	Pcs./Pkt.
VS-ST-SC-2,6	1655483	30
VS-BU-SC-2,6	1655470	30

Accessories

HC-M4-KOAX-EWZ	1676747	1

Electrical data
Rated voltage
Rated current
Material data
Contact material
Contact surface material
Mechanical data
Connection method
Conductor cross section
Connection cross section AWG
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
Power contact , for D-SUB combination inserts, with straight solder cup, gold-plated surface
Up to 20 A, male
Up to 40 A, male
Up to 20 A, female
Up to 40 A, female
Power contact , for D-SUB combination inserts, with straight solder pin, gold-plated surface
Up to 20 A, male
Up to 20 A, female
Power contact , for D-SUB combination inserts, with angled solder pins for PCB mounting, gold-plated surface
Up to 40 A, male
Up to 40 A, female
Power contact , for D-SUB combination inserts, with straight screw connection, gold-plated surface
Up to 40 A, male
Up to 40 A, female

Removal tool

Data connectors and cables

D-SUB-based connectors

Sleeve housings
and contact inserts
with IP20 degree of protection

Sleeve housings and contact inserts with IP20 degree of protection			Signal								
			Solder connection								
											
			Solder cups								
			VS-....-ST-DSUB-EG VS-....-BU-DSUB-EG			VS-....-ST-DSUB-HD-EG VS-....-BU-DSUB-HD-EG					
			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact insert, high-position Fixing: 3 mm drill hole					
Type		Order No.	Number of positions	Male	Female	Number of positions	Male	Female			
IP20, all metal	Screw locking	Straight		CUC-DST-GZNI-S/DSSC9	1419722	9	1688793	1688803	15	1655111	1655108
			CUC-DST-GZNI-S/DSSC15	1419724	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GZNI-S/DSSC25	1419727	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GZNI-S/DSSC25	1419727							
			CUC-DST-GZNI-S/DSSC15	1419724							
			CUC-DST-GZNI-S/DSSC25	1419727							
		CUC-DST-GZNI-S/DSSC25	1419727								
		Angled		CUC-DST-GZNI-A/DSSC9	1419723	9	1688793	1688803	15	1655111	1655108
			CUC-DST-GZNI-A/DSSC15	1419725	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GZNI-A/DSSC25	1419728	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GZNI-A/DSSC25	1419728							
			CUC-DST-GZNI-A/DSSC15	1419725							
	CUC-DST-GZNI-A/DSSC25		1419728								
	Snap-in locking	Straight		CUC-DST-GZNI-S/DSFL9	1419746	9	1688793	1688803	15	1655111	1655108
			CUC-DST-GZNI-S/DSFL15	1419756	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GZNI-S/DSFL25	1419758	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GZNI-S/DSFL25	1419758							
			CUC-DST-GZNI-S/DSFL15	1419756							
			CUC-DST-GZNI-S/DSFL25	1419758							
			CUC-DST-GZNI-S/DSFL25	1419758							
			Angled		CUC-DST-GZNI-A/DSFL9	1419754	9	1688793	1688803	15	1655111
		CUC-DST-GZNI-A/DSFL15		1419757	15	1688874	1688887	26	1655179	1655166	
		CUC-DST-GZNI-A/DSFL25		1419759	25	1689899	1689909	44	1655234	1655221	
		CUC-DST-GZNI-A/DSFL25		1419759							
		CUC-DST-GZNI-A/DSFL15		1419757							
		CUC-DST-GZNI-A/DSFL25		1419759							
IP20, metal-plated		Screw locking	Straight		CUC-DST-GPME-S/DSSC9	1419705	9	1688793	1688803	15	1655111
	CUC-DST-GPME-S/DSSC15			1419710	15	1688874	1688887	26	1655179	1655166	
	CUC-DST-GPME-S/DSSC25			1419719	25	1689899	1689909	44	1655234	1655221	
	CUC-DST-GPME-S/DSSC25			1419719							
	CUC-DST-GPME-S/DSSC15			1419710							
	CUC-DST-GPME-S/DSSC25			1419719							
	CUC-DST-GPME-S/DSSC25		1419719								
	Angled			CUC-DST-GPME-A/DSSC9	1419706	9	1688793	1688803	15	1655111	1655108
			CUC-DST-GPME-A/DSSC15	1419718	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GPME-A/DSSC25	1419721	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GPME-A/DSSC25	1419721							
			CUC-DST-GPME-A/DSSC15	1419718							
		CUC-DST-GPME-A/DSSC25	1419721								
	Snap-in locking	Straight		CUC-DST-GPME-S/DSFL9	1419729	9	1688793	1688803	15	1655111	1655108
			CUC-DST-GPME-S/DSFL15	1419731	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GPME-S/DSFL25	1419736	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GPME-S/DSFL25	1419736							
			CUC-DST-GPME-S/DSFL15	1419731							
			CUC-DST-GPME-S/DSFL25	1419736							
		Angled		-	-	-	-	-	-	-	-
			CUC-DST-GPME-A/DSFL15	1419757	15	1688874	1688887	26	1655179	1655166	
			CUC-DST-GPME-A/DSFL25	1419741	25	1689899	1689909	44	1655234	1655221	
			CUC-DST-GPME-A/DSFL25	1419741							
			CUC-DST-GPME-A/DSFL15	1419757							
CUC-DST-GPME-A/DSFL25			1419741								

Signal						Hybrid			Power					
Crimp connection						Solder connection						Screw connection		
														
Contact carriers for crimp contacts						Solder cups						AWG 28 ... 16		
VS-...-ST-DSUB-CD-... VS-...-BU-DSUB-CD-...			VS-...-ST-DSUB-HD-CD-B VS-...-BU-DSUB-HD-CD-B			VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			VS-...-ST-DSUB-...P VS-...-BU-DSUB-...P			PSC 1,5/...-F		
D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact carrier, high-position Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole		
Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Female	
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909	
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912	
25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983			
						4PK-5S	1655386	1655373						
						1PK-10S	1418755	1418759						
						2PK-15S	1418757	1418760						
						1PK-20S	1418758	1418761						

Data connectors and cables

D-SUB-based connectors

Panel mounting frames, sleeve housings, and contact inserts with IP67 degree of protection

Panel mounting frames, sleeve housings, and contact inserts with IP67 degree of protection				Signal								
				Screw connection			Solder connection					
												
				AWG 26 ... 20			Solder cups					
				VS-...-ST-DSUB/...-MPT-0,5 VS-...-BU-DSUB/...-MPT-0,5			VS-...-ST-DSUB-EG VS-...-BU-DSUB-EG			VS-...-ST-DSUB-HD-EG VS-...-BU-DSUB-HD-EG		
Housing size 1 to 3				D-SUB contact insert Fixing: 2.5 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact insert, high-position Fixing: 3 mm drill hole		
Type		Order No.		Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female
	IP67 panel mounting frame											
	VS-09-A	1688366		9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-A	1688036		15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-A	1689750		25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-A	1689750										
	VS-15-A	1688036										
	VS-25-A	1689750										
	VS-25-A	1689750										
	IP67 sleeve housing											
	VS-09-T-2M16	1688353		9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-T-2PG11	1688052		15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-T-2M20	1689792		25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-T-2M20	1689792										
	VS-15-T-2PG11	1688052										
	VS-25-T-2M20	1689792										
	VS-25-T-2M20	1689792										
	VS-09-SET-STD	1689145	Panel mounting frame	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
			Sleeve housing	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-SET-STD	1689129	Panel mounting frame	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
			Sleeve housing	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-SET-STD	1652198	Panel mounting frame	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
			Sleeve housing	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-15-SET-STD	1689129	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-09-SET-EMV	1689158	Panel mounting frame	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
			Sleeve housing	9	1688379	1688395	9	1688793	1688803	15	1655111	1655108
	VS-15-SET-EMV	1689132	Panel mounting frame	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
			Sleeve housing	15	1688078	1688094	15	1688874	1688887	26	1655179	1655166
	VS-25-SET-EMV	1652208	Panel mounting frame	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
			Sleeve housing	25	1689789	1689776	25	1689899	1689909	44	1655234	1655221
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									
	VS-15-SET-EMV	1689132	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									
	VS-25-SET-EMV	1652208	Panel mounting frame									
			Sleeve housing									

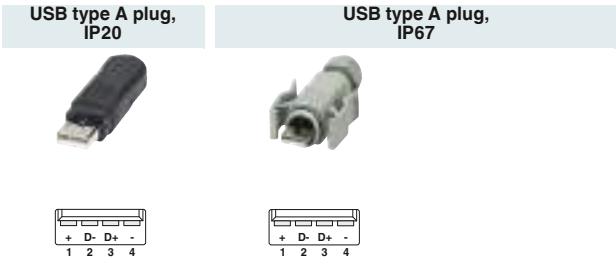
Note:
Do not use the EMC inner sleeve of the IP67 sleeve housing on the panel mounting side.

Signal									Hybrid			Power				
Solder connection			Crimp connection						Solder connection						Screw connection	
																
Angled solder pins			Contact carriers for crimp contacts						Solder cups						AWG 28 ... 16	
VS-...-ST-DSUB-LH-B VS-...-BU-DSUB-LH-B			VS-...-ST-DSUB-CD-... VS-...-BU-DSUB-CD-...			VS-...-ST-DSUB-HD-CD-B VS-...-BU-DSUB-HD-CD-B			VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			VS-...-ST-DSUB-...P VS-...-BU-DSUB-...P			PSC 1,5/...-F	
D-SUB contact insert Fixing: 2.5 mm drill hole and solder plate			D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact carrier, high-position Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole			D-SUB contact carrier Fixing: 3 mm drill hole			D-SUB contact insert Fixing: 3 mm drill hole	
Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Male	Female	Number of positions	Female
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK-5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK-4S	1689006	1689019	2PK	1688418	1688421	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK-5S	1688227	1688230	3PK	1688201	1688214	5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK-5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214	5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
									4PK - 5S	1655386	1655373					
									4PK - 5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					
									1PK-20S	1418758	1418761					
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	1PK - 4S	1689006	1689019	2PK	1688418	1688421		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124							3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	2PK - 5S	1688227	1688230	3PK	1688201	1688214		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182							5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	3PK-10S	1689996	1690008	5PK	1689970	1689983		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247								
									4PK - 5S	1655386	1655373					
									1PK-10S	1418755	1418759					
									2PK-15S	1418757	1418760					
									1PK-20S	1418758	1418761					

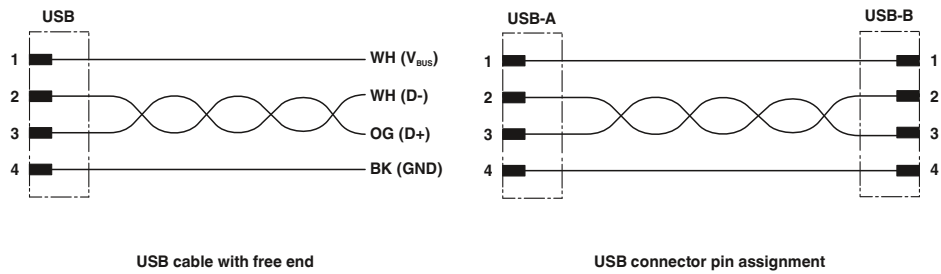
Data connectors and cables

USB connectors

Assembled cables,
IP20/IP67



Free end	Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.
	1.00 m	1655771	1.00 m	1655742		
	2.00 m	1655784	2.00 m	1655755		
	5.00 m	1655797	5.00 m	1655768		
USB type B plug, IP20						
	 	1.00 m 1654853	2.00 m 1653896			
		2.00 m 1653935	5.00 m 1653906			
USB type B plug, IP67						
	 	2.00 m 1653919	2.00 m 1653870			
		5.00 m 1653922	5.00 m 1653883			
M12 Mini USB, SPEEDCON						
		1 m 1420168				
		2 m 1420171				
		5 m 1420184				



		Technical data	Technical data
		IP20	IP67
Transmission characteristics (category)		USB 2.0	USB 2.0
Cable diameter	[mm]	6.7	6.7
Housing material		PA	PA
Handle color		black	gray
Number of positions		4	4
Degree of protection		IP20	IP67
Temperature data			
Cable, fixed installation	[°C]	-20 ... 60	-20 ... 60
Cable, flexible installation	[°C]	0 ... 50	0 ... 50

Panel feed-throughs, memory sticks, protective cover

Panel feed-throughs are implemented with the IP67 panel mounting frame and USB female inserts. The USB memory sticks with IP67 protection enable wireless data transmission in harsh industrial environments.



USB panel mounting frame

ERC

Technical data

VS-04-BUA-BUB-F/IP67

Electrical data	
Rated voltage	30 V
Transmission speed	480 Mbps
Material data	
Housing material	PC
Flammability rating in accordance with UL 94	V0
Mechanical data	
Number of positions	4
Degree of protection	IP67
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-15°C ... 65°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Version 6 , panel mounting frame with USB coupling:			
Slot V6 with USB-B	CUC-V06-F1PGY-UBB/UBAB	1411905	1
Slot V6 with USB-A	CUC-V06-F1PGY-UBA/UBBB	1411904	1
USB female insert , 4-pos., female USB to flat-ribbon cable terminal strip, 2.54 pitch, female, type A			
	VS-04-BUA-FK-F/IP67	1653854	1
	VS-04-BUB-FK-F/IP67	1653867	1
USB cable , assembled on one side with USB connector			
Connector type: A, length:0.3 m	VS-04-C-SDA/PH/0,3	1405552	1
Connector type: B, length:0.3 m	VS-04-C-SDB/PH/0,3	1405565	1
Connector type: A on B, length:1.8 m	VS-04-C-SDA/SDB/1,8	1405578	1
Freenet panel mounting frame , Version 6, for round mounting cutout, with seal, without mounting screws			
Military gray RAL 7042	VS-A-F-IP67	1653744	5
Protective cover for Version 6 panel mounting frame			
Military gray RAL 7042	VS-08-SD-F	1652606	5

Data connectors and cables

Cable range

Symbol key



With UL style



Suitable for drag chain applications



Resistant to welding sparks



UV-resistant



Extremely flame-retardant



High temperature resistance



Good oil resistance



Good resistance to chemicals



Suitable for torsional stress



Halogen-free



Transmission properties



Suitable for railway applications

INTERBUS cable, type 900



The INTERBUS type 900 cable is designed for highly flexible use in dry and humid rooms and in harsh industrial environments. The remote bus cable is certified in accordance with the requirements of the INTERBUS Club under No. 117.

The cable is halogen-free and flame-retardant in accordance with VDE 0482, Part 265-2-1/ IEC 332-1. The wire insulation of the inner conductor is made from polyethylene.

Outer sheath material PVC

Minimum bending radius 7.5 x D
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
900 PVC Green	6-pos.	M12	3 x 2 x 0.25 mm ² 32 x 0.1 mm		Yellow, green, white, brown, pink, gray	PE	-30°C ... 70°C	425 428

PROFIBUS cable, type 910



The PROFIBUS type 910 cable is suitable for drag chain applications and for use in harsh industrial environments, and is oil resistant.

Outer sheath material PUR

Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 10 m
Acceleration 7 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
910 PUR Violet	2-pos.	M12	1 x 2 x AWG 24 19 x 0.15 mm		Green, red	PE	-40°C ... 80°C	426 429

DeviceNet™/CANopen® cable, type 920



The DeviceNet™/CANopen® type 920 cable is designed for flexible installation. It is suitable for drag chain applications and use in harsh industrial environments. The cable is also oil resistant.

Outer sheath material PUR
Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
920 PUR Violet	4-pos.	M12, M8	1 x 2 x AWG 22 19 x 0.15 mm + 1 x 2 x AWG 24 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	427 432 433 434

DeviceNet™/CANopen® cable, type 923



The DeviceNet™/CANopen® type 923 cable is designed for flexible installation. It is suitable for drag chain applications and use in harsh industrial environments. The cable is also oil resistant.

Outer sheath material PUR
Number of bending cycles 5 million
Minimum bending radius 10 x D
Traverse path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
923 PUR Gray	4-pos.	M12, 7/8"	1 x 2 x AWG 22 19 x 0.15 mm + 1 x 2 x AWG 24 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	431

DeviceNet™ cable, type 928



The DeviceNet™/CANopen® type 928 cable is designed for fixed installation. It is suitable for use in harsh industrial environments and is oil resistant.

Outer sheath material PVC
Minimum bending radius 10 x D

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
928 PVC Gray	4-pos.	7/8"	1 x 2 x AWG18 19 x 0.26 mm + 1 x 2 x AWG15 19 x 0.34 mm		Red, black, blue, white	PVC	Fixed: -40°C ... 80°C	See: phoenix contact.net/ products

Data connectors and cables

Cable range

FOUNDATION Fieldbus cable, type 960

FOUNDATION Fieldbus/PROFIBUS PA cable, type 961



The FOUNDATION Fieldbus type 960 cable is designed for fixed installation. It is UV-resistant and flame-retardant in accordance with UL 1685, which means that it is suitable for both indoor and outdoor use.

Cable type 961 is available in a blue version designed specifically for use in the hazardous area.

Outer sheath material PVC

Minimum bending radius 10 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
960 PVC Orange	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	See: phoenix contact.net/ products
961 PVC Blue	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	430

CC-Link cable, type 990



The CC-Link type 990 cable is designed for fixed indoor installation. The cable is flame-retardant in accordance with UL 1685.

Outer sheath material PVC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
990 PVC Red	3-pos.	M12	3 x AWG 22 7 x 0.28 mm		White, blue, yellow	Foam PE	-30°C ... 60°C	See: phoenix contact.net/ products

PROFINET cable, type 93A



The PROFINET type 93A cable is designed for fixed installation. It is flame-retardant and its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7.5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93A PVC Green	4-pos.	M12, RJ45	4 x AWG 22 single-strand		White, yellow, blue, orange	PE	-25°C ... 80°C	392

PROFINET cable, type 93B

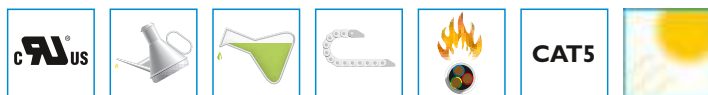
The PROFINET type 93B cable is designed for flexible installation and is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for 1200 seconds in

accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93B PVC Green	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C...70°C	394 392 396

PROFINET cable, type 93C

The PROFINET type 93C cable is designed for use in drag chains and is halogen-free and oil resistant. It is UV-resistant and therefore suitable for outdoor use. Its transmission properties meet CAT5.

Outer sheath material PUR

Number of bending cycles 3 million
Minimum bending radius 7.5 x D
Traverse path 10 m
Acceleration 4 m/s²
Speed 4 m/s
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93C PUR Green	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	392 396

PROFINET cable, type 93R

The PROFINET type 93R cable is designed for robot applications. The cable is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for

1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PUR

Torsion angle ±180°
Torsion cycles 1 million

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93R PUR Green	4-pos.	M12, RJ45	4 x AWG 22 19 x 0.15 mm		White, yellow, blue, orange	PE	-40°C ... 80°C	392 396

Data connectors and cables

Cable range

PROFINET cable, type 937



The PROFINET type 937 cable is designed for railway applications. The cable is oil resistant. It meets the requirements of fire protection standards BS 6853, GM/RT 2130, EN 45545, DIN 5510,

NF F16-101, NFPA 130, UNI CEI 11170 and its transmission properties meet CAT5.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
937 PE-X Black	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE-X	-40°C ... 90°C	392 396

PROFINET cable, type 93X



This robust PROFINET cable for outdoor use has good oil and fuel resistance. The black outer sheath and the electron beam cross-linked design provide good protection against the influence of UV radiation. The cable meets the requirements of flame

resistance standard ISO 6722-1, which is referred to by the European ECE-R 118 regulation. This means that the cable can also be used in buses and trams.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93X PE-X Black	4-pos.	M12	4 x AWG 22 7 x 0.25 mm Twisted pair		White, yellow, blue, orange	PE-X	Mobile: -40°C ... 90°C Fixed: -50°C ... 90°C	See: phoenix contact.net/ products

EtherCAT® cable, type 93G



The EtherCAT® type 93G cable is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for use in harsh industrial environments, as it is UV-resistant for 1200 seconds in

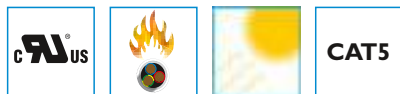
accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93G PVC Green	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	See: phoenix contact.net/ products

Sercos® cable, type 93K



The Sercos® cable is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for use in harsh industrial environments, as it is UV-resistant for 1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93K PVC Red	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	See: phoenix contact.net/ products

Ethernet cable, type 93E



The Ethernet type 93E cable is designed for flexible use. The cable is halogen-free and oil resistant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
93E PUR Blue	4-pos.	M12, RJ45	2 x 2 x AWG 26 7 x 0.25 mm		White/orange-orange, white/green-green	PE	-20°C ... 80°C	393 398

Ethernet cable, type 94A



The Ethernet type 94A cable is designed for fixed installation. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 7 x D
Tested at 20°C ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94A PUR Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 24 single-strand Twisted pair		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-20°C ... 70°C	393

Data connectors and cables

Cable range

Ethernet cable, type 94B



The Ethernet type 94B cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94B PUR Blue	8-pos.	M12, RJ45	4 x 2 x AWG 26 7 x 0.25 mm		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-40°C ... 80°C	393 400

Ethernet cable, type 94C



The Ethernet cable type 94C is designed for universal use in drag chains. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties meet CAT5.

Outer sheath material PUR

Minimum bending radius 5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94C PUR Blue	8-pos.	M12, RJ45	4 x 2 x AWG 26 19 x 0.10 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-20°C ... 80°C	393 400

Ethernet cable, type 94D



The Ethernet cable type 94D is designed for flexible installation. The cable is oil resistant up to a degree. It is suitable for outdoor use, as it is UV-resistant for 1200 seconds in accordance with UL 1581. Its transmission properties meet CAT5.

Outer sheath material PVC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94D PVC Black	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-40°C ... 80°C	393

Ethernet cable, type 94E



The Ethernet cable type 94E is designed for fixed installation. The cable is resistant to oil and chemicals and is flame-retardant. It is also halogen-free and its transmission properties meet CAT7.

Outer sheath material FRNC

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94E FRNC Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 23 single-strand Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	393

Ethernet cable, type 94F



The Ethernet type 94F cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. It is also halogen-free and its transmission properties meet CAT6_A.

Outer sheath material PUR

Minimum bending radius 10 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94F PUR Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	402

Ethernet cable, type 94S



The 94S Ethernet cable is designed for use in the railway industry. The cable is halogen-free and resistant to fuels and ozone. Thanks to its high flame resistance and low smoke density, the cable meets the requirements of the following standards for safety in rail vehicles: BS 6853, DIN 5510-2,

EN 45545-2, EN 50306-4, NF F16-101, NFPA 130, PN-K-02511, and UIC 564-2. Its transmission properties meet CAT7.

Outer sheath material PE-X

Minimum bending radius 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94S PE-X Black	8-pos.	M12	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White, blue, white, orange, white, green, white, brown	PE-X	-40°C ... 80°C	404

Data connectors and cables

Cable range

Ethernet hybrid cable, type 94H



The Ethernet type 94H hybrid cable is designed for drag chain applications. It has four wires for data transmission and four wires for power supply. The cable is oil resistant and flame-retardant.

It is also halogen-free and its transmission properties are in accordance with CAT5.

Outer sheath material PUR

Number of bending cycles 2 million
Minimum bending radius 10 x D
Traverse path 4.5 m
Acceleration 3 m/s²
Speed 3 m/s

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94H PUR Black	8-pos.	M12	1 x 4 x AWG 26 19 x 0.15 mm 1 x 4 x AWG 20 19 x 0.6 mm		White-orange, orange, white-green, green, white, blue, brown, black	PP	-40°C ... 90°C	405

Ethernet cable, type 94Z



The type 94Z Ethernet cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties are in accordance with CAT5.

Outer sheath material PUR

Minimum bending radius 51.2 mm

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94Z PUR Blue	8-pos.	RJ45	4 x 2 x AWG 26 7 x 0.16 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	405

VARAN cable, type 970



The VARAN type 970 cable is designed for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. Its transmission properties are in accordance with CAT5.

Outer sheath material Santoprene

Minimum bending radius 7.5 x D
Tested at 20°C ... 25°C

Type	Number of positions	Application	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
970 Santoprene Black	6-pos.	M12, PP, RJ45	1 x 2 x AWG 22 19 x 0.1 mm + 2 x 2 x AWG 26 19 x 0.1 mm		Brown, blue White-orange, orange, white-green, green	PE	-40°C ... 80°C	See: phoenix contact.net/products



Installation systems

Connect cables quickly and easily without special tools: with the IPD and QPD installation systems from Phoenix Contact.

Depending on the application, choose between simple cable connections, power distributions or device connections. Save up to 80% in cabling time, thanks to the convenient Push-in and QUICKON IDC displacement connection.

IPD installation system

Simply plug in once for a secure connection: Experience simple power distribution in the field with the IPD installation system.

The IPD system is fully plug-in, thanks to the Push-in connection and field-side fast locking system. The IPD system enables the time-saving installation of connectors, panel feed-throughs and distributors up to 5 x 2.5 mm². The convenient handling ensures that this is possible even in difficult installation situation.

QPD installation system

Industrial power distribution does not have to be time-consuming or complicated. The robust QPD installation system is proof of this.

Thanks to the proven QUICKON IDC fast connection, cables up to 5 x 6.0 mm² can be connected quickly and easily, without the need for stripping or special tools.

 Your web code: [#0541](#)

IPD installation system

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IPD installation system 2.5 mm²

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QPD installation system

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QPD installation system 1.5 mm²

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QPD installation system 2.5 mm²

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QPD installation system 6.0 mm²

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Easy distribution of power

Widely branched buildings or infrastructures place stringent demands on power distribution. The IPD installation system is fully plug-in and enables the tool-free assembly of 3- and 5-pos. cables with a conductor cross section of up to 2.5 mm².



Time-saving wiring in the field

Field-side cabling does not have to be complicated: As a tool-free connection technology, Push-in enables time-saving assembly through the direct plugging of pre-treated and rigid conductors. Simply open the terminal point to connect fine-flexible litz wires and to release a connected conductor.



Reliable installation

Long-term stable cabling in outdoor and industrial environments: Thanks to IP67 throughout the entire system, your installation is protected against splash water and dust, for particularly reliable installations in harsh environments.



Simple locking

Installation can be so easy, especially in difficult installation situations. To enable you to work conveniently, even under adverse conditions, the IPD connectors are equipped with a fast locking system.

The plug-in position engages clearly and securely, with polarization against incorrect plugging and touch protection in accordance with DIN EN 0105.



Flexible installation on site

The connectors for assembly facilitate especially great cabling projects considerably. Order connectors that are suitable for your project and adjust the cable length flexibly on site.



Automated wiring

Thanks to the Push-in connection on the device side, wiring robots can wire the components in the device automatically. The IPD panel feed-throughs are therefore ideal for lighting applications.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.



Installation systems

IPD installation system 2.5 mm²

Panel feed-throughs, 2.5 mm², with Push-in connection on both sides

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- For internal Push-in connection, rigid conductors are simply stripped and inserted in the connection
- Touch-proof in accordance with DIN EN 50274
- Also available in black

new



2-pos. + PE

new



4-pos. + PE

Technical data

3+PE-pos.

General data	
Degree of protection	IP66 / IP68
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Mechanical data	
Impact category	IK07
Color	light gray
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	0.5 mm² ... 2.5 mm² / 0.5 mm² ... 2.5 mm²
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C

Ordering data

Description	
Panel feed-through, with M20x1.5 mounting flange	
Panel feed-through, with M25x1.5 mounting flange	

Type	Order No.	Pcs./Pkt.
IPD WD 3P2,5 M20 GY	1047319	1
IPD WD 3P2,5 M25 GY	1047322	1

Technical data

4+PE-pos.

General data	
Degree of protection	IP66 / IP68
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Mechanical data	
Impact category	IK07
Color	light gray
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	0.5 mm² ... 2.5 mm² / 0.5 mm² ... 2.5 mm²
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C

Ordering data

Type	Order No.	Pcs./Pkt.
IPD WD 5P2,5 M25 GY	1047344	1

**Panel feed-throughs, 2.5 mm²,
with litz wires and Push-in connection
on one side**

- Devices no longer need to be opened
in order to connect the cables
- User-friendly connection, even on devices
that are difficult to access
- Touch-proof in accordance with
DIN EN 50274
- Also available in black



2-pos. + PE



4-pos. + PE

General data	
Degree of protection	IP66 / IP68
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Mechanical data	
Impact category	IK07
Color	light gray
Connection frequency	max. 10
Conductor cross section [mm ²] rigid/flexible	0.5 mm ² ... 2.5 mm ² / 0.5 mm ² ... 2.5 mm ²
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C

Technical data			
2+PE-pos.			
IP66 / IP68			
690 V			
6 kV			
20 A			
III / 3			
PA			
Cu			
IK07			
light gray			
max. 10			
0.5 mm ² ... 2.5 mm ² / 0.5 mm ² ... 2.5 mm ²			
-40°C ... 100°C			

Technical data			
4+PE-pos.			
IP66 / IP68			
690 V			
6 kV			
20 A			
III / 3			
PA			
Cu			
IK07			
light gray			
max. 10			
0.5 mm ² ... 2.5 mm ² / 0.5 mm ² ... 2.5 mm ²			
-40°C ... 100°C			

Ordering data	
Description	Cable length
Panel feed-through, with M20x1.5 mounting flange	0.5 m
	1 m
Panel feed-through, with M25x1.5 mounting flange	0.5 m
	1 m

Ordering data			
Type	Order No.	Pcs./Pkt.	
IPD WD 3P2,5 0,5 M20 GY	1047347	1	
IPD WD 3P2,5 1,0 M20 GY	1047350	1	
IPD WD 3P2,5 0,5 M25 GY	1047354	1	
IPD WD 3P2,5 1,0 M25 GY	1047356	1	

Ordering data			
Type	Order No.	Pcs./Pkt.	
IPD WD 5P2,5 0,5 M25 GY	1047360	1	
IPD WD 5P2,5 1,0 M25 GY	1047364	1	



Easy distribution of power

With the QPD system you can choose either fixed or plug-in connections to construct flexible distribution solutions. Thanks to the proven QUICKON IDC displacement connection, you can connect cables of up to $5 \times 6.0 \text{ mm}^2$ quickly and easily, without the need for stripping or special tools.



Panel feed-throughs for devices

Convenient installation of a connector begins during the device manufacturer's design-in process. Install the QPD panel feed-throughs directly in the device. The connection can be made on site without having to open the device. The electronics remain continuously protected and the protection class of the device is retained



Reliable installation

The IP66/IP68/IP69K degrees of protection and robust design make the QPD ideal for use outside and in wet areas.



Secure connection in just a few steps

With insulation displacement technology, the cable is connected without stripping the insulation. Simply remove the sheath and prepare the PE conductor. Insert the wires into the nut and snap into the marked wire guides.



Easy assembly without special tools

Cut the ends of the litz wires flush. Then place the union nut onto the contact carrier and tighten.



Fast connection with QUICKON

The fast connection technology automatically establishes the contact and strain relief when tightened. The end position is reached when the connection snaps audibly into place. The connection can be disconnected at any time, which means that components can be reused.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.



Installation systems

QPD installation system 1.5 mm²

H-distributors, 1.5 mm²

- Can be used as a H-distributor with continuous master cable
- Can be used as a star distributor
- Can be used as a Y-distributor with a test connection
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with four QUICKON nuts



without QUICKON nut



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
	IP66 / IP68 / IP69K		
General data			
Degree of protection			
Electrical data			
Rated voltage (III/3)	690 V		
Rated surge voltage	6 kV		
Rated current	17.5 A		
Overvoltage category / Degree of pollution	III / 3		
Material data			
Housing material	PA		
Contact material	Cu		
Flammability rating in accordance with UL 94	V0		
Mechanical data			
Impact category	IK07		
Color	black		
Connector data QUICKON connection			
Core insulation	PVC/PE/TPE/rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		
Connection frequency	max. 10		
Conductor cross section [mm²] rigid/flexible	0.5 mm² ... 1.5 mm² / 0.5 mm² ... 1.5 mm²		
Conductor cross section [AWG]	20 ... 16		
Temperature data			
Ambient temperature (operation)	-40°C ... 100°C		
Temperature when conductor connected	-5°C ... 50°C		

Ordering data			
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.	
1414719	1	1414715	1
1414720	1	1414716	1
		1414755	1
		1414756	1
H-distributor, without QUICKON nuts			
QUICKON nut, for connections up to 1.5 mm², for cable diameter:			
4 mm ... 9 mm			
8 mm ... 13 mm			
5 mm ... 10 mm			
9 mm ... 14 mm			



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
	IP66 / IP68 / IP69K		
General data			
Degree of protection			
Electrical data			
Rated voltage (III/3)	690 V		
Rated surge voltage	6 kV		
Rated current	17.5 A		
Overvoltage category / Degree of pollution	III / 3		
Material data			
Housing material	PA		
Contact material	Cu		
Flammability rating in accordance with UL 94	V0		
Mechanical data			
Impact category	IK07		
Color	black		
Connector data QUICKON connection			
Core insulation	PVC/PE/TPE/rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		
Connection frequency	max. 10		
Conductor cross section [mm²] rigid/flexible	0.5 mm² ... 1.5 mm² / 0.5 mm² ... 1.5 mm²		
Conductor cross section [AWG]	20 ... 16		
Temperature data			
Ambient temperature (operation)	-40°C ... 100°C		
Temperature when conductor connected	-5°C ... 50°C		

Ordering data			
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.	
1414721	1	1414717	1
		1414757	1
QUICKON nut, for connections up to 1.5 mm², for cable diameter:			
4 mm ... 9 mm			
8 mm ... 13 mm			
5 mm ... 10 mm			
9 mm ... 14 mm			

T-distributors, 1.5 mm²

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with three QUICKON nuts



with two QUICKON nuts



Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP66 / IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Overvoltage category / Degree of pollution		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Flammability rating in accordance with UL 94		V0	
Mechanical data			
Impact category		IK07	
Color		black	
Connector data QUICKON connection			
Core insulation		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency		max. 10	
Conductor cross section [mm ²] rigid/flexible		0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40°C ... 100°C	
Temperature when conductor connected		-5°C ... 50°C	

Ordering data					
Description	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.
	2+PE-pos.		3+PE-pos.		4+PE-pos.
T-distributor, for cable diameter:					
4 mm ... 9 mm	1414712	1	1414708	1	
8 mm ... 13 mm	1414714	1	1414710	1	
5 mm ... 10 mm					1414753 1
9 mm ... 14 mm					1414754 1
QUICKON nut, for connections up to 1.5 mm ² , for cable diameter:					
4 mm ... 9 mm					
8 mm ... 13 mm					
5 mm ... 10 mm					
9 mm ... 14 mm					



Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP66 / IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Overvoltage category / Degree of pollution		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Flammability rating in accordance with UL 94		V0	
Mechanical data			
Impact category		IK07	
Color		black	
Connector data QUICKON connection			
Core insulation		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency		max. 10	
Conductor cross section [mm ²] rigid/flexible		0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40°C ... 100°C	
Temperature when conductor connected		-5°C ... 50°C	

Ordering data					
Description	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.
	2+PE-pos.		3+PE-pos.		4+PE-pos.
T-distributor, for cable diameter:					
4 mm ... 9 mm	1414711	1	1414707	1	
8 mm ... 13 mm	1414713	1	1414709	1	
5 mm ... 10 mm					1414751 1
9 mm ... 14 mm					1414752 1
QUICKON nut, for connections up to 1.5 mm ² , for cable diameter:					
4 mm ... 9 mm	1415099	1	1415097	1	
8 mm ... 13 mm	1415100	1	1415098	1	
5 mm ... 10 mm					1415101 1
9 mm ... 14 mm					1415104 1

Installation systems

QPD installation system 1.5 mm²

Cable connectors, 0.14 mm² ... 1.5 mm²

- Easy cable extension or cable repairs
- The QUICKON connections feature different position markings and mechanical coding
- Touch-proof in accordance with DIN EN 50274



with two QUICKON nuts



with two QUICKON nuts



Technical data

General data	
Degree of protection	IP65 / IP67
Electrical data	
Rated voltage (III/3)	125 V
Rated surge voltage	2.5 kV
Rated current	5 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Steel
Contact surface material	Tin-plated
Flammability rating in accordance with UL 94	V0
Impact category	IK06
Connector data QUICKON connection	
Core insulation	PVC / PE / PP / rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6 / min. 0.10 mm
Connection frequency	10
Conductor cross section [mm ²] rigid/flexible	0.14 mm ² ... 0.25 mm ² / 0.14 mm ² ... 0.34 mm ²
Conductor cross section [AWG]	26 ... 22
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Description
Cable connector , for connecting round cables, for cable diameters:
3.5 mm ... 6 mm, 4-pos.
4.0 mm ... 8 mm, 4-pos.
6 mm ... 12 mm, 4-pos.
6 mm ... 12 mm, 3+PE-pos.

1641879

1

1642140

1



Technical data

4-pos.	3+PE-pos.
	IP65 / IP67
	500 V
	6 kV
	15 A
	III / 3
	PA
	CuZn
	Tin-plated
	V0
	IK06
	PVC / PE
	VDE 0295 class 1 to 6 / min. 0.15 mm
	10
	0.75 mm ² ... 1 mm ² / 0.75 mm ² ... 1.5 mm ²
	18 ... 16
	-40°C ... 80°C
	-5°C ... 50°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
4-pos.		3+PE-pos.	
1642153	1	1642182	1

Cable connectors, 1.5 mm²

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 1.5 mm² connector can be used here instead of the QUICKON nut
- Also available in gray color versions



with two QUICKON nuts



with one QUICKON nut



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
General data			
Degree of protection			
IP66 / IP68 / IP69K			
Electrical data			
Rated voltage (III/3)			
690 V			
Rated surge voltage			
6 kV			
Rated current			
17.5 A			
Overvoltage category / Degree of pollution			
III / 3			
Material data			
Housing material			
PA			
Contact material			
Cu			
Contact surface material			
silver-plated			
Flammability rating in accordance with UL 94			
V0			
Impact category			
IK07			
Color			
black			
Connector data QUICKON connection			
Core insulation			
PVC/PE/TPE/rubber			
Structure of individual litz wire/smallest wire diameter			
VDE 0295 class 1 to 6/min. 0.15 mm			
Connection frequency			
10			
Conductor cross section [mm ²] rigid/flexible			
0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²			
Conductor cross section [AWG]			
20 ... 16			
Temperature data			
Ambient temperature (operation)			
-40°C ... 100°C			
Temperature when conductor connected			
-5°C ... 50°C			



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
General data			
Degree of protection			
IP66 / IP68 / IP69K			
Electrical data			
Rated voltage (III/3)			
690 V			
Rated surge voltage			
6 kV			
Rated current			
17.5 A			
Overvoltage category / Degree of pollution			
III / 3			
Material data			
Housing material			
PA			
Contact material			
Cu			
Contact surface material			
silver-plated			
Flammability rating in accordance with UL 94			
V0			
Impact category			
IK07			
Color			
black			
Connector data QUICKON connection			
Core insulation			
PVC/PE/TPE/rubber			
Structure of individual litz wire/smallest wire diameter			
VDE 0295 class 1 to 6/min. 0.15 mm			
Connection frequency			
10			
Conductor cross section [mm ²] rigid/flexible			
0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²			
Conductor cross section [AWG]			
20 ... 16			
Temperature data			
Ambient temperature (operation)			
-40°C ... 100°C			
Temperature when conductor connected			
-5°C ... 50°C			

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.		4+PE-pos.	

Description

Cable connector, for cable diameter:

4 mm ... 9 mm	1414700	1	1414696	1	
8 mm ... 13 mm	1414702	1	1414698	1	
5 mm ... 10 mm					1414740 1
9 mm ... 14 mm					1414742 1

QUICKON nut, for connections up to 1.5 mm², for cable diameter:

4 mm ... 9 mm					
8 mm ... 13 mm					
5 mm ... 10 mm					
9 mm ... 14 mm					

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.		4+PE-pos.	

1414699	1	1414694	1		
1414701	1	1414697	1		
				1414739	1
				1414741	1

1415099	1	1415097	1		
1415100	1	1415098	1		
				1415101	1
				1415104	1

Installation systems

QPD installation system 1.5 mm²

Panel feed-throughs, 1.5 mm²

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274



with litz wires



with manual solder or
spade connector connection



Technical data

	3+PE-pos.	4-pos.
General data		
Degree of protection	IP65 / IP67	
Electrical data		
Rated voltage (III/3)	500 V	
Rated surge voltage	6 kV	
Rated current	15 A	
Overvoltage category / Degree of pollution	III / 3	
Material data		
Housing material	PA	
Contact material	CuZn	
Contact surface material	Tin-plated	
Flammability rating in accordance with UL 94	V0	
Impact category	IK07	
Color	black	
Connector data QUICKON connection		
Core insulation	PVC / PE	
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency	10	
Conductor cross section [mm ²] rigid/flexible	0.75 mm ² ... 1 mm ² / 0.75 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]	18 ... 16	
Temperature data		
Ambient temperature (operation)	-40°C ... 80°C	
Temperature when conductor connected	-5°C ... 50°C	

Ordering data

Description	Cable length	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		4-pos.	
Panel feed-through , with 1.5 mm ² litz wire, connecting thread: M20 x 1.5	0.1 m	1584787	10	1585045	10
	0.5 m				
Panel feed-through , with 4.8 mm x 0.8 mm manual solder/spade connection, connection thread: M20 x 1.5, color: black, terminal marking: L1, N, PE					
Panel feed-through , with 4.8 mm x 0.8 mm manual solder/slip-on connection, connecting thread: M20 x 1.5, color: black					



Technical data

	3-pos.	4-pos.
General data		
Degree of protection	IP65 / IP67	
Electrical data		
Rated voltage (III/3)	500 V	
Rated surge voltage	6 kV	
Rated current	15 A	
Overvoltage category / Degree of pollution	III / 3	
Material data		
Housing material	PA	
Contact material	CuZn	
Contact surface material	Tin-plated	
Flammability rating in accordance with UL 94	V0	
Impact category	IK07	
Color	black	
Connector data QUICKON connection		
Core insulation	PVC / PE	
Structure of individual litz wire/smallest wire diameter	VDE 0295 Cl.2-5, min. wire diameter 0.2 mm	VDE 0295 class 1 to 6/ min. 0.15 mm
Connection frequency	10	
Conductor cross section [mm ²] rigid/flexible	0.75 mm ² ... 1 mm ² / 0.75 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]	18 ... 16	
Temperature data		
Ambient temperature (operation)	-25°C ... 80°C	-40°C ... 80°C
Temperature when conductor connected	-5°C ... 50°C	

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3-pos.		4-pos.	
1641594	10		
1641659	10	1643000	10

Panel feed-throughs, 1.5 mm², with litz wires

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with QUICKON nut



without QUICKON nut



Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP66 / IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Overvoltage category / Degree of pollution		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Flammability rating in accordance with UL 94		V0	
Mechanical data			
Impact category		IK07	
Color		black	
Connector data QUICKON connection			
Core insulation		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency		max. 10	
Conductor cross section [mm ²] rigid/flexible		0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40°C ... 100°C	
Temperature when conductor connected		-5°C ... 50°C	



Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP66 / IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Overvoltage category / Degree of pollution		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Flammability rating in accordance with UL 94		V0	
Mechanical data			
Impact category		IK07	
Color		black	
Connector data QUICKON connection			
Core insulation		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency		max. 10	
Conductor cross section [mm ²] rigid/flexible		0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40°C ... 100°C	
Temperature when conductor connected		-5°C ... 50°C	

Ordering data					
Order No.		Pcs./ Pkt.	Order No.		Pcs./ Pkt.
2+PE-pos.			3+PE-pos.		

Ordering data					
Order No.		Pcs./ Pkt.	Order No.		Pcs./ Pkt.
2+PE-pos.			3+PE-pos.		

Panel feed-through, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameter:

4 mm ... 9 mm	0.5 m	1414684	1	1414675	1
4 mm ... 9 mm	1 m	1414685	1	1414676	1
8 mm ... 13 mm	0.5 m	1414687	1	1414678	1
8 mm ... 13 mm	1 m	1414688	1	1414679	1

Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:

5 mm ... 10 mm	0.5 m			1414730	1
5 mm ... 10 mm	1 m			1414731	1
9 mm ... 14 mm	0.5 m			1414733	1
9 mm ... 14 mm	1 m			1414734	1

Panel feed-through, with M20 x 1.5 mounting flange, without QUICKON nut

0.5 m	1414690	1	1414681	1
1 m	1414691	1	1414682	1

Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut

0.5 m				1414736	1
1 m				1414737	1

QUICKON nut, for connections up to 1.5 mm², for cable diameter:

4 mm ... 9 mm	1415099	1	1415097	1		
8 mm ... 13 mm	1415100	1	1415098	1		
5 mm ... 10 mm					1415101	1
9 mm ... 14 mm					1415104	1

Installation systems

QPD installation system 1.5 mm²

Panel feed-throughs, 1.5 mm², with manual solder or spade connector connection

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Also available in gray color versions
- Touch-proof in accordance with DIN EN 50274



with QUICKON nut



without QUICKON nut



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
	IP66 / IP68 / IP69K		
General data			
Degree of protection			
Electrical data			
Rated voltage (III/3)	690 V		
Rated surge voltage	6 kV		
Rated current	17.5 A		
Overvoltage category / Degree of pollution	III / 3		
Material data			
Housing material	PA		
Contact material	Cu		
Flammability rating in accordance with UL 94	V0		
Mechanical data			
Impact category	IK07		
Color	black		
Connector data QUICKON connection			
Core insulation	PVC/PE/TPE/rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		
Connection frequency	max. 10		
Conductor cross section [mm ²] rigid/flexible	0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²		
Conductor cross section [AWG]	20 ... 16		
Temperature data			
Ambient temperature (operation)	-40°C ... 100°C		
Temperature when conductor connected	-5°C ... 50°C		

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.		4+PE-pos.	

Panel feed-through, with M20 x 1.5 mounting flange,
with QUICKON nut, for cable diameter:

4 mm ... 9 mm
8 mm ... 13 mm

1414686 1 1414677 1
1414689 1 1414680 1

Panel feed-through, with M25 x 1.5 mounting flange,
with QUICKON nut, for cable diameters:

5 mm ... 10 mm
9 mm ... 14 mm

1414732 1
1414735 1

Panel feed-through, with M20 x 1.5 mounting flange,
without QUICKON nut

Panel feed-through, with M25 x 1.5 mounting flange,
without QUICKON nut

1414692 1 1414683 1
1414738 1

QUICKON nut, for connections up to 1.5 mm²,
for cable diameter:

4 mm ... 9 mm
8 mm ... 13 mm
5 mm ... 10 mm
9 mm ... 14 mm



Technical data			
2+PE-pos.	3+PE-pos.	4+PE-pos.	
	IP66 / IP68 / IP69K		
General data			
Degree of protection			
Electrical data			
Rated voltage (III/3)	690 V		
Rated surge voltage	6 kV		
Rated current	17.5 A		
Overvoltage category / Degree of pollution	III / 3		
Material data			
Housing material	PA		
Contact material	Cu		
Flammability rating in accordance with UL 94	V0		
Mechanical data			
Impact category	IK07		
Color	black		
Connector data QUICKON connection			
Core insulation	PVC/PE/TPE/rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		
Connection frequency	max. 10		
Conductor cross section [mm ²] rigid/flexible	0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²		
Conductor cross section [AWG]	20 ... 16		
Temperature data			
Ambient temperature (operation)	-40°C ... 100°C		
Temperature when conductor connected	-5°C ... 50°C		

Ordering data					
Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
2+PE-pos.		3+PE-pos.		4+PE-pos.	

Panel feed-through, with M20 x 1.5 mounting flange,
without QUICKON nut

1414692 1 1414683 1

Panel feed-through, with M25 x 1.5 mounting flange,
without QUICKON nut

1414732 1
1414735 1

QUICKON nut, for connections up to 1.5 mm²,
for cable diameter:

1415099 1 1415097 1
1415100 1 1415098 1

1415101 1
1415104 1

Connectors, 1.5 mm²

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent mismatching of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions
- With SPEEDCON fast locking system



with gray screw locking



	Technical data		
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP66 / IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Overvoltage category / Degree of pollution		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Contact surface material		silver-plated	
Flammability rating in accordance with UL 94		V0	
Impact category		IK07	
Color		black	
Connector data QUICKON connection			
Core insulation		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency		10	
Conductor cross section [mm ²] rigid/flexible		0.5 mm ² ... 1.5 mm ² / 0.5 mm ² ... 1.5 mm ²	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40°C ... 100°C	
Temperature when conductor connected		-5°C ... 50°C	

Ordering data					
Description	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.
	2+PE-pos.		3+PE-pos.		4+PE-pos.

Connectors, for cable diameters:

4 mm ... 9 mm	1414705	1	1414703	1	
8 mm ... 13 mm	1414706	1	1414704	1	
5 mm ... 10 mm					1414749 1
9 mm ... 14 mm					1414750 1

Accessories

- Marker labels ① can be stuck onto the middle of the H- and T-distributor
- Red sealing plugs ② can be stuck into the QUICKON nuts easily and create a seal when screwed tight
- Protective caps with retaining cords ③ for closing open QUICKON domes which, for example, are going to be fitted with a connector later
- Locking nuts ④ for fixing the panel feed-throughs to panels that are too thin to have a thread cut in
- Insulating sleeve ⑤ for 4.8 mm spade connections
- Protective caps ⑥ for attaching to the open QUICKON dome
- Protective caps ⑦ at front for attaching to the connector
- Slotted socket wrenches ⑧ enable you to tighten the QUICKON nuts easily and securely
- Red coding profiles ⑨ for preventing QPD connector mix-ups. Simply insert them into the QUICKON dome and connector on the front side. They are marked with an arrow and their symmetrical form enables them to be mounted in four different positions
- Aluminum shielding tape ⑩ prevents the splicing of the braided shield and enables a clean shield connection



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Marker labels , for H- and T-distributors ①			
For plotting and engraving Can be printed using thermal transfer printer	GPE 13X 9 WH EMLP (13X9)R	0806932 0819453	10 1
Closing cap , for closing unused bore holes in multiple seals and cable glands ②			
Ø 7 mm Ø 10 mm Ø 14 mm	SEALING PLUG 7X16 RD SEALING PLUG 10X16 RD SEALING PLUG 14X22 RD	1400255 1400284 1400270	10 10 10
Protective cap , for panel feed-throughs, captive, IP68 ③			
1.5 mm², 3-, 4-pos. / black 1.5 mm², 5-pos. / 2.5 mm², 4-pos. / black	QPD QSK BK 3/4X1,5 FS QPD QSK BK 5X1,5 FS	1414722 1414728	1 1
Counter nut , (plastic), to lock the contact carrier from the inside of the device ④			
M20 / wrench size 26 / black M25 / wrench size 32 / black	Q-MU-M20 BK Q-MU M25	1586099 1640715	25 25
Insulating sleeve , as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor ⑤			
	PT/FS 4,8	1670497	25
Protective cap , for QUICKON connection, IP50 ⑥			
1.5 mm², 3-, 4-pos. 1.5 mm², 5-pos. / 2.5 mm², 4-pos.	QPD QSK 3/4X1,5 QPD QSK 5X1,5	1414723 1414758	10 10
Protective cap , for connectors, IP50 ⑦			
1.5 mm², 3-, 4-pos. 1.5 mm², 5-pos. / 2.5 mm², 4-pos.	QPD PSK 3/4X1,5 QPD PSK 5X1,5	1414724 1414759	10 10
Slotted socket wrench for QUICKON nuts and panel feed-throughs ⑧			
1.5 mm², 5-pos. / 2.5 mm², 4-pos. / wrench size 22 mm	QSS 22	1670206	1
Coding profile , for insertion into the connector and QUICKON dome ⑨			
	CP-QPD 3/4X1,5 CP-QPD 5X1,5	1414729 1414760	10 10
Shielding tape , for shielded QPD versions ⑩			
	ALU-SB	1404531	100

- Can be used as a H-distributor with continuous master cable
- Can be used as a star distributor
- Can be used as a Y-distributor with a test connection
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with four QUICKON nuts



without QUICKON nut

	Technical data				Technical data			
	3+PE-pos.		4+PE-pos.		3+PE-pos.		4+PE-pos.	
General data								
Degree of protection	IP66 / IP68 / IP69K				IP66 / IP68 / IP69K			
Electrical data								
Rated voltage (III/3)	690 V				690 V			
Rated surge voltage	6 kV				6 kV			
Rated current	20 A				20 A			
Overvoltage category / Degree of pollution	III / 3				III / 3			
Material data								
Housing material	PA				PA			
Contact material	Cu				Cu			
Flammability rating in accordance with UL 94	V0				V0			
Mechanical data								
Impact category	IK07				IK07			
Color	black				black			
Connector data QUICKON connection								
Core insulation	PVC/PE/TPE/rubber				PVC/PE/TPE/rubber			
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm				VDE 0295 class 1 to 6/min. 0.15 mm			
Connection frequency	max. 10				max. 10			
Conductor cross section [mm²] rigid/flexible	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²				1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²			
Conductor cross section [AWG]	16 ... 14				16 ... 14			
Temperature data								
Ambient temperature (operation)	-40°C ... 100°C				-40°C ... 100°C			
Temperature when conductor connected	-5°C ... 50°C				-5°C ... 50°C			
	Ordering data				Ordering data			
Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
	3+PE-pos.		4+PE-pos.		3+PE-pos.		4+PE-pos.	
H-distributor, with four QUICKON nuts, for cable diameters:								
6 mm ... 10 mm	1423971	1						
9 mm ... 14 mm	1423972	1						
6 mm ... 11 mm			1406368	1				
9 mm ... 16 mm			1406369	1				
H-distributor, without QUICKON nuts								
					1423973	1	1406370	1
QUICKON nut, for connections up to 2.5 mm², for cable diameters:								
6 mm ... 10 mm					1423993	1		
9 mm ... 14 mm					1423994	1		
6 mm ... 11 mm							1459663	1
9 mm ... 16 mm							1459647	1

Installation systems

QPD installation system 2.5 mm²

T-distributors, 2.5 mm²

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with three QUICKON nuts



with two QUICKON nuts



Technical data

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP66 / IP68 / IP69K	IP68 / IP69K
Electrical data		
Rated voltage (III/3)	690 V	690 V
Rated surge voltage	6 kV	6 kV
Rated current	20 A	20 A
Overvoltage category / Degree of pollution	III / 3	III / 3
Material data		
Housing material	PA	PA
Contact material	Cu	Cu
Flammability rating in accordance with UL 94	V0	V0
Mechanical data		
Impact category	IK07	IK07
Color	black	black
Connector data QUICKON connection		
Core insulation	PVC/PE/TPE/rubber	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/ min. 0.15 mm max. 10	VDE 0295 class 1 to 6/ min. 0.15 mm max. 10
Connection frequency	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²
Conductor cross section [AWG]	16 ... 14	16 ... 14
Temperature data		
Ambient temperature (operation)	-40°C ... 100°C	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C	-5°C ... 50°C

Ordering data

Description

T-distributor, for cable diameter:

6 mm ... 10 mm
9 mm ... 14 mm
6 mm ... 11 mm
9 mm ... 16 mm

QUICKON nut, for connections up to 2.5 mm²,
for cable diameters:

6 mm ... 10 mm
9 mm ... 14 mm
6 mm ... 11 mm
9 mm ... 16 mm

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3+PE-pos.		4+PE-pos.	

1424045 1
1424046 1
1405401 1
1405402 1

Technical data

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP66 / IP68 / IP69K	IP68 / IP69K
Electrical data		
Rated voltage (III/3)	690 V	690 V
Rated surge voltage	6 kV	6 kV
Rated current	20 A	20 A
Overvoltage category / Degree of pollution	III / 3	III / 3
Material data		
Housing material	PA	PA
Contact material	Cu	Cu
Flammability rating in accordance with UL 94	V0	V0
Mechanical data		
Impact category	IK07	IK07
Color	black	black
Connector data QUICKON connection		
Core insulation	PVC/PE/TPE/rubber	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/ min. 0.15 mm max. 10	VDE 0295 class 1 to 6/ min. 0.15 mm max. 10
Connection frequency	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²
Conductor cross section [AWG]	16 ... 14	16 ... 14
Temperature data		
Ambient temperature (operation)	-40°C ... 100°C	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C	-5°C ... 50°C

Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3+PE-pos.		4+PE-pos.	

1424047 1
1424048 1
1405403 1
1405404 1

1423993 1
1423994 1
1459663 1
1459647 1

Cable connectors, 2.5 mm²

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 2.5 mm² connector can be used here instead of the QUICKON nut
- Also available in gray color versions



with two QUICKON nuts



with one QUICKON nut

ERC

Technical data	
3+PE-pos.	4+PE-pos.
IP66 / IP68 / IP69K	
690 V	
6 kV	
20 A	
III / 3	
PA	
Cu	
silver-plated	
V0	
IK07	
black	
PVC/PE/TPE/rubber	
VDE 0295 class 1 to 6/min. 0.15 mm	
10	
1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²	
16 ... 14	
-40°C ... 100°C	
-5°C ... 50°C	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3+PE-pos.		4+PE-pos.	

General data
Degree of protection
Electrical data
Rated voltage (III/3)
Rated surge voltage
Rated current
Overvoltage category / Degree of pollution
Material data
Housing material
Contact material
Contact surface material
Flammability rating in accordance with UL 94
Impact category
Color
Connector data QUICKON connection
Core insulation
Structure of individual litz wire/smallest wire diameter
Connection frequency
Conductor cross section [mm²] rigid/flexible
Conductor cross section [AWG]
Temperature data
Ambient temperature (operation)
Temperature when conductor connected

Description

Cable connector, for cable diameter:

6 mm ... 10 mm	
9 mm ... 14 mm	
6 mm ... 11 mm	
9 mm ... 16 mm	

QUICKON nut, for connections up to 2.5 mm², for cable diameters:

6 mm ... 10 mm		
9 mm ... 14 mm		
6 mm ... 11 mm		
9 mm ... 16 mm		

ERC

Technical data	
3+PE-pos.	4+PE-pos.
IP66 / IP68 / IP69K	
690 V	
6 kV	
20 A	
III / 3	
PA	
Cu	
silver-plated	
V0	
IK07	
black	
PVC/PE/TPE/rubber	
VDE 0295 class 1 to 6/min. 0.15 mm	
10	
1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²	
16 ... 14	
-40°C ... 100°C	
-5°C ... 50°C	

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
3+PE-pos.		4+PE-pos.	

1423991	1		
1423992	1		
		1403834	1
		1403831	1

1423993	1		
1423994	1		
		1459663	1
		1459647	1

Installation systems

QPD installation system 2.5 mm²

Panel feed-throughs, 2.5 mm², with litz wires

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with QUICKON nut



without QUICKON nut

	Technical data				Technical data				
	3+PE-pos.		4+PE-pos.		3+PE-pos.		4+PE-pos.		
General data									
Degree of protection	IP66 / IP68 / IP69K				IP66 / IP68 / IP69K				
Electrical data									
Rated voltage (III/3)			690 V				690 V		
Rated surge voltage			6 kV				6 kV		
Rated current			20 A				20 A		
Overvoltage category / Degree of pollution			III / 3				III / 3		
Material data									
Housing material			PA				PA		
Contact material			Cu				Cu		
Flammability rating in accordance with UL 94			V0				V0		
Mechanical data									
Impact category			IK07				IK07		
Color			black				black		
Connector data QUICKON connection									
Core insulation	PVC/PE/TPE/rubber				PVC/PE/TPE/rubber				
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm				VDE 0295 class 1 to 6/min. 0.15 mm				
Connection frequency			max. 10				max. 10		
Conductor cross section [mm²] rigid/flexible			1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²				1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²		
Conductor cross section [AWG]			16 ... 14				16 ... 14		
Temperature data									
Ambient temperature (operation)			-40°C ... 100°C				-40°C ... 100°C		
Temperature when conductor connected			-5°C ... 50°C				-5°C ... 50°C		
	Ordering data				Ordering data				
Description	Cable length	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		3+PE-pos.		4+PE-pos.		3+PE-pos.		4+PE-pos.	
Panel feed-through, I_N=15 A, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameters:									
6 mm ... 11 mm	0.5 m			1403725	1				
6 mm ... 11 mm	1 m			1403727	1				
9 mm ... 16 mm	0.5 m			1403731	1				
9 mm ... 16 mm	1 m			1403733	1				
Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:									
6 mm ... 10 mm	0.5 m	1423975	1						
6 mm ... 10 mm	1 m	1423974	1						
9 mm ... 14 mm	0.5 m	1423980	1						
9 mm ... 14 mm	1 m	1423979	1						
6 mm ... 11 mm	0.5 m			1582557	1				
6 mm ... 11 mm	1 m			1582558	1				
9 mm ... 16 mm	0.5 m			1582561	1				
9 mm ... 16 mm	1 m			1582562	1				
Panel feed-through, with M20 x 1.5 mounting flange, without QUICKON nut									
	0.5 m						1403737	1	
	1 m						1403739	1	
Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut									
	0.5 m					1423983	1	1582565	1
	1 m					1423984	1	1582566	1
QUICKON nut, for connections up to 2.5 mm², for cable diameters:									
6 mm ... 10 mm						1423993	1		
9 mm ... 14 mm						1423994	1		
6 mm ... 11 mm								1459663	1
9 mm ... 16 mm								1459647	1

**Panel feed-throughs, 2.5 mm²,
with manual solder or
spade connector connection**

- Devices no longer need to be opened
in order to connect the cables
- User-friendly connection, even on devices
that are difficult to access
- Also available in gray color versions



with QUICKON nut



without QUICKON nut

	Technical data		Technical data	
	3+PE-pos.	4+PE-pos.	3+PE-pos.	4+PE-pos.
General data	IP66 / IP68 / IP69K		IP66 / IP68 / IP69K	
Degree of protection				
Electrical data				
Rated voltage (III/3)	690 V		690 V	
Rated surge voltage	6 kV		6 kV	
Rated current	20 A	15 A	20 A	15 A
Overvoltage category / Degree of pollution	III / 3		III / 3	
Material data				
Housing material	PA		PA	
Contact material	Cu		Cu	
Flammability rating in accordance with UL 94	V0		V0	
Mechanical data				
Impact category	IK07		IK07	
Color	black		black	
Connector data QUICKON connection				
Core insulation	PVC/PE/TPE/rubber		PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency	max. 10		max. 10	
Conductor cross section [mm²] rigid/flexible	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²		1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²	
Conductor cross section [AWG]	16 ... 14		16 ... 14	
Temperature data				
Ambient temperature (operation)	-40°C ... 100°C		-40°C ... 100°C	
Temperature when conductor connected	-5°C ... 50°C		-5°C ... 50°C	
	Ordering data		Ordering data	
	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Description	3+PE-pos.	4+PE-pos.	3+PE-pos.	4+PE-pos.
Panel feed-through, I_N=15 A, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameters:				
6 mm ... 11 mm		1403729	1	
9 mm ... 16 mm		1403735	1	
Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:				
6 mm ... 10 mm	1423976	1		
9 mm ... 14 mm	1423981	1		
6 mm ... 11 mm		1582559	1	
9 mm ... 16 mm		1582563	1	
Panel feed-through, with mounting flange, without QUICKON nut, connecting thread:				
M20, I _N =15 A			1403741	1
Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut				
M25, I _N =20 A			1423986	1
QUICKON nut, for connections up to 2.5 mm², for cable diameters:				
6 mm ... 10 mm			1423993	1
9 mm ... 14 mm			1423994	1
6 mm ... 11 mm			1459663	1
9 mm ... 16 mm			1459647	1

Connectors, 2.5 mm²

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent mismatching of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions
- With SPEEDCON fast locking system



with gray screw locking

Technical data			
4+PE-pos.			
General data			
Degree of protection	IP66 / IP68 / IP69K		
Electrical data			
Rated voltage (III/3)	690 V		
Rated surge voltage	6 kV		
Rated current	20 A		
Overvoltage category / Degree of pollution	III / 3		
Material data			
Housing material	PA		
Contact material	Cu		
Contact surface material	silver-plated		
Flammability rating in accordance with UL 94	V0		
Impact category	IK07		
Color	black		
Connector data QUICKON connection			
Core insulation	PVC/PE/TPE/rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm		
Connection frequency	10		
Conductor cross section [mm²] rigid/flexible	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²		
Conductor cross section [AWG]	16 ... 14		
Temperature data			
Ambient temperature (operation)	-40°C ... 100°C		
Temperature when conductor connected	-5°C ... 50°C		
Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Connectors, for cable diameters:			
6 mm ... 11 mm	QPD P 4PE2,5 6-11 TL BK	1039563	1
9 mm ... 16 mm	QPD P 4PE2,5 9-16 TL BK	1039561	1

Accessories

- Marker labels ① can be stuck onto the middle of the H- and T-distributor
- Red sealing plugs ② can be stuck into the QUICKON nuts easily and create a seal when screwed tight
- Protective caps with retaining cords ③ for closing open QUICKON domes which, for example, are going to be fitted with a connector later
- Locking nuts ④ for fixing the panel feed-throughs to panels that are too thin to have a thread cut in
- Insulating sleeve ⑤ for 4.8 mm spade connections
- Protective caps ⑥ for attaching to the open QUICKON dome
- Protective caps ⑦ at front for attaching to the connector
- Slotted socket wrenches ⑧ enable you to tighten the QUICKON nuts easily and securely
- Red coding profiles ⑨ for preventing QPD connector mix-ups. Simply insert them into the QUICKON dome and connector on the front side. They are marked with an arrow and their symmetrical form enables them to be mounted in four different positions
- AS-i seals ⑩ for connecting 1 or 2 AS-i cables
- Aluminum shielding tape ⑪ prevents the splicing of the braided shield and enables a clean shield connection



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Marker labels , for H- and T-distributors ①			
For plotting and engraving Can be printed using thermal transfer printer	GPE 13X 9 WH EMLP (13X9)R	0806932 0819453	10 1
Closing cap , for closing unused bore holes in multiple seals and cable glands ②			
Ø 10 mm Ø 14 mm	SEALING PLUG 10X16 RD SEALING PLUG 14X22 RD	1400284 1400270	10 10
Protective cap , for panel feed-throughs, captive, IP68 ③			
1.5 mm², 5-pos. / 2.5 mm², 4-pos. / black	QPD QSK BK 5X1,5 FS	1414728	1
2.5 mm², 5-pos. / gray	QPD QSK GY 5X2,5 FS	1404526	1
2.5 mm², 5-pos. / black	QPD QSK BK 5X2,5 FS	1404525	1
Counter nut , (plastic), to lock the contact carrier from the inside of the device ④			
M20 / wrench size 26 / black M25 / wrench size 32 / black	Q-MU-M20 BK Q-MU M25	1586099 1640715	25 25
Insulating sleeve , as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor ⑤			
	PT/FS 4,8	1670497	25
Protective cap , for QUICKON connection, IP50 ⑥			
1.5 mm², 5-pos. / 2.5 mm², 4-pos. 2.5 mm², 5-pos.	QPD QSK 5X1,5 QPD QSK 5X2,5	1414758 1404528	10 10
Protective cap , for connectors, IP50 ⑦			
1.5 mm², 5-pos. / 2.5 mm², 4-pos. 2.5 mm², 5-pos.	QPD PSK 5X1,5 QPD PSK 5X2,5	1414759 1404529	10 10
Slotted socket wrench for QUICKON nuts and panel feed-throughs ⑧			
1.5 mm², 5-pos. / 2.5 mm², 4-pos. / wrench size 22 mm	QSS 22	1670206	1
2.5 mm², 5-pos. / wrench size 27 mm	QSS 27	1670646	1
Coding profile , for insertion into the connector and QUICKON dome ⑨			
	CP QPD 4X2,5 CP-QPD 5X2,5	1425950 1404530	10 10
Insert seal for: ⑩			
One AS-i cable	KV-DI-PG16-1XASI	1582462	10
Two AS-i cables	KV-DI-PG16-2XASI	1582464	10
Shielding tape , for shielded QPD versions ⑪			
	ALU-SB	1404531	100

H-distributors, 6.0 mm²

- Can be used as a H-distributor with continuous master cable
- Can be used as a star distributor
- Can be used as a Y-distributor with a test connection
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with four QUICKON nuts



without QUICKON nut

**Technical data****4+PE-pos.**

General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm ²] rigid/flexible	2.5 mm ² ... 6 mm ² / 2.5 mm ² ... 6 mm ²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
H-distributor, with four QUICKON nuts and one sealing bolt, for cable diameters:			
9 mm ... 14 mm	QPD H 4PE6,0 4X9-14 BK	1411422	1
12 mm ... 20 mm	QPD H 4PE6,0 4X12-20 BK	1411425	1
H-distributor, without QUICKON nuts			
QUICKON nut, for connections up to 6.0 mm², for cable diameter:			
9 mm ... 14 mm			
12 mm ... 20 mm			

**Technical data****4+PE-pos.**

Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm ²] rigid/flexible	2.5 mm ² ... 6 mm ² / 2.5 mm ² ... 6 mm ²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
H-distributor, with four QUICKON nuts and one sealing bolt, for cable diameters:			
9 mm ... 14 mm	QPD H 4PE6,0 4X9-14 BK	1411422	1
12 mm ... 20 mm	QPD H 4PE6,0 4X12-20 BK	1411425	1
H-distributor, without QUICKON nuts			
QUICKON nut, for connections up to 6.0 mm², for cable diameter:			
9 mm ... 14 mm			
12 mm ... 20 mm			

Installation systems

QPD installation system 6.0 mm²

T-distributors, 6.0 mm²

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with three QUICKON nuts



with two QUICKON nuts



Technical data

4+PE-pos.

General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Description	Type	Order No.	Pcs./Pkt.
T-distributor , with three QUICKON nuts, for cable diameter:			
9 mm ... 14 mm	QPD T 4PE6,0 3X9-14 BK	1411414	1
12 mm ... 20 mm	QPD T 4PE6,0 3X12-20 BK	1411415	1
T-distributor , with two QUICKON nuts, for cable diameter:			
9 mm ... 14 mm			
12 mm ... 20 mm			
QUICKON nut , for connections up to 6.0 mm², for cable diameter:			
9 mm ... 14 mm			
12 mm ... 20 mm			



Technical data

4+PE-pos.

General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Type	Order No.	Pcs./Pkt.
QPD T 4PE6,0 2X9-14 BK	1411416	1
QPD T 4PE6,0 2X12-20 BK	1411417	1
QPD N 4PE6,0 9-14 BK	1410409	1
QPD N 4PE6,0 12-20 BK	1410406	1

Cable connectors, 6.0 mm²

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 6.0 mm² connector can be used here instead of the QUICKON nut
- Also available in gray color versions



with two QUICKON nuts



with one QUICKON nut



Technical data	
4+PE-pos.	
General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Cable connector, with two QUICKON nuts, for cable diameters:			
9 mm ... 14 mm	QPD C 4PE6,0 2X9-14 BK	1410410	1
12 mm ... 20 mm	QPD C 4PE6,0 2X12-20 BK	1410412	1
Cable connector, with one QUICKON nut, for cable diameters:			
9 mm ... 14 mm			
12 mm ... 20 mm			
QUICKON nut, for connections up to 6.0 mm², for cable diameter:			
9 mm ... 14 mm			
12 mm ... 20 mm			



Technical data	
4+PE-pos.	
General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Cable connector, with two QUICKON nuts, for cable diameters:			
9 mm ... 14 mm	QPD C 4PE6,0 1X9-14 BK	1410415	1
12 mm ... 20 mm	QPD C 4PE6,0 1X12-20 BK	1410416	1
Cable connector, with one QUICKON nut, for cable diameters:			
9 mm ... 14 mm			
12 mm ... 20 mm			
QUICKON nut, for connections up to 6.0 mm², for cable diameter:			
9 mm ... 14 mm	QPD N 4PE6,0 9-14 BK	1410409	1
12 mm ... 20 mm	QPD N 4PE6,0 12-20 BK	1410406	1

Installation systems

QPD installation system 6.0 mm²

Panel feed-throughs, 6.0 mm²

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions



with one QUICKON nut



without QUICKON nut



Technical data

4+PE-pos.

General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Description	Cable length
Panel feed-through , with M25 x 1.5 mounting flange, with one QUICKON nut, for cable diameter:	
9 mm ... 14 mm	0.5 m
9 mm ... 14 mm	1 m
12 mm ... 20 mm	0.5 m
12 mm ... 20 mm	1 m
Panel feed-through , with M25 x 1.5 mounting flange, without QUICKON nut	
	0.5 m
	1 m
QUICKON nut , for connections up to 6.0 mm², for cable diameter:	
9 mm ... 14 mm	
12 mm ... 20 mm	

Type	Order No.	Pcs./Pkt.
QPD W 4PE6,0 9-14 M25 0,5 BK	1410392	1
QPD W 4PE6,0 9-14 M25 1,0 BK	1410393	1
QPD W 4PE6,0 12-20 M25 0,5 BK	1410394	1
QPD W 4PE6,0 12-20 M25 1,0 BK	1410395	1



Technical data

4+PE-pos.

General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

Ordering data

Type	Order No.	Pcs./Pkt.
QPD W 4PE6,0 M25 0,5 BK	1410396	1
QPD W 4PE6,0 M25 1,0 BK	1410397	1
QPD N 4PE6,0 9-14 BK	1410409	1
QPD N 4PE6,0 12-20 BK	1410406	1

Connectors 6.0 mm²

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent mismatching of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available in gray color versions
- With SPEEDCON fast locking system



with gray screw locking

Technical data		
4+PE-pos.		
General data		
Degree of protection	IP66 / IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	40 A	
Overvoltage category / Degree of pollution	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Contact surface material	silver-plated	
Flammability rating in accordance with UL 94	V0	
Impact category	IK07	
Color	black	
Connector data QUICKON connection		
Core insulation	PVC/PE/TPE/rubber	
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm	
Connection frequency	10	
Conductor cross section [mm²] rigid/flexible	2.5 mm² ... 6 mm² / 2.5 mm² ... 6 mm²	
Conductor cross section [AWG]	14 ... 10	
Temperature data		
Ambient temperature (operation)	-40°C ... 100°C	
Temperature when conductor connected	-5°C ... 50°C	
Ordering data		
Type	Order No.	Pcs./Pkt.
QPD P 4PE6,0 9-14 TL BK	1039564	1
QPD P 4PE6,0 12-20 TL BK	1039565	1

Description	
Connectors, for cable diameters:	
9 mm ... 14 mm	
12 mm ... 20 mm	

Installation systems

QPD installation system 6.0 mm²

Accessories

- Marker labels ① can be stuck onto the middle of the H- and T-distributor
- Red sealing plugs ② can be stuck into the QUICKON nuts easily and create a seal when screwed tight
- Protective caps with retaining cords ③ for closing open QUICKON domes which, for example, are going to be fitted with a connector later
- Locking nuts ④ for fixing the panel feed-throughs to panels that are too thin to have a thread cut in
- Insulating sleeve ⑤ for 4.8 mm spade connections
- Protective caps ⑥ for attaching to the open QUICKON dome
- Protective caps ⑦ at front for attaching to the connector
- Red coding profiles ⑧ for preventing QPD connector mix-ups. Simply insert them into the QUICKON dome and connector on the front side. They are marked with an arrow and their symmetrical form enables them to be mounted in four different positions
- Aluminum shielding tape ⑨ prevents the splicing of the braided shield and enables a clean shield connection



Ordering data			
Description	Type	Order No.	Pcs./Pkt.
Marker labels , for H- and T-distributors ①			
For plotting and engraving Can be printed using thermal transfer printer	GPE 13X 9 WH EMLP (13X9)R	0806932 0819453	10 1
Closing cap , for closing unused bore holes in multiple seals and cable glands ②			
Ø 10 mm Ø 14 mm	SEALING PLUG 10X16 RD SEALING PLUG 14X22 RD	1400284 1400270	10 10
Protective cap , captive, IP68 ③			
6 mm², 5-pos. / gray 6 mm², 5-pos. / black	QPD QSK GY 5X6,0 FS QPD QSK BK 5X6,0 FS	1411401 1411400	1 1
Counter nut , (plastic), to lock the contact carrier from the inside of the device ④			
M25 / wrench size 32 / black	Q-MU M25	1640715	25
Insulating sleeve , as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor ⑤			
	PT/FS 4,8	1670497	25
Protective cap , for QUICKON connection, IP50 ⑥			
6 mm², 5-pos.	QPD QSK 5X6,0	1411403	10
Protective cap , for connectors, IP50 ⑦			
6 mm², 5-pos.	QPD PSK 5X6,0	1411404	10
Coding profile , for insertion into the connector and QUICKON dome ⑧			
	CP-QPD 5X6,0	1411402	10
Shielding tape , for shielded QPD versions ⑨			
	ALU-SB	1404531	100

Assembled cables, 2.5 mm²

- Connecting cable between two QUICKON connections
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274
- Other versions available on request
- With SPEEDCON fast locking system



4+PE-pos.

EAC (R)

Technical data	
General data	
Degree of protection	IP66 / IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Overvoltage category / Degree of pollution	III / 3
Material data	
Housing material	PA
Contact material	Cu
Flammability rating in accordance with UL 94	V0
Mechanical data	
Impact category	IK07
Color	black
Connector data QUICKON connection	
Core insulation	PVC/PE/TPE/rubber
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6/min. 0.15 mm
Connection frequency	max. 10
Conductor cross section [mm ²] rigid/flexible	1 mm ² ... 2.5 mm ² / 1 mm ² ... 2.5 mm ²
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C
Temperature when conductor connected	-5°C ... 50°C

		Ordering data		
Description	Cable length	Type	Order No.	Pcs./Pkt.
Assembled cable				
	1 m	QPD 5P/ 1,0-PVC/5P 5X2,5 BK	1408720	1
	3 m	QPD 5P/ 3,0-PVC/5P 5X2,5 BK	1408721	1
	5 m	QPD 5P/ 5,0-PVC/5P 5X2,5 BK	1408722	1
	10 m	QPD 5P/10,0-PVC/5P 5X2,5 BK	1408723	1



Heavy-duty connectors

The right connector for every application

Heavy-duty connectors from the HEAVYCON complete series protect your interfaces and ensure the reliable transmission of power, data, and signals, even under the harshest conditions. They are resistant to dirt, water, vibrations, and high mechanical strain and remain sealed up to IP69K protection. Due to conductive surfaces and seals, all HEAVYCON metal housings are “EMC-ready”.

You can always create the right plug-in connection for your requirements with housings from our series types and matching contact inserts which can be combined.

Compatible insertion, flexible combination

All housing series fit on standard panel cutouts. ADVANCE housings can be mounted directly onto the wall using the panel mounting flange. STANDARD and EVO housings are mounting- and plug-in-compatible with aluminum housings from well-known manufacturers. This allows all components to be individually combined and flexibly modified, extended or exchanged. Our fixed position and modular contact inserts naturally fit into all housing series.

The right connection technology for every application

We offer contact inserts with a wide range of connection technologies. You'll find the right contact insert for every connector housing with intuitive Push-in connection technology.

 Your web code: **#0002**

HEAVYCON product range overview

HEAVYCON system cross-reference list	502
Contact inserts and housings	
Series D7	
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Contact inserts	518
Housings	524
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Contact inserts	534
Housings	596
Connector sets	646
Compact series	
Contact inserts	648
Housings	650
Accessories	654
DUPLICON stackable power distribution system	672



STANDARD connectors

The robust metal housings of the connectors are resistant to dirt, water, vibration, and high mechanical loads. STANDARD housings have a single or double locking latch. Various supporting base elements such as panel mounting bases, box mounting bases or coupling housings are available as required.



EVO connectors

The EVO connectors are characterized by the patented EVO-Lock system. It allows the cable outlet direction to be freely selected during assembly. It reduces the amount of housing variants required by up to 75%. The EVO housings are plug-in-compatible with aluminum housings from well-known manufacturers. They fit on standard panel cutouts.



ADVANCE connectors

By eliminating the typical panel mounting base, you save on assembly and material costs. The ADVANCE housings with screw locking are suitable for the most stringent requirements, such as particularly aggressive atmospheres and sensitive interfaces.



Contact inserts with a fixed number of positions

The fixed-position inserts are available in a variety of performance classes and with a range of connection technologies. Fast connection technologies, such as Push-in or QUICKON (IDC) connection, enable cable connection within seconds.



Modular contact inserts

Combine the appropriate modules for your application from our wide range of products: HEAVYCON modular includes over 50 contact inserts for signal, power, and data transmission and for pneumatic applications. The innovative module carrier frame with sturdy catch springs enables quick mounting.



Online product configurator

Use our online configurator to quickly and easily configure your connectors. A 3D preview and drag & drop simplify the selection process. The product list can be exported, e-mailed or ordered directly.

i Your web code: **#0003**



COM connectors

Thanks to their compact design, COM connectors are particularly space saving and are suitable for the cabling of decentral structures in automation technology. The comprehensive product range provides a high level of safety and protection against electromagnetic interferences.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.





HEAVYCON HPR is intended for use in transport and transportation technology. The sleeve housing, panel mounting base, and surface mounting housing meet the increased requirements of the railway industry and are characterized by high vibration resistance. The conductive housing surface provides all-round protection in electromagnetic interference fields. They therefore guarantee the reliable transmission of data, signals, and power, e.g., at carriage transitions. Thanks to their IP68/IP69K degree of protection, the HPR housings can also be used safely outside on the carriage body. Corresponding contact inserts of the B, BB, BBB, DD, HV, and HS range and modular inserts, as well as the square A series extend the portfolio.



Square B series

The HEAVYCON HPR housings in the B series can be securely locked using the robust screw locking mechanism. They are resistant to vibrations and shocks in accordance with IEC 61373 / EN 50155.



Compact D7 series

HEAVYCON D7 housings enable signal and power transmission in a compact design. The new D7 size HPR housings are optimized for railway applications.



Vibration-proof crimp connection

Robust and vibration-proof contact inserts with crimp connection ensure the reliable transmission of signal and power circuits to rail vehicles. You can connect the wire/crimp contact quickly and easily using crimping pliers or a crimping machine.



User-friendly Push-in connection

Contact inserts with Push-in connection technology ensure quick and easy conductor connection: simply insert the conductor directly into the connection without tools, and the gas-tight, vibration- and shock-proof connection is complete.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.



Heavy-duty connectors

HEAVYCON system cross-reference list – contact inserts and housings

The system cross-reference list illustrates which contact insert matches which housing type.

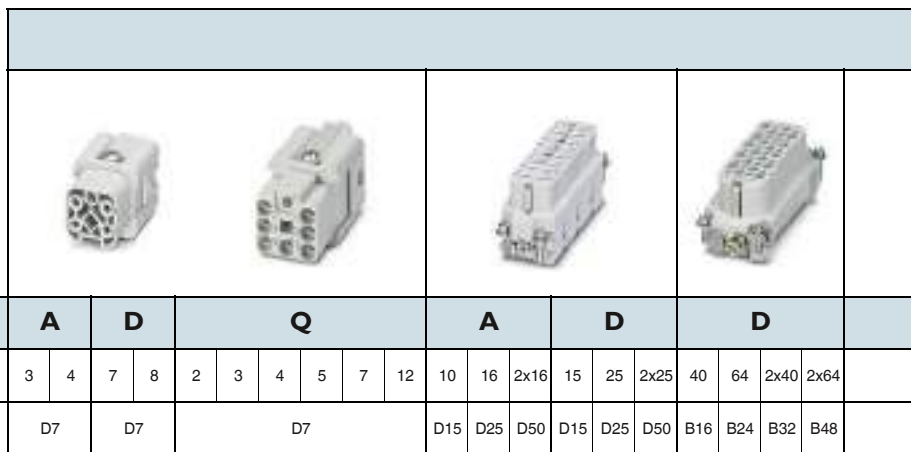
The upper rows describe the contact insert based on the number of positions, voltage, current, and connection method.

The entries in the columns denote the appropriate housing size.



Configure complete HEAVYCON connectors quickly and easily with our configurator:

i Your web code: #0003



Series	A		D		Q						A			D			D			
Number of positions	3	4	7	8	2	3	4	5	7	12	10	16	2x16	15	25	2x25	40	64	2x40	2x64
Housing size	D7		D7		D7						D15	D25	D50	D15	D25	D50	B16	B24	B32	B48
Rated voltage IEC [V]	230/400		250	50	400	400	830	230/400	400	400	250			250			250			
Rated current IEC [A]	24		10		40	40	40	24	10	10	20			10			10			
Rated voltage UL [V]	600		600	30	600	600	600	600	600	600	600			600			600			
Rated current UL [A]	16 - 24		12		50	50	50	24	17.5	15	16 - 19			10			10			

Connection method												
PT = Push-in	PT						PT					
UT = Screw	UT						UT					
CT = Crimp			CT	CT			CT	CT		CT		
Q = IDC / QUICKON	Q											
A = Axial screw				A								
P = Pneumatic												

Series	A		D		Q						A			D			D			
Number of positions	3	4	7	8	2	3	4	5	7	12	10	16	2x16	15	25	2x25	40	64	2x40	2x64
Page	504	504	506	506	510	510	510	508	506	506	518	520	520	522	522	522	534	534	534	534
From 514	•	•	•	•	•	•	•	•	•	•										
From 524											•			•						
From 528												•			•					
From 532													•			•				

HEAVYCON housings		
D7, D15 to D50, and EVO D housings		D7
		D15
		D25
		D50
EVO M1 sleeve housings, panel mounting bases		M1

STANDARD, EVO, and ADVANCE housings		B6
		B10
		B16
		B24
		B32
		B48

From 595																				
From 596																				
From 602																				
From 616																	•			
From 630																		•		
From 644																			•	
From 645																				•

HEAVYCON contact inserts

																															
	DD						B						BB						BBB				HV			HS			M		
	24	42	72	108	2x72	2x108	6	10	16	24	2x16	2x24	10	18	32	46	2x32	2x46	40	64	2x40	2x64	3+2	6+2	10+2	6	12	Variable			
	B6	B10	B16	B24	B32	B48	B6	B10	B16	B24	B32	B48	B6	B10	B16	B24	B32	B48	B16	B24	B32	B48	B10	B16	B24	B16	B32	B6 - B48			

250							500							500							500							830							400/690							50 - 5000						
10							16							16							16							16							41							5 - 200						
600							600							600							600							600							600							30 - 600						
10							10 - 16							16 - 20							16							16 - 21							35							5 - 146						

		PT	PT		PT		PT
		UT				UT	UT
	CT	CT	CT	CT	CT		CT
		Q					
							A
							P

Heavy-duty connectors

HEAVYCON D7 – contact inserts

A3, A4 series

230 V / 400 V, 10 A ... 24 A

Connection technology:

- Push-in connection
- Screw connection
- Insulation displacement connection

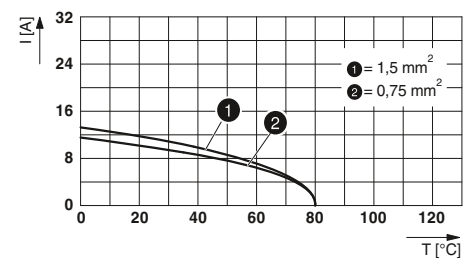
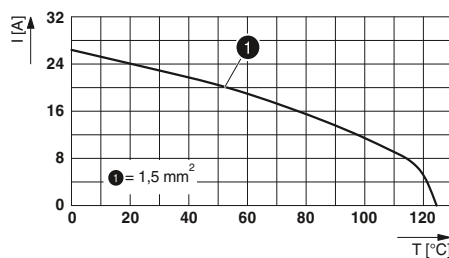
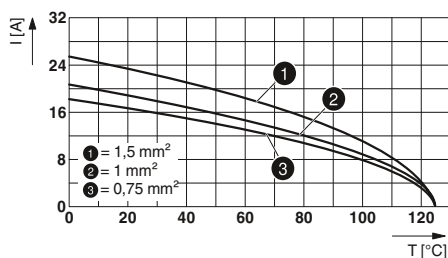
To determine the corresponding housing, see the system cross-reference list on page 502.

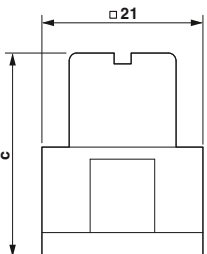
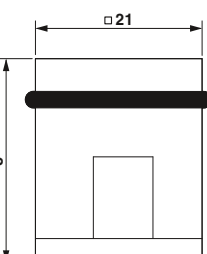
Notes:
For accessories, see from page 654
Contact inserts already contain an IP67 sealing screw
Only operate connectors when there is no load/the power is switched off
¹⁾ For flexible wires with wire end protection



Type	Technical data					
	① HC-A03-I-PT-...	② HC-A03-I-UT-...	③ HC-A3-...Q1,5-TFL-G-PA Sleeve housing	④ HC-A3-...Q1,5-KML-G-PA Coupling housing	⑤ HC-A04-I-PT-...	⑥ HC-A04-I-UT-...
Approvals						
IEC data						
Rated current, contacts (at 40°C)	[A] 10	24	10	10	10	24
Overvoltage category	III	III	III	III	III	III
Degree of pollution	3	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 230 / 400	230 / 400	230 / 400	230 / 400	230 / 400	230 / 400
Rated surge voltage, contacts	[kV] 4	4	4	4	4	4
Connection cross section	[mm²] 0.14 ... 1.5 ¹⁾	0.5 ... 2.5 ¹⁾	0.75 ... 1.5	0.75 ... 1.5	0.14 ... 1.5 ¹⁾	0.5 ... 2.5 ¹⁾
UL data						
Rated voltage	[V] 600	600	600	600	600	600
Rated current	[A] 17.5	24	10	10	16	24
Connection cross section	AWG 16	14	18-16	18-16	16	14
CSA / cUL data						
Rated voltage	[V] 600	600	600	600	600	600
Rated current	[A] 15	18	10	10	14	18
Connection cross section	AWG 16	14	18-16	18-16	16	14
Material data						
Contact carrier material	PC	PC	PA / PC	PA / PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0	V0
Contact material	-	Copper alloy	Copper alloy	Copper alloy	-	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag	Ag	Ag
Ambient conditions						
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-25 ... 80	-25 ... 80	-40 ... 125	-40 ... 125
General data						
Connection method	Push-in connection	Screw connection	QUICKON connection	QUICKON connection	Push-in connection	Screw connection
Stripping length	[mm] 10	5	-	-	10	5
Number of positions	3	3	3	3	4	4
Contact numbering	1 - 3	1 - 3	1 - 3	1 - 3	1 - 4	1 - 4
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves



				Ordering data																																																																				
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																																
					Female	Male																																																																		
Push-in connection								 Dimensional drawing: female connector																																																																
	3	1 - 3	D7	① HC-A03-I-PT...	1585265	1585252	1																																																																	
Screw connection								 Dimensional drawing: male connector																																																																
	3	1 - 3	D7	② HC-A03-I-UT...	1585223	1585210	1																																																																	
Insulation displacement connection				Sleeve housing				<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>21</td><td></td><td>28.5</td><td></td></tr><tr><td>② Female</td><td>21</td><td></td><td>28</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>28.5</td><td></td></tr><tr><td>③ Female</td><td>26.5</td><td></td><td>66</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td></td><td></td></tr><tr><td>④ Female</td><td>26.5</td><td></td><td>62.8</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td></td><td></td></tr><tr><td>⑤ Female</td><td>21</td><td></td><td>33.5</td><td></td></tr><tr><td>⑤ Male</td><td></td><td></td><td>34</td><td></td></tr><tr><td>⑥ Female</td><td>21</td><td></td><td>28.5</td><td></td></tr><tr><td>⑥ Male</td><td></td><td></td><td></td><td></td></tr></table>						a	b	c	d	① Female	21		28.5		② Female	21		28		② Male			28.5		③ Female	26.5		66		③ Male					④ Female	26.5		62.8		④ Male					⑤ Female	21		33.5		⑤ Male			34		⑥ Female	21		28.5		⑥ Male				
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① Female	21		28.5																																																																					
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③ Female	26.5		66																																																																					
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④ Female	26.5		62.8																																																																					
④ Male																																																																								
⑤ Female	21		33.5																																																																					
⑤ Male			34																																																																					
⑥ Female	21		28.5																																																																					
⑥ Male																																																																								
	3	1 - 3	D7	③ HC-A3-...Q1,5-TFL-G-PA	1641510	1641581	1																																																																	
Insulation displacement connection				Coupling housing																																																																				
	3	1 - 3	D7	④ HC-A3-...Q1,5-KML-G-PA	1641617	1641604	1																																																																	
Push-in connection																																																																								
	4	1 - 4	D7	⑤ HC-A04-I-PT...	1585281	1585278	1																																																																	
Screw connection																																																																								
	4	1 - 4	D7	⑥ HC-A04-I-UT...	1585249	1585236	1																																																																	

Accessories



Coding profiles
From page 656



Replacement sealing screws
From page 663

Heavy-duty connectors

HEAVYCON D7 – contact inserts

D7, D8, Q7, Q12 series

50 V ... 400 V, 10 A

Connection technology:

– Crimp connection CK 1,6

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

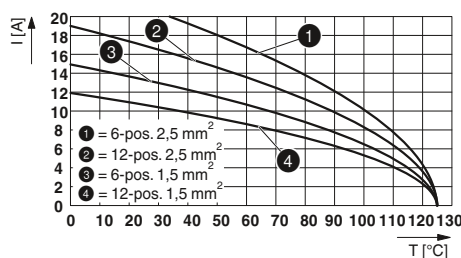
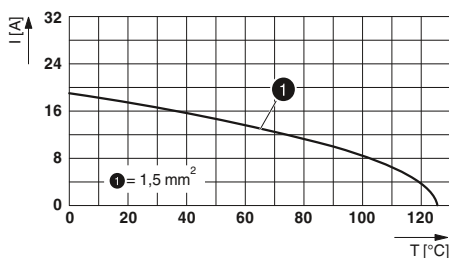
Only operate connectors when there is no load/the power is switched off

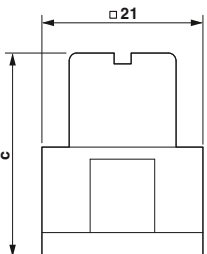
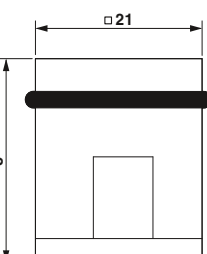
¹⁾ Only for plastic housings



Type	Technical data			
	① HC-D 7-I-CT...	② HC-D 8-I-CT... without PE	③ HC-Q07-I-CT...	④ HC-Q12-I-CT...
Approvals	UL ENEC RL	UL ENEC RL	UL ENEC RL	UL ENEC RL
IEC data				
Rated current, contacts (at 40°C)	[A] 10	10	10	10
Overtoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 250 ¹⁾	50	400	400
Rated surge voltage, contacts	[kV] 4	0.8	6	6
Connection cross section	[mm²] 0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5
UL data				
Rated voltage	[V] 600	600	600	600
Rated current	[A] 12	12	17.5	15
Connection cross section	AWG 14	14	14	14
CSA / cUL data				
Rated voltage	[V] 600	600	600	600
Rated current	[A] 10	10	13.5	12
Connection cross section	AWG 14	14	14	14
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	[mm] 8	8	8	8
Number of positions	7	8	7	12
Contact numbering	1 - 7	1 - 8	1 - 7	1 - 12
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves



				Ordering data																																											
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																							
					Female	Male																																									
Crimp connection CK 1,6								 Dimensional drawing: female connector																																							
	7	1 - 7	D7	① HC-D 7-I-CT-...	1584347	1584334	1																																								
Crimp connection CK 1,6								 Dimensional drawing: male connector																																							
	8	1 - 8	D7	without PE ② HC-D 8-I-CT-...	1584363	1584350	1																																								
Crimp connection CK 1,6																																															
	7	1 - 7	D7	③ HC-Q07-I-CT-...	1418623	1418624	1																																								
Crimp connection CK 1,6																																															
	12	1 - 12	D7	④ HC-Q12-I-CT-...	1418625	1418626	1																																								
Turned crimp contacts CK 1,6 Silver-plated								<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>21</td><td></td><td>32</td><td></td></tr><tr><td>② Female</td><td>21</td><td></td><td>32</td><td></td></tr><tr><td>③ Female</td><td>21</td><td></td><td>40.1</td><td></td></tr><tr><td>③ Male</td><td>21</td><td></td><td>39.5</td><td></td></tr><tr><td>④ Female</td><td>21</td><td></td><td>43.1</td><td></td></tr><tr><td>④ Male</td><td>21</td><td></td><td>40.8</td><td></td></tr></table>						a	b	c	d	① Female	21		32		② Female	21		32		③ Female	21		40.1		③ Male	21		39.5		④ Female	21		43.1		④ Male	21		40.8	
	a	b	c	d																																											
① Female	21		32																																												
② Female	21		32																																												
③ Female	21		40.1																																												
③ Male	21		39.5																																												
④ Female	21		43.1																																												
④ Male	21		40.8																																												
																																															
Turned crimp contacts CK 1,6 Gold-plated																																															
																																															

Accessories



Crimping tools
From page 670



Dummy sockets
phoenixcontact.net/products



Replacement sealing screws
From page 663

Heavy-duty connectors

HEAVYCON D7 – contact inserts

Q5 series

230 V / 400 V, 24 A

Connection technology:
– Crimp connection CK 2,5

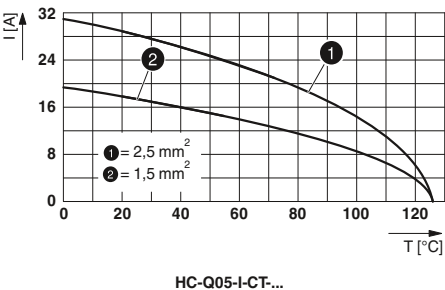
To determine the corresponding housing, see the system cross-reference list on page 502.

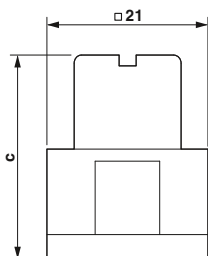
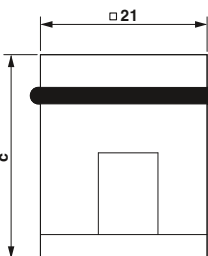
Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off



Technical data				
Type	① HC-Q05-I-CT...			
Approvals	UL ENEC RL			
IEC data				
Rated current, contacts (at 40°C)	[A]	24		
Overvoltage category		III		
Degree of pollution		3		
Rated voltage (III/3) contacts	[V]	230 / 400		
Rated surge voltage, contacts	[kV]	4		
Connection cross section	[mm²]	0.5 ... 2.5		
UL data				
Rated voltage	[V]	600		
Rated current	[A]	24		
Connection cross section	AWG	14		
CSA / cUL data				
Rated voltage	[V]	600		
Rated current	[A]	15		
Connection cross section	AWG	14		
Material data				
Contact carrier material		PC		
Inflammability class in acc. with UL 94		V0		
Contact material		Copper alloy		
Contact surface material		Ag (alternatively Au)		
Temperature data				
Ambient temperature range	[°C]	-40 ... 125		
General data				
Connection method		Crimp connection		
Hexagonal socket	[mm]	-		
Stripping length	[mm]	7.5		
Number of positions		5		
Contact numbering		1 - 5		
Insertion/withdrawal cycles		≥ 500		

Derating curves



Ordering data																						
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.															
					Female	Male																
Crimp connection CK 2,5	5	1 - 5	D7	① HC-Q05-I-CT-...	1406537	1406538	1															
																						
Dimensional drawing: female connector																						
																						
Dimensional drawing: male connector																						
<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>21</td><td></td><td>40.1</td><td></td></tr><tr><td>Male</td><td></td><td></td><td>39.5</td><td></td></tr></table>									a	b	c	d	① Female	21		40.1		Male			39.5	
	a	b	c	d																		
① Female	21		40.1																			
Male			39.5																			
Turned crimp contacts CK 2,5 Silver-plated		Cross section mm ² / AWG 0.5 - 0.5 / 20 0.75 - 0.75 / 18 0.75 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14 3 - 3 / 12		CK2,5-ED-0,50... AG CK2,5-ED-0,75... AG CK2,5-ED-1,00... AG CK2,5-ED-1,50... AG CK2,5-ED-2,50... AG CK2,5-ED-3,00... AG	1663640 1663653 1663666 1663679 1663682 1663695	1663572 1663585 1663598 1663608 1663611 1663624	100 100 100 100 100 100															
Turned crimp contacts CK 2,5 Gold-plated		Cross section mm ² / AWG 0.5 - 0.5 / 20 0.75 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14		CK2,5-ED-0,50... AU CK2,5-ED-1,00... AU CK2,5-ED-1,50... AU CK2,5-ED-2,50... AU	1674859 1674833 1674820 1674862	1674804 1674781 1674778 1674817	100 100 100 100															

Accessories



Crimping tools
From page 670



Dummy sockets
From page 657

Heavy-duty connectors

HEAVYCON D7 – contact inserts

Q2, Q3, Q4 series

400 V, 40 A

Connection technology:

- Axial screw connection
- Crimp connection CK 4,0

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

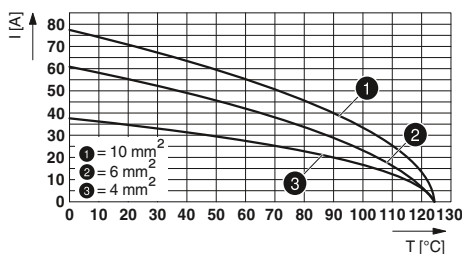
Only operate connectors when there is no load/the power is switched off

¹⁾ Only for plastic housings

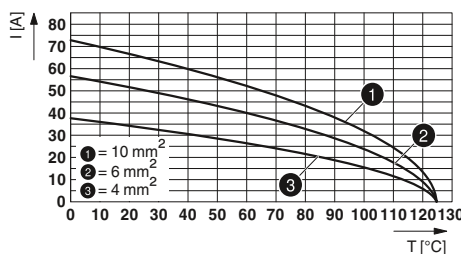


Type	Technical data			
	① HC-HS 2-D7-E...S	② HC-Q02-I-CT...	③ HC-Q03-I-CT...	④ HC-Q04-I-CT... without PE
Approvals	ERC	ERC	ERC	ERC
IEC data				
Rated current, contacts (at 40°C)	[A] 40	40	40	40
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 400	400	400	830 ¹⁾
Rated surge voltage, contacts	[kV] 6	6	6	8
Connection cross section	[mm ²] 4 ... 10	1.5 ... 6	1.5 ... 6	1.5 ... 6
UL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
CSA / cUL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Axial screw connection	Crimp connection	Crimp connection	Crimp connection
Hexagonal socket	[mm] 2	-	-	-
Stripping length	[mm] 8	9	9	9
Number of positions	2	2	3	4
Contact numbering	1 - 2	1 - 2	1 - 2	1 - 4
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

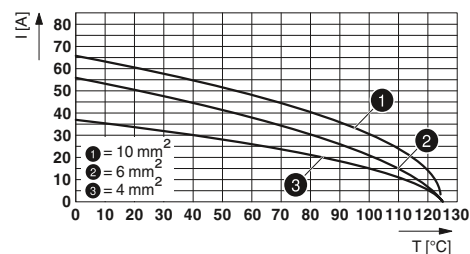
Derating curves



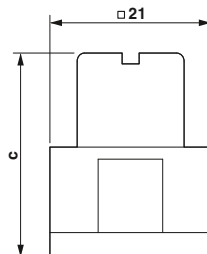
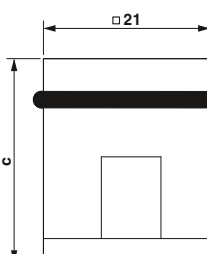
HC-Q02-I-CT...



HC-Q03-I-CT...



HC-Q04-I-CT...

				Ordering data																																																					
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																	
					Female	Male																																																			
Axial screw connection								 Dimensional drawing: female connector																																																	
	2	1 - 2	D7	① HC-HS 2-D7-E...S	1586264	1586277	10																																																		
Crimp connection CK 4,0								 Dimensional drawing: male connector																																																	
	2	1 - 2	D7	② HC-Q02-I-CT...	1419895	1419893	1																																																		
Crimp connection CK 4,0																																																									
	3	1 - 2	D7	③ HC-Q03-I-CT...	1419897	1419896	1																																																		
Crimp connection CK 4,0								<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>21</td><td></td><td>34.8</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td>40</td><td></td></tr><tr><td>② Female</td><td>21</td><td></td><td>34.8</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>40</td><td></td></tr><tr><td>③ Female</td><td>21</td><td></td><td>34.8</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td>40</td><td></td></tr><tr><td>④ Female</td><td>21</td><td></td><td>34.8</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td>40</td><td></td></tr></table>						a	b	c	d	① Female	21		34.8		① Male			40		② Female	21		34.8		② Male			40		③ Female	21		34.8		③ Male			40		④ Female	21		34.8		④ Male			40	
	a	b	c	d																																																					
① Female	21		34.8																																																						
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③ Female	21		34.8																																																						
③ Male			40																																																						
④ Female	21		34.8																																																						
④ Male			40																																																						
	4	1 - 4	D7	without PE ④ HC-Q04-I-CT...	1419899	1419898	1																																																		
Turned crimp contacts CK 4,0 Silver-plated																																																									
		Cross section mm² / AWG 1.5 - 1.5 / 16 2.5 - 2.5 / 14 4 - 4 / 12 6 - 6 / 10 10 - 10 / 8	CK4,0-ED-1,50... AG	1663271	1663239	25																																																			
			CK4,0-ED-2,50... AG	1663284	1663242	25																																																			
			CK4,0-ED-4,00... AG	1663297	1663255	25																																																			
			CK4,0-ED-6,00... AG	1663307	1663268	25																																																			
			CK4,0-ED-10,00... AG	1586183	1586198	25																																																			

Accessories



Crimping tools
From page 670



HC-HS 2... coding profiles
From page 656



Coding profiles
From page 656

Heavy-duty connectors

HEAVYCON D7 – contact inserts

Q series, RJ45 modules

Connection technology:
– RJ45 and RJ1

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off

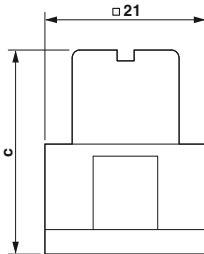
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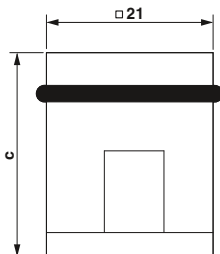
Type	Technical data			
	① HC-Q-I-RJ45 GC-... RJ45, CAT6	② HC-Q-I-RJ45-08-... RJ45, CAT6	③ HC-Q-I-RJ45-AD-PC-... for RJ45 patch cable	④ HC-Q-I-RJ45I-AD-08-PC-... for RJ industrial inserts
Approvals	-	-	-	-
IEC data				
Rated current, contacts (at 40°C)	[A] -	1	1	1
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] -	50	50	50
Rated surge voltage, contacts	[kV] -	0.8	0.8	0.8
Connection cross section	[mm²] -	-	-	-
UL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
CSA / cUL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
Material data				
Contact carrier material	-	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	-	Au	Au	Au
Temperature data				
Ambient temperature range	[°C] -40 ... 70	-25 ... 60	-25 ... 60	-40 ... 70
General data				
Connection method	-	-	-	-
Stripping length	[mm] -	-	-	-
Number of positions	8	8	8	8
Contact numbering	-	-	-	-
Insulation resistance	[GΩ] -0.1	-	-	-
Contact resistance	[mΩ] -	-	-	-
Insertion/withdrawal cycles	-	-	-	≥ 500

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
RJ45 gender changer	8		D7	RJ45, CAT6 ① HC-Q-I-RJ45 GC-...	1422590		1
							
RJ45 pin insert	8		D7	RJ45, CAT6 ② HC-Q-I-RJ45-08-...		1077117	1
							
RJ45 adapter	8		D7	for RJ45 patch cable ③ HC-Q-I-RJ45-AD-PC-...		1077120	1
							
RJ45 adapter	8		D7	for RJ industrial inserts ④ HC-Q-I-RJ45I-AD-08-PC-...		1077119	1
							
RJ45 patch cable Length: 1 m			CAT6 _A CAT6 CAT5e	NBC-R4AC1/1,0-94G/R4AC1-BU FL CAT6 PATCH 1,0 FL CAT5 PATCH 1,0	1413160 2891385 2832276		1 10 10
							
RJ45 connector, IP20, CAT5e			Cross section mm ² / AWG 0.14 - 0.25 / 26 - 24 0.23 - 0.32 / 23 - 22	CUC-INI-C1ZNI-S/R4IE8 CUC-INI-C1ZNI-S/R4IP8	1421608 1421129		1 1
							

Dimensions (in mm)



Dimensional drawing: female connector



Dimensional drawing: male connector

	a	b	c	d
① Female	21		39	
② Female				
② Male	21		22	
③ Female				
③ Male	21		20.5	
④ Female				
④ Male	21		35	

Accessories



RJ45 patch cables
From page 721

Heavy-duty connectors

HEAVYCON D7 – housings

Size D7, plastic, sleeve housings for single locking latch

General data

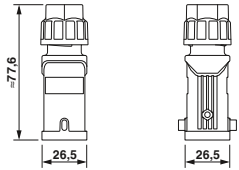
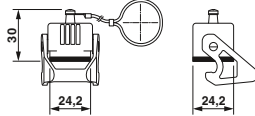
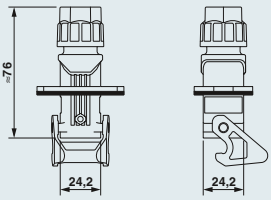
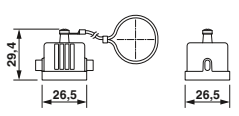
Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR, conductive
IP66
-40°C ... 125°C



Ordering data

Description	Clamping area	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 77.6 mm 	4 mm ... 10 mm 10 mm ... 16 mm	HC-STA-D07-HHFS-1TGM20-PL-BK HC-STA-D07-HHFS-1TGM25-PL-BK	1419255 1419256	1 1	
Sleeve housing Height: 54.5 mm 	4 mm ... 10 mm 10 mm ... 16 mm	HC-STA-D07-HHFS-1SGM20-PL-BK HC-STA-D07-HHFS-1SGM25-PL-BK	1419257 1419258	1 1	
Protective cover, for housing sizes: Height: 30 mm 		D7, for female insert HC-STA-D07-HCLWS-PLR-BK D7, for male insert HC-STA-D07-HCLWS-PL-BK	1419274 1419275	1 1	
Feed-through housing, with single locking latch Height: 76 mm 	4 mm ... 10 mm	HC-STA-D07-CHPWS-1TGM20-PL-BK	1419269	1	
Protective cover, for coupling housings: Height: 29.4 mm 		D7, for female insert HC-STA-D07-BCLFS-PLR-BK D7, for male insert HC-STA-D07-BCLFS-PL-BK	1419270 1419271	1 1	

Accessories



Replacement sealing screws
From page 663



Replacement latches
phoenixcontact.net/products

Size D7, metal, sleeve housings for single locking latch

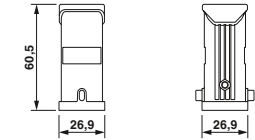
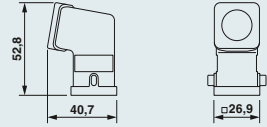
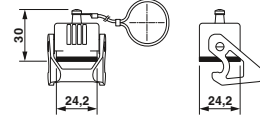
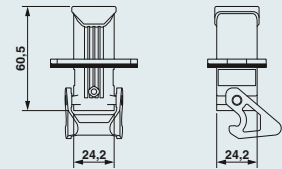
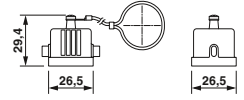


Technical data

General data

Housing material	Die-cast aluminum, salt water resistant
Locking latch material	PA
Sealing material	NBR, conductive
IP degree of protection (when plugged in)	IP66 / IP67
Ambient temperature (operation)	-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60.5 mm 	1x M20 1x M25 1x Pg11	HC-STA-D07-HHFS-1TTM20-EL-AL HC-STA-D07-HHFS-1TTM25-EL-AL HC-STA-D07-HHFS-1TTP11-EL-AL	1419229 1419231 1419232	1 1 1	
Sleeve housing Height: 52.8 mm 	1x M20 1x M25 1x Pg11	HC-STA-D07-HHFS-1STM20-EL-AL HC-STA-D07-HHFS-1STM25-EL-AL HC-STA-D07-HHFS-1STP11-EL-AL	1419235 1419236 1419237	1 1 1	
Protective cover, for housing sizes: Height: 30 mm 		D7, for female insert HC-STA-D07-HCLWS-PLR-BK D7, for male insert HC-STA-D07-HCLWS-PL-BK	1419274 1419275	1 1	
Feed-through housing, with single locking latch Height: 60.5 mm 	1x M20	HC-STA-D07-CHPWS-1TGM20-EL-AL	1419242	1	
Protective cover, for coupling housings: Height: 29.4 mm 		D7, for female insert HC-STA-D07-BCLFS-PLR-BK D7, for male insert HC-STA-D07-BCLFS-PL-BK	1419270 1419271	1 1	

Accessories



Cable glands
From page 686



Replacement sealing screws
From page 663



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON D7 – housings

Size D7, plastic, supporting base elements with single locking latch

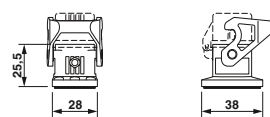
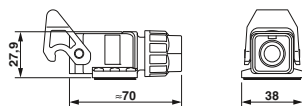
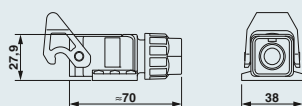
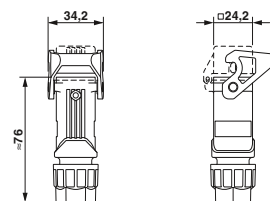
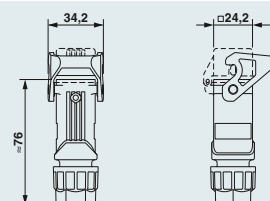
General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR
IP degree of protection (when plugged in)	IP66
Ambient temperature (operation)	-40°C ... 125°C

Technical data



Ordering data

Description	Clamping area	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 25.5 mm 		Without cover HC-STA-D07-BWS-PL-BK With cover, for female inserts HC-STA-D07-BWSCF-PL-BK With cover, for male inserts HC-STA-D07-BWSCM-PL-BK	1419265 1419277 1419278	1 1 1	
Panel mounting base Height: 27.9 mm 		Angled version HC-STA-D07-BAWS-PL-BK	1419266	1	
Box mounting base Height: 27.9 mm 	4 mm ... 10 mm	open floor HC-STA-D07-SHOWS-1SGM20-PL-BK	1419267	1	
Box mounting base Height: 28 mm 	4 mm ... 10 mm	enclosed floor HC-STA-D07-SHCWS-1SGM20-PL-BK	1419268	1	
Coupling housing Height: 76 mm 	4 mm ... 10 mm 10 mm ... 16 mm	Without cover HC-STA-D07-CHWS-1TGM20-PL-BK HC-STA-D07-CHWS-1TGM25-PL-BK	1419259 1419260	1 1	
Coupling housing Height: 76 mm 	4 mm ... 10 mm 10 mm ... 16 mm 4 mm ... 10 mm 10 mm ... 16 mm	With cover, for female inserts HC-STA-D07-CHWSCF-1TGM20-PL-BK HC-STA-D07-CHWSCF-1TGM25-PL-BK With cover, for male inserts HC-STA-D07-CHWSCM-1TGM20-PL-BK HC-STA-D07-CHWSCM-1TGM25-PL-BK	1419261 1419262 1419263 1419264	1 1 1 1	

Accessories



Protective covers
From page 654



Replacement sealing screws
From page 663



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Size D7, metal, supporting base elements with single locking latch



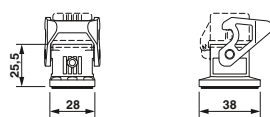
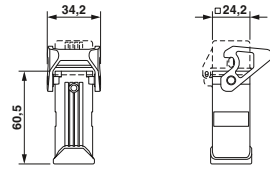
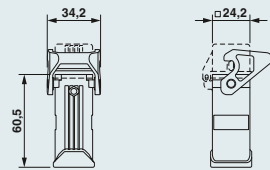
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR
IP66 / IP67
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 25.5 mm 		Without cover HC-STA-D07-BWS-EL-AL With cover, for female inserts HC-STA-D07-BWSCF-EL-AL With cover, for male inserts HC-STA-D07-BWSCM-EL-AL	1419249 1419251 1419250	1 1 1	
Panel mounting base Height: 28.5 mm 		Angled version HC-STA-D07-BAWS-EL-AL	1419252	1	
Box mounting base Height: 27.9 mm 	1x M20 1x Pg11	open floor HC-STA-D07-SHOWS-1STM20-EL-AL HC-STA-D07-SHOWS-1STP11-EL-AL	1419253 1419233	1 1	
Box mounting base Height: 27.9 mm 	1x M20 1x Pg11	enclosed floor HC-STA-D07-SHCWS-1STM20-EL-AL HC-STA-D07-SHCWS-1STP11-EL-AL	1419234 1419241	1 1	
Coupling housing Height: 60.5 mm 	1x M20 1x M25 1x Pg11	Without cover HC-STA-D07-CHWS-1TTM20-EL-AL HC-STA-D07-CHWS-1TTM25-EL-AL HC-STA-D07-CHWS-1TTP11-EL-AL	1419238 1419239 1419240	1 1 1	
Coupling housing Height: 60.5 mm 	1x M20 1x M25 1x Pg11 1x M20 1x M25 1x Pg11	With cover, for female inserts HC-STA-D07-CHWSCF-1TTM20-EL-AL HC-STA-D07-CHWSCF-1TTM25-EL-AL HC-STA-D07-CHWSCF-1TTP11-EL-AL With cover, for male inserts HC-STA-D07-CHWSCM-1TTM20-EL-AL HC-STA-D07-CHWSCM-1TTM25-EL-AL HC-STA-D07-CHWSCM-1TTP11-EL-AL	1419243 1419244 1419245 1419246 1419247 1419248	1 1 1 1 1 1	

Accessories



Protective covers
From page 654



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON D – contact inserts

A10 series

250 V, 16 A ... 20 A

Connection technology:

- Push-in connection
- Screw connection
- Crimp connection

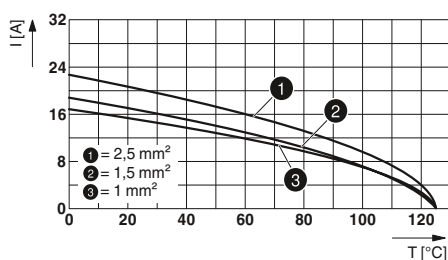
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
¹⁾ For flexible wires with wire end protection

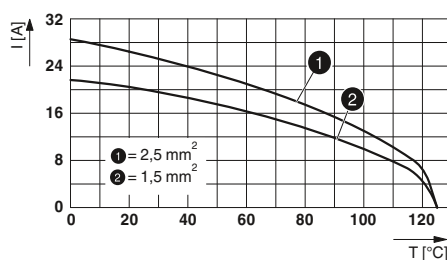


Type	Technical data			
	① HC-A 10-I-PT...	② HC-A 10-I-UT...	③ HC-A 10-E...C	
Approvals	UL ENEC RL	UL ENEC RL	UL ENEC	
IEC data				
Rated current, contacts (at 40°C)	[A] 16	20	16	
Overtoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 250	250	250	
Rated surge voltage, contacts	[kV] 4	4	4	
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.5 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 17	19	-	
Connection cross section	AWG 14	14	-	
CSA / cUL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 14	15	10	
Connection cross section	AWG 14	14	20-13	
Material data				
Contact carrier material	PC	PC	PA	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag	Ag	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	
General data				
Connection method	Push-in connection	Screw connection	Crimp connection	
Stripping length	[mm] 8	7	8	
Number of positions	10	10	10	
Contact numbering	1 - 10	1 - 10	1 - 10	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

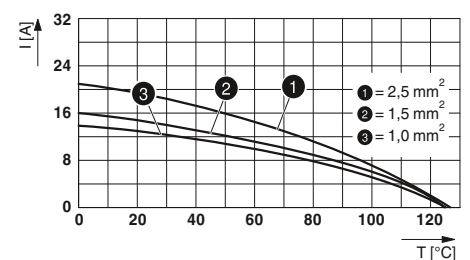
Derating curves



HC-A 10-I-PT...

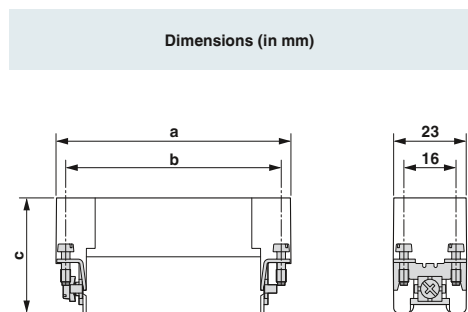


HC-A 10-I-UT...

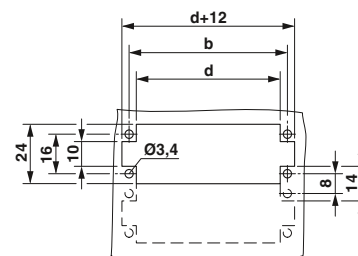


HC-A 10-E...C

				Ordering data		
Description	Pos.	Number	Size	Type	Order No. Female Male	Pcs./ Pkt.
Push-in connection						
	10	1 - 10	D15	① HC-A 10-I-PT-...	1585362 1585359	1
Screw connection						
	10	1 - 10	D15	② HC-A 10-I-UT-...	1585304 1585294	1
Crimp connection CK 2,5						
	10	1 - 10	D15	③ HC-A 10-E...C	1676983 1676996	10
Turned crimp contacts CK 2,5 Silver-plated						
			Cross section mm ² / AWG			
			0.5 - 0.5 / 20	CK2,5-ED-0,50... AG	1663640 1663572	100
			0.75 - 0.75 / 18	CK2,5-ED-0,75... AG	1663653 1663585	100
			0.75 - 1 / 18	CK2,5-ED-1,00... AG	1663666 1663598	100
			1.5 - 1.5 / 16	CK2,5-ED-1,50... AG	1663679 1663608	100
			2.5 - 2.5 / 14	CK2,5-ED-2,50... AG	1663682 1663611	100
			4 - 4 / 12	CK2,5-ED-4,00... AG	1663705 1663637	100
Turned crimp contacts CK 2,5 Gold-plated						
			Cross section mm ² / AWG			
			0.5 - 0.5 / 20	CK2,5-ED-0,50... AU	1674859 1674804	100
			0.75 - 1 / 18	CK2,5-ED-1,00... AU	1674833 1674781	100
			1.5 - 1.5 / 16	CK2,5-ED-1,50... AU	1674820 1674778	100
			2.5 - 2.5 / 14	CK2,5-ED-2,50... AU	1674862 1674817	100
			4 - 4 / 12	CK2,5-ED-4,00... AU	1674846 1674794	100



Dimensional drawing



Panel cutout

	a	b	c	d
① Female	55.5	49.5	34.1	43.5
① Male				
② Female	55.5	49.5	31.5	43.5
② Male			34.1	
③ Female	56.5	49.5	30	43.5
③ Male			33	

Accessories



Crimping tools
From page 670



Coding profiles
From page 656



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON D – contact inserts

A16 series

250 V, 16 A ... 20 A

Connection technology:

- Push-in connection
- Screw connection
- Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

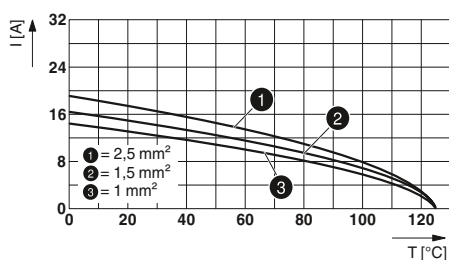
Only operate connectors when there is no load/the power is switched off

¹⁾ For flexible wires with wire end protection

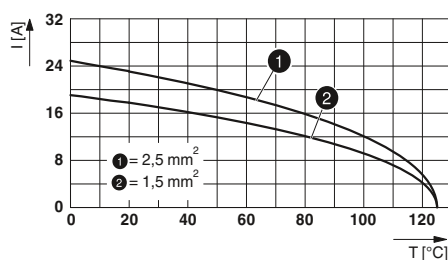


Type	Technical data			
	① ② HC-A 16-I-PT...	③ ④ HC-A 16-I-UT...	⑤ ⑥ HC-A 16-E...C	
Approvals	UL ENEC RL	UL ENEC RL	UL ENEC	
IEC data				
Rated current, contacts (at 40°C)	[A] 16	20	16	
Overtoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 250	250	250	
Rated surge voltage, contacts	[kV] 4	4	4	
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.5 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 16	19	-	
Connection cross section	AWG 14	14	-	
CSA / cUL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 13	15	10	
Connection cross section	AWG 14	14	20-13	
Material data				
Contact carrier material	PC	PC	PA	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag	Ag	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	
General data				
Connection method	Push-in connection	Screw connection	Crimp connection	
Stripping length	[mm] 8	7	8	
Number of positions	16	16	16	
Contact numbering	1 - 16	1 - 16	1 - 16	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

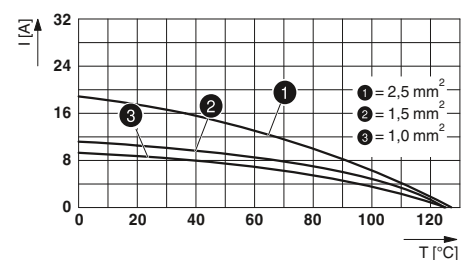
Derating curves



HC-A 16-I-PT...

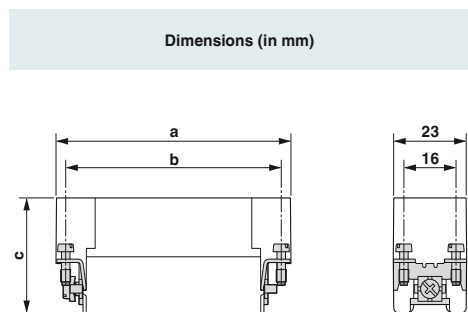


HC-A 16-I-UT...

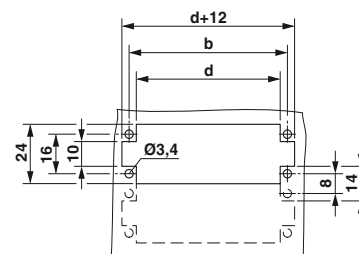


HC-A 16-E...C

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Push-in connection							
	16	1 - 16	D25 / D50	① HC-A 16-I-PT-...	1585388	1585375	1
	16	17 - 32	D25 / D50	② HC-A 16-I-PT-...-32	1585401	1585391	1
Screw connection							
	16	1 - 16	D25 / D50	③ HC-A 16-I-UT-...	1585320	1585317	1
	16	17 - 32	D25 / D50	④ HC-A 16-I-UT-...-32	1585346	1585333	1
Crimp connection CK 2,5							
	16	1 - 16	D25 / D50	⑤ HC-A 16-E...C	1677018	1677034	10
	16	17 - 32	D25 / D50	⑥ HC-A 16-E...C-32	1677050	1677076	10
Turned crimp contacts CK 2,5 Silver-plated		Cross section mm ² / AWG					
		0.5 - 0.5 / 20		CK2,5-ED-0,50... AG	1663640	1663572	100
		0.75 - 0.75 / 18		CK2,5-ED-0,75... AG	1663653	1663585	100
		0.75 - 1 / 18		CK2,5-ED-1,00... AG	1663666	1663598	100
		1.5 - 1.5 / 16		CK2,5-ED-1,50... AG	1663679	1663608	100
		2.5 - 2.5 / 14		CK2,5-ED-2,50... AG	1663682	1663611	100
		4 - 4 / 12		CK2,5-ED-4,00... AG	1663705	1663637	100
Turned crimp contacts CK 2,5 Gold-plated		Cross section mm ² / AWG					
		0.5 - 0.5 / 20		CK2,5-ED-0,50... AU	1674859	1674804	100
		0.75 - 1 / 18		CK2,5-ED-1,00... AU	1674833	1674781	100
		1.5 - 1.5 / 16		CK2,5-ED-1,50... AU	1674820	1674778	100
		2.5 - 2.5 / 14		CK2,5-ED-2,50... AU	1674862	1674817	100
		4 - 4 / 12		CK2,5-ED-4,00... AU	1674846	1674794	100



Dimensional drawing



Panel cutout

		a	b	c	d
①	Female			31.5	
	Male	72	66	34.1	60
②	Female			31.5	
	Male	72	66	34.1	60
③	Female			31.5	
	Male	72	66	34.1	60
④	Female			31.5	
	Male	72	66	34.1	60
⑤	Female			31.7	
	Male	72	66	31.8	60
⑥	Female			31.7	
	Male	72	66	31.8	60

Accessories



Crimping tools
From page 670



Coding profiles
From page 656



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON D – contact inserts

D15, D25 series

250 V, 10 A

Connection technology:

– Crimp connection

Guide pins and sockets are mandatory for HC-D... and HC-DD series contact inserts; see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

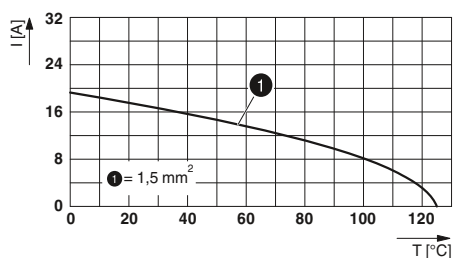
Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off

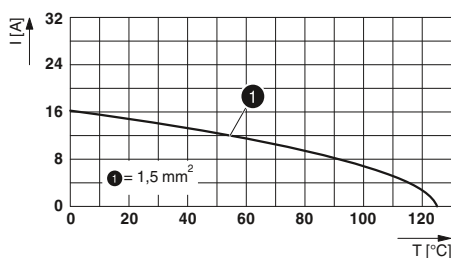


Type	Technical data			
	① HC-D 15-I-CT-...	② ③ HC-D 25-I-CT-...	④ HC-D 25-I-CT-...-Z	
Approvals	UL ENEC RL	UL ENEC RL	UL ENEC RL	
IEC data				
Rated current, contacts (at 40°C)	10	10	10	
Overvoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	250	250	250	
Rated surge voltage, contacts	4	4	4	
Connection cross section	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5	
UL data				
Rated voltage	600	600	600	
Rated current	10	10	10	
Connection cross section	14	14	14	
CSA / cUL data				
Rated voltage	600	600	600	
Rated current	8	8	8	
Connection cross section	14	14	14	
Material data				
Contact carrier material	PC	PC	PA	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	
Stripping length	8	8	8	
Number of positions	15	25	25	
Contact numbering	-	-	-	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

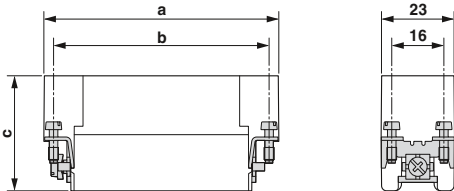
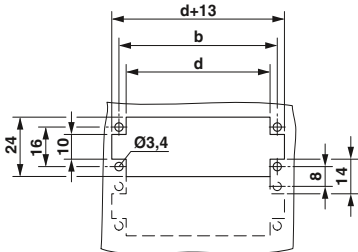
Derating curves



HC-D 15-I-CT-....



HC-D 25-I-CT-....

				Ordering data																																																				
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																
					Female	Male																																																		
Crimp connection CK 1,6	15		D15	① HC-D 15-I-CT-...	1584389	1584376	1																																																	
Crimp connection CK 1,6	25		D25 / D50	② HC-D 25-I-CT-...	1584402	1584392	1	Dimensional drawing 																																																
	25		D25 / D50	③ HC-D 25-I-CT-...	1584402	1584392	1																																																	
Crimp connection CK 1,6	25		D25 / D50	Euromap ④ HC-D 25-I-CT-...-Z	1411481	1411478	1																																																	
								<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td></td><td></td><td>33.5</td><td></td></tr><tr><td>① Male</td><td>55.4</td><td>49.5</td><td>34.2</td><td>43.5</td></tr><tr><td>② Female</td><td>72</td><td>66</td><td>33.5</td><td>60</td></tr><tr><td>② Male</td><td></td><td></td><td>34.2</td><td></td></tr><tr><td>③ Female</td><td></td><td></td><td>33.5</td><td></td></tr><tr><td>③ Male</td><td>72</td><td>66</td><td>34.2</td><td>60</td></tr><tr><td>④ Female</td><td></td><td></td><td>33.5</td><td></td></tr><tr><td>④ Male</td><td>72</td><td>66</td><td>34.2</td><td>60</td></tr></table>					a	b	c	d	① Female			33.5		① Male	55.4	49.5	34.2	43.5	② Female	72	66	33.5	60	② Male			34.2		③ Female			33.5		③ Male	72	66	34.2	60	④ Female			33.5		④ Male	72	66	34.2	60
	a	b	c	d																																																				
① Female			33.5																																																					
① Male	55.4	49.5	34.2	43.5																																																				
② Female	72	66	33.5	60																																																				
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③ Female			33.5																																																					
③ Male	72	66	34.2	60																																																				
④ Female			33.5																																																					
④ Male	72	66	34.2	60																																																				
Turned crimp contacts CK 1,6 Silver-plated	Cross section mm ² / AWG																																																							
	0.14 - 0.37 / 26 - 22			CK1,6-ED-0,37... AG	1663394	1663336	100																																																	
	0.5 - 0.5 / 20			CK1,6-ED-0,50... AG	1663404	1663349	100																																																	
	0.75 - 0.75 / 18			CK1,6-ED-0,75... AG	1663417	1663352	100																																																	
	0.75 - 1 / 18			CK1,6-ED-1,00... AG	1663420	1663365	100																																																	
	1.5 - 1.5 / 16			CK1,6-ED-1,50... AG	1663433	1663378	100																																																	
	2.5 - 2.5 / 14			CK1,6-ED-2,50... AG	1663446	1663381	100																																																	
Turned crimp contacts CK 1,6 Gold-plated	Cross section mm ² / AWG																																																							
	0.14 - 0.37 / 24 - 22			CK1,6-ED-0,37... AU	1674969	1674901	100																																																	
	0.5 - 0.5 / 20			CK1,6-ED-0,50... AU	1674480	1672453	100																																																	
	0.75 - 0.75 / 18			CK1,6-ED-0,75... AU	1672440	1674914	100																																																	
	0.75 - 1 / 18			CK1,6-ED-1,00... AU	1674943	1674888	100																																																	
	1.5 - 1.5 / 16			CK1,6-ED-1,50... AU	1674930	1674875	100																																																	
	2.5 - 2.5 / 14			CK1,6-ED-2,50... AU	1674985	1674927	100																																																	

Accessories

		
Crimping tools From page 670	Guide elements From page 657	Replacement PE screws From page 662

Heavy-duty connectors

HEAVYCON D – housings

Size D15, plastic, EVO sleeve housings for single locking latch

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
-
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description

Thread

Type

Order No.

Pcs./Pkt.

Dimensions

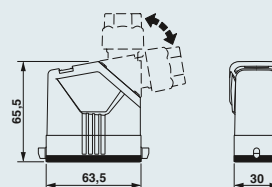
Sleeve housing
Height: 65.5 mm



HC-EVO-D15-HHFS-PL-BK

1411340

1



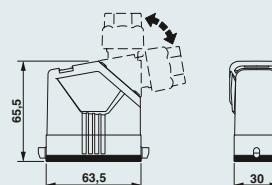
Sleeve housing
Height: 65.5 mm



HC-EVO-D15-HHFS-PL-BK

1411340

1



Cable gland

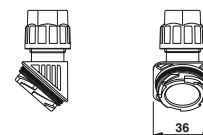
Clamping area
7 mm ... 13 mm
9 mm ... 17 mm



HC-D-G-M20-PLRBK
HC-D-G-M25-PLRBK

1411350
1411351

1
1



Connector set¹⁾
Height: 100.5 mm



Without cover, Push-in connection
HC-EVO-A10PT-BWS-HH-M20-PLRBK
Without cover, screw connection
HC-EVO-A10UT-BWS-HH-M20-PLRBK
With cover, Push-in connection
HC-EVO-A10PT-BWSC-HH-M20-PLRBK
With cover, screw connection
HC-EVO-A10UT-BWSC-HH-M20-PLRBK

1424453
1411356
1424454
1411357

1
1
1
1

Notes:

Marking label: US-EMP (20X9) Order No. 0829439

¹⁾ Connector sets: phoenixcontact.net/webcode/#0523

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 658



Module carrier frames
phoenixcontact.net/products

Size D15, metal, STANDARD sleeve housings for single locking latch



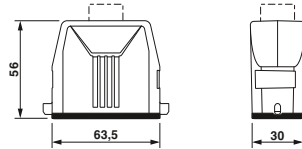
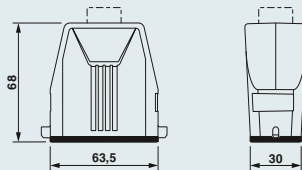
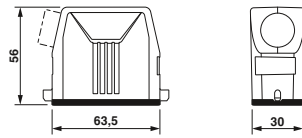
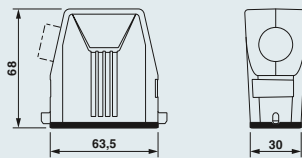
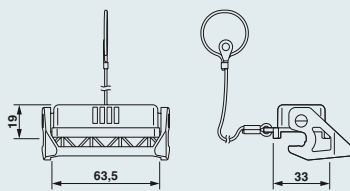
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
NBR, conductive
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 56 mm 	1x M20 1x Pg13.5	HC-STA-D15-HLFS-1TTM20-ELC-AL	1424350	1	
		HC-STA-D15-HLFS-1TTP13-ELC-AL	1424352	1	
Sleeve housing Height: 68 mm 	1x M25 1x Pg16 1x Pg21	HC-STA-D15-HHFS-1TTM25-ELC-AL	1424351	1	
		HC-STA-D15-HHFS-1TTP16-ELC-AL	1424353	1	
		HC-STA-D15-HHFS-1TTP21-ELC-AL	1424358	1	
Sleeve housing Height: 56 mm 	1x M20 1x Pg16	HC-STA-D15-HLFS-1STM20-ELC-AL	1424345	1	
		HC-STA-D15-HLFS-1STP16-ELC-AL	1424347	1	
Sleeve housing Height: 68 mm 	1x M25 1x Pg16 1x Pg21	HC-STA-D15-HHFS-1STM25-ELC-AL	1424346	1	
		HC-STA-D15-HHFS-1STP16-ELC-AL	1424348	1	
		HC-STA-D15-HHFS-1STP21-ELC-AL	1424349	1	
Protective cover Height: 19 mm 		HC-STA-D15-HCLWS-PL-BK	1424375	1	

Notes:

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Cover plates
From page 664



D-SUB adapter plates
From page 665



Module carrier frames
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON D – housings

**Size D15, plastic,
EVO supporting base elements
with single locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C



Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 26 mm		Without cover HC-EVO-D15-BWS-PLR-BK	1411336	1	
Panel mounting base Height: 26 mm		With cover HC-EVO-D15-BWSC-PLR-BK	1411337	1	
Box mounting base ¹⁾ Height: 52 mm	2x M20 2x M25	Without cover HC-EVO-D15-SLWS-2SSM20-PLR-BK HC-EVO-D15-SLWS-2SSM25-PLR-BK	1421463 1411341	1 1	
Box mounting base ¹⁾ Height: 52 mm	2x M20 2x M25	With cover HC-EVO-D15-SLWSC-2SSM20-PLR-BK HC-EVO-D15-SLWSC-2SSM25-PLR-BK	1421465 1411343	1 1	
Coupling housing Height: 60 mm		HC-EVO-D15-CHWS-PL-BK	1411338	1	
Cable gland	Clamping area 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	

Notes:

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 658



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Size D15, metal, STANDARD supporting base elements with single locking latch



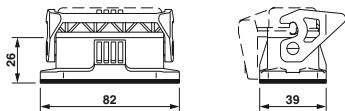
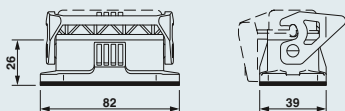
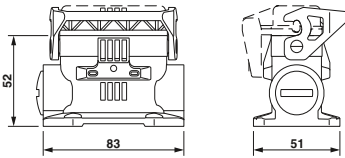
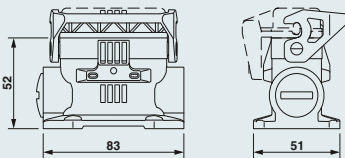
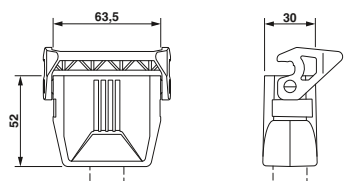
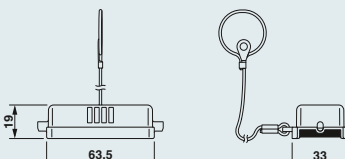
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 26 mm 		Without cover HC-STA-D15-BWS-EL-AL	1424362	1	
Panel mounting base Height: 26 mm 		With cover HC-STA-D15-BWSC-EL-AL	1424363	1	
Box mounting base¹⁾ Height: 52 mm 	2x M20 2x M25 2x Pg16 2x Pg21	Without cover HC-STA-D15-SLWS-2SSM20-EL-AL HC-STA-D15-SLWS-2SSM25-EL-AL HC-STA-D15-SLWS-2SSP16-EL-AL HC-STA-D15-SLWS-2SSP21-EL-AL	1424364 1424365 1424366 1424367	1 1 1 1	
Box mounting base¹⁾ Height: 52 mm 	2x M20 2x M25 2x Pg16 2x Pg21	With cover HC-STA-D15-SLWSC-2SSM20-EL-AL HC-STA-D15-SLWSC-2SSM25-EL-AL HC-STA-D15-SLWSC-2SSP16-EL-AL HC-STA-D15-SLWSC-2SSP21-EL-AL	1424369 1424371 1424372 1424373	1 1 1 1	
Coupling housing Height: 52 mm 	1x M20 1x M25 1x Pg16	HC-STA-D15-CLWS-1TTM20-EL-AL HC-STA-D15-CHWS-1TTM25-EL-AL HC-STA-D15-CHWS-1TTP16-EL-AL	1424359 1424361 1424360	1 1 1	
Protective cover Height: 19 mm 		HC-STA-D15-BCSFS-PLR-BK	1424374	1	

Notes:

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement latches
phoenixcontact.net/products



Replacement seals
phoenixcontact.net/products



Module carrier frames
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON D – housings

Size D25, plastic, EVO sleeve housings for single locking latch

General data

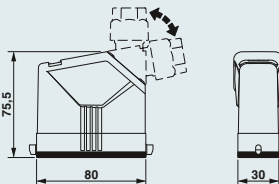
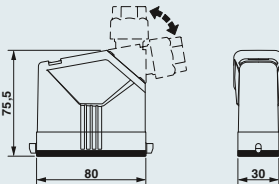
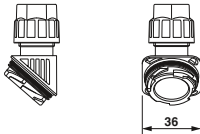
Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
-
NBR
IP66
12
-40°C ... 125°C



Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 75.5 mm 		HC-EVO-D25-HHFS-PL-BK	1411347	1	
Sleeve housing Height: 75.5 mm 		HC-EVO-D25-HHFS-PL-BK	1411347	1	
Cable gland 	Clamping area 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	
Connector set¹⁾ Height: 114.5 mm 		Without cover, Push-in connection HC-EVO-A16PT-BWS-HH-M25-PLRBK Without cover, screw connection HC-EVO-A16UT-BWS-HH-M25-PLRBK With cover, Push-in connection HC-EVO-A16PT-BWSC-HH-M25-PLRBK With cover, screw connection HC-EVO-A16UT-BWSC-HH-M25-PLRBK	1424459 1411358 1424460 1411359	1 1 1 1	

Notes:

Marking label: US-EMP (20X9) Order No. 0829439

¹⁾ Connector sets: phoenixcontact.net/webcode/#0523

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 658

Size D25, metal, STANDARD sleeve housings for single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
NBR, conductive
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 56 mm	1x M20 1x Pg16	HC-STA-D25-HLFS-1TTM20-ELC-AL HC-STA-D25-HLFS-1TTP16-ELC-AL	1424381 1424383	1 1	
Sleeve housing Height: 72 mm	1x M25 1x Pg16 1x Pg21	HC-STA-D25-HHFS-1TTM25-ELC-AL HC-STA-D25-HHFS-1TTP16-ELC-AL HC-STA-D25-HHFS-1TTP21-ELC-AL	1424382 1424384 1424385	1 1 1	
Sleeve housing Height: 56 mm	1x M20 1x Pg16	HC-STA-D25-HLFS-1STM20-ELC-AL HC-STA-D25-HLFS-1STP16-ELC-AL	1424376 1424378	1 1	
Sleeve housing Height: 72 mm	1x M25 1x Pg16 1x Pg21	HC-STA-D25-HHFS-1STM25-ELC-AL HC-STA-D25-HHFS-1STP16-ELC-AL HC-STA-D25-HHFS-1STP21-ELC-AL	1424377 1424379 1424380	1 1 1	
Protective cover Height: 19 mm		HC-STA-D25-HCLWS-PL-BK	1424400	1	

Notes:

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Cover plates
From page 664



D-SUB adapter plates
From page 665

Heavy-duty connectors

HEAVYCON D – housings

Size D25, plastic, EVO supporting base elements with single locking latch

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C



Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 26 mm		Without cover HC-EVO-D25-BWS-PLR-BK	1411344	1	
Panel mounting base Height: 26 mm		With cover HC-EVO-D25-BWSC-PLR-BK	1411345	1	
Box mounting base ¹⁾ Height: 57 mm	2x M20 2x M25	Without cover HC-EVO-D25-SLWS-2SSM20-PLR-BK HC-EVO-D25-SLWS-2SSM25-PLR-BK	1421466 1411348	1 1	
Box mounting base ¹⁾ Height: 57 mm	2x M20 2x M25	With cover HC-EVO-D25-SLWSC-2SSM20-PLR-BK HC-EVO-D25-SLWSC-2SSM25-PLR-BK	1421467 1411349	1 1	
Coupling housing Height: 70 mm		HC-EVO-D25-CHWS-PLR-BK	1411346	1	
Cable gland	Clamping area 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	

Notes:

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 658



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Size D25, metal, STANDARD supporting base elements with single locking latch



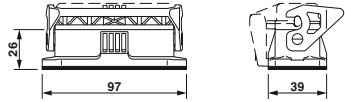
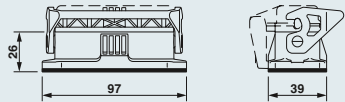
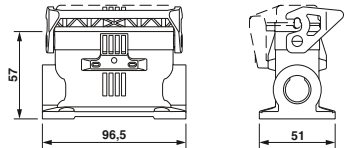
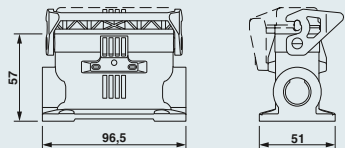
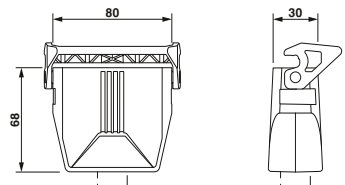
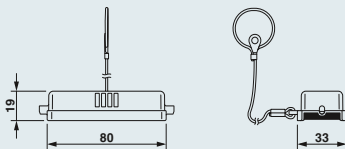
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 26 mm 		Without cover HC-STA-D25-BWS-EL-AL	1424391	1	
Panel mounting base Height: 26 mm 		With cover HC-STA-D25-BWSC-EL-AL	1424390	1	
Box mounting base¹⁾ Height: 57 mm 	2x M20 2x M25 2x Pg16 2x Pg21	Without cover HC-STA-D25-SLWS-2SSM20-EL-AL HC-STA-D25-SLWS-2SSM25-EL-AL HC-STA-D25-SLWS-2SSP16-EL-AL HC-STA-D25-SLWS-2SSP21-EL-AL	1424392 1424393 1424394 1424395	1 1 1 1	
Box mounting base¹⁾ Height: 57 mm 	2x M20 2x M25 2x Pg16 2x Pg21	With cover HC-STA-D25-SLWSC-2SSM20-EL-AL HC-STA-D25-SLWSC-2SSM25-EL-AL HC-STA-D25-SLWSC-2SSP16-EL-AL HC-STA-D25-SLWSC-2SSP21-EL-AL	1424396 1424397 1424398 1424399	1 1 1 1	
Coupling housing Height: 68 mm 	1x M25 1x Pg16	HC-STA-D25-CHWS-1TTM25-EL-AL HC-STA-D25-CHWS-1TTP16-EL-AL	1424387 1424389	1 1	
Protective cover Height: 19 mm 		HC-STA-D25-BCSFS-PLR-BK	1424401	1	

Notes:

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement latches
phoenixcontact.net/products



Replacement seals
phoenixcontact.net/products



D-SUB adapter plates
From page 665

Heavy-duty connectors

HEAVYCON D – housings

Size D50, metal, STANDARD sleeve housings for double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 80 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-D50-HHFD-1TTM25-EL-AL HC-STA-D50-HHFD-1TTM32-EL-AL HC-STA-D50-HHFD-1TTP21-EL-AL HC-STA-D50-HHFD-1TTP29-EL-AL	1424408 1424409 1424410 1424411	1 1 1 1	
Sleeve housing Height: 60 mm	1x M25 1x Pg21	Cable outlet: lateral HC-STA-D50-HLFD-1STM25-EL-AL HC-STA-D50-HLFD-1STP21-EL-AL	1424402 1424405	1 1	
Sleeve housing Height: 80 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: lateral HC-STA-D50-HHFD-1STM25-EL-AL HC-STA-D50-HHFD-1STM32-EL-AL HC-STA-D50-HHFD-1STP21-EL-AL HC-STA-D50-HHFD-1STP29-EL-AL	1424403 1424404 1424406 1424407	1 1 1 1	

Notes:

Marking label: US-EMLP-HA (20X9), Order No. [0830989](#)

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products

**Size D50, metal,
STANDARD supporting base elements
with double locking latch**



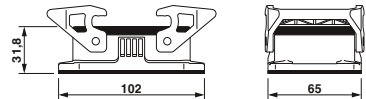
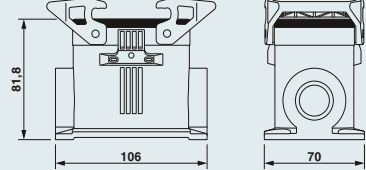
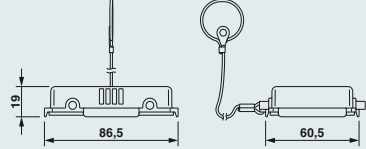
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
-
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 32 mm 		Without cover HC-STA-D50-BWD-ELC-AL	1424412	1	
Box mounting base¹⁾ Height: 82 mm 	2x M25 2x M32 2x Pg21 2x Pg29	Without cover HC-STA-D50-SHWD-2SSM25-ELC-AL HC-STA-D50-SHWD-2SSM32-ELC-AL HC-STA-D50-SHWD-2SSP21-ELC-AL HC-STA-D50-SHWD-2SSP29-ELC-AL	1424413 1424414 1424415 1424416	1 1 1 1	
Protective cover Height: 19 mm 		HC-STA-D50-BCSFD-PL-BK	1424417	1	

Notes:

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686

Heavy-duty connectors

HEAVYCON B – contact inserts

D40, D64 series

250 V, 10 A

Connection technology:

– Crimp connection

Guide pins and sockets are mandatory for HC-D... and HC-DD series contact inserts; see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

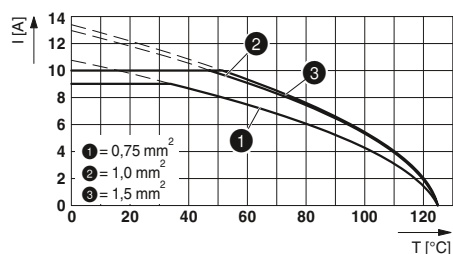
Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off

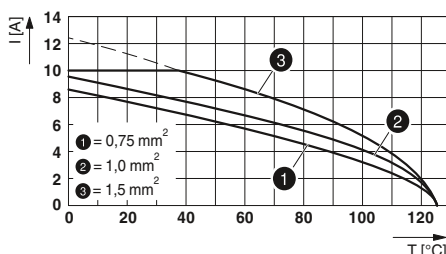


Type	Technical data			
	① HC-D 40-I-CT...	② HC-D 64-I-CT...		
Approvals	UL ENEC RL	UL ENEC RL		
IEC data				
Rated current, contacts (at 40°C)	[A] 10	10		
Overvoltage category	III	III		
Degree of pollution	3	3		
Rated voltage (III/3) contacts	[V] 250	250		
Rated surge voltage, contacts	[kV] 4	4		
Connection cross section	[mm²] 0.14 ... 2.5	0.14 ... 2.5		
UL data				
Rated voltage	[V] 600	600		
Rated current	[A] 10	10		
Connection cross section	AWG 14	14		
CSA / cUL data				
Rated voltage	[V] 600	600		
Rated current	[A] 7	7		
Connection cross section	AWG 14	14		
Material data				
Contact carrier material	PC	PC		
Inflammability class in acc. with UL 94	V0	V0		
Contact material	Copper alloy	Copper alloy		
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)		
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125		
General data				
Connection method	Crimp connection	Crimp connection		
Stripping length	[mm] 8	8		
Number of positions	40	64		
Contact numbering	-	-		
Insertion/withdrawal cycles	≥ 500	≥ 500		

Derating curves



HC-D 40-I-CT...



HC-D 64-I-CT...

[illegible]

Accessories



Crimping tools
From page 670



Guide elements
From page 657



Replacement PE screws
From page 662



Thermal crimp contacts
From page 668

Heavy-duty connectors

HEAVYCON B – contact inserts

D40, D64 series terminal adapters

250 V, 10 A

Connection technology:

- Push-in connection
- Screw connection

Notes:

For accessories, see from page 654

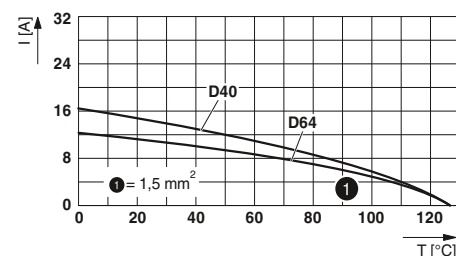
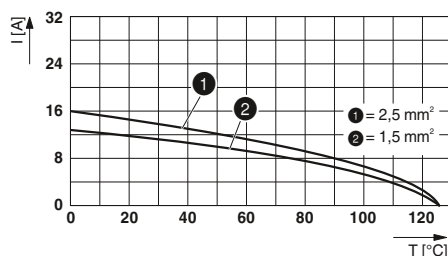
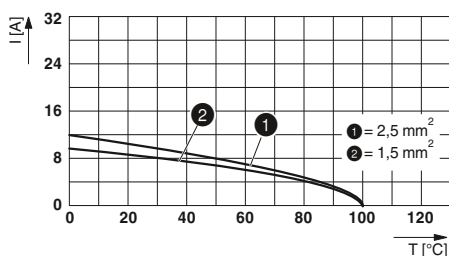
Not for HC-EVO panel mounting bases

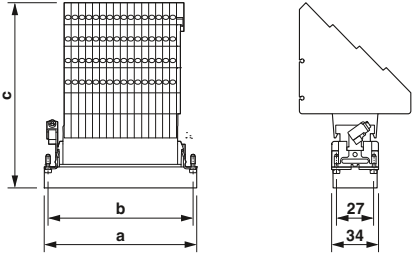
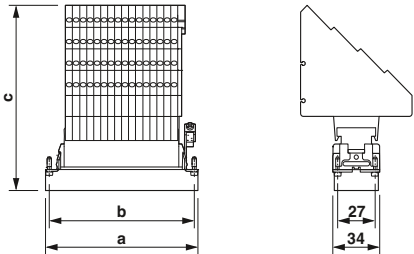
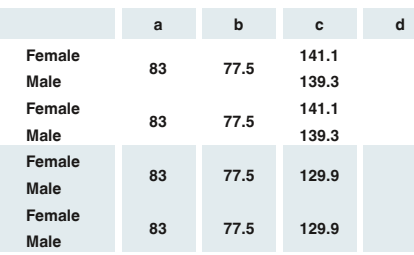
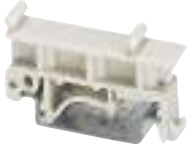
Only operate connectors when there is no load/the power is switched off

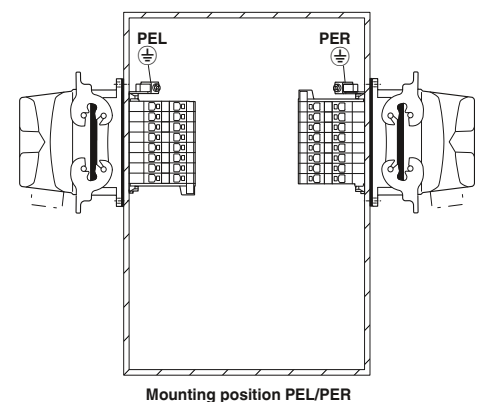


Type	Technical data			
	① ② HC-D 40-A-TWIN-PEL-...	③ ④ HC-D 40-A-UT-PEL-...	⑤ ⑥ HC-D 64-A-TWIN-PEL-...	⑦ ⑧ HC-D 64-A-UT-PEL-...
Approvals	UL ENEC	UL ENEC	UL ENEC	UL ENEC
IEC data				
Rated current, contacts (at 40°C)	10	10	10	10
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	250	250	250	250
Rated surge voltage, contacts	6	4	6	4
Connection cross section	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5	0.2 ... 2.5
UL data				
Rated voltage	600	600	600	600
Rated current	7	7	7	7
Connection cross section	14	14	14	14
CSA / cUL data				
Rated voltage	600	600	600	600
Rated current	7	7	7	7
Connection cross section	14	14	14	14
Material data				
Contact carrier material	PA	PA	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag
Temperature data				
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Push-in connection	Screw connection	Push-in connection	Screw connection
Stripping length	10	10	10	10
Number of positions	40	40	64	64
Contact numbering	-	-	-	-
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves



				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Size	Type	Female	Male	
Push-in connection				PE left			
				PE right			
Screw connection				PE left			
				PE right			
Push-in connection				PE left			
				PE right			
Screw connection				PE left			
				PE right			
Foot element				HC-KA-FE			
Locking screw barrel				HC-VSH			



Heavy-duty connectors

HEAVYCON B – contact inserts

DD24, DD42, DD72, DD108 series

250 V, 10 A

Connection technology:

– Crimp connection

Guide pins and sockets are mandatory for HC-D... and HC-DD series contact inserts; see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

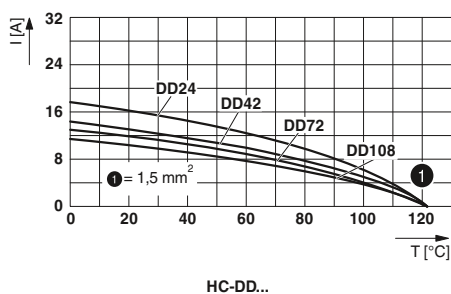
Only operate connectors when there is no load/the power is switched off



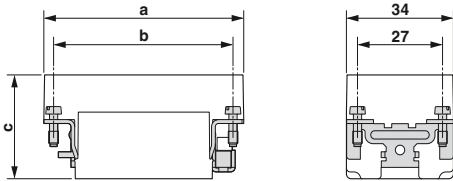
Technical data

Type	① HC-DD24-I-CT-...	② HC-DD42-I-CT-...	③ ④ HC-DD72-I-CT-...	⑤ ⑥ HC-DD108-I-CT-...
Approvals	CE, UL, ENEC, G	CE, UL, ENEC, G	CE, UL, ENEC, G	CE, UL, ENEC, G
IEC data				
Rated current, contacts (at 40°C)	10	10	10	10
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	250	250	250	250
Rated surge voltage, contacts	4	4	4	4
Connection cross section	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5
UL data				
Rated voltage	250	250	250	250
Rated current	10	10	10	10
Connection cross section	14	14	14	14
CSA / cUL data				
Rated voltage	250	250	250	250
Rated current	7	7	7	7
Connection cross section	26-14	26-14	26-14	26-14
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data				
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	8	8	8	8
Number of positions	24	42	72	108
Contact numbering	1 - 24	1 - 42	1 - 72	1 - 108
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

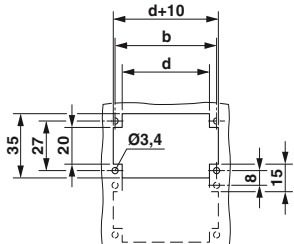
Derating curves



Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Crimp connection							
	24	1 - 24	B6	① HC-DD24-I-CT-...	1584046	1584033	1
Crimp connection							
	42	1 - 42	B10	② HC-DD42-I-CT-...	1584062	1584059	1
Crimp connection							
	72	1 - 72	B16 / B32	③ HC-DD72-I-CT-...	1584091	1584075	1
	72	73 - 144	B16 / B32	④ HC-DD72-I-CT-...-144	1584101	1584088	1
Crimp connection							
	108	1 - 108	B24 / B48	⑤ HC-DD108-I-CT-...	1584130	1584114	1
	108	109 - 216	B24 / B48	⑥ HC-DD108-I-CT-...-216	1584143	1584127	1
Turned crimp contacts CK 1,6 Silver-plated			Cross section mm² / AWG				
			0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100
			0.5 - 0.5 / 20	CK1,6-ED-0,50... AG	1663404	1663349	100
			0.75 - 0.75 / 18	CK1,6-ED-0,75... AG	1663417	1663352	100
			0.75 - 1 / 18	CK1,6-ED-1,00... AG	1663420	1663365	100
			1.5 - 1.5 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100
			2.5 - 2.5 / 14	CK1,6-ED-2,50... AG	1663446	1663381	100



Dimensional drawing



Panel cutout

	a	b	c	d
① Female	50.5	44	34.5	36
			32.5	
② Female	64	57	34.5	49
			32.5	
③ Female	84	77.5	34.5	72
			32.5	
④ Female	84	77.5	34.5	72
			32.5	
⑤ Female	111	104	34.5	98
			32.5	
⑥ Female	111	104	34.5	98
			32.5	

Accessories



Crimping tools
From page 670



Guide elements
From page 657



Crimp contacts, gold-plated
From page 666



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

B6 series

500 V, 10 A ... 24 A

Connection technology:

- Push-in connection
- Push-in double connection
- Screw connection
- Insulation displacement connection
- Crimp connection

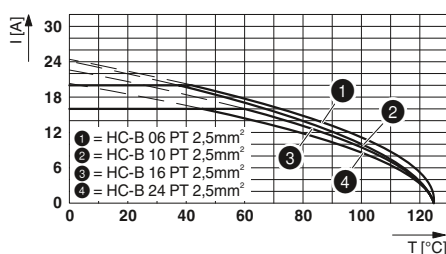
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
1) For flexible wires with wire end protection

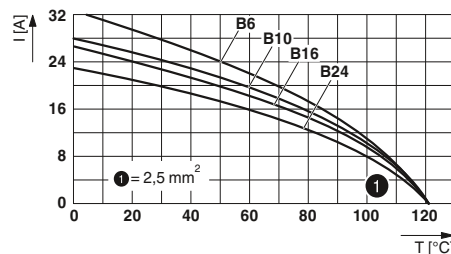


Technical data					
Type	① HC-B 6-I-PT...	② HC-B 6-I-TPT...	③ HC-B 6-I-UT...	④ HC-B 6-E...Q-2,5	⑤ HC-B 6-I-CT...
Approvals	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL
IEC data					
Rated current, contacts (at 40°C)	16	10	24	16	16
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	500	500	500	500	500
Rated surge voltage, contacts	6	6	6	6	6
Connection cross section	0.14 ... 2.5 ¹⁾	0.25 ... 1.5 ¹⁾	0.5 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	600	600	600	600	600
Rated current	13	14	16	10	13
Connection cross section	14	16	14	14	22-14
CSA / cUL data					
Rated voltage	600	600	600	600	600
Rated current	13	11	13	10	20
Connection cross section	14	16	22-14	16	20-12
Material data					
Contact carrier material	PC	PC	PC	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag/Sn (tarnish protection)	Ag	Ag	Ag	Ag (alternatively Au)
Ambient conditions					
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Push-in connection	Push-in connection	Screw connection	QUICKON connection	Crimp connection
Stripping length	8 ... 10	8	8	-	7.5
Number of positions	6	6	6	6	6
Contact numbering	1 - 6	1 - 6	1 - 6	1 - 6	1 - 6
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

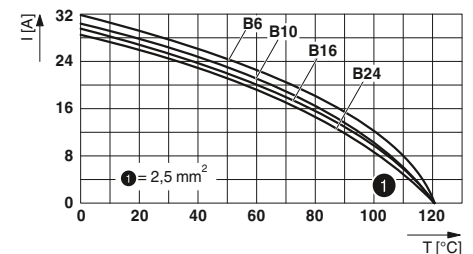
Derating curves



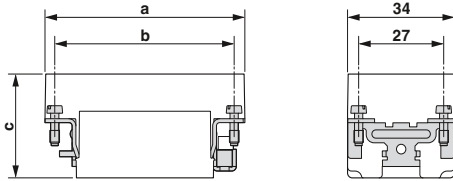
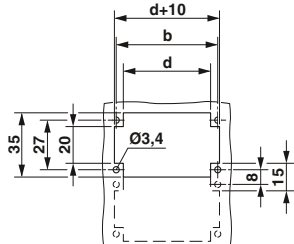
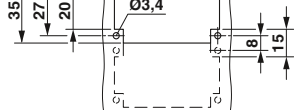
HC-B 6-I-PT...



HC-B 6-I-UT...



HC-B 6-I-CT...

				Ordering data																																																															
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																											
					Female	Male																																																													
Push-in connection																																																																			
	6	1 - 6	B6	① HC-B 6-I-PT-...	1407727	1407728	1																																																												
Push-in double connection																																																																			
	6	1 - 6	B6	② HC-B 6-I-TPT-...	1423016	1423015	1																																																												
Screw connection																																																																			
	6	1 - 6	B6	③ HC-B 6-I-UT-...	1648128	1648115	1																																																												
Insulation displacement connection																																																																			
	6	1 - 6	B6	④ HC-B 6-E...Q-2,5	1605556	1605611	10	<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>50.5</td><td>44</td><td>37</td><td>36</td></tr><tr><td>① Male</td><td></td><td></td><td>34.4</td><td></td></tr><tr><td>② Female</td><td>50.5</td><td>44</td><td>32</td><td>36</td></tr><tr><td>② Male</td><td></td><td></td><td>32</td><td></td></tr><tr><td>③ Female</td><td>50.5</td><td>44</td><td>34.6</td><td>36</td></tr><tr><td>③ Male</td><td></td><td></td><td>32</td><td></td></tr><tr><td>④ Female</td><td>51</td><td>44</td><td>37</td><td>36</td></tr><tr><td>④ Male</td><td>51.5</td><td>44</td><td>35</td><td></td></tr><tr><td>⑤ Female</td><td>50.5</td><td>44</td><td>34.6</td><td>36</td></tr><tr><td>⑤ Male</td><td></td><td></td><td>32</td><td></td></tr></table>						a	b	c	d	① Female	50.5	44	37	36	① Male			34.4		② Female	50.5	44	32	36	② Male			32		③ Female	50.5	44	34.6	36	③ Male			32		④ Female	51	44	37	36	④ Male	51.5	44	35		⑤ Female	50.5	44	34.6	36	⑤ Male			32	
	a	b	c	d																																																															
① Female	50.5	44	37	36																																																															
① Male			34.4																																																																
② Female	50.5	44	32	36																																																															
② Male			32																																																																
③ Female	50.5	44	34.6	36																																																															
③ Male			32																																																																
④ Female	51	44	37	36																																																															
④ Male	51.5	44	35																																																																
⑤ Female	50.5	44	34.6	36																																																															
⑤ Male			32																																																																
Crimp connection																																																																			
	6	1 - 6	B6	⑤ HC-B 6-I-CT-...	1648160	1648157	1																																																												
Turned crimp contacts CK 2,5 Silver-plated																																																																			
																																																																			

Accessories



Crimping tools
From page 670



Coding elements
From page 656



Crimp contacts, gold-plated
From page 666



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

B10 series

500 V, 10 A ... 24 A

Connection technology:

- Push-in connection
- Push-in double connection
- Screw connection
- Insulation displacement connection
- Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

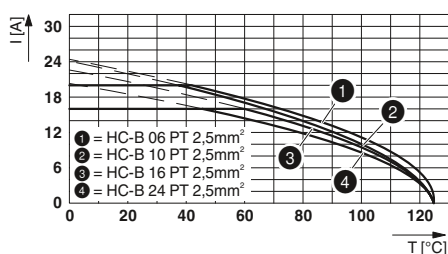
Only operate connectors when there is no load/the power is switched off

¹⁾ For flexible wires with wire end protection

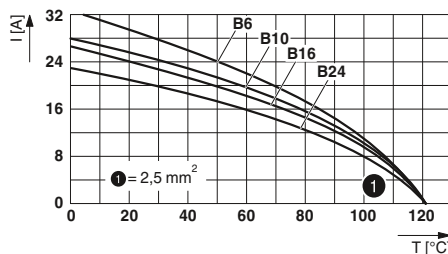


Type	Technical data				
	① HC-B 10-I-PT-...	② HC-B 10-I-TPT-...	③ HC-B 10-I-UT-...	④ HC-B 10-E-Q-2.5	⑤ HC-B 10-I-CT-...
Approvals	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL
IEC data					
Rated current, contacts (at 40°C)	[A] 16	10	24	16	16
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 500	500	500	500	500
Rated surge voltage, contacts	[kV] 6	6	6	6	6
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.25 ... 1.5 ¹⁾	0.5 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 13	14	16	10	13
Connection cross section	AWG 14	16	14	14	22-14
CSA / cUL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 10	11	13	10	20
Connection cross section	AWG 14	16	22-14	16	20-12
Material data					
Contact carrier material	PC	PC	PC	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag/Sn (tarnish protection)	Ag	Ag	Ag	Ag (alternatively Au)
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Push-in connection	Push-in connection	Screw connection	QUICKON connection	Crimp connection
Stripping length	[mm] 8 ... 10	8	8	-	7.5
Number of positions	10	10	10	10	10
Contact numbering	1 - 10	1 - 10	1 - 10	1 - 10	1 - 10
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

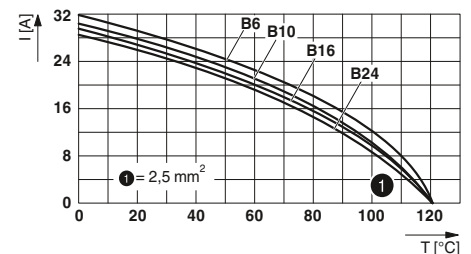
Derating curves



HC-B 10-I-PT-...

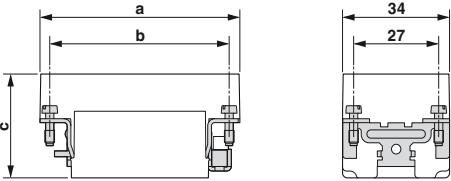
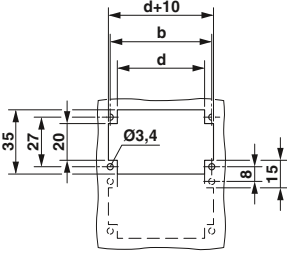


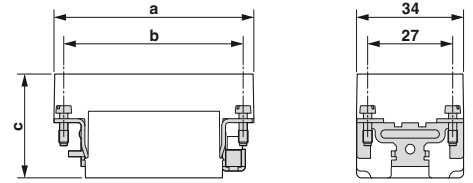
HC-B 10-I-UT-...



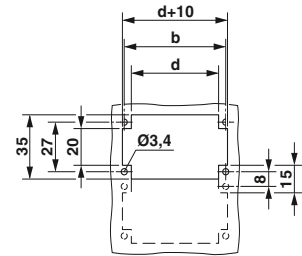
HC-B 10-I-CT-...

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Push-in connection							
	10	1 - 10	B10	① HC-B 10-I-PT...	1407729	1407730	1
Push-in double connection							
	10	1 - 10	B10	② HC-B 10-I-TPT...	1423018	1423017	1
Screw connection							
	10	1 - 10	B10	③ HC-B 10-I-UT...	1648186	1648173	1
Insulation displacement connection							
	10	1 - 10	B10	④ HC-B 10-E...Q-2,5	1605569	1605624	10
Crimp connection							
	10	1 - 10	B10	⑤ HC-B 10-I-CT...	1648225	1648212	1
Turned crimp contacts CK 2,5 Silver-plated							
			Cross section mm ² / AWG				
			0.5 - 0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100
			0.75 - 0.75 / 18	CK2,5-ED-0,75... AG	1663653	1663585	100
			0.75 - 1 / 18	CK2,5-ED-1,00... AG	1663666	1663598	100
			1.5 - 1.5 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100
			2.5 - 2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100
			4 - 4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100

Dimensions (in mm)				
				
Dimensional drawing				
				
Panel cutout				
	a	b	c	d
① Female	64	57	37	49
Male			34.4	
② Female	64	57	32	49
Male				
③ Female	64	57	34.6	49
Male			32	
④ Female	64	57	37	49
Male			35	
⑤ Female	64	57	34.6	49
Male			32	



Dimensional drawing



Panel cutout

	a	b	c	d
① Female	64	57	37	49
① Male	64	57	34.4	49
② Female	64	57	32	49
② Male	64	57	32	49
③ Female	64	57	34.6	49
③ Male	64	57	32	49
④ Female	64	57	37	49
④ Male	64	57	35	49
⑤ Female	64	57	34.6	49
⑤ Male	64	57	32	49

Accessories



Crimping tools
From page 670



Coding elements
From page 656



Crimp contacts, gold-plated
From page 666



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

B16 series

500 V, 10 A ... 20 A

Connection technology:

- Push-in connection
- Push-in double connection
- Screw connection
- Insulation displacement connection
- Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

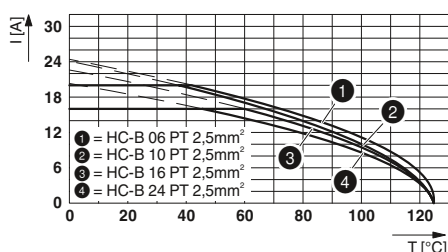
Only operate connectors when there is no load/the power is switched off

¹⁾ For flexible wires with wire end protection

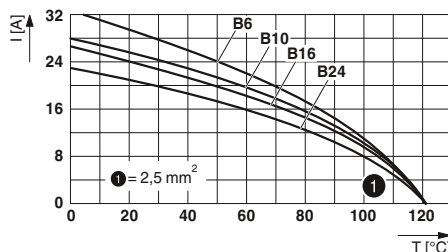


Type	Technical data				
	① ② HC-B 16-I-PT-...	③ ④ HC-B 16-I-TPT-...	⑤ ⑥ HC-B 16-I-UT-...	⑦ ⑧ HC-B 16-E-Q-2,5	⑨ ⑩ HC-B 16-I-CT-...
Approvals	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE ENEC UL
IEC data					
Rated current, contacts (at 40°C)	[A] 16	10	20	16	16
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 500	500	500	500	500
Rated surge voltage, contacts	[kV] 6	6	6	6	6
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.25 ... 1.5 ¹⁾	0.5 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 13	14	16	10	13
Connection cross section	AWG 14	16	14	14	22-14
CSA / cUL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 10	11	13	10	20
Connection cross section	AWG 14	16	22-14	16	20-12
Material data					
Contact carrier material	PC	PC	PC	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag/Sn (tarnish protection)	Ag	Ag	Ag	Ag (alternatively Au)
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Push-in connection	Push-in connection	Screw connection	QUICKON connection	Crimp connection
Stripping length	[mm] 8 ... 10	8	8	-	7.5
Number of positions	16	16	16	16	16
Contact numbering	1 - 16	1 - 16	1 - 16	1 - 16	1 - 16
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

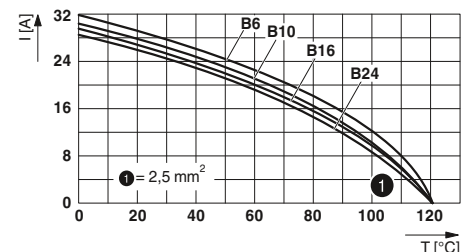
Derating curves



HC-B 16-I-PT-...

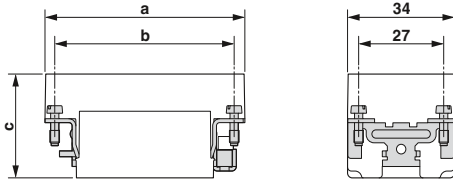
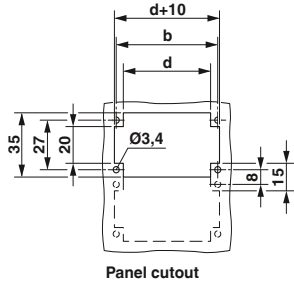


HC-B 16-I-UT-...



HC-B 16-I-CT-...

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Push-in connection							
	16	1 - 16	B16 / B32	① HC-B 16-I-PT-...	1407731	1407732	1
	16	17 - 32	B16 / B32	② HC-B 16-I-PT-...-32	1407733	1407734	1
Push-in double connection							
	16	1 - 16	B16	③ HC-B 16-I-TPT-...	1423020	1423019	1
	16	17 - 32	B16 / B32	④ HC-B 16-I-TPT-...-32	1423826	1423825	1
Screw connection							
	16	1 - 16	B16 / B32	⑤ HC-B 16-I-UT-...	1648241	1648238	1
	16	17 - 32	B16 / B32	⑥ HC-B 16-I-UT-...-32	1584884	1584871	1
Insulation displacement connection							
	16	1 - 16	B16 / B32	⑦ HC-B 16-E...Q-2,5	1605572	1605637	10
	16	17 - 32	B16 / B32	⑧ HC-B 16-E...Q-2,5-32	1605598	1605653	10
Crimp connection							
	16	1 - 16	B16 / B32	⑨ HC-B 16-I-CT-...	1648283	1648270	1
	16	17 - 32	B16 / B32	⑩ HC-B 16-I-CT-...-32	1584923	1584910	1
Turned crimp contacts CK 2,5 Silver-plated							
	Cross section mm ² / AWG						
	0.5 - 0.5 / 20			CK2,5-ED-0,50... AG	1663640	1663572	100
	0.75 - 0.75 / 18			CK2,5-ED-0,75... AG	1663653	1663585	100
	0.75 - 1 / 18			CK2,5-ED-1,00... AG	1663666	1663598	100
	1.5 - 1.5 / 16			CK2,5-ED-1,50... AG	1663679	1663608	100
	2.5 - 2.5 / 14			CK2,5-ED-2,50... AG	1663682	1663611	100
	4 - 4 / 12			CK2,5-ED-4,00... AG	1663705	1663637	100

Dimensions (in mm)				
				
Dimensional drawing				
				
Panel cutout				

	a	b	c	d
① Female	84	77.5	37	72
① Male			34.4	
② Female	84	77.5	37	72
② Male			34.4	
③ Female	84	77.5	34.6	72
③ Male			34.6	
④ Female	84	77.5	34.6	72
④ Male			34.6	
⑤ Female	84	77.5	34.6	72
⑤ Male			32	
⑥ Female	84	77.5	34.6	72
⑥ Male			32	
⑦ Female	84.5	77.5	37	72
⑦ Male			35	
⑧ Female	84.5	77.5	37	72
⑧ Male			35	
⑨ Female	84	77.5	34.6	72
⑨ Male			32	
⑩ Female	84	77.5	34.6	72
⑩ Male			32	

Accessories



Crimping tools
From page 670



Coding elements
From page 656



Crimp contacts, gold-plated
From page 666



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

B24 series

500 V, 10 A ... 20 A

Connection technology:

- Push-in connection
- Push-in double connection
- Screw connection
- Insulation displacement connection
- Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

Order crimp contacts separately

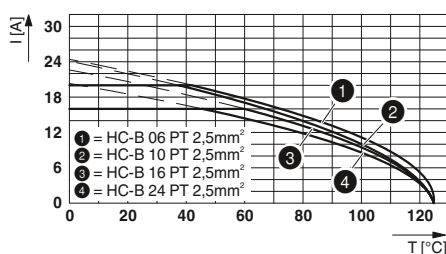
Only operate connectors when there is no load/the power is switched off

¹⁾ For flexible wires with wire end protection

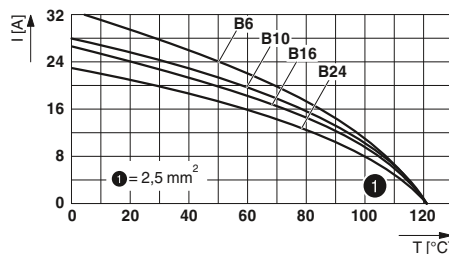


Type	Technical data				
	① ② HC-B 24-I-PT-...	③ ④ HC-B 24-I-TPT-...	⑤ ⑥ HC-B 24-I-UT-...	⑦ ⑧ HC-B 24-E...Q-2,5	⑨ ⑩ HC-B 24-I-CT-...
Approvals	CE ENEC UL	CE ENEC UL	CE ENEC UL	CE UL US ENEC	CE UL US ENEC
IEC data					
Rated current, contacts (at 40°C)	[A] 16	10	20	16	16
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 500	500	500	500	500
Rated surge voltage, contacts	[kV] 6	6	6	6	6
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.25 ... 1.5 ¹⁾	0.5 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 13	13	16	10	13
Connection cross section	AWG 14	16	14	14	22-14
CSA / cUL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 10	10	13	10	20
Connection cross section	AWG 14	16	22-14	16	20-12
Material data					
Contact carrier material	PC	PC	PC	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag/Sn (tarnish protection)	Ag	Ag	Ag	Ag (alternatively Au)
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Push-in connection	Push-in connection	Screw connection	QUICKON connection	Crimp connection
Stripping length	[mm] 8 ... 10	8	8	-	7.5
Number of positions	24	24	24	24	24
Contact numbering	1 - 24	1 - 24	1 - 24	1 - 24	1 - 24
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

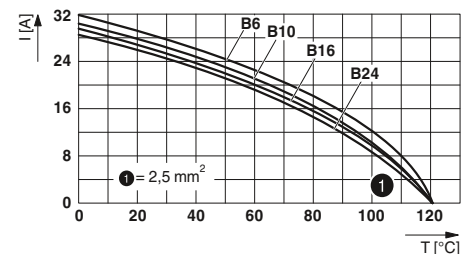
Derating curves



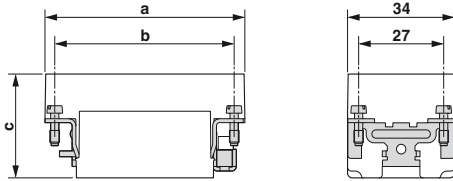
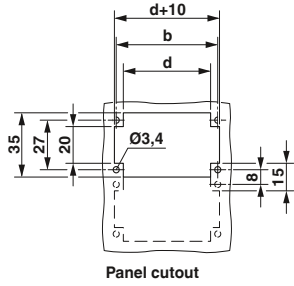
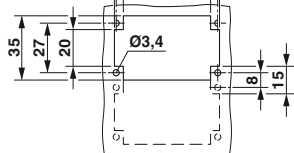
HC-B 24-I-PT-...



HC-B 24-I-UT-...



HC-B 24-I-CT-...

Ordering data																																																																																																																	
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																																																																									
					Female	Male																																																																																																											
Push-in connection																																																																																																																	
	24	1 - 24	B24 / B48	① HC-B 24-I-PT-...	1407735	1407736	1																																																																																																										
	24	25 - 48	B24 / B48	② HC-B 24-I-PT-...-48	1407737	1407738	1																																																																																																										
Push-in double connection																																																																																																																	
	24	1 - 24	B24	③ HC-B 24-I-TPT-...	1423022	1423021	1	Dimensional drawing 																																																																																																									
	24 / 0	25 - 48	B24 / B48	④ HC-B 24-I-TPT-...-48	1423828	1423827	1																																																																																																										
Screw connection																																																																																																																	
	24	1 - 24	B24 / B48	⑤ HC-B 24-I-UT-...	1648306	1648296	1	 Panel cutout																																																																																																									
	24	25 - 48	B24 / B48	⑥ HC-B 24-I-UT-...-48	1584949	1584936	1																																																																																																										
Insulation displacement connection																																																																																																																	
	24	1 - 24	B24 / B48	⑦ HC-B 24-E...Q-2,5	1605585	1605640	10	<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>111</td><td>104</td><td>37</td><td>98</td></tr><tr><td>① Male</td><td></td><td></td><td>34.4</td><td></td></tr><tr><td>② Female</td><td>111</td><td>104</td><td>37</td><td>98</td></tr><tr><td>② Male</td><td></td><td></td><td>34.4</td><td></td></tr><tr><td>③ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>③ Male</td><td></td><td></td><td>34.6</td><td></td></tr><tr><td>④ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>④ Male</td><td></td><td></td><td>34.6</td><td></td></tr><tr><td>⑤ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>⑤ Male</td><td></td><td></td><td>32</td><td></td></tr><tr><td>⑥ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>⑥ Male</td><td></td><td></td><td>32</td><td></td></tr><tr><td>⑦ Female</td><td>111</td><td>104</td><td>37</td><td>98</td></tr><tr><td>⑦ Male</td><td></td><td></td><td>35</td><td></td></tr><tr><td>⑧ Female</td><td>111</td><td>104</td><td>37</td><td>98</td></tr><tr><td>⑧ Male</td><td></td><td></td><td>35</td><td></td></tr><tr><td>⑨ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>⑨ Male</td><td></td><td></td><td>32</td><td></td></tr><tr><td>⑩ Female</td><td>111</td><td>104</td><td>34.6</td><td>98</td></tr><tr><td>⑩ Male</td><td></td><td></td><td>32</td><td></td></tr></table>		a	b	c	d	① Female	111	104	37	98	① Male			34.4		② Female	111	104	37	98	② Male			34.4		③ Female	111	104	34.6	98	③ Male			34.6		④ Female	111	104	34.6	98	④ Male			34.6		⑤ Female	111	104	34.6	98	⑤ Male			32		⑥ Female	111	104	34.6	98	⑥ Male			32		⑦ Female	111	104	37	98	⑦ Male			35		⑧ Female	111	104	37	98	⑧ Male			35		⑨ Female	111	104	34.6	98	⑨ Male			32		⑩ Female	111	104	34.6	98	⑩ Male			32	
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24	1 - 24	B24 / B48	⑧ HC-B 24-E...Q-2,5-48	1605608	1605666	10																																																																																																											
Crimp connection																																																																																																																	
	24	1 - 24	B24 / B48	⑨ HC-B 24-I-CT-...	1648348	1648335	1																																																																																																										
	24	25 - 48	B24 / B48	⑩ HC-B 24-I-CT-...-48	1584981	1584978	1																																																																																																										
Turned crimp contacts CK 2,5 Silver-plated																																																																																																																	
			Cross section mm ² / AWG	CK2,5-ED-0,50... AG	1663640	1663572	100																																																																																																										
			0.5 - 0.5 / 20	CK2,5-ED-0,75... AG	1663653	1663585	100																																																																																																										
			0.75 - 0.75 / 18	CK2,5-ED-1,00... AG	1663666	1663598	100																																																																																																										
			1.5 - 1.5 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100																																																																																																										
			2.5 - 2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100																																																																																																										
			4 - 4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100																																																																																																										

Accessories



Crimping tools
From page 670



Coding elements
From page 656



Crimp contacts, gold-plated
From page 666



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

B6, B10, B16, B24 series terminal adapters

500 V, 16 A

Connection technology:
– Push-in connection

Notes:

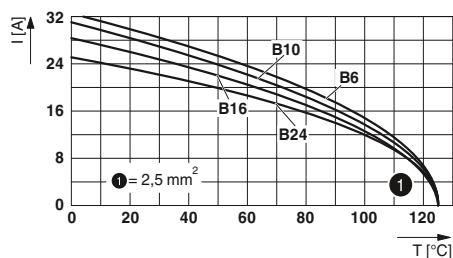
For accessories, see from page 654

Only operate connectors when there is no load/the power is switched off

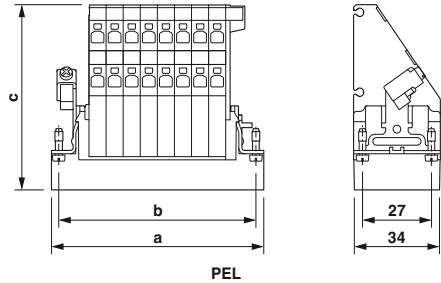
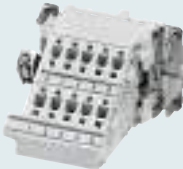
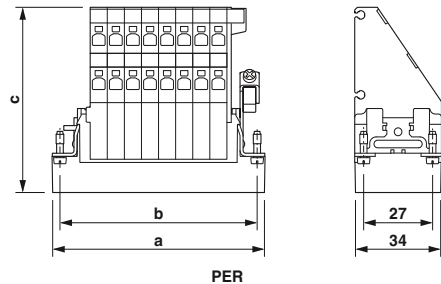
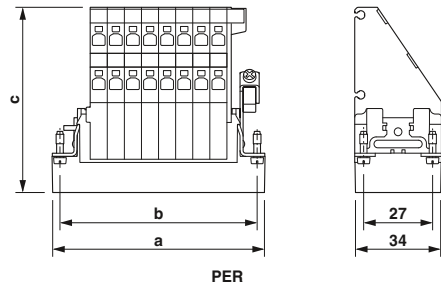
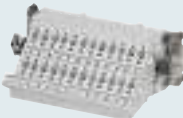


Type	Technical data			
	① ② HC-B 6-A-DT-PER-...	③ ④ HC-B 10-A-DT-PER-...	⑤ ⑥ HC-B 16-A-DT-PER-...	⑦ ⑧ HC-B 24-A-DT-PER-...
Approvals	CE, UL, ENEC	CE, UL, ENEC	CE, UL, ENEC	CE, UL, ENEC
IEC data				
Rated current, contacts (at 40°C)	16	16	16	16
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	500	500	500	500
Rated surge voltage, contacts	6	6	6	6
Connection cross section	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5
UL data				
Rated voltage	600	600	600	600
Rated current	13	13	13	13
Connection cross section	22-14	22-14	22-14	22-14
CSA / cUL data				
Rated voltage	600	600	600	600
Rated current	13	13	13	13
Connection cross section	22-14	22-14	22-14	22-14
Material data				
Contact carrier material	PA	PA	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag
Temperature data				
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Push-in connection	Push-in connection	Push-in connection	Push-in connection
Stripping length	10	10	10	10
Number of positions	6	10	16	24
Contact numbering	1 - 6	1 - 10	1 - 16	1 - 24
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves



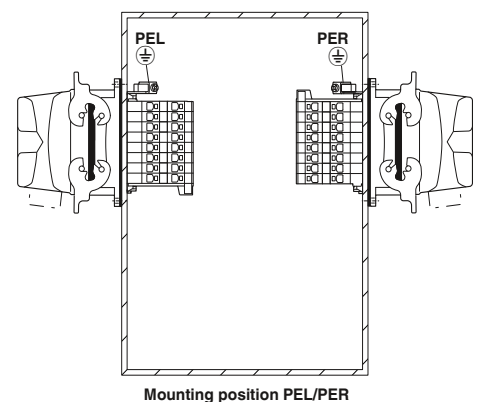
HC-B ...-A-DT-PER-...

Ordering data																																																																																																		
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																																																										
					Female	Male																																																																																												
Push-in connection		6	1 - 6	B6	PE left ① HC-B 6-A-DT-PEL-...	1648351	1648364	5																																																																																										
		6	1 - 6	B6	PE right ② HC-B 6-A-DT-PER-...	1648377	1648380	5																																																																																										
Push-in connection		10	1 - 10	B10	PE left ③ HC-B 10-A-DT-PEL-...	1648393	1648403	5																																																																																										
		10	1 - 10	B10	PE right ④ HC-B 10-A-DT-PER-...	1648416	1648429	5																																																																																										
Push-in connection		16	1 - 16	B16	PE left ⑤ HC-B 16-A-DT-PEL-...	1648432	1648445	5																																																																																										
		16	1 - 16	B16	PE right ⑥ HC-B 16-A-DT-PER-...	1648458	1648461	5																																																																																										
Push-in connection		24	1 - 24	B24	PE left ⑦ HC-B 24-A-DT-PEL-...	1648474	1648487	5	<table><thead><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr></thead><tbody><tr><td>① Female</td><td>50.5</td><td>44</td><td>72.1</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>② Female</td><td>50.5</td><td>44</td><td>72.1</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>③ Female</td><td>64</td><td>57</td><td>72.1</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>④ Female</td><td>64</td><td>57</td><td>72.1</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑤ Female</td><td>84</td><td>77.5</td><td>72.1</td><td></td></tr><tr><td>⑤ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑥ Female</td><td>84</td><td>77.5</td><td>72.1</td><td></td></tr><tr><td>⑥ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑦ Female</td><td>111</td><td>104</td><td>72.1</td><td></td></tr><tr><td>⑦ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑧ Female</td><td>111</td><td>104</td><td>72.1</td><td></td></tr><tr><td>⑧ Male</td><td></td><td></td><td>70.5</td><td></td></tr></tbody></table>						a	b	c	d	① Female	50.5	44	72.1		① Male			70.5		② Female	50.5	44	72.1		② Male			70.5		③ Female	64	57	72.1		③ Male			70.5		④ Female	64	57	72.1		④ Male			70.5		⑤ Female	84	77.5	72.1		⑤ Male			70.5		⑥ Female	84	77.5	72.1		⑥ Male			70.5		⑦ Female	111	104	72.1		⑦ Male			70.5		⑧ Female	111	104	72.1		⑧ Male			70.5	
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24	1 - 24	B24	PE right ⑧ HC-B 24-A-DT-PER-...	1648490	1648500	5																																																																																												
Foot element				HC-KA-FE	1775240		10																																																																																											
Locking screw barrel				HC-VSH	1660083		10	<table><thead><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr></thead><tbody><tr><td>① Female</td><td>50.5</td><td>44</td><td>72.1</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>② Female</td><td>50.5</td><td>44</td><td>72.1</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>③ Female</td><td>64</td><td>57</td><td>72.1</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>④ Female</td><td>64</td><td>57</td><td>72.1</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑤ Female</td><td>84</td><td>77.5</td><td>72.1</td><td></td></tr><tr><td>⑤ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑥ Female</td><td>84</td><td>77.5</td><td>72.1</td><td></td></tr><tr><td>⑥ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑦ Female</td><td>111</td><td>104</td><td>72.1</td><td></td></tr><tr><td>⑦ Male</td><td></td><td></td><td>70.5</td><td></td></tr><tr><td>⑧ Female</td><td>111</td><td>104</td><td>72.1</td><td></td></tr><tr><td>⑧ Male</td><td></td><td></td><td>70.5</td><td></td></tr></tbody></table>						a	b	c	d	① Female	50.5	44	72.1		① Male			70.5		② Female	50.5	44	72.1		② Male			70.5		③ Female	64	57	72.1		③ Male			70.5		④ Female	64	57	72.1		④ Male			70.5		⑤ Female	84	77.5	72.1		⑤ Male			70.5		⑥ Female	84	77.5	72.1		⑥ Male			70.5		⑦ Female	111	104	72.1		⑦ Male			70.5		⑧ Female	111	104	72.1		⑧ Male			70.5		
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Accessories



Coding elements
From page 656



Mounting position PEL/PER

Heavy-duty connectors

HEAVYCON B – contact inserts

B6, B10, B16, B24 series terminal adapters

500 V, 16 A

Connection technology:

– Screw connection

Notes:

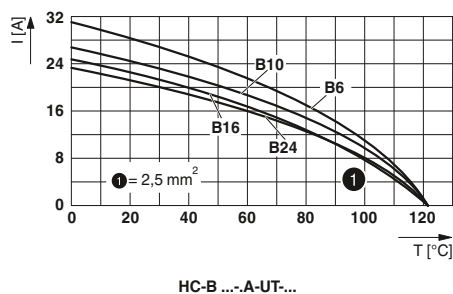
For accessories, see from page 654

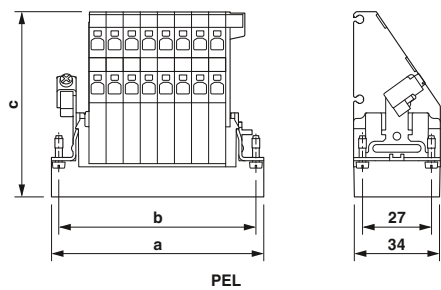
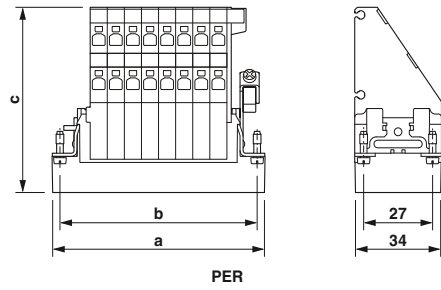
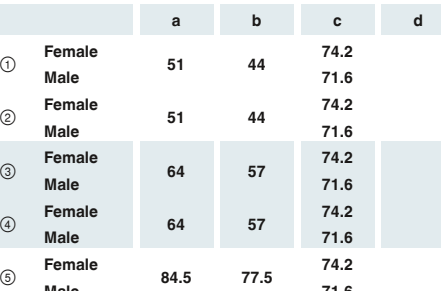
Only operate connectors when there is no load/the power is switched off



Type	Technical data			
	① ② HC-B 6-A-UT-PEL-...	③ ④ HC-B 10-A-UT-PEL-...	⑤ ⑥ HC-B 16-A-UT-PEL-...	⑦ ⑧ HC-B 24-A-UT-PEL-...
Approvals	CE, UL, ENEC	CE, UL, ENEC	CE, UL, ENEC	CE, UL, ENEC
IEC data				
Rated current, contacts (at 40°C)	16	16	16	16
Overvoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	500	500	500	500
Rated surge voltage, contacts	6	6	6	6
Connection cross section	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5
UL data				
Rated voltage	600	600	600	600
Rated current	13	13	13	13
Connection cross section	22-14	22-14	22-14	22-14
CSA / cUL data				
Rated voltage	600	600	600	600
Rated current	13	13	13	13
Connection cross section	22-14	22-14	22-14	22-14
Material data				
Contact carrier material	PA	PA	PA	PA
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag
Temperature data				
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Screw connection	Screw connection	Screw connection	Screw connection
Stripping length	12	12	12	12
Number of positions	6	10	16	24
Contact numbering	1 - 6	1 - 10	1 - 16	1 - 24
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves

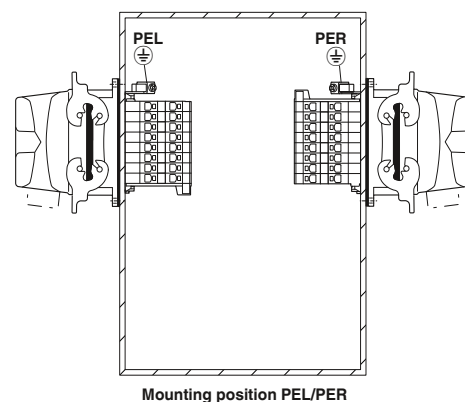


Ordering data																																																																																																		
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																																																										
					Female	Male																																																																																												
Screw connection		6	1 - 6	B6	PE left ① HC-B 6-A-UT-PEL-...	1648018	1648024	5																																																																																										
		6	1 - 6	B6	PE right ② HC-B 6-A-UT-PER-...	1648066	1648072	5																																																																																										
Screw connection		10	1 - 10	B10	PE left ③ HC-B 10-A-UT-PEL-...	1648030	1648036	5																																																																																										
		10	1 - 10	B10	PE right ④ HC-B 10-A-UT-PER-...	1648078	1648084	5																																																																																										
Screw connection		16	1 - 16	B16	PE left ⑤ HC-B 16-A-UT-PEL-...	1648042	1648048	5																																																																																										
		16	1 - 16	B16	PE right ⑥ HC-B 16-A-UT-PER-...	1648090	1648096	5																																																																																										
Screw connection		24	1 - 24	B24	PE left ⑦ HC-B 24-A-UT-PEL-...	1648054	1648060	5	<table><thead><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr></thead><tbody><tr><td>① Female</td><td>51</td><td>44</td><td>74.2</td><td></td></tr><tr><td>② Male</td><td>51</td><td>44</td><td>71.6</td><td></td></tr><tr><td>③ Female</td><td>51</td><td>44</td><td>74.2</td><td></td></tr><tr><td>④ Male</td><td>51</td><td>44</td><td>71.6</td><td></td></tr><tr><td>⑤ Female</td><td>64</td><td>57</td><td>74.2</td><td></td></tr><tr><td>⑥ Male</td><td>64</td><td>57</td><td>71.6</td><td></td></tr><tr><td>⑦ Female</td><td>64</td><td>57</td><td>74.2</td><td></td></tr><tr><td>⑧ Male</td><td>64</td><td>57</td><td>71.6</td><td></td></tr><tr><td>⑤ Female</td><td>84.5</td><td>77.5</td><td>74.2</td><td></td></tr><tr><td>⑥ Male</td><td>84.5</td><td>77.5</td><td>71.6</td><td></td></tr><tr><td>⑦ Female</td><td>84.5</td><td>77.5</td><td>74.2</td><td></td></tr><tr><td>⑧ Male</td><td>84.5</td><td>77.5</td><td>71.6</td><td></td></tr><tr><td>⑦ Female</td><td>111</td><td>104</td><td>74.2</td><td></td></tr><tr><td>⑧ Male</td><td>111</td><td>104</td><td>71.6</td><td></td></tr><tr><td>⑧ Female</td><td>111</td><td>104</td><td>74.2</td><td></td></tr><tr><td>⑨ Male</td><td>111</td><td>104</td><td>71.6</td><td></td></tr></tbody></table>						a	b	c	d	① Female	51	44	74.2		② Male	51	44	71.6		③ Female	51	44	74.2		④ Male	51	44	71.6		⑤ Female	64	57	74.2		⑥ Male	64	57	71.6		⑦ Female	64	57	74.2		⑧ Male	64	57	71.6		⑤ Female	84.5	77.5	74.2		⑥ Male	84.5	77.5	71.6		⑦ Female	84.5	77.5	74.2		⑧ Male	84.5	77.5	71.6		⑦ Female	111	104	74.2		⑧ Male	111	104	71.6		⑧ Female	111	104	74.2		⑨ Male	111	104	71.6	
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⑨ Male	111	104	71.6																																																																																															
24	1 - 24	B24	PE right ⑧ HC-B 24-A-UT-PER-...	1648102	1648108	5																																																																																												
Foot element				HC-KA-FE	1775240		10																																																																																											
Locking screw barrel				HC-VSH	1660083		10																																																																																											

Accessories



Coding elements
From page 656



Mounting position PEL/PER

Heavy-duty connectors

HEAVYCON B – contact inserts

BB10, BB18, BB32, BB46 series

500 V, 16 A

Connection technology:

– Push-in connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

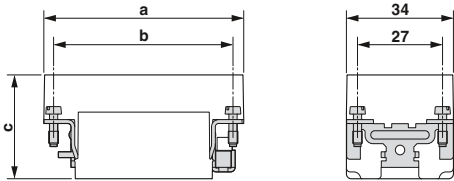
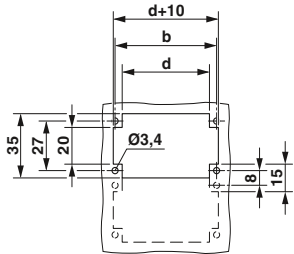
Only operate connectors when there is no load/the power is switched off

¹⁾ For flexible wires with wire end protection

new



Type	Technical data			
	① HC-BB 10-I-PT-...	② HC-BB 18-I-PT-...	③ HC-BB 32-I-PT-...	④ HC-BB 46-I-PT-...
Approvals	-	-	-	-
IEC data				
Rated current, contacts (at 40°C)	[A] 16	16	16	16
Overtoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 500	500	500	500
Rated surge voltage, contacts	[kV] 6	6	6	6
Connection cross section	[mm²] 0.34 ... 2.5 ¹⁾	0.34 ... 2.5 ¹⁾	0.34 ... 2.5 ¹⁾	0.34 ... 2.5 ¹⁾
UL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
CSA / cUL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Au/Sn	Au/Sn	Au/Sn	Au/Sn
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Push-in connection	Push-in connection	Push-in connection	Push-in connection
Stripping length	[mm] 10	10	10	10
Number of positions	10	18	32	46
Contact numbering	1 - 10	1 - 18	1 - 32	1 - 46
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

				Ordering data																																																													
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																									
					Female	Male																																																											
Push-in connection																																																																	
	10	1 - 10	B6	① HC-BB 10-I-PT...	1014417	1014418	1																																																										
Push-in connection																																																																	
	18	1 - 18	B10	② HC-BB 18-I-PT...	1014419	1014420	1																																																										
Push-in connection																																																																	
	32	1 - 32	B16	③ HC-BB 32-I-PT...	1014421	1014422	1	Panel cutout																																																									
Push-in connection																																																																	
	46	1 - 46	B24	④ HC-BB 46-I-PT...	1014423	1014424	1	<table><tr><td></td><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>①</td><td>Female</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Male</td><td>51</td><td>44</td><td>32.5</td><td>35</td></tr><tr><td>②</td><td>Female</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Male</td><td>64</td><td>57</td><td>33.2</td><td>48</td></tr><tr><td>③</td><td>Female</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Male</td><td>84.5</td><td>77.5</td><td>33.2</td><td>68.5</td></tr><tr><td>④</td><td>Female</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>Male</td><td>111</td><td>104</td><td>32.5</td><td>95</td></tr></table>						a	b	c	d	①	Female						Male	51	44	32.5	35	②	Female						Male	64	57	33.2	48	③	Female						Male	84.5	77.5	33.2	68.5	④	Female						Male	111	104	32.5	95
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Accessories



Coding profiles
From page 656



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

BB10, BB18, BB32, BB46 series

500 V, 16 A

Connection technology:

– Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

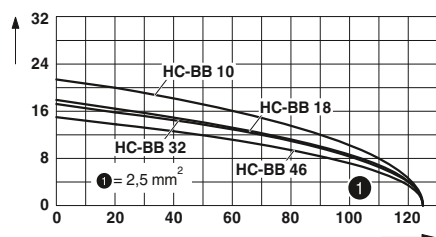
Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off

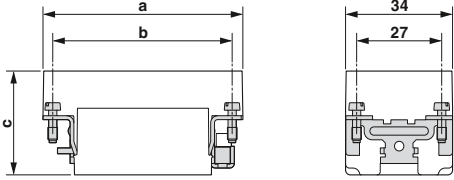
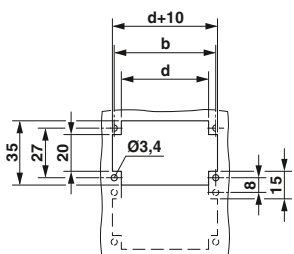


Type	Technical data			
	① HC-BB 10-I-CT-...	② HC-BB 18-I-CT-...	③ ④ HC-BB 32-I-CT-...	⑤ ⑥ HC-BB 46-I-CT-...
Approvals	UL ENEC RL	UL ENEC RL	UL ENEC RL	UL ENEC RL
IEC data				
Rated current, contacts (at 40°C)	[A] 16	16	16	16
Overtoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 500	500	500	500
Rated surge voltage, contacts	[kV] 6	6	6	6
Connection cross section	[mm²] 0.5 ... 4	0.5 ... 4	0.5 ... 4	0.5 ... 4
UL data				
Rated voltage	[V] 600	600	600	600
Rated current	[A] 20	20	16	16
Connection cross section	AWG 12	12	12	12
CSA / cUL data				
Rated voltage	[V] 600	600	600	600
Rated current	[A] 18	16	13.5	13.5
Connection cross section	AWG 12	12	12	12
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	[mm] 7.5	7.5	7.5	7.5
Number of positions	10	18	32	46
Contact numbering	1 - 10	1 - 18	1 - 32	1 - 46
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Derating curves



HC-BB ...

				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Size	Type	Female	Male	
Crimp connection							
	10	1 - 10	B6	① HC-BB 10-I-CT...	1584703	1584774	1
							
Crimp connection							
	18	1 - 18	B10	② HC-BB 18-I-CT...	1584729	1584716	1
							
Crimp connection							
	32	1 - 32	B16 / B32	③ HC-BB 32-I-CT...	1584745	1584732	1
	32	33 - 64	B16 / B32	④ HC-BB 32-I-CT... 33-64	1406543	1406544	1
Crimp connection							
	46	1 - 46	B24 / B48	⑤ HC-BB 46-I-CT...	1584758	1584761	1
	46	47 - 92	B24 / B48	⑥ HC-BB 46-I-CT... 47-92	1406545	1406546	1
Turned crimp contacts CK 2,5 Silver-plated							
				CK2,5-ED-0,50... AG	1663640	1663572	100
				CK2,5-ED-0,75... AG	1663653	1663585	100
				CK2,5-ED-1,00... AG	1663666	1663598	100
				CK2,5-ED-1,50... AG	1663679	1663608	100
				CK2,5-ED-2,50... AG	1663682	1663611	100
				CK2,5-ED-4,00... AG	1663705	1663637	100
Turned crimp contacts CK 2,5 Gold-plated							
				CK2,5-ED-0,50... AU	1674859	1674804	100
				CK2,5-ED-1,00... AU	1674833	1674781	100
				CK2,5-ED-1,50... AU	1674820	1674778	100
				CK2,5-ED-2,50... AU	1674862	1674817	100
				CK2,5-ED-4,00... AU	1674846	1674794	100

	a	b	c	d
① Female	51	44	32.5	35
① Male			33.2	
② Female	64	57	32.5	48
② Male			33.2	
③ Female	84.5	77.5	32.5	68.5
③ Male			33.2	
④ Female	84.5	77.5	32.5	68.5
④ Male			33.2	
⑤ Female	111	104	32.5	95
⑤ Male			33.2	
⑥ Female	111	104	32.5	95
⑥ Male			33.2	

Accessories



Crimping tools
From page 670



Coding profiles
From page 656



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

BBB40, BBB64 series

500 V, 16 A

Connection technology:

– Crimp connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

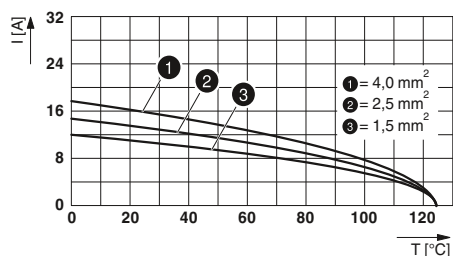
Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off

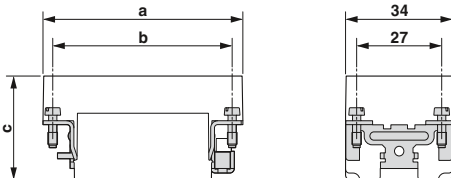
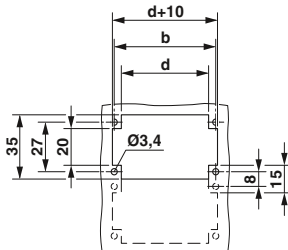


Type	Technical data			
	① HC-BBB 40-E...C	② HC-BBB 64-E...C		
Approvals	ERE 	ERE 		
IEC data				
Rated current, contacts (at 40°C)	[A] 16	16		
Overtoltage category	III	III		
Degree of pollution	3	3		
Rated voltage (III/3) contacts	[V] 500	500		
Rated surge voltage, contacts	[kV] 6	6		
Connection cross section	[mm²] 0.5 ... 4	0.5 ... 4		
UL data				
Rated voltage	[V] 600	600		
Rated current	[A] 16	16		
Connection cross section	AWG 12	12		
CSA / cUL data				
Rated voltage	[V] -	-		
Rated current	[A] -	-		
Connection cross section	AWG -	-		
Material data				
Contact carrier material	PC	PC		
Inflammability class in acc. with UL 94	V0	V0		
Contact material	Copper alloy	Copper alloy		
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)		
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125		
General data				
Connection method	Crimp connection	Crimp connection		
Stripping length	[mm] 7.5	7.5		
Number of positions	40	64		
Contact numbering	1 - 40	1 - 64		
Insertion/withdrawal cycles	≥ 500	≥ 500		

Derating curves



HC-BBB ...

Ordering data																												
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.																					
					Female	Male																						
Crimp connection	40	1 - 40	B16 / B32	① HC-BBB 40-E...C	1409930	1409921	1																					
																												
Crimp connection	64	1 - 64	B24 / B48	② HC-BBB 64-E...C	1409914	1409901	1																					
																												
																												
Dimensional drawing																												
																												
Panel cutout																												
<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td rowspan="2">① Female</td><td>84</td><td rowspan="2">77.5</td><td>37</td><td rowspan="2">68.5</td></tr><tr><td>Male</td><td>84.5</td><td>34.4</td></tr><tr><td rowspan="2">② Female</td><td>111</td><td rowspan="2">104</td><td>39</td><td rowspan="2">95</td></tr><tr><td>Male</td><td>111</td><td>36.4</td></tr></table>									a	b	c	d	① Female	84	77.5	37	68.5	Male	84.5	34.4	② Female	111	104	39	95	Male	111	36.4
	a	b	c	d																								
① Female	84	77.5	37	68.5																								
	Male		84.5		34.4																							
② Female	111	104	39	95																								
	Male		111		36.4																							
Turned crimp contacts CK 2,5 Silver-plated				Cross section mm² / AWG 0.5 - 0.5 / 20 0.75 - 0.75 / 18 0.75 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14 4 - 4 / 12	CK2,5-ED-0,50... AG CK2,5-ED-0,75... AG CK2,5-ED-1,00... AG CK2,5-ED-1,50... AG CK2,5-ED-2,50... AG CK2,5-ED-4,00... AG	1663640 1663653 1663666 1663679 1663682 1663705	1663572 1663585 1663598 1663608 1663611 1663637	100 100 100 100 100 100																				
																												
Turned crimp contacts CK 2,5 Gold-plated				Cross section mm² / AWG 0.5 - 0.5 / 20 0.75 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14 4 - 4 / 12	CK2,5-ED-0,50... AU CK2,5-ED-1,00... AU CK2,5-ED-1,50... AU CK2,5-ED-2,50... AU CK2,5-ED-4,00... AU	1674859 1674833 1674820 1674862 1674846	1674804 1674781 1674778 1674817 1674794	100 100 100 100 100																				
																												

Accessories



Crimping tools
From page 670



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

HV03, HV06, HV10 series

High-voltage applications

Push-in connection

830 V, 16 A

Connection technology:

- Push-in connection
- With 2 lagging switch contacts
- For all size B housing

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off
¹⁾ For flexible wires with wire end protection



Type	Technical data			
	① HC-HV03-I-PT-...	② HC-HV06-I-PT-...	③ HC-HV10-I-PT-...	
Approvals				
IEC data				
Rated current, contacts (at 40°C)	[A] 16	16	16	
Overvoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 830	830	830	
Rated surge voltage, contacts	[kV] 8	8	8	
Connection cross section	[mm²] 0.14 ... 2.5 ¹⁾	0.14 ... 2.5 ¹⁾	0.14 ... 2.5 ¹⁾	
UL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 21	20	20	
Connection cross section	AWG 14	14	14	
CSA / cUL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 16	16	15	
Connection cross section	AWG 14	14	14	
Material data				
Contact carrier material	PC	PC	PC	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	-	-	-	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	
General data				
Connection method	Push-in connection	Push-in connection	Push-in connection	
Stripping length	[mm] 8 ... 10	8 ... 10	8 ... 10	
Number of positions	5	8	12	
Contact numbering	-	-	-	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

[illegible]

Accessories



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

HV03, HV06, HV10 series

High-voltage applications

Crimp connection

830 V, 25 A

Connection technology:

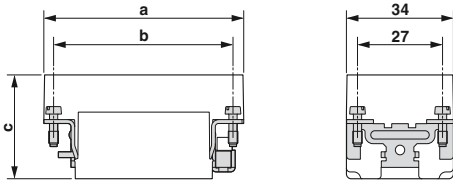
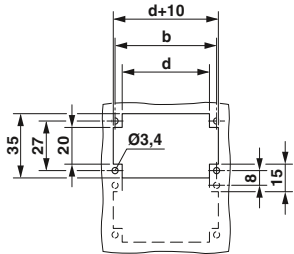
- Crimp connection
- With 2 lagging switch contacts
- For all size B housing

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off



Type	Technical data			
	① HC-HV03-I-CT-...	② HC-HV06-I-CT-...	③ HC-HV10-I-CT-...	
Approvals	ERE 	ERE 	ERE 	
IEC data				
Rated current, contacts (at 40°C)	[A] 25	25	25	
Overvoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 830	830	830	
Rated surge voltage, contacts	[kV] 8	8	8	
Connection cross section	[mm²] 0.5 ... 4	0.5 ... 4	0.5 ... 4	
UL data				
Rated voltage	[V] 600	600	600	
Rated current	[A] 16	16	16	
Connection cross section	AWG 12	12	12	
CSA / cUL data				
Rated voltage	[V] -	-	-	
Rated current	[A] -	-	-	
Connection cross section	AWG -	-	-	
Material data				
Contact carrier material	PA	PA	PA	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	
Stripping length	[mm] 7.5	7.5	7.5	
Number of positions	5	8	12	
Contact numbering	-	-	-	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

Ordering data																																											
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																			
					Female	Male																																					
Crimp connection	3 / 2	B10	① HC-HV03-I-CT-...	1405261	1405260	1																																					
Crimp connection	6 / 2	B16 / B32	② HC-HV06-I-CT-...	1405263	1405262	1	Dimensional drawing 																																				
Crimp connection	10 / 2	B24 / B48	③ HC-HV10-I-CT-...	1405265	1405264	1																																					
								<table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>① Female</td><td></td><td></td><td>34.6</td><td></td></tr><tr><td>① Male</td><td>64</td><td>57</td><td>32</td><td>49</td></tr><tr><td>② Female</td><td></td><td></td><td>34.6</td><td></td></tr><tr><td>② Male</td><td>84</td><td>77.5</td><td>32</td><td>72</td></tr><tr><td>③ Female</td><td></td><td></td><td>34.6</td><td></td></tr><tr><td>③ Male</td><td>111</td><td>104</td><td>32</td><td>98</td></tr></table>		a	b	c	d	① Female			34.6		① Male	64	57	32	49	② Female			34.6		② Male	84	77.5	32	72	③ Female			34.6		③ Male	111	104	32	98
	a	b	c	d																																							
① Female			34.6																																								
① Male	64	57	32	49																																							
② Female			34.6																																								
② Male	84	77.5	32	72																																							
③ Female			34.6																																								
③ Male	111	104	32	98																																							
Turned crimp contacts CK 2,5 Silver-plated		Cross section mm ² / AWG 0.5 - 0.5 / 20 0.75 - 0.75 / 18 0.75 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14 4 - 4 / 12	CK2,5-ED-0,50... AG CK2,5-ED-0,75... AG CK2,5-ED-1,00... AG CK2,5-ED-1,50... AG CK2,5-ED-2,50... AG CK2,5-ED-4,00... AG	1663640 1663653 1663666 1663679 1663682 1663705	1663572 1663585 1663598 1663608 1663611 1663637	100 100 100 100 100 100																																					
Turned switch contacts CK 2,5 Male, silver-plated		Cross section mm ² / AWG 1 - 1 / 18 1.5 - 1.5 / 16 2.5 - 2.5 / 14	CK2,5-ED-1,00ST-S AG CK2,5-ED-1,50ST-S AG CK2,5-ED-2,50ST-S AG		1663857 1663860 1663873																																						

Accessories



Crimping tools
From page 670



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

HS series

High-current applications

400 V / 690 V, 41 A
1000 V, 80 A

Connection technology:

– Screw connection

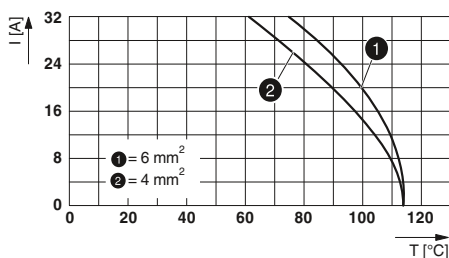
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
¹⁾ For rigid conductors and flexible wires with wire end protection

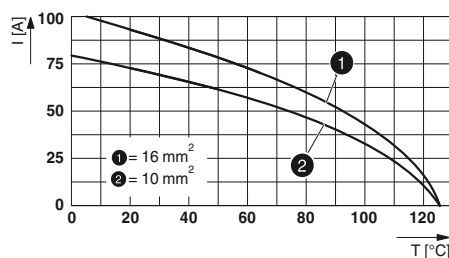


Type	Technical data			
	① ② HC-HS06-I-UT...	③ HC-K 6/0-E...S		
Approvals	UL ENEC RL	UL ENEC RL		
IEC data				
Rated current, contacts (at 40°C)	[A]	41	80	
Overvoltage category		III	III	
Degree of pollution		3	3	
Rated voltage (III/3) contacts	[V]	400 / 690	1000	
Rated surge voltage, contacts	[kV]	6	8	
Connection cross section	[mm²]	0.5 ... 6	6 ... 16	
UL data				
Rated voltage	[V]	600	600	
Rated current	[A]	35	80	
Connection cross section	AWG	10	6	
CSA / cUL data				
Rated voltage	[V]	600	600	
Rated current	[A]	32	60	
Connection cross section	AWG	10	10-6	
Material data				
Contact carrier material		PC	PA	
Inflammability class in acc. with UL 94		V0	V0	
Contact material		Copper alloy	Copper alloy	
Contact surface material		Ag	Ag	
Temperature data				
Ambient temperature range	[°C]	-40 ... 125	-40 ... 125	
General data				
Connection method		Screw connection	Screw connection	
Stripping length	[mm]	10	15	
Number of positions		6	6	
Contact numbering		1 - 6	1 - 6	
Insertion/withdrawal cycles		≥ 500	≥ 500	

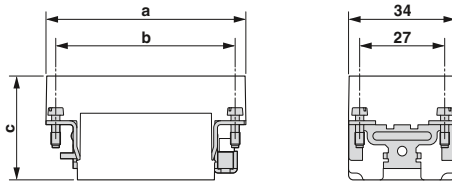
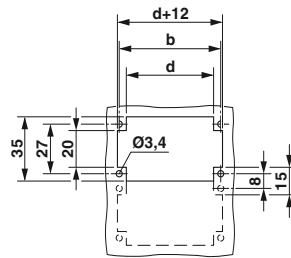
Derating curves



HC-HS06-I-UT...



HC-K 6/0-E...S

Ordering data																																										
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.																																			
					Female	Male																																				
Screw connection																																										
	6	1 - 6	B16 / B32	① HC-HS06-I-UT-...	1406530	1406531	1																																			
	6	7 - 12	B16 / B32	② HC-HS06-I-UT-... 7-12	1406533	1406534	1																																			
Screw connection¹)																																										
	6	1 - 6	B16 / B32	③ HC-K 6/0-E...S	1580537	1580538	10																																			
Panel cutout																																										
																																										
Dimensional drawing																																										
																																										
Panel cutout																																										
<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td>84.5</td><td>77.5</td><td>34</td><td>72</td></tr><tr><td>① Male</td><td></td><td></td><td></td><td></td></tr><tr><td>② Female</td><td>84.5</td><td>77.5</td><td>34</td><td>72</td></tr><tr><td>② Male</td><td></td><td></td><td></td><td></td></tr><tr><td>③ Female</td><td>84</td><td>77.4</td><td>49.7</td><td>72</td></tr><tr><td>③ Male</td><td></td><td></td><td>46.3</td><td></td></tr></table>									a	b	c	d	① Female	84.5	77.5	34	72	① Male					② Female	84.5	77.5	34	72	② Male					③ Female	84	77.4	49.7	72	③ Male			46.3	
	a	b	c	d																																						
① Female	84.5	77.5	34	72																																						
① Male																																										
② Female	84.5	77.5	34	72																																						
② Male																																										
③ Female	84	77.4	49.7	72																																						
③ Male			46.3																																							

Accessories



Coding profiles
From page 656



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

K series

Combination applications for power and signal

400 V ... 830 V, 40 A ... 80 A

Connection technology:

- Power and control contacts
- Screw connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

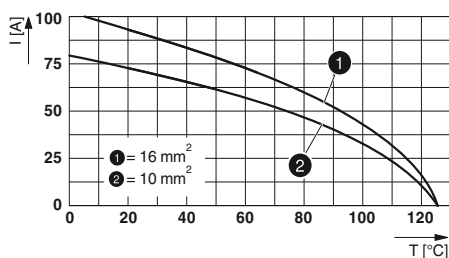
Only operate connectors when there is no load/the power is switched off

¹⁾ For rigid conductors and flexible wires with wire end protection

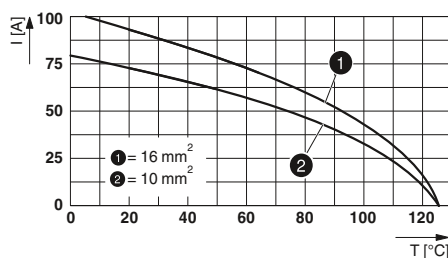


Type	Technical data					
	① HC-K 4/0-E...S		② HC-K 4/2-E...S		③ HC-K 4/8-E...S	
	Power contacts	Control contacts	Power contacts	Control contacts	Power contacts	Control contacts
Approvals	EAC		EAC		EAC	
IEC data						
Rated current	[A]	80	-	-	80	16
Overvoltage category		III		III		III
Degree of pollution		3		3		3
Rated voltage (III/3) contacts	[V]	830	-	-	400	400
Rated surge voltage, contacts	[kV]	8	-	-	6	6
Connection cross section	[mm ²]	1.5 ... 16	-	-	1.5 ... 16	0.5 ... 2.5
UL data						
Rated voltage	[V]	600	600	-	600	-
Rated current	[A]	80	16	-	16	-
Connection cross section	AWG	6	14	-	14	-
CSA / cUL data						
Rated voltage	[V]	-	-	-	-	-
Rated current	[A]	-	-	-	-	-
Connection cross section	AWG	-	-	-	-	-
Material data						
Contact carrier material	PC		PC		PA	
Inflammability class in acc. with UL 94	V0		V0		V0	
Contact material	Cu alloy		Cu alloy		Copper alloy	
Contact surface material	Ag	-	Ag	Ag	Ag	Ag
Temperature data						
Ambient temperature range	[°C]	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data						
Connection method	Screw connection		-	-	Screw connection	Screw connection
Hexagonal socket	[mm]	-	-	-	-	-
Stripping length	[mm]	-	-	-	14	7
Number of positions		4	4	2	4	8
Contact numbering		1 - 4	-	-	1 - 4	1 - 8
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

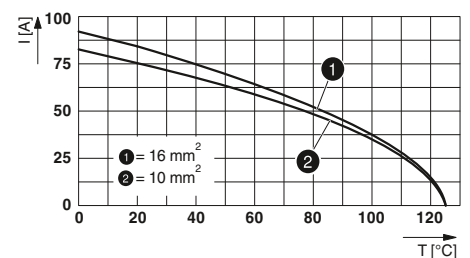
Derating curves



HC-K 4/0-E...S



HC-K 4/2-E...S



HC-K 4/8-E...S

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Screw connection ¹⁾	4 / 0	1 - 4	B16 / B32	① HC-K 4/0-E...S	1679427	1679414	1
							
Screw connection ¹⁾	4 / 2	1 - 4	B16 / B32	② HC-K 4/2-E...S	1686876	1686889	1
							
Screw connection ¹⁾	4 / 8	1 - 4	B24 / B48	③ HC-K 4/8-E...S	1679320	1679333	1
							

Accessories



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

K series

Combination applications for power and signal

690 V, 40 A

Connection technology:

- Power and control contacts
- Screw connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

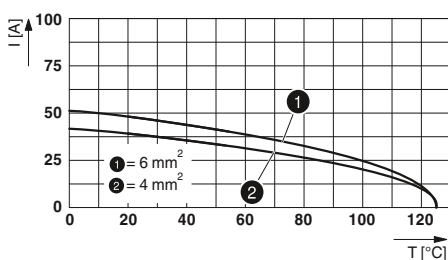
For accessories, see from page 654

Only operate connectors when there is no load/the power is switched off

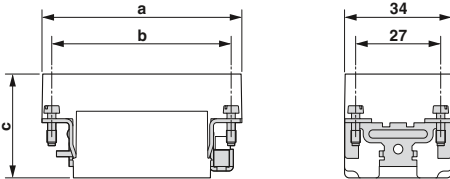
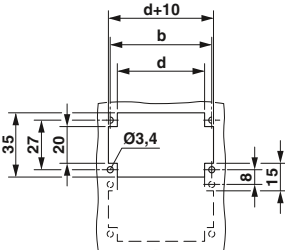


		Technical data					
Type		① HC-K 6/6-E...S		② HC-K 6/12-E...S			
		Power contacts	Control contacts	Power contacts	Control contacts		
Approvals		UL		FRL			
IEC data							
Rated current	[A]	-	-	40	10		
Overvoltage category		III		III			
Degree of pollution		3		3			
Rated voltage (III/3) contacts	[V]	-	-	690	230 / 400		
Rated surge voltage, contacts	[kV]	-	-	8	4		
Connection cross section	[mm²]	-	-	2.5 ... 8	0.2 ... 2.5		
UL data							
Rated voltage	[V]	600	-	-	-		
Rated current	[A]	16	-	-	-		
Connection cross section	AWG	14	-	-	-		
CSA / cUL data							
Rated voltage	[V]	-	-	-	-		
Rated current	[A]	-	-	-	-		
Connection cross section	AWG	-	-	-	-		
Material data							
Contact carrier material		PC		PC			
Inflammability class in acc. with UL 94		V0		V0			
Contact material		Cu alloy		Cu alloy			
Contact surface material		Ag	Ag	Ag	Ag		
Temperature data							
Ambient temperature range	[°C]	-40 ... 125		-40 ... 125			
General data							
Connection method		-	-	Axial screw connection	Screw connection		
Hexagonal socket	[mm]	-	-	2	-		
Stripping length	[mm]	-	-	8	10		
Number of positions		6	6	6	12		
Contact numbering		-	-	1 - 6	11 - 22		
Insertion/withdrawal cycles		≥ 500		≥ 500			

Derating curves



HC-K 6/12-E...S

Ordering data																																
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.																									
					Female	Male																										
Axial screw connection																																
	6 / 6	1 - 6	B24 / B48	① HC-K 6/6-E...S	1636402	1636392	1																									
Axial screw connection																																
	6 / 12	1 - 6	B16 / B32	② HC-K 6/12-E...S	1636363	1636350	1																									
Dimensions (in mm)																																
																																
				Dimensional drawing																												
																																
				Panel cutout																												
<table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>① Female</td><td></td><td></td><td></td><td></td></tr><tr><td>① Male</td><td></td><td></td><td></td><td></td></tr><tr><td>② Female</td><td>84.1</td><td>77.5</td><td>47</td><td>68.5</td></tr><tr><td>② Male</td><td>84.5</td><td></td><td>47.2</td><td></td></tr></table>									a	b	c	d	① Female					① Male					② Female	84.1	77.5	47	68.5	② Male	84.5		47.2	
	a	b	c	d																												
① Female																																
① Male																																
② Female	84.1	77.5	47	68.5																												
② Male	84.5		47.2																													

Accessories



Coding elements
From page 657



Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

K series

Combination applications for power and signal

230 V / 400 V ... 690 V, 16 A ... 40 A

Connection technology:

- Power and control contacts
- Crimp connection

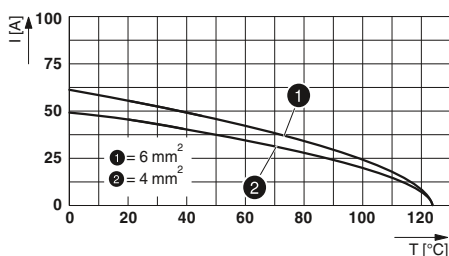
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off

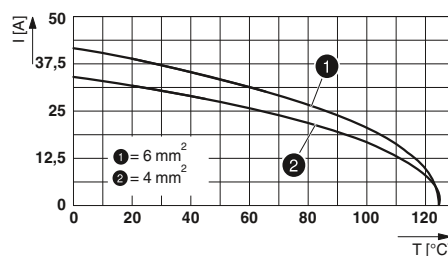


Type	Technical data					
	① HC-K 6/36-E...C		② HC-K12/ 2-E...C		③ HC-K 8/24-E...C	
	Power contacts	Control contacts	Power contacts	Control contacts	Power contacts	Control contacts
Approvals	UL		UL		UL	
IEC data						
Rated current [A]	40	10	40	10	16	10
Overvoltage category	III		III		III	
Degree of pollution	3		3		3	
Rated voltage (III/3) contacts [V]	690	160	690	250	230 / 400	160
Rated surge voltage, contacts [kV]	8	2.5	8	4	4	2.5
Connection cross section [mm²]	1.5 ... 6	0.14 ... 2.5	1.5 ... 6	0.14 ... 2.5	0.5 ... 4	0.14 ... 2.5
UL data						
Rated voltage [V]	600	-	600	-	600	-
Rated current [A]	10	-	10	-	10	-
Connection cross section AWG	14	-	14	-	14	-
CSA / cUL data						
Rated voltage [V]	-	-	-	-	-	-
Rated current [A]	-	-	-	-	-	-
Connection cross section AWG	-	-	-	-	-	-
Material data						
Contact carrier material	PC		PC		PA	
Inflammability class in acc. with UL 94	V0		V0		V0	
Contact material	Cu alloy		Cu alloy		Cu alloy	
Contact surface material	Ag	Ag (alternatively Au)	Ag	Ag (alternatively Au)	Ag (alternat. Au)	Ag (alternatively Au)
Temperature data						
Ambient temperature range [°C]	-40 ... 125		-40 ... 125		-40 ... 125	
General data						
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length [mm]	9	8	9	8	7.5	8
Number of positions	6	36	12	2	8	24
Contact numbering	1 - 6	1 - 36	1 - 12	1 - 2	1 - 8	1 - 24
Insertion/withdrawal cycles	≥ 500		≥ 500		≥ 500	

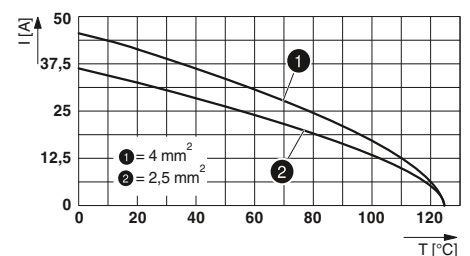
Derating curves



HC-K 6/36 E...C

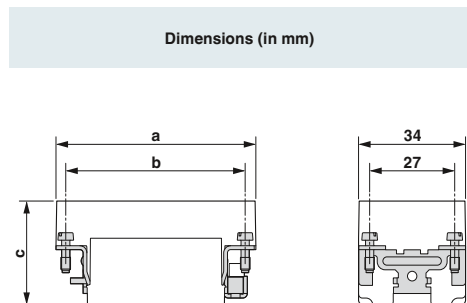


HC-K 12/2 E...C

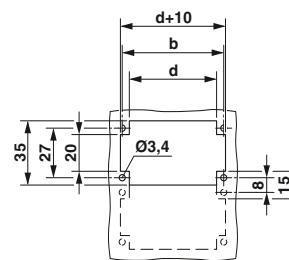


HC-K 8/24 E...C

Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Crimp connection CK 4,0/CK 1,6							
	6 / 36	1 - 6	B16 / B32	① HC-K 6/36-E...C	1636389	1636376	1
Crimp connection CK 4,0/CK 1,6							
	12 / 2	1 - 12	B16 / B32	② HC-K12/ 2-E...C	1636347	1636334	1
Crimp connection CK 2,5/CK 1,6							
	8 / 24	1 - 8	B10	③ HC-K 8/24-E...C	1636321	1636318	1
Turned crimp contacts CK 1,6 Silver-plated		Cross section mm ² / AWG		CK1,6-ED-0,37... AG CK1,6-ED-0,50... AG CK1,6-ED-0,75... AG CK1,6-ED-1,00... AG CK1,6-ED-1,50... AG CK1,6-ED-2,50... AG	1663394 1663404 1663417 1663420 1663433 1663446	1663336 1663349 1663352 1663365 1663378 1663381	100 100 100 100 100 100
		0.14 - 0.37 / 26 - 22					
		0.5 - 0.5 / 20					
		0.75 - 0.75 / 18					
		0.75 - 1 / 18					
		1.5 - 1.5 / 16					
		2.5 - 2.5 / 14					
		Turned crimp contacts CK 2,5 Silver-plated		CK2,5-ED-0,50... AG CK2,5-ED-0,75... AG CK2,5-ED-1,00... AG CK2,5-ED-1,50... AG CK2,5-ED-2,50... AG CK2,5-ED-4,00... AG	1663640 1663653 1663666 1663679 1663682 1663705	1663572 1663585 1663598 1663608 1663611 1663637	100 100 100 100 100 100
							
0.5 - 0.5 / 20							
0.75 - 0.75 / 18							
0.75 - 1 / 18							
1.5 - 1.5 / 16							
		2.5 - 2.5 / 14					
		4 - 4 / 12					
		Turned crimp contacts CK 4,0 Silver-plated		CK4,0-ED-1,50... AG CK4,0-ED-2,50... AG CK4,0-ED-4,00... AG CK4,0-ED-6,00... AG CK4,0-ED-10,00... AG	1663271 1663284 1663297 1663307 1586183	1663239 1663242 1663255 1663268 1586198	25 25 25 25 25
		Cross section mm ² / AWG					
		1.5 - 1.5 / 16					
		2.5 - 2.5 / 14					
		4 - 4 / 12					
		6 - 6 / 10					
		10 - 10 / 8					



Dimensional drawing



Panel cutout

	a	b	c	d
① Female	84.5	77.5	41.5	68.5
① Male			39	
② Female	84.5	77.5	41.5	72
② Male			39.6	
③ Female	64	57	38	49
③ Male			36	

Accessories

Crimping tools
From page 670Coding elements
From page 657Crimp contacts, gold-plated
From page 666Replacement PE screws
From page 662

Heavy-duty connectors

HEAVYCON B – contact inserts

Power

TYPE	HC-M-01-AT-...-40	HC-M-01-AT-...-40-PE	HC-M-02-AT-...-35	HC-M-02-AT-...-16	HC-M-02-AT-...-10
					
Connection technology	Axial screw	Axial screw	Axial screw	Axial screw	Axial screw
Number of positions	1	1	2	2	2
IEC rated data	200 A, 1000 V, 70 mm ²	PE, 70 mm ²	100 A, 1000 V, 35 mm ²	70 A, 1000 V, 25 mm ²	40 A, 1000 V, 10 mm ²
UL rated data	146 A, 600 V, AWG 00	PE, AWG 00	127 A, 600 V, AWG 2	69 A, 600 V, AWG 6	55 A, 600 V, AWG 8
Module slots	2	2	2	1	1
Page	572	572	572	572	572

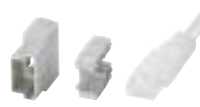
TYPE	HC-M-02-CT-...	HC-M-03-CT-...	HC-M-03/04-CT-...	HC-M-04-CT-...	HC-M-02-CT-...-HV-16
					
Connection technology	Crimp connection CK 4,0	Crimp connection CK 4,0	Crimp connection CK 4,0 / CK 1,6	Crimp connection CK 4,0	Crimp connection CK 2,5
Number of positions	2	3	3 / 4	4	2
IEC rated data	40 A, 1000 V, 10 mm ²	40 A, 690 V, 10 mm ²	40 / 10 A, 830 V, 6 / 2.5 mm ²	40 A, 830 V, 6 mm ²	16 A, 2900 / 5000 V, 4 mm ²
UL rated data	42 A, 600 V, AWG 10	42 A, 600 V, AWG 10	40 A, 600 A, AWG 10	37 A, 600 V, AWG 10	28 A, 600 V, AWG 12
Module slots	1	1	1	1	2
Page	574	574	574	574	578

TYPE	HC-M-05-PT-...	HC-M-05L-TPT-...	HC-M-06P-CT-...	HC-M-06-PT-...	HC-M-06-CT-...
					
Connection technology	Push-in connection	Push-in double connection	Crimp connection CK 2,5	Push-in connection	Crimp connection CK 2,5
Number of positions	5	5	6	6	6
IEC rated data	16 A, 400 V, 2.5 mm ²	10 A, 230 / 400 V, 1.5 mm ²	16 A, 830 V, 4 mm ²	16 A, 500 V, 2.5 mm ²	16 A, 500 V, 4 mm ²
UL rated data	19 A, 600 V, AWG 14	16 A, 600 V, AWG 16	24 A; 600 V; AWG 12	-	24 A, 600 V, AWG 12
Module slots	1	1	1	1	1
Page	576	576	578	576	578

TYPE	HC-M-08-PT-...	HC-M-08-CT-...		HC-M-20-CT-...	
					
Connection technology	Push-in connection	Crimp connection CK 2,5		Crimp connection CK 2,5	
Number of positions	8	8		20	
IEC rated data	16 A, 400 V, 2.5 mm ²	16 A, 400 V, 4 mm ²		16 A, 500 V, 4 mm ²	
UL rated data	-	20 A, 600 V, AWG 12		17.5 A, 600 V, AWG 12	
Module slots	1	1		2	
Page	576	578		578	

Signal

TYPE	HC-M-12-PT-...	HC-M-12-CT-...	HC-M-17-CT-...	HC-M-25-CT-...	
					
Connection technology	Push-in connection	Crimp connection CK 1,6	Crimp connection CK 1,6	Crimp connection VS 1,0	
Number of positions	12	12	17	25	
IEC rated data	10 A, 250 V, 1.5 mm ²	10 A, 250 V, 2.5 mm ²	10 A, 160 V, 2.5 mm ²	4 A, 50 V, 0.5 mm ²	
UL rated data	-	16 A, 600 V, AWG 14	14 A, 600 V, AWG 14	5 A, 30 V, AWG 20	
Module slots	1	1	1	1	
Page	576	580	580	586	

Data								
TYPE	HC-M-DSUB 09-CT...	HC-M-DSUB 09-UT...	HC-M-08-GBIT-CT...	HC-M-04-KT...	HC-M-04-...-KOAX...			
								
Connection technology	Crimp connection VS 1,0	Screw connection	Crimp connection VS 1,0	For coaxial crimp contacts	Coaxial crimp contacts			
Data transmission rate	-	12 Mbps, PROFIBUS	10 Gbps, CAT 6 _A	-	≥ 2 GHz			
IEC rated data	1 A, 50 V, 0.5 mm²	1 A, 50 V, 0.5 mm²	5 A, 50 V, 0.5 mm²	-	75 Ω			
UL rated data	-	-	5 A, 30 V, AWG 20	-	50 Ω			
Number of positions / module slots	9 / 1	9 / 1	8 / 1	4 / 1	-			
Page	586	586	586	588	588			
TYPE	HC-M-02-EMC...	HC-M-EMC-DSUB...	HC-M-EMV...	HC-M01-COAX-1,6...	HC-M01-COAX-1,6...			
								
Connection technology	EMC connector	Crimp connection VS 1,0	Crimp connection CK 1,6	Crimp connection CK 1,6	Crimp connection CK 2,5			
Data transmission rate	-	100 Mbps, CAT 5e	100 Mbps, CAT 5e	500 MHz, 75 Ω coaxial	500 MHz, 50 Ω coaxial			
IEC rated data	-	5 A, 50 V, 0.52 mm²	10 A, 50 V, 2.5 mm²	10 A, 50 V	16 A, 50 V			
UL rated data	-	5 A, 30 V, AWG 20	10 A, 30 V, AWG 16	10 A, 30 V	16 A, 30 V			
Number of positions / module slots	2 / 2	8 / -	4 / -	1 / -	1 / -			
Page	582	582	582	584	584			
TYPE	HC-M-RJ45-08-GC...	HC-M-RJ45...	HC-M-RJI-AD-PC...	CUC-INI-C1ZNI-S/R4IE8	CUC-INI-C1ZNI-S/R4IP8			
								
Connection technology	RJ45 gender changer	RJ45, crimp connection	RJ Industrial, IDC					
Data transmission rate	10 Gbps, 500 MHz	10 Gbps, 500 MHz			1 Gbps, 100 MHz	1 Gbps, 100 MHz		
Description	CAT 6 _A	CAT 6 _A	For RJ Industrial, IDC		CAT 5e	CAT 5e		
Number of positions	8	-						
Module slots	1	1	1		AWG 26-24	AWG 23-22		
Page	590	590	590		590	590		
TYPE	HC-M-RJ45...	NBC-R4AC1/1,0-94G/R4AC1-BU	FL CAT6 PATCH 1,0	FL CAT5 PATCH 1,0				
								
Connection technology	RJ45 patch cable							
Data transmission rate		10 Gbps, 500 MHz	1 Gbps, 250 MHz	1 Gbps, 100 MHz				
Description	For RJ45 patch cables	CAT 6 _A patch cable	CAT 6 patch cable	CAT 5e patch cable				
Number of positions	-	-	-	-				
Module slots	1	-	-	-				
Page	590	590	590	590				
Pneumatics								Dummy module
TYPE	HC-M-02-PN-M...	HC-M-PN2...	HC-M-03-PN-M...	HC-M-PN3...			HC-M-00	
								
Hose internal diameter	6 mm	6 mm	1.6 mm	1.6 mm	3 mm	4 mm		
Number of positions	2	-	3	-	-	-		
Module slots	1	-	1	-	-	-	1	
Page	592	592	592	592	592	592	594	

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

1000 V, 40 A ... 200 A

Connection technology:

– Axial screw connection

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

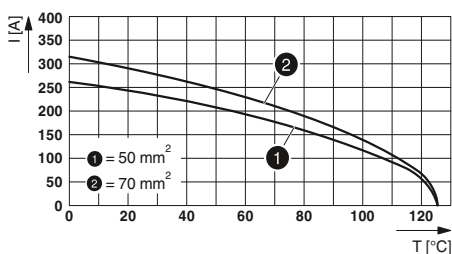
Only operate connectors when there is no load/the power is switched off

¹⁾ For a housing height of ≥ 72 mm only

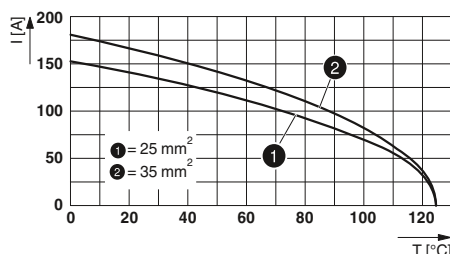


Technical data					
Type	① HC-M-01-AT-...-40	② HC-M-01-AT-...-40-PE PE module	③ HC-M-02-AT-...-35	④ HC-M-02-AT-...-16	⑤ HC-M-02-AT-...-10
Approvals					
IEC data					
Rated current, contacts (at 40°C)	[A] 200	-	100	70	40
Overvoltage category	III	-	III	III	III
Degree of pollution	3	-	3	3	3
Rated voltage (III/3) contacts	[V] 1000	-	1000	1000	1000
Rated surge voltage, contacts	[kV] 8	-	8	8	8
Connection cross section	[mm ²] 25 ... 70	25 ... 70	10 ... 35	1.5 ... 25	2.5 ... 10
UL data					
Rated voltage	[V] 600	-	600	600	600
Rated current	[A] 146	-	127	69	55
Connection cross section	AWG 0	-	2	6	8
CSA / cUL data					
Rated voltage	[V] 600	-	600	600	600
Rated current	[A] 116	-	100	54	45
Connection cross section	AWG 0	-	2	6	8
Material data					
Contact carrier material	PC	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag	Ag
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Axial screw connection	Axial screw connection	Axial screw connection	Axial screw connection	Axial screw connection
Hexagonal socket	[mm] 5	5	4	2.5	2
Stripping length	[mm] 16	16	13	11	5
Number of positions	1	1	2	2	2
Contact numbering	-	-	1 - 2	1 - 2	1 - 2
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

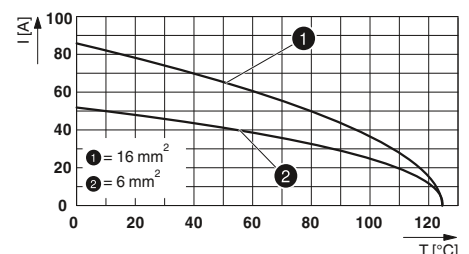
Derating curves



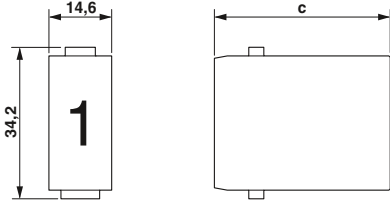
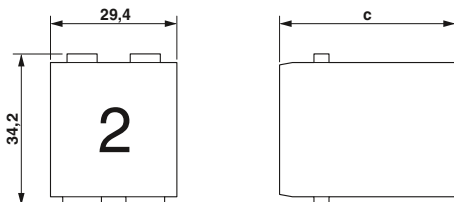
HC-M-01-AT-...-40



HC-M-02-AT-...-35



HC-M-02-AT-...-16

				Ordering data																																																															
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																											
					Female	Male																																																													
Axial screw connection ¹⁾	1		2	① HC-M-01-AT-...-40	1417379	1417381	2																																																												
																																																																			
Axial screw connection ¹⁾	1		2	PE module ② HC-M-01-AT-...-40-PE	1417380	1417382	2	1 module slot																																																											
																																																																			
Axial screw connection ¹⁾	2	1 - 2	2	③ HC-M-02-AT-...-35	1417390	1417392	2	2 module slots																																																											
																																																																			
Axial screw connection ¹⁾	2	1 - 2	1	④ HC-M-02-AT-...-16	1417296	1417297	2	<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td></td><td></td><td>60</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td>54.5</td><td></td></tr><tr><td>② Female</td><td></td><td></td><td>54.3</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>54.6</td><td></td></tr><tr><td>③ Female</td><td></td><td></td><td>50.3</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td>49</td><td></td></tr><tr><td>④ Female</td><td></td><td></td><td>46.5</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td>45</td><td></td></tr><tr><td>⑤ Female</td><td></td><td></td><td>33.5</td><td></td></tr><tr><td>⑤ Male</td><td></td><td></td><td>34.7</td><td></td></tr></table>						a	b	c	d	① Female			60		① Male			54.5		② Female			54.3		② Male			54.6		③ Female			50.3		③ Male			49		④ Female			46.5		④ Male			45		⑤ Female			33.5		⑤ Male			34.7	
	a	b	c	d																																																															
① Female			60																																																																
① Male			54.5																																																																
② Female			54.3																																																																
② Male			54.6																																																																
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④ Male			45																																																																
⑤ Female			33.5																																																																
⑤ Male			34.7																																																																
																																																																			
Axial screw connection ¹⁾	2	1 - 2	1	⑤ HC-M-02-AT-...-10	1417387	1417389	2																																																												
																																																																			
Cable lug PE extension from 6 mm ² to 16 mm ²				HC-M-MHR-PE16	1636981		50																																																												
																																																																			

Accessories



Module carrier frames
From page 594



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

690 V ...1000 V, 40 A

Connection technology:

– Crimp connection CK 4,0

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

For accessories, see from page 654

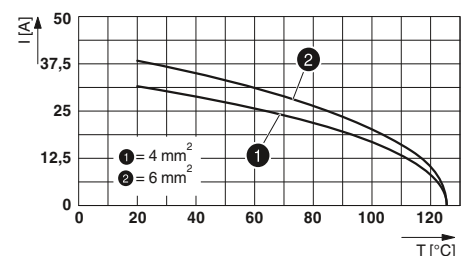
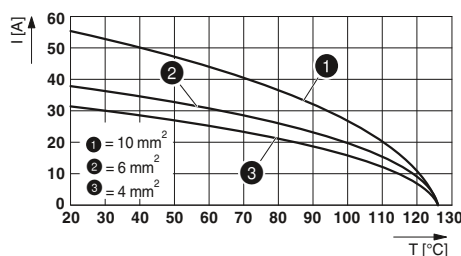
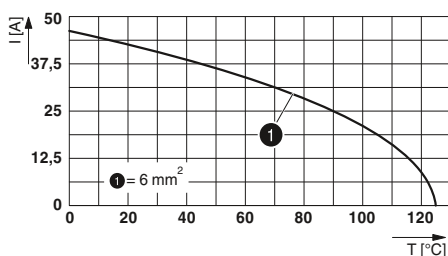
Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off

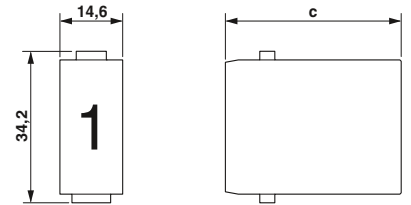


Type	Technical data			
	① HC-M-02-CT...	② HC-M-03-CT...	③ HC-M-04-CT...	④ HC-M-03/04-CT...
Approvals				
IEC data				
Rated current, contacts (at 40°C)	[A] 40	40	40	40
Overtoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 1000	690	830	830
Rated surge voltage, contacts	[kV] 8	6	8	8
Connection cross section	[mm²] 1.5 ... 10	1.5 ... 10	1.5 ... 6	1.5 ... 6
UL data				
Rated voltage	[V] 600	600	600	600
Rated current	[A] 42	42	37	40
Connection cross section	AWG 10	10	10	10
CSA / cUL data				
Rated voltage	[V] 600	600	830	600
Rated current	[A] 34	33	30	33
Connection cross section	AWG 10	10	10	10
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Ag	Ag
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	[mm] 9	9	9	9
Number of positions	2	3	4	7
Contact numbering	1 - 2	1 - 3	1 - 4	1 - 3
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

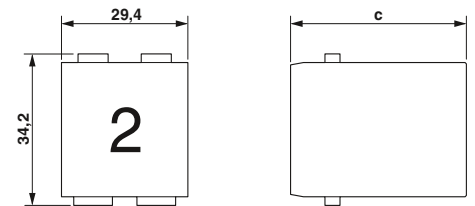
Derating curves



				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Slots	Type	Female	Male	
Crimp connection CK 4,0							
	2	1 - 2	1	① HC-M-02-CT...	1414361	1414360	5
	3	1 - 3	1	② HC-M-03-CT...	1414359	1414358	5
Crimp connection CK 4,0							
	4	1 - 4	1	③ HC-M-04-CT...	1414363	1414362	5
Crimp connection CK 4,0/CK 1,6							
	3 / 4	1 - 3	1	④ HC-M-03/04-CT...	1414365	1414364	5
Turned crimp contacts CK 4,0 Silver-plated							
							
		Cross section mm ² / AWG					
		1.5 - 1.5 / 16		CK4,0-ED-1,50... AG	1663271	1663239	25
		2.5 - 2.5 / 14		CK4,0-ED-2,50... AG	1663284	1663242	25
		4 - 4 / 12		CK4,0-ED-4,00... AG	1663297	1663255	25
		6 - 6 / 10		CK4,0-ED-6,00... AG	1663307	1663268	25
		10 - 10 / 8		CK4,0-ED-10,00... AG	1586183	1586198	25
Turned crimp contacts CK 1,6 Silver-plated							
							
		Cross section mm ² / AWG					
		0.14 - 0.37 / 26 - 22		CK1,6-ED-0,37... AG	1663394	1663336	100
		0.5 - 0.5 / 20		CK1,6-ED-0,50... AG	1663404	1663349	100
		0.75 - 0.75 / 18		CK1,6-ED-0,75... AG	1663417	1663352	100
		0.75 - 1 / 18		CK1,6-ED-1,00... AG	1663420	1663365	100
		1.5 - 1.5 / 16		CK1,6-ED-1,50... AG	1663433	1663378	100
		2.5 - 2.5 / 14		CK1,6-ED-2,50... AG	1663446	1663381	100



1 module slot



2 module slots

	a	b	c	d
① Female			42.4	
① Male			43.7	
② Female			44.7	
② Male			43.1	
③ Female			40.9	
③ Male			44.6	
④ Female			39.1	
④ Male			44.3	

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Crimp contacts, gold-plated
From page 666



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

230 V ... 400 V, 10 A ... 16 A

Connection technology:

- Push-in connection
- Push-in double connection

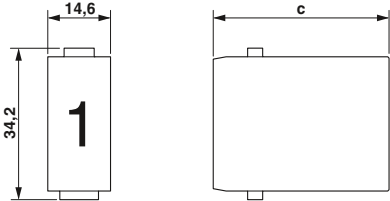
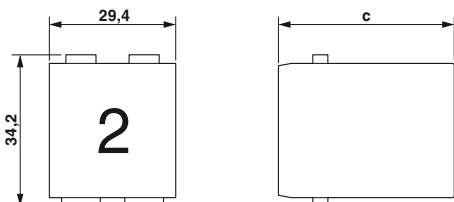
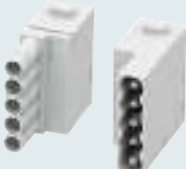
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
¹⁾ For flexible wires with wire end protection

new



Type	Technical data				
	① HC-M-05-PT-...	② HC-M-05L-TPT-...	③ HC-M-06-PT-...	④ HC-M-08-PT-...	⑤ HC-M-12-PT-...
Approvals			-	-	-
IEC data					
Rated current, contacts (at 40°C)	16	10	16	16	10
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	400	230 / 400	500	400	250
Rated surge voltage, contacts	6	4	6	6	4
Connection cross section	0.14 ... 2.5 ¹⁾	0.25 ... 1.5 ¹⁾	0.5 ... 2.5	0.5 ... 2.5	0.14 ... 1.5 ¹⁾
UL data					
Rated voltage	600	600	-	-	-
Rated current	19	16	-	-	-
Connection cross section	14	16	-	-	-
CSA / cUL data					
Rated voltage	600	600	-	-	-
Rated current	15	12	-	-	-
Connection cross section	14	16	-	-	-
Material data					
Contact carrier material	PC	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag	Ag	Au/Sn	Au/Sn	Ag
Ambient conditions					
Ambient temperature range	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Push-in connection	Push-in connection	Push-in connection	Push-in connection	Push-in connection
Hexagonal socket	-	-	-	-	-
Stripping length	8	8	10	10	8
Number of positions	5	5	6	8	12
Contact numbering	1 - 5	1 - 5	1 - 6	1 - 8	1 - 12
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

Ordering data																																																															
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																																							
					Female	Male																																																									
Push-in connection	5	1 - 5	1	① HC-M-05-PT...	1417373	1417372	5	 1 module slot																																																							
																																																															
Push-in double connection	5	1 - 5	1	② HC-M-05L-TPT...	1423962	1423961	1	 2 module slots																																																							
																																																															
Push-in connection	6	1 - 6	1	③ HC-M-06-PT...	1424224	1424225	1	<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td></td><td></td><td>34</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td>35.5</td><td></td></tr><tr><td>② Female</td><td></td><td></td><td>38</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>36</td><td></td></tr><tr><td>③ Female</td><td></td><td></td><td>39</td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td></td><td></td></tr><tr><td>④ Female</td><td></td><td></td><td>39</td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td></td><td></td></tr><tr><td>⑤ Female</td><td></td><td></td><td>36.3</td><td></td></tr><tr><td>⑤ Male</td><td></td><td></td><td></td><td></td></tr></table>		a	b	c	d	① Female			34		① Male			35.5		② Female			38		② Male			36		③ Female			39		③ Male					④ Female			39		④ Male					⑤ Female			36.3		⑤ Male				
	a	b	c	d																																																											
① Female			34																																																												
① Male			35.5																																																												
② Female			38																																																												
② Male			36																																																												
③ Female			39																																																												
③ Male																																																															
④ Female			39																																																												
④ Male																																																															
⑤ Female			36.3																																																												
⑤ Male																																																															
																																																															
Push-in connection	8	1 - 8	1	④ HC-M-08-PT...	1424226	1424227	1																																																								
																																																															
Push-in connection	12	1 - 12	1	⑤ HC-M-12-PT...	1424228	1424246	1																																																								
																																																															

Accessories



Module carrier frames
From page 594



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

400 V ... 830 V, 16 A

Connection technology:

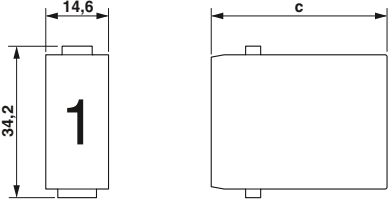
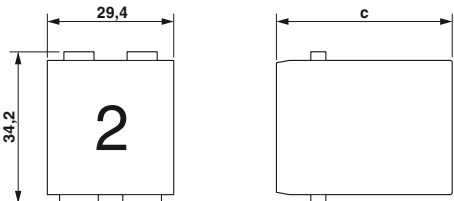
– Crimp connection CK 2,5

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
¹⁾ For a housing height of ≥ 72 mm only



Type	Technical data				
	① HC-M-02-CT-...-HV-16	② HC-M-06P-CT-...	③ HC-M-06-CT-...	④ HC-M-08-CT-...	⑤ HC-M-20-CT-...
Approvals					
IEC data					
Rated current, contacts (at 40°C)	[A] 16	16	16	16	16
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 2900 / 5000	830	500	400	690
Rated surge voltage, contacts	[kV] 15	8	6	6	6
Connection cross section	[mm²] 0.5 ... 4	0.5 ... 4	0.5 ... 4	0.5 ... 4	0.5 ... 4
UL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 28	24	24	20	17.5
Connection cross section	AWG 12	12	12	12	12
CSA / cUL data					
Rated voltage	[V] 600	600	600	600	600
Rated current	[A] 24	18	18	16	14
Connection cross section	AWG 12	12	12	12	12
Material data					
Contact carrier material	PC / PTFE	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Crimp connection	Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	[mm] 9.5	7.5	7.5	7.5	7.5
Number of positions	2	6	6	8	20
Contact numbering	I, II	1 - 6	1 - 6	1 - 8	1 - 20
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

				Ordering data			Pcs./ Pkt.	Dimensions (in mm)
Description	Pos.	Number	Slots	Type	Female	Male		
Crimp connection CK 2,5¹⁾								
	2	I, II	2	① HC-M-02-CT...-HV-16	1417407	1417408	1	 1 module slot
Crimp connection CK 2,5								
	6	1 - 6	1	② HC-M-06P-CT...	1414369	1414368	5	 2 module slots
Crimp connection CK 2,5								
	6	1 - 6	1	③ HC-M-06-CT...	1414367	1414366	5	
Crimp connection CK 2,5								
	8	1 - 8	1	④ HC-M-08-CT...	1414371	1414370	5	
Crimp connection CK 2,5								
	20	1 - 20	2	⑤ HC-M-20-CT...	1414373	1414372	2	
Turned crimp contacts CK 2,5 Silver-plated								
								
		Cross section mm² / AWG						
		0.5 - 0.5 / 20		CK2,5-ED-0,50... AG	1663640	1663572	100	
		0.75 - 0.75 / 18		CK2,5-ED-0,75... AG	1663653	1663585	100	
		0.75 - 1 / 18		CK2,5-ED-1,00... AG	1663666	1663598	100	
		1.5 - 1.5 / 16		CK2,5-ED-1,50... AG	1663679	1663608	100	
		2.5 - 2.5 / 14		CK2,5-ED-2,50... AG	1663682	1663611	100	
		4 - 4 / 12		CK2,5-ED-4,00... AG	1663705	1663637	100	

	a	b	c	d
① Female			64.3	
① Male			61.3	
② Female			37.4	
② Male			38.9	
③ Female			35.8	
③ Male			34	
④ Female			35.8	
④ Male			34.5	
⑤ Female			39.95	
⑤ Male			37.6	

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Crimp contacts, gold-plated
From page 666



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

160 V ... 250 V, 10 A

Connection technology:

– Crimp connection CK 1,6

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:

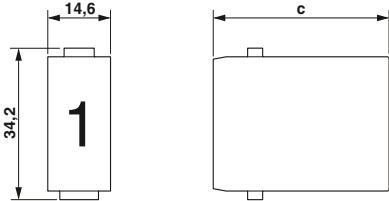
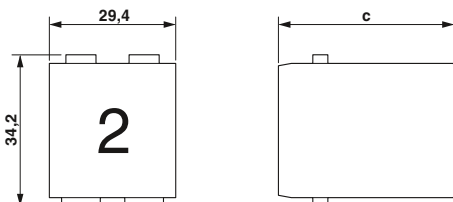
For accessories, see from page 654

Order crimp contacts separately

Only operate connectors when there is no load/the power is switched off



Type	Technical data			
	① HC-M-12-CT...	② HC-M-17-CT...		
Approvals	 	 		
IEC data				
Rated current, contacts (at 40°C)	[A] 10	10		
Overtoltage category	III	III		
Degree of pollution	3	3		
Rated voltage (III/3) contacts	[V] 250	160		
Rated surge voltage, contacts	[kV] 4	2.5		
Connection cross section	[mm²] 0.14 ... 2.5	0.14 ... 2.5		
UL data				
Rated voltage	[V] 250	160		
Rated current	[A] 16	14		
Connection cross section	AWG 14	14		
CSA / cUL data				
Rated voltage	[V] 250	160		
Rated current	[A] 12	10		
Connection cross section	AWG 14	14		
Material data				
Contact carrier material	PC	PC		
Inflammability class in acc. with UL 94	V0	V0		
Contact material	Copper alloy	Copper alloy		
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)		
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 125		
General data				
Connection method	Crimp connection	Crimp connection		
Stripping length	[mm] 8	8		
Number of positions	12	17		
Contact numbering	1 - 12	1 - 17		
Insertion/withdrawal cycles	≥ 500	≥ 500		

Ordering data																																	
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																									
					Female	Male																											
Crimp connection CK 1,6	12	1 - 12	1	① HC-M-12-CT...	1414355	1414354	5	 1 module slot																									
Crimp connection CK 1,6	17	1 - 17	1	② HC-M-17-CT...	1414357	1414356	5																										
 2 module slots																																	
<table><tr><td></td><td>a</td><td>b</td><td>c</td><td>d</td></tr><tr><td>① Female</td><td></td><td></td><td>34</td><td></td></tr><tr><td>① Male</td><td></td><td></td><td></td><td></td></tr><tr><td>② Female</td><td></td><td></td><td>34</td><td></td></tr><tr><td>② Male</td><td></td><td></td><td></td><td></td></tr></table>										a	b	c	d	① Female			34		① Male					② Female			34		② Male				
	a	b	c	d																													
① Female			34																														
① Male																																	
② Female			34																														
② Male																																	
Turned crimp contacts CK 1,6 Silver-plated		Cross section mm² / AWG																															
		0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100																											
		0.5 - 0.5 / 20	CK1,6-ED-0,50... AG	1663404	1663349	100																											
		0.75 - 0.75 / 18	CK1,6-ED-0,75... AG	1663417	1663352	100																											
		0.75 - 1 / 18	CK1,6-ED-1,00... AG	1663420	1663365	100																											
		1.5 - 1.5 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100																											
		2.5 - 2.5 / 14	CK1,6-ED-2,50... AG	1663446	1663381	100																											
Turned crimp contacts CK 1,6 Gold-plated		Cross section mm² / AWG																															
		0.14 - 0.37 / 24 - 22	CK1,6-ED-0,37... AU	1674969	1674901	100																											
		0.5 - 0.5 / 20	CK1,6-ED-0,50... AU	1674480	1672453	100																											
		0.75 - 0.75 / 18	CK1,6-ED-0,75... AU	1672440	1674914	100																											
		0.75 - 1 / 18	CK1,6-ED-1,00... AU	1674943	1674888	100																											
		1.5 - 1.5 / 16	CK1,6-ED-1,50... AU	1674930	1674875	100																											
		2.5 - 2.5 / 14	CK1,6-ED-2,50... AU	1674985	1674927	100																											

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

50 V, 5 A ... 10 A

Connection technology:

- Crimp connection VS 1,0
- Crimp connection CK 1,6

To determine the corresponding housing, see the system cross-reference list on page 502.

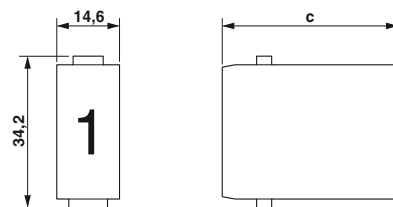
Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
¹⁾ For a housing height of ≥ 72 mm only

new

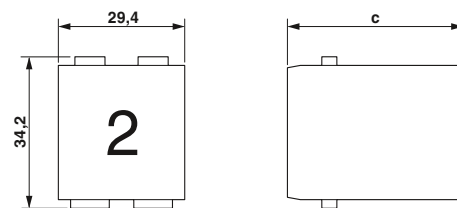


Type	Technical data			
	① HC-M-02-EMC-...	② HC-M-08-EMC-DSUB-...	③ HC-M-EMV-.../3-9,5	
Approvals		-		
IEC data				
Rated current, contacts (at 40°C)	[A] 10	5	10	
Overtoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 50	50	50	
Rated surge voltage, contacts	[kV] 0.8	0.8	0.8	
Connection cross section	[mm²] 0.14 ... 2.5	0.09 ... 0.52	0.14 ... 2.5	
UL data				
Rated voltage	[V] -	-	42	
Rated current	[A] -	-	10	
Connection cross section	AWG -	-	16	
CSA / cUL data				
Rated voltage	[V] -	-	42	
Rated current	[A] -	-	9	
Connection cross section	AWG -	-	16	
Material data				
Contact carrier material	PC	PC	PC	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag (power)/Au (signal)	AU	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 85	-40 ... 85	
General data				
Connection method	Crimp connection	-	Crimp connection	
Stripping length	[mm] -	-	8	
Number of positions	2	8	4	
Contact numbering	1 - 2	1 - 8	1 - 4	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Slots	Type	Female	Male	
EMC module ¹⁾							
	2	1 - 2	2	① HC-M-02-EMC-...	1417376	1417374	2
EMC connector, crimp connection VS 1,0							
	8	1 - 8		② HC-M-08-EMC-DSUB-...	1066080	1066082	1
EMC connector, crimp connection CK 1,6							
	4	1 - 4		③ HC-M-EMV-.../3-9,5	1636091	1636088	1
Shield adapters							
				HC-M-ADP-EMC	1420486	1420486	1
Turned crimp contacts VS 1,0 Gold-plated							
				CUC-DSC-...1BAU-S/DSC28	1418787	1418784	100
				CUC-DSC-...1BAU-S/DSC22	1418790	1418789	100
				CUC-DSC-...1BAU-S/DSC24	1418788	1418786	100
Turned crimp contacts CK 1,6 Silver-plated							
				CK1,6-ED-0,37... AG	1663394	1663336	100
				CK1,6-ED-0,50... AG	1663404	1663349	100
				CK1,6-ED-0,75... AG	1663417	1663352	100
				CK1,6-ED-1,00... AG	1663420	1663365	100
				CK1,6-ED-1,50... AG	1663433	1663378	100
				CK1,6-ED-2,50... AG	1663446	1663381	100



1 module slot



2 module slots

	a	b	c	d
① Female			34	
① Male				
② Female			15.5	15.5
② Male				
③ Female			15.5	
③ Male				

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

50 V, 10 A

Connection technology:

- Crimp connection CK 1,6
- Crimp connection CK 2,5

To determine the corresponding housing, see the system cross-reference list on page 502.

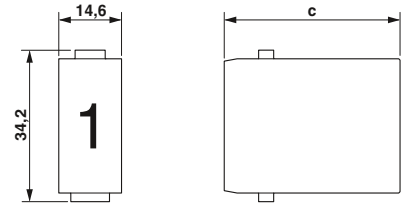
Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
¹⁾ For a housing height of ≥ 72 mm only

new

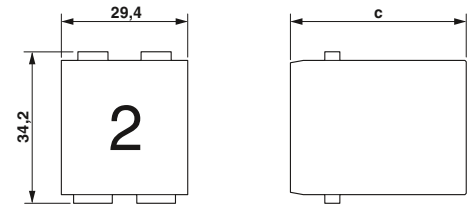


Type	Technical data			
	① HC-M-02-EMC-...	② HC-M-01-COAX-CK1,6-75-...	③ HC-M-01-COAX-CK2,5-50-...	
Approvals			-	
IEC data				
Rated current, contacts (at 40°C)	[A] 10	10	16	
Overvoltage category	III	III	III	
Degree of pollution	3	3	3	
Rated voltage (III/3) contacts	[V] 50	50	50	
Rated surge voltage, contacts	[kV] 0.8	0.8	0.8	
Connection cross section	[mm²] 0.14 ... 2.5	0.14 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	[V] -	50	-	
Rated current	[A] -	10	-	
Connection cross section	AWG -	-	-	
CSA / cUL data				
Rated voltage	[V] -	-	-	
Rated current	[A] -	-	-	
Connection cross section	AWG -	-	-	
Material data				
Contact carrier material	PC	PC	PC	
Inflammability class in acc. with UL 94	V0	V0	V0	
Contact material	Copper alloy	Copper alloy	Copper alloy	
Contact surface material	Ag (power)/Au (signal)	AU	AU	
Temperature data				
Ambient temperature range	[°C] -40 ... 125	-40 ... 85	-40 ... 85	
General data				
Connection method	Crimp connection	-	-	
Stripping length	[mm] -	8	8	
Number of positions	2	1	1	
Contact numbering	1 - 2	-	-	
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	

				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Slots	Type	Female	Male	
EMC module ¹⁾							
	2	1 - 2	2	① HC-M-02-EMC-...	1417376	1417374	2
Coaxial connectors 75 Ω, crimp connection CK 1,6							
	1			② HC-M-01-COAX-CK1,6-75-...	1066961	1066962	1
Coaxial connectors 50 Ω, crimp connection CK 2,5							
	1			③ HC-M-01-COAX-CK2,5-50-...	1066959	1066960	1
Shield adapters							
				HC-M-ADP-EMC	1420486	1420486	1
Turned crimp contacts CK 1,6 Silver-plated							
		Cross section mm ² / AWG		CK1,6-ED-0,37... AG	1663394	1663336	100
		0.14 - 0.37 / 26 - 22		CK1,6-ED-0,50... AG	1663404	1663349	100
		0.5 - 0.5 / 20		CK1,6-ED-0,75... AG	1663417	1663352	100
		0.75 - 0.75 / 18		CK1,6-ED-1,00... AG	1663420	1663365	100
		0.75 - 1 / 18		CK1,6-ED-1,50... AG	1663433	1663378	100
		1.5 - 1.5 / 16		CK1,6-ED-2,50... AG	1663446	1663381	100
		2.5 - 2.5 / 14					
Turned crimp contacts CK 2,5 Silver-plated							
		Cross section mm ² / AWG		CK2,5-ED-0,50... AG	1663640	1663572	100
		0.5 - 0.5 / 20		CK2,5-ED-0,75... AG	1663653	1663585	100
		0.75 - 0.75 / 18		CK2,5-ED-1,00... AG	1663666	1663598	100
		0.75 - 1 / 18		CK2,5-ED-1,50... AG	1663679	1663608	100
		1.5 - 1.5 / 16		CK2,5-ED-2,50... AG	1663682	1663611	100
		2.5 - 2.5 / 14		CK2,5-ED-4,00... AG	1663705	1663637	100
		4 - 4 / 12					



1 module slot



2 module slots

	a	b	c	d
① Female			34	
① Male				
② Female			15.5	15.5
② Male				
③ Female			15.5	15.5
③ Male				

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts

50 V, 1 ... 5 A

Connection technology:

- Crimp connection VS 1,0
- Screw connection

Guide pins and sockets are mandatory for the HC-M-25-CT... and HC-M-DSUB 09-... modules; see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

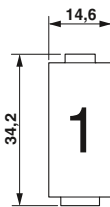
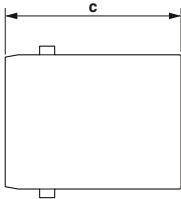
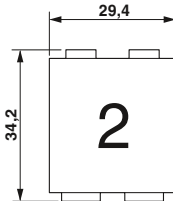
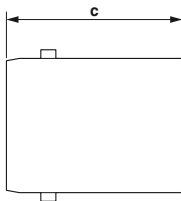
Notes:
For accessories, see from page 654
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off

new



Type	Technical data				
	① HC-M-25-CT-...	② HC-M-08-GBIT-CT-...	③ HC-M-DSUB 09-UT-... For 1 cable	④ HC-M-DSUB 09-CT-... For 1 cable	⑤ HC-M-DSUB 09/2-CT-... For 2 cables
Approvals	CE ENEC 94	CE ENEC 94	ENEC	ENEC	ENEC
IEC data					
Rated current, contacts (at 40°C)	[A] 4	5	1	1	5
Overvoltage category	III	III	III	III	III
Degree of pollution	3	3	3	3	3
Rated voltage (III/3) contacts	[V] 50	50	50	50	50
Rated surge voltage, contacts	[kV] 0.8	0.8	0.8	0.8	0.8
Connection cross section	[mm²] 0.08 ... 0.5	0.08 ... 0.5	0.08 ... 0.5	0.08 ... 0.5	0.09 ... 0.82
UL data					
Rated voltage	[V] 50	50	-	-	-
Rated current	[A] 5	5	-	-	-
Connection cross section	AWG 20	22	-	-	-
CSA / cUL data					
Rated voltage	[V] 30	50	-	-	-
Rated current	[A] 4	5	-	-	-
Connection cross section	AWG 20	22	-	-	-
Material data					
Contact carrier material	PC	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0	V0
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Au	Au	Ag	Au	Ag
Ambient conditions					
Ambient temperature range	[°C] -40 ... 125	-40 ... 85	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method	Crimp connection	Crimp connection	Screw connection	Crimp connection	Crimp connection
Stripping length	[mm] 4.2	4.2	4.2	4.2	4.2
Number of positions	25	8	9	9	9
Contact numbering	1 - 25	1 - 8	1 - 9	1 - 9	1 - 9
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

Ordering data							
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.
					Female	Male	
Crimp connection VS 1,0							
	25	1 - 25	1	① HC-M-25-CT...	1414375	1414374	5
Ethernet connector, crimp connection VS 1,0							
	8	1 - 8	1	② HC-M-08-GBIT-CT...	1417303	1417302	1
D-SUB 09 module, screw connection							
	9	1 - 9	1	For 1 cable ③ HC-M-DSUB 09-UT...	1417307	1423723	1
D-SUB 09 module, crimp connection VS 1,0							
	9	1 - 9	1	For 1 cable ④ HC-M-DSUB 09-CT...	1417308	1417309	1
D-SUB 09/2 module, crimp connection VS 1,0							
	9	1 - 9	1	For 2 cables ⑤ HC-M-DSUB 09/2-CT...	1079793	1079796	1
Turned crimp contacts VS 1,0 Gold-plated							
		Cross section mm ² / AWG 0.08 - 0.12 / 28 - 26 0.08 - 0.34 / 28 - 22 0.2 - 0.5 / 24 - 20		CUC-DSC-...1BAU-S/DSC28 CUC-DSC-...1BAU-S/DSC22 CUC-DSC-...1BAU-S/DSC24	1418787 1418790 1418788	1418784 1418789 1418786	100 100 100

Dimensions (in mm)				
 14,6 34,2 1	 c			
1 module slot				
 29,4 34,2 2	 c			
2 module slots				

	a	b	c	d
① Female			30.65	
Male			34	
② Female			40.3	
Male			41.4	
③ Female			35.7	
Male				
④ Female			35.2	
Male				
⑤ Female			35.7	
Male				

Accessories



Module carrier frames
From page 594



Crimping tools
From page 670



Guide elements
From page 657



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts, coaxial modules

50 V, 1.5 A

Connection technology:

– Coaxial contacts

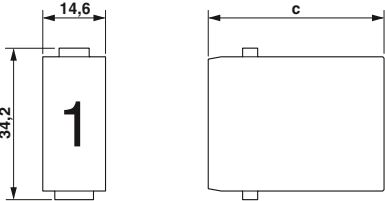
Guide pins and guide sockets are mandatory for the HC-M-04-KT... series modules, see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off
50 Ω coaxial contacts for cables RG 174/U, RG 188 A/U, RG 316/U
75 Ω coaxial contacts for cables RG 179 B/U, RG 187 A/U



Technical data				
Type	① HC-M-04-KT...			
Approvals	CE ENEC UL			
IEC data				
Rated current, contacts (at 40°C)	[A]	1.5		
Overvoltage category		III		
Degree of pollution		3		
Rated voltage (III/3) contacts	[V]	50		
Rated surge voltage, contacts	[kV]	0.8		
Connection cross section	[mm²]	0.14 ... 2.5		
UL data				
Rated voltage	[V]	-		
Rated current	[A]	-		
Connection cross section	AWG	-		
CSA / cUL data				
Rated voltage	[V]	-		
Rated current	[A]	-		
Connection cross section	AWG	-		
Material data				
Contact carrier material		PC		
Inflammability class in acc. with UL 94		V0		
Contact material		Copper alloy		
Contact surface material		AU		
Temperature data				
Ambient temperature range	[°C]	-40 ... 125		
General data				
Connection method		Soldering and crimp connection		
Stripping length	[mm]	2.5		
Number of positions		4		
Contact numbering		1 - 4		
Insulation resistance	[GΩ]	≥ 10		
Contact resistance	[mΩ]	-		
Insertion/withdrawal cycles		≥ 500		

Ordering data								
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)
					Female	Male		
Coaxial module	4	1 - 4	1	① HC-M-04-KT...	1417370	1417371	5	
								
Coaxial contacts 50 Ω For cables RG 174/U, RG 188 A/U, RG 316/U				HC-M-04-....-KOAX-50	1676815	1676802	10	1 module slot
								
Coaxial contacts 75 Ω For cables RG 179 B/U, RG 187 A/U				HC-M-04-....-KOAX-75	1686245	1686258	10	2 module slots
								
				</				

Accessories



Module carrier frames
From page 594



Crimping tools
From page 671



Guide elements
From page 657



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts, RJ45 modules

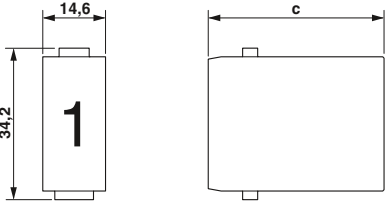
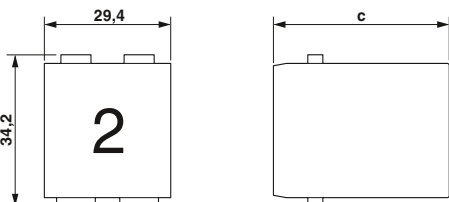
Connection technology:
– RJ45 and RJ1

To determine the corresponding
housing, see the system cross-reference
list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off



Type	Technical data			
	① HC-M-RJ45-08-GC-... RJ45, CAT6 _A , 10 Gbps E E E E E E E E	② HC-M-RJ45-08-... RJ45, CAT6 _A , 10 Gbps E E E E E E E E	③ HC-M-RJ45-AD-PC-... for RJ45 patch cable E E E E E E E E	④ HC-M-RJ1-AD-PC-... for RJ industrial inserts E E E E E E E E
Approvals				
IEC data				
Rated current, contacts (at 40°C)	[A] 1	1	1	1
Overtoltage category	III	III	III	III
Degree of pollution	3	3	3	3
Rated voltage (III/3) contacts	[V] 50	50	50	50
Rated surge voltage, contacts	[kV] 0.8	0.8	0.8	0.8
Connection cross section	[mm²] -	-	-	-
UL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
CSA / cUL data				
Rated voltage	[V] -	-	-	-
Rated current	[A] -	-	-	-
Connection cross section	AWG -	-	-	-
Material data				
Contact carrier material	PC	PC	PC	PC
Inflammability class in acc. with UL 94	V0	V0	V0	V0
Contact material	Copper alloy	Phosphor bronze	Copper alloy	Copper alloy
Contact surface material	Au	Au	Au	Au
Temperature data				
Ambient temperature range	[°C] -40 ... 70	-25 ... 60	-25 ... 60	-40 ... 70
General data				
Connection method	-	-	-	-
Stripping length	[mm] -	-	-	-
Number of positions	8	8	8	8
Contact numbering	1 - 8	1 - 8	1 - 8	1 - 8
Insulation resistance	[GΩ] -	-	-	-
Contact resistance	[mΩ] -	-	-	-
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

Ordering data																																																
Description	Pos.	Number	Slots	Type	Order No.		Pcs./ Pkt.	Dimensions (in mm)																																								
					Female	Male																																										
RJ45 gender changer	8	1 - 8	1	RJ45, CAT6 _A , 10 Gbps ① HC-M-RJ45-08-GC-...	1419886		1	 1 module slot																																								
RJ45 male insert	8	1 - 8	1	RJ45, CAT6 _A , 10 Gbps ② HC-M-RJ45-08-....		1419887	1																																									
RJ45 adapter	8	1 - 8	1	for RJ45 patch cable ③ HC-M-RJ45-AD-PC-...		1419885	1	 2 module slots																																								
RJ45 adapter	8	1 - 8	1	for RJ industrial inserts ④ HC-M-RJI-AD-PC-...		1419888	1																																									
RJ45 patch cable Length: 1 m				CAT6 _A CAT6 CAT5e NBC-R4AC1/1,0-94G/R4AC1-BU FL CAT6 PATCH 1,0 FL CAT5 PATCH 1,0		1413160 2891385 2832276	1 10 10	<table><tr><th></th><th>a</th><th>b</th><th>c</th><th>d</th></tr><tr><td>① Female</td><td></td><td></td><td>36.7</td><td></td></tr><tr><td>② Female</td><td></td><td></td><td></td><td></td></tr><tr><td>② Male</td><td></td><td></td><td>41</td><td></td></tr><tr><td>③ Female</td><td></td><td></td><td></td><td></td></tr><tr><td>③ Male</td><td></td><td></td><td>50.7</td><td></td></tr><tr><td>④ Female</td><td></td><td></td><td></td><td></td></tr><tr><td>④ Male</td><td></td><td></td><td>54.5</td><td></td></tr></table>		a	b	c	d	① Female			36.7		② Female					② Male			41		③ Female					③ Male			50.7		④ Female					④ Male			54.5	
	a	b	c	d																																												
① Female			36.7																																													
② Female																																																
② Male			41																																													
③ Female																																																
③ Male			50.7																																													
④ Female																																																
④ Male			54.5																																													
RJ45 connector, IP20, CAT5e				Cross section mm ² / AWG 0.14 - 0.25 / 26 - 24 0.23 - 0.32 / 23 - 22 CUC-INI-C1ZNI-S/R4IE8 CUC-INI-C1ZNI-S/R4IP8		1421608 1421129	1 1																																									

Accessories



Module carrier frames
From page 594



RJ45 patch cables
From page 721



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts, pneumatic modules

Connection technology:

- Pneumatic contact with valve
- Pneumatic contact without valve

Guide pins and guide sockets are mandatory for the HC-M-02-PN-M-... and HC-M-03-PN-M-... modules; see page 657.

To determine the corresponding housing, see the system cross-reference list on page 502.

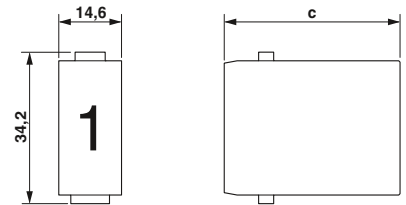
Notes:

For accessories, see from page 654

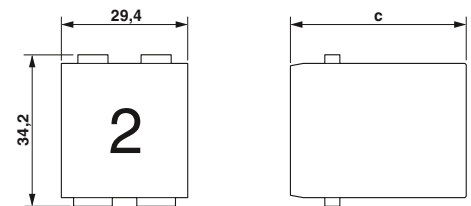


Type	Technical data					
	① HC-M-02-PN-M-...	② HC-M-PN2-6,00-...-V With valve	③ HC-M-PN2-6,00-... Without valve	④ HC-M-03-PN-M-...	⑤ ⑥ ⑦ HC-M-PN3-1,60-BU-V With valve	⑧ ⑨ ⑩ HC-M-PN3-1,60-... Without valve
Approvals	CE ENEC 94	ENEC	ENEC	CE ENEC 94	ENEC	ENEC
Material data for pneumatic module						
Contact carrier material	PC	-	-	PC	-	-
Inflammability class in acc. with UL 94	V0	-	-	V0	-	-
Module slots	1	-	-	1	-	-
Material data for pneumatic contact						
Contact material	-	Delrin acetal	Delrin acetal	-	Delrin acetal	Delrin acetal
Seal material (contact)	-	Buna-N	Buna-N	-	Buna-N	Buna-N
Valve material (contact)	-	Polypropylene	Polypropylene	-	Polypropylene	Polypropylene
Mechanical data						
Number of positions	2	-	-	3	-	-
Contact numbering	1 - 2	-	-	1 - 3	-	-
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500	≥ 500
Internal diameter of pressure hose connection	6 mm	6 mm	6 mm	1.6 mm	1.6 mm	1.6 mm
Operating pressure	-	8.00 bar	8.00 bar	-	8.00 bar	8.00 bar
Ambient conditions						
Ambient temperature range	°C -40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80

				Ordering data			Dimensions (in mm)
Description	Pos.	Number	Slots	Type	Female	Male	
PN2 pneumatic module	2	1 - 2	1	① HC-M-02-PN-M-...	1417434	1417434	5
							
PN2 pneumatic contact				With valve ② HC-M-PN2-6,00-...-V	1676776		10
							
PN2 pneumatic contact				Without valve ③ HC-M-PN2-6,00-...	1676763	1676750	10
							
PN3 pneumatic module	3	1 - 3	1	④ HC-M-03-PN-M-...	1417433	1417433	5
							
PN3 pneumatic contact				With valve ⑤ HC-M-PN3-1,60-BU-V	1663543		10
				With valve ⑥ HC-M-PN3-3,00-BU-V	1663556		10
				With valve ⑦ HC-M-PN3-4,00-BU-V	1663569		10
PN3 pneumatic contact				Without valve ⑧ HC-M-PN3-1,60-...	1663514	1663488	10
				Without valve ⑨ HC-M-PN3-3,00-...	1663527	1663491	10
				Without valve ⑩ HC-M-PN3-4,00-...	1663530	1663501	10



1 module slot



2 module slots

	a	b	c	d
① Female				
① Male			27.2	
④ Female				
④ Male			27.2	

Accessories



Module carrier frames
From page 594



Dummy modules
From page 594

Heavy-duty connectors

HEAVYCON B – contact inserts

Modular contact inserts, module carrier frames

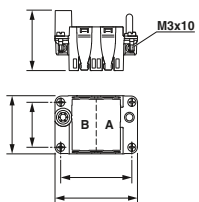
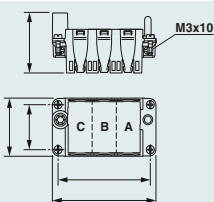
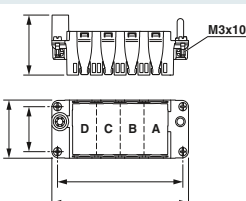
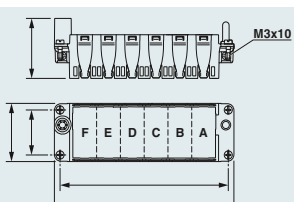
General data		Technical data
Module carrier frame material		Die-cast zinc alloy
Connection cross section		4 mm ² ... 6 mm ² (for PE conductor – power side)
Connection cross section		1 mm ² ... 2.5 mm ² (for PE conductor – control side)
Connection cross section	AWG	12 ... 10 (for PE conductor – power side)
Connection cross section	AWG	18 ... 14 (for PE conductor – control side)
Insertion/withdrawal cycles		≥ 500
Ambient temperature (operation)		-40°C ... 125°C

Ordering data	

Description	Size	Type	Order No.	Pcs./Pkt.
Module carrier frame ¹⁾ 	B6	For sleeve housing (A, B, C, etc.) HC-M-B06-MFH-H	1182087	1
	B6	For panel mounting base (a, b, c, etc.) HC-M-B06-MFH-B	1182085	1
Module carrier frame ¹⁾ 	B10	For sleeve housing (A, B, C, etc.) HC-M-B10-MFH-H	1182089	1
	B10	For panel mounting base (a, b, c, etc.) HC-M-B10-MFH-B	1182088	1
Module carrier frame ¹⁾ 	B16	For sleeve housing (A, B, C, etc.) HC-M-B16-MFH-H	1182093	1
	B16	For panel mounting base (a, b, c, etc.) HC-M-B16-MFH-B	1182090	1
Module carrier frame ¹⁾ 	B24	For sleeve housing (A, B, C, etc.) HC-M-B24-MFH-H	1182095	1
	B24	For panel mounting base (a, b, c, etc.) HC-M-B24-MFH-B	1182094	1
Dummy module 		for unused slots HC-M-00	1414353	5

Notes:
For assembly instructions, see phoenixcontact.net/products
Wire end protection is necessary for conductor cross sections <2.5 mm ²
¹⁾ For rigid conductors and flexible wires with wire end protection



Dimensions





Accessories



Coding elements
From page 657



Dummy modules
From page 594

EVO M1 single-module housings, sleeve housings, panel mounting bases, contact insert modules

General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR, conductive
IP degree of protection	IP66
Ambient temperature (operation)	-40°C ... 125°C

Technical data



Ordering data

Description	Size	Type	Order No.	Pcs./Pkt.	Dimensions
EVO M1 sleeve housing	M1	For one modular contact insert HC-EVO-M1-HHFS-PLBK	1424436	1	
EVO M1 panel mounting base	M1	For one modular contact insert HC-EVO-M1-BWS-PLRBK	1424437	1	
PE contact insert module		1/2 module, female HC-1/2M-UT-F-6-PE 1/2 module, male HC-1/2M-UT-M-6-PE	1424438 1424439	1 1	
Thread adapter		HC-D-TA-M25-PLRBK HC-D-TA-PG16-PLR-BK	1411352 1411353	1 1	
Cable gland	Clamping area 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	

Accessories



EVO unlocking tools
From page 659



Cable glands
From page 686



Corrugated pipe adapters
see Catalog 3

Heavy-duty connectors

HEAVYCON B – housings

Size B6, plastic, ADVANCE PL sleeve housings with cable gland

General data

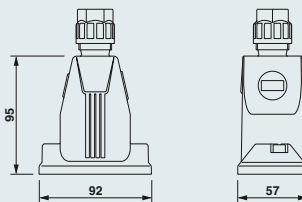
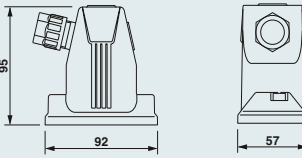
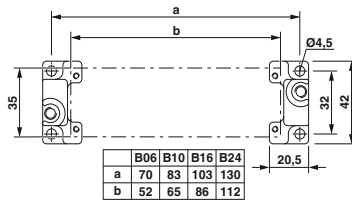
Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
Stainless steel
NBR
IP66 / IP67
12
-40°C ... 100°C



Ordering data

Description	Clamping area	Type	Order No.	Pcs./Pkt.	Dimensions															
Sleeve housing¹⁾ Height: 93.7 mm 	8 mm ... 13 mm 9 mm ... 17 mm	Cable outlet: top HC-ADV-B06-HHWH-1TGM20-PL HC-ADV-B06-HHWH-1TGM25-PL	1404222 1404225	1 1																
Sleeve housing¹⁾ Height: 93.7 mm 	8 mm ... 13 mm 9 mm ... 17 mm	Cable outlet: lateral HC-ADV-B06-HHWH-1SGM20-PL HC-ADV-B06-HHWH-1SGM25-PL	1404224 1404226	1 1																
Panel mounting flange 		2 pcs. per housing HC-B-AF Set with 2 panel mounting flanges HC-B-AF-SET	1686533 1604638	20 1	<table><tr><td></td><td>B06</td><td>B10</td><td>B16</td><td>B24</td></tr><tr><td>a</td><td>70</td><td>83</td><td>103</td><td>130</td></tr><tr><td>b</td><td>52</td><td>65</td><td>86</td><td>112</td></tr></table>		B06	B10	B16	B24	a	70	83	103	130	b	52	65	86	112
	B06	B10	B16	B24																
a	70	83	103	130																
b	52	65	86	112																
Protective cover Height: 31.2 mm 		for sleeve side, IP50 HC-B 6-TMS-SD-IP50 for panel mounting side, IP66 HC-B 6-TMS-SD-IP66	1690736 1411494	10 10																

Notes:

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ Screw locking with M6 Allen screws

Accessories



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products



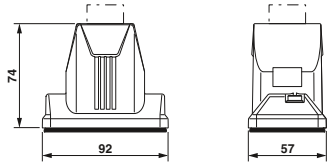
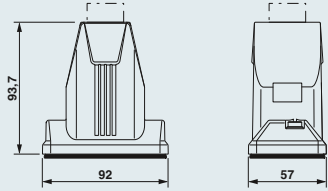
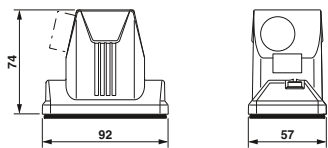
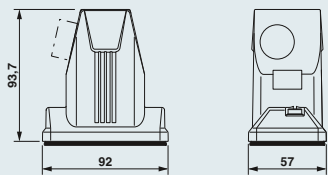
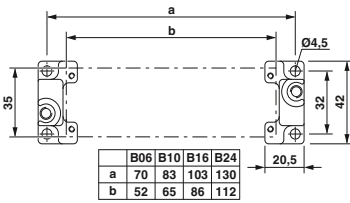
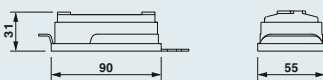
Corrugated pipe adapters
see Catalog 3

Size B6, metal, ADVANCE sleeve housings



Technical data	
General data	
Housing material	Die-cast aluminum, salt water resistant
Surface material	uncoated / powder coated, black
Lock material	Stainless steel
Sealing material	NBR, conductive / Viton
IP degree of protection (when plugged in)	IP66 / IP68 / IP69K
NEMA degree of protection (when plugged in)	4 / 4X / 12
Ambient temperature (operation)	-40°C ... 125°C

Ordering data	

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing, cable outlet: top¹) Height: 74 mm		Uncoated, EMC ready			
	1x M20	HC-ADV-B06-HLWH-1TTM20-EMC-AL	1413362	1	
	1x M25	HC-ADV-B06-HLWH-1TTM25-EMC-AL	1413364	1	
		Uncoated, EMC ready, without drill hole			
	1x M20	HC-ADV-B06-HLWH-BLANK-ELC-AL	1420048	1	
	1x M25	Powder-coated, black			
	1x M20	HC-ADV-B06-HLWH-1TTM20-MF-BK	1420904	1	
	1x M25	HC-ADV-B06-HLWH-1TTM25-MF-BK	1420905	1	
Sleeve housing, cable outlet: top¹) Height: 93.7 mm		Uncoated, EMC ready			
	1x M25	HC-ADV-B06-HHWH-1TTM25-EMC-AL	1413374	1	
	1x M32	HC-ADV-B06-HHWH-1TTM32-EMC-AL	1413376	1	
		Uncoated, EMC ready, without drill hole			
	1x M25	HC-ADV-B06-HHWH-BLANK-ELC-AL	1420050	1	
	1x M32	Powder-coated, black			
		HC-ADV-B06-HHWH-1TTM25-MF-BK	1420900	1	
		HC-ADV-B06-HHWH-1TTM32-MF-BK	1420901	1	
Sleeve housing, cable outlet: to the side¹) Height: 74 mm		Uncoated, EMC ready			
	1x M20	HC-ADV-B06-HLWH-1STM20-EMC-AL	1413363	1	
	1x M25	HC-ADV-B06-HLWH-1STM25-EMC-AL	1413365	1	
		Uncoated, EMC ready, without drill hole			
	1x M20	HC-ADV-B06-HLWH-BLANK-ELC-AL	1420048	1	
	1x M25	Powder-coated, black			
		HC-ADV-B06-HLWH-1STM20-MF-BK	1420902	1	
		HC-ADV-B06-HLWH-1STM25-MF-BK	1420903	1	
Sleeve housing, cable outlet: to the side¹) Height: 93.7 mm		Uncoated, EMC ready			
	1x M25	HC-ADV-B06-HHWH-1STM25-EMC-AL	1413375	1	
	1x M32	HC-ADV-B06-HHWH-1STM32-EMC-AL	1413377	1	
		Uncoated, EMC ready, without drill hole			
	1x M25	HC-ADV-B06-HHWH-BLANK-ELC-AL	1420050	1	
	1x M32	Powder-coated, black			
		HC-ADV-B06-HHWH-1STM25-MF-BK	1420898	1	
		HC-ADV-B06-HHWH-1STM32-MF-BK	1420899	1	
Panel mounting flange		2 pcs. per housing			
		HC-B-AF	1686533	20	
	Set with 2 panel mounting flanges				
		HC-B-AF-SET	1604638	1	
Protective cover Height: 31.2 mm		for sleeve side, IP50			
		HC-B 6-TMS-SD-IP50	1690736	10	
		for panel mounting side, IP66			
		HC-B 6-TMS-SD-IP66	1411494	10	

Notes:

In order to achieve optimum shielding results, the mounting surface must be conductive

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹) Screw locking with M6 Allen screws

Accessories



Cable glands
From page 686



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B6, plastic,
EVO housings,
single locking latch**

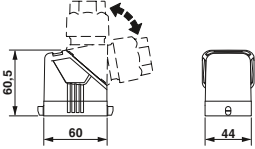
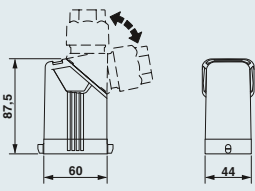
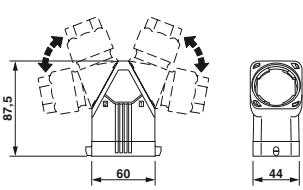
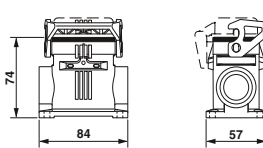
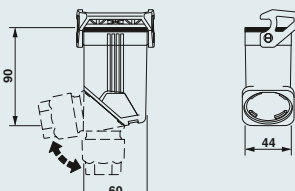
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60.5 mm 		HC-EVO-B06-HLFS-PLBK	1407619	1	
Sleeve housing Height: 87.5 mm 		HC-EVO-B06-HHFS-PLBK	1407620	1	
Double sleeve housing Height: 87.5 mm 		for single locking latch HC-EVO-B06-HHFS-2B-PL-BK	1420930	1	
Panel mounting base Height: 30.5 mm 		Without cover HC-EVO-B06-BWS-PLRBK With cover HC-EVO-B06-BWSC-PLRBK	1407621 1407622	1 1	
Box mounting base ¹⁾ Height: 74 mm 	2x M20 2x M25 2x M32 2x M20 2x M25 2x M32	Without cover HC-EVO-B06-SHWS-2SSM20-PLRBK HC-EVO-B06-SHWS-2SSM25-PLRBK HC-EVO-B06-SHWS-2SSM32-PLRBK With cover HC-EVO-B06-SHWS-2SSM20-PLRBK HC-EVO-B06-SHWS-2SSM25-PLRBK HC-EVO-B06-SHWS-2SSM32-PLRBK	1421322 1421229 1407623 1421329 1421244 1407624	1 1 1 1 1 1	
Coupling housing Height: 90 mm 		HC-EVO-B06-CHWS-PLRBK	1407625	1	

Notes:

For further accessories, see from page 658
Marking label: US-EMP (20X9) Order No. [0829439](#)
¹⁾ One cable entry is sealed with a knockout cover



Accessories



Cable glands
From page 658



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Connector sets
From page 646

**Size B6, metal,
EVO housings,
single locking latch**


General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60.5 mm		HC-EVO-B06-HLFS-EL-AL	1411448	1	
Sleeve housing Height: 80 mm		HC-EVO-B06-HHFS-EL-AL	1411447	1	
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B06-BWS-ELC-AL With cover HC-STA-B06-BWSC-ELC-AL	1411318 1411319	1 1	
Box mounting base¹⁾ Height: 54.6 mm	2x M20 2x M25 2x Pg16	Without cover HC-STA-B06-SLWS-2SSM20-ELC-AL HC-STA-B06-SLWS-2SSM25-ELC-AL HC-STA-B06-SLWS-2SSP16-ELC-AL With cover HC-STA-B06-SLWSC-2SSM20-ELC-AL HC-STA-B06-SLWSC-2SSM25-ELC-AL HC-STA-B06-SLWSC-2SSP16-ELC-AL	1412821 1412822 1412823 1412825 1412826 1412827	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 74.8 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B06-SHWS-2SSM25-ELC-AL HC-STA-B06-SHWS-2SSM32-ELC-AL HC-STA-B06-SHWS-2SSM40-ELC-AL With cover HC-STA-B06-SHWSC-2SSM25-ELC-AL HC-STA-B06-SHWSC-2SSM32-ELC-AL HC-STA-B06-SHWSC-2SSM40-ELC-AL	1082556 1082559 1082566 1082575 1082576 1082577	1 1 1 1 1 1	
Coupling housing Height: 73 mm	1x M20 1x M25 1x M32 1x Pg13.5 1x Pg21 1x Pg29	HC-STA-B06-CHWS-1TTM20-ELC-AL HC-STA-B06-CHWS-1TTM25-ELC-AL HC-STA-B06-CHWS-1TTM32-ELC-AL HC-STA-B06-CHWS-1TTP13-ELC-AL HC-STA-B06-CHWS-1TTP21-ELC-AL HC-STA-B06-CHWS-1TTP29-ELC-AL	1412555 1412556 1412557 1412558 1412559 1412560	1 1 1 1 1 1	

Notes:

For further accessories, see page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B6, metal, sleeve housings for single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 52 mm	1x M20 1x M25 1x Pg13.5 1x Pg16	Cable outlet: top HC-STA-B06-HLFS-1TTM20-EL-AL HC-STA-B06-HLFS-1TTM25-EL-AL HC-STA-B06-HLFS-1TTP13-EL-AL HC-STA-B06-HLFS-1TTP16-EL-AL without bore hole HC-STA-B06-HLFS-BLANK-EL-AL	1412574 1412575 1412576 1412577 1419900	1 1 1 1 1	
Sleeve housing Height: 72 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B06-HHFS-1TTM25-EL-AL HC-STA-B06-HHFS-1TTM32-EL-AL HC-STA-B06-HHFS-1TTP21-EL-AL HC-STA-B06-HHFS-1TTP29-EL-AL without bore hole HC-STA-B06-HHFS-BLANK-EL-AL	1412566 1412567 1412568 1412569 1419901	1 1 1 1 1	
Sleeve housing Height: 52 mm	1x M20 1x M25 1x Pg13.5 1x Pg16	Cable outlet: lateral HC-STA-B06-HLFS-1STM20-EL-AL HC-STA-B06-HLFS-1STM25-EL-AL HC-STA-B06-HLFS-1STP13-EL-AL HC-STA-B06-HLFS-1STP16-EL-AL without bore hole HC-STA-B06-HLFS-BLANK-EL-AL	1412570 1412571 1412572 1412573 1419900	1 1 1 1 1	
Sleeve housing Height: 72 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: lateral HC-STA-B06-HHFS-1STM25-EL-AL HC-STA-B06-HHFS-1STM32-EL-AL HC-STA-B06-HHFS-1STP21-EL-AL HC-STA-B06-HHFS-1STP29-EL-AL without bore hole HC-STA-B06-HHFS-BLANK-EL-AL	1412562 1412563 1412564 1412565 1419901	1 1 1 1 1	

Notes:

For further accessories, see from page 658
Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B6, metal, supporting base elements with single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B06-BWS-ELC-AL With cover HC-STA-B06-BWSC-ELC-AL	1411318 1411319	1 1	
Box mounting base¹⁾ Height: 54.6 mm	2x M20 2x M25 2x Pg16	Without cover HC-STA-B06-SLWS-2SSM20-ELC-AL HC-STA-B06-SLWS-2SSM25-ELC-AL HC-STA-B06-SLWS-2SSP16-ELC-AL With cover HC-STA-B06-SLWSC-2SSM20-ELC-AL HC-STA-B06-SLWSC-2SSM25-ELC-AL HC-STA-B06-SLWSC-2SSP16-ELC-AL	1412821 1412822 1412823 1412825 1412826 1412827	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 74.8 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B06-SHWS-2SSM25-ELC-AL HC-STA-B06-SHWS-2SSM32-ELC-AL HC-STA-B06-SHWS-2SSM40-ELC-AL With cover HC-STA-B06-SHWSC-2SSM25-ELC-AL HC-STA-B06-SHWSC-2SSM32-ELC-AL HC-STA-B06-SHWSC-2SSM40-ELC-AL	1082556 1082559 1082566 1082575 1082576 1082577	1 1 1 1 1 1	
Coupling housing Height: 73 mm	1x M20 1x M25 1x M32 1x Pg13.5 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B06-CHWS-1TTM20-ELC-AL HC-STA-B06-CHWS-1TTM25-ELC-AL HC-STA-B06-CHWS-1TTM32-ELC-AL HC-STA-B06-CHWS-1TTP13-ELC-AL HC-STA-B06-CHWS-1TTP21-ELC-AL HC-STA-B06-CHWS-1TTP29-ELC-AL	1412555 1412556 1412557 1412558 1412559 1412560	1 1 1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B10, plastic, ADVANCE PL sleeve housings with cable gland

General data

Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
Stainless steel
NBR
IP66 / IP67
12
-40°C ... 100°C

Ordering data

Description

Clamping area

Type

Order No.

Pcs./Pkt.

Dimensions

Sleeve housing¹⁾ Height: 95 mm

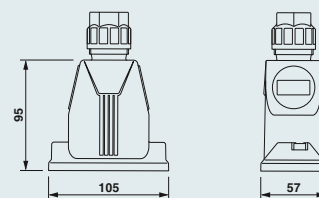


9 mm ... 17 mm
11 mm ... 21 mm

Cable outlet: top
HC-ADV-B10-HHWH-1TGM25-PL
HC-ADV-B10-HHWH-1TGM32-PL

1404227
1404229

1
1



Sleeve housing¹⁾ Height: 95 mm

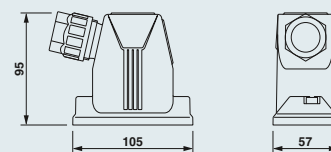


9 mm ... 17 mm
11 mm ... 21 mm

Cable outlet: lateral
HC-ADV-B10-HHWH-1SGM25-PL
HC-ADV-B10-HHWH-1SGM32-PL

1404228
1404230

1
1



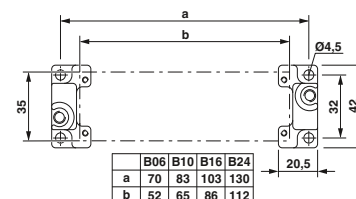
Panel mounting flange



2 pcs. per housing
HC-B-AF
Set with 2 panel mounting flanges
HC-B-AF-SET

1686533
1604638

20
1



Protective cover Height: 31.2 mm



for sleeve side, IP50
HC-B 10-TMS-SD-IP50
for panel mounting side, IP66
HC-B 10-TMS-SD-IP66

1690749
1411504

10
10



Notes:

Marking label: US-EMP (20X9) Order No. **0829439**

¹⁾ Screw locking with M6 Allen screws

Accessories



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products



Corrugated pipe adapters
see Catalog 3

Size B10, metal, ADVANCE sleeve housings



General data

Housing material
Surface material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
uncoated / powder coated, black
Stainless steel
NBR, conductive / Viton
IP66 / IP68 / IP69K
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing, cable outlet: top¹⁾ Height: 74 mm	1x M20 1x M25	Uncoated, EMC ready HC-ADV-B10-HLWH-1TTM20-EMC-AL HC-ADV-B10-HLWH-1TTM25-EMC-AL Uncoated, EMC ready, without drill hole HC-ADV-B10-HLWH-BLANK-ELC-AL Powder-coated, black HC-ADV-B10-HLWH-1TTM20-MF-BK HC-ADV-B10-HLWH-1TTM25-MF-BK	1413388 1413390 1420051 1420912 1420913	1 1 1 1 1	
Sleeve housing, cable outlet: top¹⁾ Height: 93.7 mm	1x M25 1x M32	Uncoated, EMC ready HC-ADV-B10-HHWH-1TTM25-EMC-AL HC-ADV-B10-HHWH-1TTM32-EMC-AL Uncoated, EMC ready, without drill hole HC-ADV-B10-HHWH-BLANK-ELC-AL Powder-coated, black HC-ADV-B10-HHWH-1TTM25-MF-BK HC-ADV-B10-HHWH-1TTM32-MF-BK	1413400 1413402 1420052 1420908 1420909	1 1 1 1 1	
Sleeve housing, cable outlet: to the side¹⁾ Height: 74 mm	1x M20 1x M25	Uncoated, EMC ready HC-ADV-B10-HLWH-1STM20-EMC-AL HC-ADV-B10-HLWH-1STM25-EMC-AL Uncoated, EMC ready, without drill hole HC-ADV-B10-HLWH-BLANK-ELC-AL Powder-coated, black HC-ADV-B10-HLWH-1STM20-MF-BK HC-ADV-B10-HLWH-1STM25-MF-BK	1413389 1413391 1420051 1420910 1420911	1 1 1 1 1	
Sleeve housing, cable outlet: to the side¹⁾ Height: 93.7 mm	1x M25 1x M32	Uncoated, EMC ready HC-ADV-B10-HHWH-1STM25-EMC-AL HC-ADV-B10-HHWH-1STM32-EMC-AL Uncoated, EMC ready, without drill hole HC-ADV-B10-HHWH-BLANK-ELC-AL Powder-coated, black HC-ADV-B10-HHWH-1STM25-MF-BK HC-ADV-B10-HHWH-1STM32-MF-BK	1413401 1413403 1420052 1420906 1420907	1 1 1 1 1	
Panel mounting flange		2 pcs. per housing HC-B-AF Set with 2 panel mounting flanges HC-B-AF-SET	1686533 1604638	20 1	
Protective cover Height: 31.2 mm		for sleeve side, IP50 HC-B 10-TMS-SD-IP50 for panel mounting side, IP66 HC-B 10-TMS-SD-IP66	1690749 1411504	10 10	

Notes:

In order to achieve optimum shielding results, the mounting surface must be conductive

Marking label: US-EMLP-HA (20X9), Order No. **0830989**

¹⁾ Screw locking with M6 Allen screws

Accessories



Screw connections
From page 686



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B10, plastic,
EVO housings,
single locking latch**

General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	12
Ambient temperature (operation)	-40°C ... 125°C

Technical data

Ordering data



Description	Thread

Sleeve housing
Height: 60.5 mm



Sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 74 mm



Coupling housing
Height: 90 mm



Cable gland



Clamping area

7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

Type	Order No.	Pcs./Pkt.

HC-EVO-B10-HLFS-PLBK

1407626

1

HC-EVO-B10-HHFS-PLBK

1407627

1

Without cover
HC-EVO-B10-BWS-PLRBK

1407632

1

With cover
HC-EVO-B10-BWSC-PLRBK

1407633

1

Without cover
HC-EVO-B10-SHWS-2SSM20-PLRBK

1421354

1

HC-EVO-B10-SHWS-2SSM25-PLRBK

1421277

1

HC-EVO-B10-SHWS-2SSM32-PLRBK

1407636

1

With cover
HC-EVO-B10-SHWSC-2SSM20-PLRBK

1421355

1

HC-EVO-B10-SHWSC-2SSM25-PLRBK

1421301

1

HC-EVO-B10-SHWSC-2SSM32-PLRBK

1407637

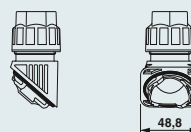
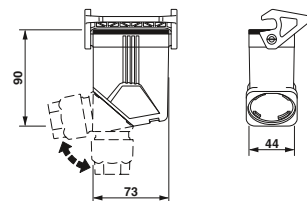
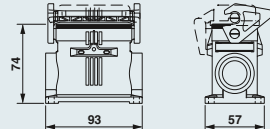
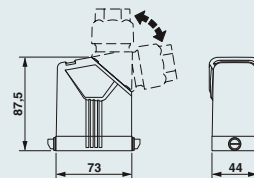
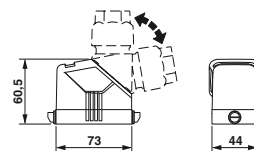
1

HC-EVO-B10-CHWS-PLRBK

1407640

1

Dimensions



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Connector sets
From page 646

**Size B10, metal,
EVO housings,
single locking latch**


General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 64 mm		HC-EVO-B10-HLFS-EL-AL	1411456	1	
Sleeve housing Height: 80 mm		HC-EVO-B10-HHFS-EL-AL	1411453	1	
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B10-BWS-ELC-AL With cover HC-STA-B10-BWSC-ELC-AL	1411320 1411321	1 1	
Box mounting base¹⁾ Height: 54.6 mm	2x M20 2x M25 2x Pg16	Without cover HC-STA-B10-SLWS-2SSM20-ELC-AL HC-STA-B10-SLWS-2SSM25-ELC-AL HC-STA-B10-SLWS-2SSP16-ELC-AL With cover HC-STA-B10-SLWSC-2SSM20-ELC-AL HC-STA-B10-SLWSC-2SSM25-ELC-AL HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412839 1412840 1412842 1412844 1412845 1412846	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 74.5 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B10-SHWS-2SSM25-ELC-AL HC-STA-B10-SHWS-2SSM32-ELC-AL HC-STA-B10-SHWS-2SSM40-ELC-AL With cover HC-STA-B10-SHWSC-2SSM25-ELC-AL HC-STA-B10-SHWSC-2SSM32-ELC-AL HC-STA-B10-SHWSC-2SSM40-ELC-AL	1082578 1082579 1082580 1082582 1082583 1082585	1 1 1 1 1 1	
Cable gland	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Thread adapters
From page 660



EMC cable glands
From page 660



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B10, metal, sleeve housings for single locking latch



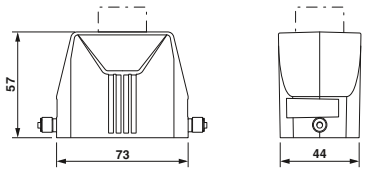
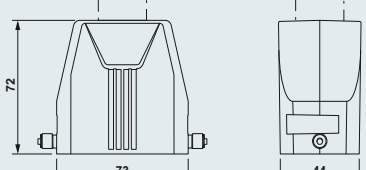
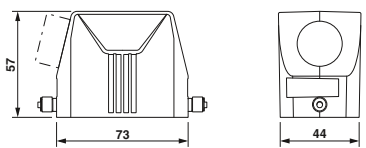
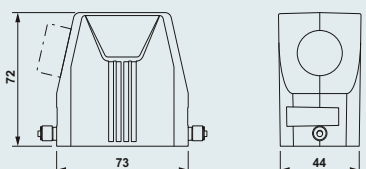
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 57 mm 	1x M20 1x M25 1x Pg16 1x Pg21	Cable outlet: top			
		HC-STA-B10-HLFS-1TTM20-EL-AL	1412629	1	
		HC-STA-B10-HLFS-1TTM25-EL-AL	1412630	1	
		HC-STA-B10-HLFS-1TTP16-EL-AL	1412631	1	
		HC-STA-B10-HLFS-1TTP21-EL-AL	1412632	1	
		without bore hole			
Sleeve housing Height: 72 mm 	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top			
		HC-STA-B10-HHFS-1TTM25-EL-AL	1412604	1	
		HC-STA-B10-HHFS-1TTM32-EL-AL	1412605	1	
		HC-STA-B10-HHFS-1TTP21-EL-AL	1412606	1	
		HC-STA-B10-HHFS-1TTP29-EL-AL	1412607	1	
		without bore hole			
Sleeve housing Height: 57 mm 	1x M20 1x M25 1x Pg16 1x Pg21	Cable outlet: lateral			
		HC-STA-B10-HLFS-1STM20-EL-AL	1412624	1	
		HC-STA-B10-HLFS-1STM25-EL-AL	1412625	1	
		HC-STA-B10-HLFS-1STP16-EL-AL	1412627	1	
		HC-STA-B10-HLFS-1STP21-EL-AL	1412628	1	
		without bore hole			
Sleeve housing Height: 72 mm 	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: lateral			
		HC-STA-B10-HHFS-1STM25-EL-AL	1412600	1	
		HC-STA-B10-HHFS-1STM32-EL-AL	1412601	1	
		HC-STA-B10-HHFS-1STP21-EL-AL	1412602	1	
		HC-STA-B10-HHFS-1STP29-EL-AL	1412603	1	
		without bore hole			
		HC-STA-B10-HHFS-BLANK-EL-AL	1419903	1	

Notes:

For further accessories, see from page 658
Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B10, metal, supporting base elements with single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B10-BWS-ELC-AL With cover HC-STA-B10-BWSC-ELC-AL	1411320 1411321	1 1	
Box mounting base¹⁾ Height: 54.6 mm	2x M20 2x M25 2x Pg16	Without cover HC-STA-B10-SLWS-2SSM20-ELC-AL HC-STA-B10-SLWS-2SSM25-ELC-AL HC-STA-B10-SLWS-2SSP16-ELC-AL With cover HC-STA-B10-SLWSC-2SSM20-ELC-AL HC-STA-B10-SLWSC-2SSM25-ELC-AL HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412839 1412840 1412842 1412844 1412845 1412846	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 74.5 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B10-SHWS-2SSM25-ELC-AL HC-STA-B10-SHWS-2SSM32-ELC-AL HC-STA-B10-SHWS-2SSM40-ELC-AL With cover HC-STA-B10-SHWSC-2SSM25-ELC-AL HC-STA-B10-SHWSC-2SSM32-ELC-AL HC-STA-B10-SHWSC-2SSM40-ELC-AL	1082578 1082579 1082580 1082582 1082583 1082585	1 1 1 1 1 1	
Coupling housing Height: 73 mm	1x M20 1x M25 1x M32 1x Pg16 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B10-CHWS-1TTM20-ELC-AL HC-STA-B10-CHWS-1TTM25-ELC-AL HC-STA-B10-CHWS-1TTM32-ELC-AL HC-STA-B10-CHWS-1TTP16-ELC-AL HC-STA-B10-CHWS-1TTP21-ELC-AL HC-STA-B10-CHWS-1TTP29-ELC-AL	1412584 1412585 1412586 1412587 1412588 1412589	1 1 1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B10, plastic,
EVO housings,
double locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 60.5 mm



Sleeve housing
Height: 87.5 mm



Double sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 74 mm



2x M20
2x M25
2x M32

Coupling housing
Height: 90 mm



Type Order No. Pcs./Pkt.

HC-EVO-B10-HLFD-PLBK

1407628

1

HC-EVO-B10-HHFD-PLBK

1407629

1

for double locking latch
HC-EVO-B10-HHFD-2B-PL-BK

1411495

1

Without cover
HC-EVO-B10-BWD-PLRBK

1407634

1

Without cover
HC-EVO-B10-SHWD-2SSM20-PLRBK
HC-EVO-B10-SHWD-2SSM25-PLRBK
HC-EVO-B10-SHWD-2SSM32-PLRBK

1421356

1421304

1407638

1

1

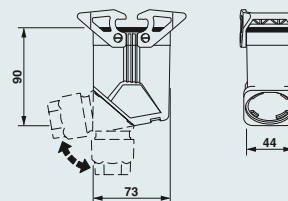
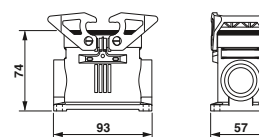
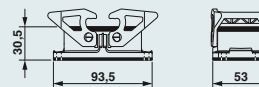
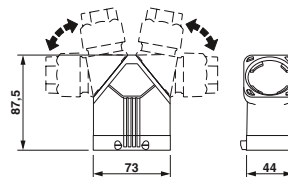
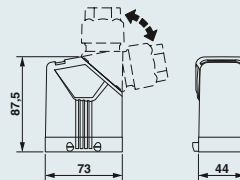
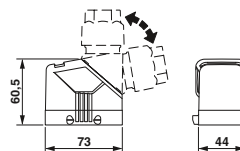
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HC-EVO-B10-CHWD-PLRBK

1407641

1

Dimensions



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](https://www.phoenixcontact.net/products)

For coupling housings, visit [phoenixcontact.net/products](https://www.phoenixcontact.net/products)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



Cable glands
From page 658



Thread adapters
From page 659



Replacement seals
[phoenixcontact.net/products](https://www.phoenixcontact.net/products)



Connector sets
From page 646

**Size B10, metal,
EVO housings,
double locking latch**

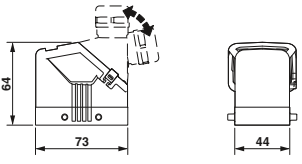
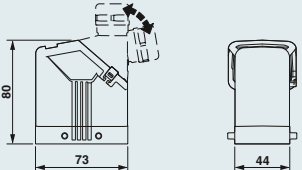
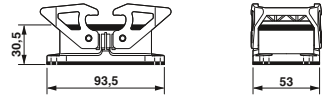
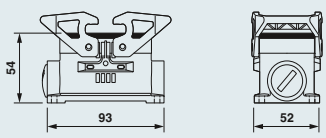
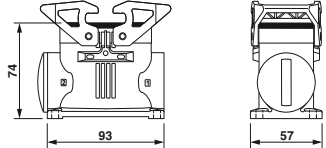
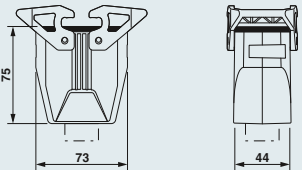

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 64 mm 		HC-EVO-B10-HLFD-EL-AL	1411455	1	
Sleeve housing Height: 80 mm 		HC-EVO-B10-HHFD-EL-AL	1411451	1	
Panel mounting base Height: 30.5 mm 		Without cover HC-STA-B10-BWD-ELC-AL	1411322	1	
Box mounting base¹⁾ Height: 54 mm 	2x M20 2x M25 2x Pg16	Without cover HC-STA-B10-SLWD-2SSM20-ELC-AL HC-STA-B10-SLWD-2SSM25-ELC-AL HC-STA-B10-SLWD-2SSP16-ELC-AL	1412835 1412836 1412837	1 1 1	
Box mounting base¹⁾ Height: 74.5 mm 	2x M25 2x M32 2x M40	Without cover HC-STA-B10-SHWD-2SSM25-ELC-AL HC-STA-B10-SHWD-2SSM32-ELC-AL HC-STA-B10-SHWD-2SSM40-ELC-AL	1082598 1082599 1083164	1 1 1	
Coupling housing Height: 73 mm 	1x M20 1x M25 1x M32 1x Pg16 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B10-CHWD-1TTM20-ELC-AL HC-STA-B10-CHWD-1TTM25-ELC-AL HC-STA-B10-CHWD-1TTM32-ELC-AL HC-STA-B10-CHWD-1TTP16-ELC-AL HC-STA-B10-CHWD-1TTP21-ELC-AL HC-STA-B10-CHWD-1TTP29-ELC-AL	1412578 1412579 1412580 1412581 1412582 1412583	1 1 1 1 1 1	

Notes:

For further accessories, see page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B10, metal, sleeve housings for double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 57 mm	1x M20 1x M25 1x Pg16 1x Pg21	Cable outlet: top HC-STA-B10-HLFD-1TTM20-EL-AL HC-STA-B10-HLFD-1TTM25-EL-AL HC-STA-B10-HLFD-1TTP16-EL-AL HC-STA-B10-HLFD-1TTP21-EL-AL without bore hole HC-STA-B10-HLFD-BLANK-EL-AL	1412620 1412621 1412622 1412623 1419972	1 1 1 1 1	
Sleeve housing Height: 72 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B10-HHFD-1TTM25-EL-AL HC-STA-B10-HHFD-1TTM32-EL-AL HC-STA-B10-HHFD-1TTP21-EL-AL HC-STA-B10-HHFD-1TTP29-EL-AL without bore hole HC-STA-B10-HHFD-BLANK-EL-AL	1412596 1412597 1412598 1412599 1419979	1 1 1 1 1	
Sleeve housing Height: 57 mm	1x M20 1x M25 1x Pg16 1x Pg21	Cable outlet: lateral HC-STA-B10-HLFD-1STM20-EL-AL HC-STA-B10-HLFD-1STM25-EL-AL HC-STA-B10-HLFD-1STP16-EL-AL HC-STA-B10-HLFD-1STP21-EL-AL without bore hole HC-STA-B10-HLFD-BLANK-EL-AL	1412616 1412617 1412618 1412619 1419972	1 1 1 1 1	
Sleeve housing Height: 72 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: lateral HC-STA-B10-HHFD-1STM25-EL-AL HC-STA-B10-HHFD-1STM32-EL-AL HC-STA-B10-HHFD-1STP21-EL-AL HC-STA-B10-HHFD-1STP29-EL-AL without bore hole HC-STA-B10-HHFD-BLANK-EL-AL	1412592 1412593 1412594 1412595 1419979	1 1 1 1 1	

Notes:

For further accessories, see from page 658
Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B10, metal, supporting base elements with double locking latch



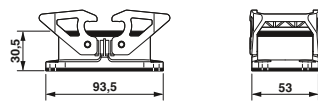
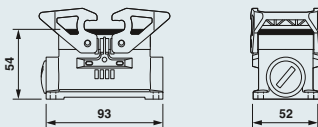
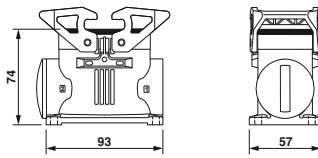
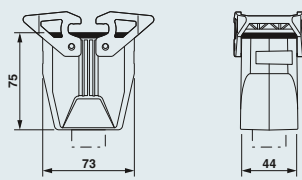
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm 		Without cover HC-STA-B10-BWD-ELC-AL	1411322	1	
Box mounting base¹⁾ Height: 54 mm 	2x M20 2x M25 2x Pg16	Without cover HC-STA-B10-SLWD-2SSM20-ELC-AL HC-STA-B10-SLWD-2SSM25-ELC-AL HC-STA-B10-SLWD-2SSP16-ELC-AL	1412835 1412836 1412837	1 1 1	
Box mounting base¹⁾ Height: 74.5 mm 	2x M25 2x M32 2x M40	Without cover HC-STA-B10-SHWD-2SSM25-ELC-AL HC-STA-B10-SHWD-2SSM32-ELC-AL HC-STA-B10-SHWD-2SSM40-ELC-AL	1082598 1082599 1083164	1 1 1	
Coupling housing Height: 73 mm 	1x M20 1x M25 1x M32 1x Pg16 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B10-CHWD-1TTM20-ELC-AL HC-STA-B10-CHWD-1TTM25-ELC-AL HC-STA-B10-CHWD-1TTM32-ELC-AL HC-STA-B10-CHWD-1TTP16-ELC-AL HC-STA-B10-CHWD-1TTP21-ELC-AL HC-STA-B10-CHWD-1TTP29-ELC-AL	1412578 1412579 1412580 1412581 1412582 1412583	1 1 1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B10, plastic,
EVO housings,
double locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 60.5 mm



Sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 74 mm



2x M20
2x M25
2x M32

Type

HC-EVO-B10-HLWD-PLBK

HC-EVO-B10-HHWD-PLBK

With cover
HC-EVO-B10-BFDC-PLRBK

With cover
HC-EVO-B10-SHFDC-2SSM20-PLRBK
HC-EVO-B10-SHFDC-2SSM25-PLRBK
HC-EVO-B10-SHFDC-2SSM32-PLRBK

Order No.

1407630

1407631

1407635

1421362

1421320

1407639

Pcs./Pkt.

1

1

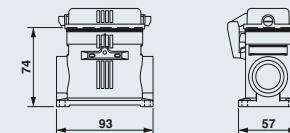
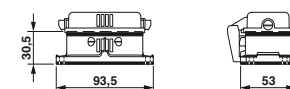
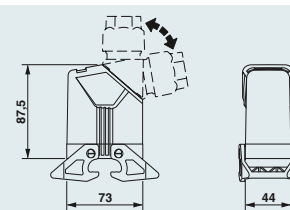
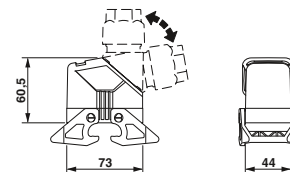
1

1

1

1

Dimensions



74

93

57

Cable gland



Clamping area

7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

HC-B-G-M20-PLRBK
HC-B-G-M25-PLRBK
HC-B-G-M32-PLRBK
HC-B-G-M40-PLRBK

1407669

1407670

1407671

1407672

1

1

1

1



48,8

Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. 0829439

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

**Size B10, metal,
EVO housings,
double locking latch**

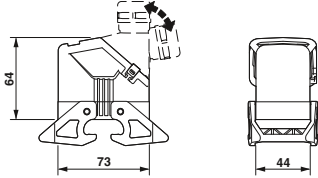
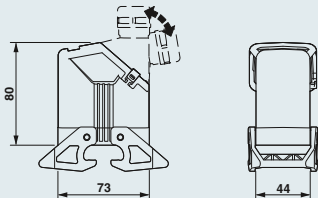
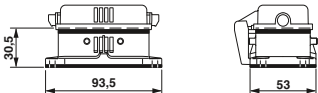
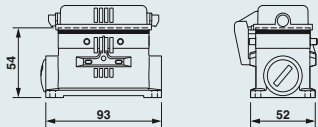
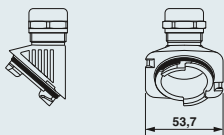

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 64 mm 		HC-EVO-B10-HLWD-EL-AL	1411457	1	
Sleeve housing Height: 80 mm 		HC-EVO-B10-HHWD-EL-AL	1411454	1	
Panel mounting base Height: 30.5 mm 		With cover HC-STA-B10-BFDC-ELC-AL	1411323	1	
Box mounting base¹⁾ Height: 54 mm 	2x M20 2x M25 2x Pg16	With cover HC-STA-B10-SLFDC-2SSM20-ELC-AL HC-STA-B10-SLFDC-2SSM25-ELC-AL HC-STA-B10-SLFDC-2SSP16-ELC-AL	1412830 1412831 1412832	1 1 1	
Cable gland 	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Thread adapters
From page 660



EMC cable glands
From page 660



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B10, metal, sleeve housings with double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 57 mm



1x M20
1x M25
1x Pg16
1x Pg21

Type

Cable outlet: top
HC-STA-B10-HLWD-1TTM20-EL-AL
HC-STA-B10-HLWD-1TTM25-EL-AL
HC-STA-B10-HLWD-1TTP16-EL-AL
HC-STA-B10-HLWD-1TTP21-EL-AL
without bore hole
HC-STA-B10-HLWD-BLANK-EL-AL

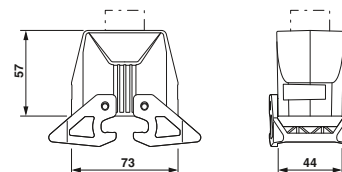
Order No.

1412637
1412638
1412639
1412640
1420034

Pcs./Pkt.

1
1
1
1
1

Dimensions



Sleeve housing
Height: 72 mm



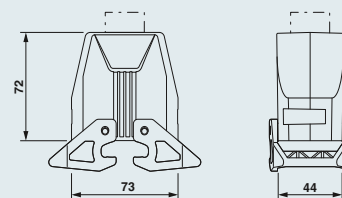
1x M25
1x M32
1x Pg21
1x Pg29

Type

Cable outlet: top
HC-STA-B10-HHWD-1TTM25-EL-AL
HC-STA-B10-HHWD-1TTM32-EL-AL
HC-STA-B10-HHWD-1TTP21-EL-AL
HC-STA-B10-HHWD-1TTP29-EL-AL
without bore hole
HC-STA-B10-HHWD-BLANK-EL-AL

1412612
1412613
1412614
1412615
1420035

1
1
1
1
1



Sleeve housing
Height: 57 mm



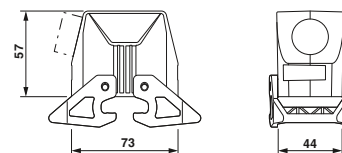
1x M20
1x M25
1x Pg16
1x Pg21

Type

Cable outlet: lateral
HC-STA-B10-HLWD-1STM20-EL-AL
HC-STA-B10-HLWD-1STM25-EL-AL
HC-STA-B10-HLWD-1STP16-EL-AL
HC-STA-B10-HLWD-1STP21-EL-AL
without bore hole
HC-STA-B10-HLWD-BLANK-EL-AL

1412633
1412634
1412635
1412636
1420034

1
1
1
1
1



Sleeve housing
Height: 72 mm



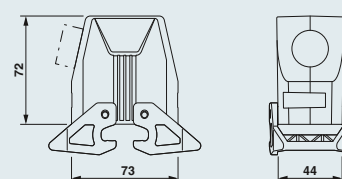
1x M25
1x M32
1x Pg21
1x Pg29

Type

Cable outlet: lateral
HC-STA-B10-HHWD-1STM25-EL-AL
HC-STA-B10-HHWD-1STM32-EL-AL
HC-STA-B10-HHWD-1STP21-EL-AL
HC-STA-B10-HHWD-1STP29-EL-AL
without bore hole
HC-STA-B10-HHWD-BLANK-EL-AL

1412608
1412609
1412610
1412611
1420035

1
1
1
1
1



Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Replacement latches
phoenixcontact.net/products

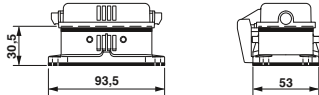
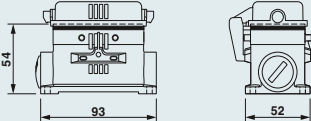


Protective covers
From page 654

Technical data



Dimensions

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm 		With cover HC-STA-B10-BFDC-ELC-AL	1411323	1	
Box mounting base¹) Height: 54 mm 	2x M20 2x M25 2x Pg16	With cover HC-STA-B10-SLFDC-2SSM20-ELC-AL HC-STA-B10-SLFDC-2SSM25-ELC-AL HC-STA-B10-SLFDC-2SSP16-ELC-AL	1412830 1412831 1412832	1 1 1	

Accessories



Cover plates
From page 664

Heavy-duty connectors

HEAVYCON B – housings

Size B16, plastic, ADVANCE PL sleeve housings with cable gland

General data

Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
Stainless steel
NBR
IP66 / IP67
12
-40°C ... 100°C

Ordering data

Description

Clamping area

Type

Order No.

Pcs./Pkt.

Dimensions

Sleeve housing¹⁾ Height: 95 mm

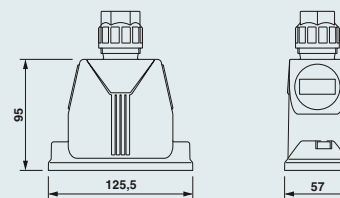


11 mm ... 21 mm
19 mm ... 28 mm

Cable outlet: top
HC-ADV-B16-HHWH-1TGM32-PL
HC-ADV-B16-HHWH-1TGM40-PL

1404231
1404233

1
1



Sleeve housing¹⁾ Height: 95 mm

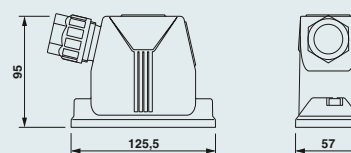


11 mm ... 21 mm
19 mm ... 28 mm

Cable outlet: lateral
HC-ADV-B16-HHWH-1SGM32-PL
HC-ADV-B16-HHWH-1SGM40-PL

1404232
1404234

1
1



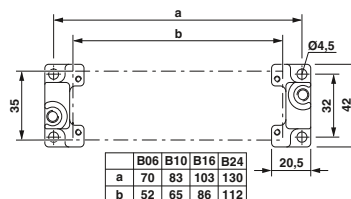
Panel mounting flange



2 pcs. per housing
HC-B-AF
Set with 2 panel mounting flanges
HC-B-AF-SET

1686533
1604638

20
1



Protective cover Height: 31.2 mm



for sleeve side, IP50
HC-B 16-TMS-SD-IP50
for panel mounting side, IP66
HC-B 16-TMS-SD-IP66

1690752
1411517

10
10



Notes:

Marking label: US-EMP (20X9) Order No. **0829439**

¹⁾ Screw locking with M6 Allen screws

Accessories



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products



Corrugated pipe adapters
see Catalog 3

Size B16, metal,
ADVANCE sleeve housings

General data

Housing material
Surface material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Uncoated / powder coated, black
Stainless steel
NBR, conductive / Viton
IP66 / IP68 / IP69K
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing¹⁾ Height: 74 mm	1x M25	Uncoated, EMC ready HC-ADV-B16-HLWH-1TTM25-EMC-AL	1414975	1	
	1x M25	Uncoated, EMC ready, without drill hole HC-ADV-B16-HLWH-BLANK-ELC-AL	1420053	1	
	1x M25	Powder-coated, black HC-ADV-B16-HLWH-1TTM25-MF-BK	1420921	1	
Sleeve housing¹⁾ Height: 93.7 mm	1x M25 1x M32 1x M40	Uncoated, EMC ready HC-ADV-B16-HHWH-1TTM25-EMC-AL	1414977	1	
	1x M32	Uncoated, EMC ready, without drill hole HC-ADV-B16-HHWH-1TTM32-EMC-AL	1413416	1	
	1x M40	Uncoated, EMC ready, without drill hole HC-ADV-B16-HHWH-1TTM40-EMC-AL	1413418	1	
	1x M25	Powder-coated, black HC-ADV-B16-HHWH-BLANK-ELC-AL	1420054	1	
	1x M32	Powder-coated, black HC-ADV-B16-HHWH-1TTM25-MF-BK	1420917	1	
	1x M40	Powder-coated, black HC-ADV-B16-HHWH-1TTM32-MF-BK	1420918	1	
		Powder-coated, black HC-ADV-B16-HHWH-1TTM40-MF-BK	1420919	1	
Sleeve housing¹⁾ Height: 74 mm	1x M25	Uncoated, EMC ready HC-ADV-B16-HLWH-1STM25-EMC-AL	1414976	1	
	1x M25	Uncoated, EMC ready, without drill hole HC-ADV-B16-HLWH-BLANK-ELC-AL	1420053	1	
	1x M25	Powder-coated, black HC-ADV-B16-HLWH-1STM25-MF-BK	1420920	1	
Sleeve housing¹⁾ Height: 93.7 mm	1x M25 1x M32 1x M40	Uncoated, EMC ready HC-ADV-B16-HHWH-1STM25-EMC-AL	1414978	1	
	1x M32	Uncoated, EMC ready, without drill hole HC-ADV-B16-HHWH-1STM32-EMC-AL	1413417	1	
	1x M40	Uncoated, EMC ready, without drill hole HC-ADV-B16-HHWH-1STM40-EMC-AL	1413419	1	
	1x M25	Powder-coated, black HC-ADV-B16-HHWH-BLANK-ELC-AL	1420054	1	
	1x M32	Powder-coated, black HC-ADV-B16-HHWH-1STM25-MF-BK	1420914	1	
	1x M40	Powder-coated, black HC-ADV-B16-HHWH-1STM32-MF-BK	1420915	1	
		Powder-coated, black HC-ADV-B16-HHWH-1STM40-MF-BK	1420916	1	
Panel mounting flange		2 pcs. per housing HC-B-AF	1686533	20	
		Set with 2 panel mounting flanges HC-B-AF-SET	1604638	1	
Protective cover Height: 31.2 mm		for sleeve side, IP50 HC-B 16-TMS-SD-IP50	1690752	10	
		for panel mounting side, IP66 HC-B 16-TMS-SD-IP66	1411517	10	

Notes:

In order to achieve optimum shielding results, the mounting surface must be conductive

Marking label: US-EMLP-HA (20X9), Order No. **0830989**

¹⁾ Screw locking with M6 Allen screws

Accessories



Cable glands
From page 686



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B16, plastic,
EVO housings,
single locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description

Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 78 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



Coupling housing
Height: 81 mm



Cable gland



Clamping area

7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

Type

HC-EVO-B16-HLFS-PLBK

Order No.

1420931

Pcs./Pkt.

1

HC-EVO-B16-HHFS-PLBK

1407642

1

Without cover

HC-EVO-B16-BWS-PLRBK

1407646

1

With cover

HC-EVO-B16-BWSC-PLRBK

1407647

1

Without cover

HC-EVO-B16-SHWS-2SSM25-PLRBK

1421381

1

HC-EVO-B16-SHWS-2SSM32-PLRBK

1421363

1

HC-EVO-B16-SHWS-2SSM40-PLRBK

1407650

1

With cover

HC-EVO-B16-SHWSC-2SSM25-PLRBK

1421382

1

HC-EVO-B16-SHWSC-2SSM32-PLRBK

1421364

1

HC-EVO-B16-SHWSC-2SSM40-PLRBK

1407651

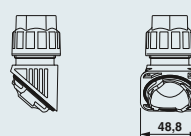
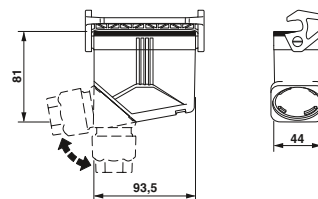
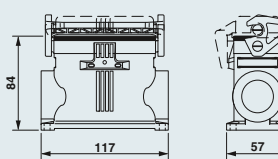
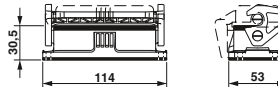
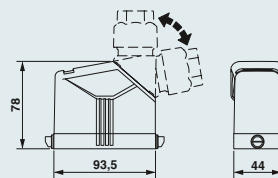
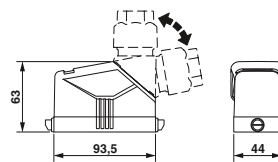
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HC-EVO-B16-CHWS-PLRBK

1407654

1

Dimensions



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Connector sets
From page 646

**Size B16, metal,
EVO housings,
single locking latch**

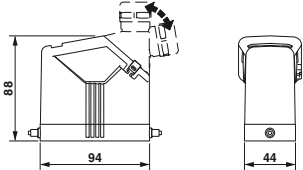
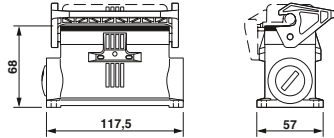
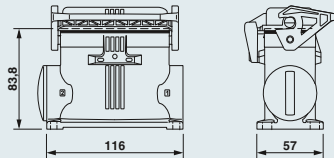
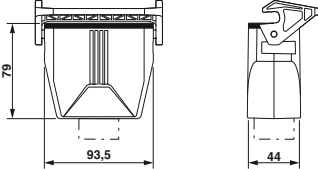
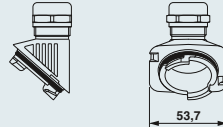

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm 		HC-EVO-B16-HHFS-EL-AL	1411461	1	
Panel mounting base Height: 30.5 mm 		Without cover HC-STA-B16-BWS-ELC-AL With cover HC-STA-B16-BWSC-ELC-AL	1411324 1411325	1 1	
Box mounting base¹⁾ Height: 68 mm 	2x M25 2x M32 2x Pg21	Without cover HC-STA-B16-SLWS-2SSM25-ELC-AL HC-STA-B16-SLWS-2SSM32-ELC-AL HC-STA-B16-SLWS-2SSP21-ELC-AL With cover HC-STA-B16-SLWSC-2SSM25-ELC-AL HC-STA-B16-SLWSC-2SSM32-ELC-AL HC-STA-B16-SLWSC-2SSP21-ELC-AL	1412861 1412862 1412863 1412865 1412866 1412867	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 84.7 mm 	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B16-SHWS-2SSM25-ELC-AL HC-STA-B16-SHWS-2SSM32-ELC-AL HC-STA-B16-SHWS-2SSM40-ELC-AL With cover HC-STA-B16-SHWSC-2SSM25-ELC-AL HC-STA-B16-SHWSC-2SSM32-ELC-AL HC-STA-B16-SHWSC-2SSM40-ELC-AL	1082586 1082587 1082588 1082589 1082590 1082591	1 1 1 1 1 1	
Coupling housing Height: 79 mm 	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-CHWS-1TTM25-ELC-AL HC-STA-B16-CHWS-1TTM32-ELC-AL HC-STA-B16-CHWS-1TTP21-ELC-AL HC-STA-B16-CHWS-1TTP29-ELC-AL	1412645 1412646 1412647 1412648	1 1 1 1	
Cable gland 	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



EMC cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B16, metal, sleeve housings for single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60 mm	1x M25 1x M32 1x Pg16 1x Pg21	Cable outlet: top HC-STA-B16-HLFS-1TTM25-EL-AL HC-STA-B16-HLFS-1TTM32-EL-AL HC-STA-B16-HLFS-1TTP16-EL-AL HC-STA-B16-HLFS-1TTP21-EL-AL without bore hole HC-STA-B16-HLFS-BLANK-EL-AL	1412729 1412730 1412731 1412732 1419905	1 1 1 1 1	
Sleeve housing Height: 76 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-HHFS-1TTM32-EL-AL HC-STA-B16-HHFS-1TTM40-EL-AL HC-STA-B16-HHFS-1TTP21-EL-AL HC-STA-B16-HHFS-1TTP29-EL-AL without bore hole HC-STA-B16-HHFS-BLANK-EL-AL	1412689 1412700 1412701 1412702 1419934	1 1 1 1 1	
Sleeve housing Height: 60 mm	1x M25 1x M32 1x Pg16 1x Pg21	Cable outlet: lateral HC-STA-B16-HLFS-1STM25-EL-AL HC-STA-B16-HLFS-1STM32-EL-AL HC-STA-B16-HLFS-1STP16-EL-AL HC-STA-B16-HLFS-1STP21-EL-AL without bore hole HC-STA-B16-HLFS-BLANK-EL-AL	1412725 1412726 1412727 1412728 1419905	1 1 1 1 1	
Sleeve housing Height: 76 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: lateral HC-STA-B16-HHFS-1STM32-EL-AL HC-STA-B16-HHFS-1STM40-EL-AL HC-STA-B16-HHFS-1STP21-EL-AL HC-STA-B16-HHFS-1STP29-EL-AL without bore hole HC-STA-B16-HHFS-BLANK-EL-AL	1412679 1412682 1412683 1412684 1419934	1 1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B16, metal, supporting base elements with single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B16-BWS-ELC-AL With cover HC-STA-B16-BWSC-ELC-AL	1411324 1411325	1 1	
Box mounting base¹⁾ Height: 68 mm	2x M25 2x M32 2x Pg21	Without cover HC-STA-B16-SLWS-2SSM25-ELC-AL HC-STA-B16-SLWS-2SSM32-ELC-AL HC-STA-B16-SLWS-2SSP21-ELC-AL With cover HC-STA-B16-SLWSC-2SSM25-ELC-AL HC-STA-B16-SLWSC-2SSM32-ELC-AL HC-STA-B16-SLWSC-2SSP21-ELC-AL	1412861 1412862 1412863 1412865 1412866 1412867	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 84.7 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B16-SHWS-2SSM25-ELC-AL HC-STA-B16-SHWS-2SSM32-ELC-AL HC-STA-B16-SHWS-2SSM40-ELC-AL With cover HC-STA-B16-SHWSC-2SSM25-ELC-AL HC-STA-B16-SHWSC-2SSM32-ELC-AL HC-STA-B16-SHWSC-2SSM40-ELC-AL	1082586 1082587 1082588 1082589 1082590 1082591	1 1 1 1 1 1	
Coupling housing Height: 79 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-CHWS-1TTM25-ELC-AL HC-STA-B16-CHWS-1TTM32-ELC-AL HC-STA-B16-CHWS-1TTP21-ELC-AL HC-STA-B16-CHWS-1TTP29-ELC-AL	1412645 1412646 1412647 1412648	1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B16, plastic,
EVO housings,
double locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 78 mm



Double sleeve housing
Height: 78 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



2x M25
2x M32
2x M40

Coupling housing
Height: 84 mm



Type Order No. Pcs./Pkt.

HC-EVO-B16-HLFD-PLBK

1420932

1

HC-EVO-B16-HHFD-PLBK

1407643

1

for double locking latch
HC-EVO-B16-HHFD-2B-PL-BK

1411496

1

Without cover
HC-EVO-B16-BWD-PLRBK

1407648

1

Without cover
HC-EVO-B16-SHWD-2SSM25-PLRBK
HC-EVO-B16-SHWD-2SSM32-PLRBK
HC-EVO-B16-SHWD-2SSM40-PLRBK

1421455

1421365

1407652

1

1

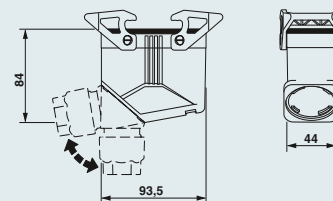
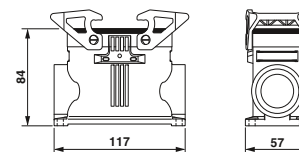
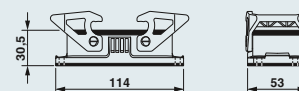
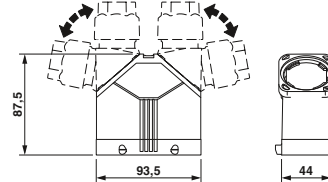
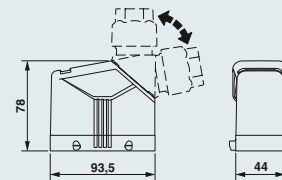
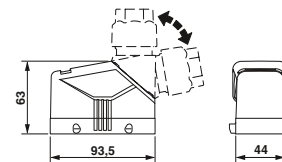
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HC-EVO-B16-CHWD-PLRBK

1407655

1

Dimensions



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](https://www.phoenixcontact.com/en/products/US-EMP-20X9)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



Cable glands
From page 658



Thread adapters
From page 659



Replacement seals
[phoenixcontact.net/products](https://www.phoenixcontact.net/products)



Connector sets
From page 646

**Size B16, metal,
EVO housings,
double locking latch**


General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Polyamide
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm		HC-EVO-B16-HHFD-EL-AL	1411460	1	
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B16-BWD-ELC-AL	1411327	1	
Box mounting base¹⁾ Height: 68 mm	2x M25 2x M32 2x Pg21	Without cover HC-STA-B16-SLWD-2SSM25-ELC-AL HC-STA-B16-SLWD-2SSM32-ELC-AL HC-STA-B16-SLWD-2SSP21-ELC-AL	1412855 1412856 1412857	1 1 1	
Box mounting base¹⁾ Height: 84.7 mm	2x M25 2x M32 2x M40	Without cover HC-STA-B16-SHWD-2SSM25-ELC-AL HC-STA-B16-SHWD-2SSM32-ELC-AL HC-STA-B16-SHWD-2SSM40-ELC-AL	1082600 1082601 1082602	1 1 1	
Coupling housing Height: 79 mm	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-CHWD-1TTM25-ELC-AL HC-STA-B16-CHWD-1TTM32-ELC-AL HC-STA-B16-CHWD-1TTP21-ELC-AL HC-STA-B16-CHWD-1TTP29-ELC-AL	1412641 1412642 1412643 1412644	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B16, metal, sleeve housings for double locking latch



new



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60 mm	1x M25 1x M32 1x Pg16 1x Pg21	Cable outlet: top HC-STA-B16-HLFD-1TTM25-EL-AL HC-STA-B16-HLFD-1TTM32-EL-AL HC-STA-B16-HLFD-1TTP16-EL-AL HC-STA-B16-HLFD-1TTP21-EL-AL without bore hole HC-STA-B16-HLFD-BLANK-EL-AL	1412721 1412722 1412723 1412724 1419999	1 1 1 1 1	
Sleeve housing Height: 76 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-HHFD-1TTM32-EL-AL HC-STA-B16-HHFD-1TTM40-EL-AL HC-STA-B16-HHFD-1TTP21-EL-AL HC-STA-B16-HHFD-1TTP29-EL-AL without bore hole HC-STA-B16-HHFD-BLANK-EL-AL	1412653 1412654 1412669 1412678 1420000	1 1 1 1 1	
Sleeve housing Height: 110.8 mm	1x M50	Cable outlet: top HC-STA-B16-HHFD-1TTM50-EL-AL	1082552	1	
Sleeve housing Height: 60 mm	1x M25 1x M32 1x Pg16 1x Pg21	Cable outlet: lateral HC-STA-B16-HLFD-1STM25-EL-AL HC-STA-B16-HLFD-1STM32-EL-AL HC-STA-B16-HLFD-1STP16-EL-AL HC-STA-B16-HLFD-1STP21-EL-AL without bore hole HC-STA-B16-HLFD-BLANK-EL-AL	1412717 1412718 1412719 1412720 1419999	1 1 1 1 1	
Sleeve housing Height: 76 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: lateral HC-STA-B16-HHFD-1STM32-EL-AL HC-STA-B16-HHFD-1STM40-EL-AL HC-STA-B16-HHFD-1STP21-EL-AL HC-STA-B16-HHFD-1STP29-EL-AL without bore hole HC-STA-B16-HHFD-BLANK-EL-AL	1412649 1412650 1412651 1412652 1420000	1 1 1 1 1	
Sleeve housing Height: 110.8 mm	1x M50	Cable outlet: lateral HC-STA-B16-HHFD-1STM50-EL-AL	1082551	1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B16, metal, supporting base elements with double locking latch



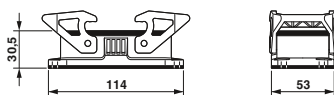
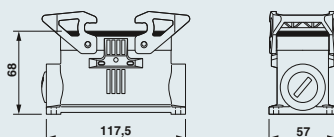
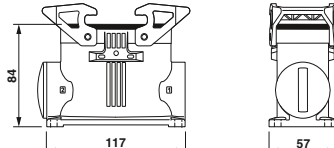
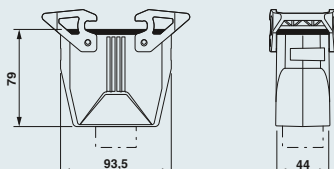
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm 		Without cover HC-STA-B16-BWD-ELC-AL	1411327	1	
Box mounting base¹⁾ Height: 68 mm 	2x M25 2x M32 2x Pg21	Without cover HC-STA-B16-SLWD-2SSM25-ELC-AL HC-STA-B16-SLWD-2SSM32-ELC-AL HC-STA-B16-SLWD-2SSP21-ELC-AL	1412855 1412856 1412857	1 1 1	
Box mounting base¹⁾ Height: 84.7 mm 	2x M25 2x M32 2x M40	Without cover HC-STA-B16-SHWD-2SSM25-ELC-AL HC-STA-B16-SHWD-2SSM32-ELC-AL HC-STA-B16-SHWD-2SSM40-ELC-AL	1082600 1082601 1082602	1 1 1	
Coupling housing Height: 79 mm 	1x M25 1x M32 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-CHWD-1TTM25-ELC-AL HC-STA-B16-CHWD-1TTM32-ELC-AL HC-STA-B16-CHWD-1TTP21-ELC-AL HC-STA-B16-CHWD-1TTP29-ELC-AL	1412641 1412642 1412643 1412644	1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B16, plastic, EVO housings, double locking latch

General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	12
Ambient temperature (operation)	-40°C ... 125°C

Technical data

Ordering data



Description	Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 78 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



2x M25
2x M32
2x M40

Type	Order No.	Pcs./Pkt.

HC-EVO-B16-HLWD-PLBK

1420933

1

HC-EVO-B16-HHWD-PLBK

1407644

1

With cover
HC-EVO-B16-BFDC-PLRBK

1407649

1

With cover
HC-EVO-B16-SHFDC-2SSM25-PLRBK
HC-EVO-B16-SHFDC-2SSM32-PLRBK
HC-EVO-B16-SHFDC-2SSM40-PLRBK

1421458

1421366

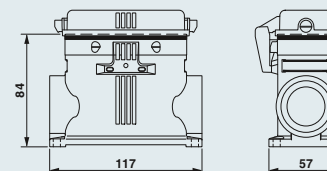
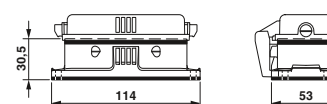
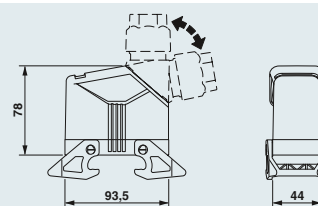
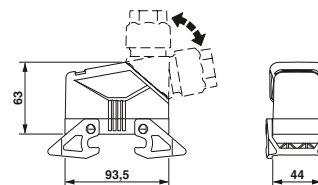
1407653

1

1

1

Dimensions



Cable gland



Clamping area

7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

HC-B-G-M20-PLRBK
HC-B-G-M25-PLRBK
HC-B-G-M32-PLRBK
HC-B-G-M40-PLRBK

1407669

1407670

1407671

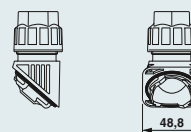
1407672

1

1

1

1



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Size B16, metal, EVO housings, double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm		HC-EVO-B16-HHWD-EL-AL	1411462	1	
Panel mounting base Height: 30.5 mm		With cover HC-STA-B16-BFDC-ELC-AL	1411328	1	
Box mounting base¹⁾ Height: 68 mm	2x M25 2x M32 2x Pg16 2x Pg21	With cover HC-STA-B16-SLFDC-2SSM25-ELC-AL HC-STA-B16-SLFDC-2SSM32-ELC-AL HC-STA-B16-SLFDC-2SSP16-ELC-AL HC-STA-B16-SLFDC-2SSP21-ELC-AL	1412849 1412850 1412852 1412853	1 1 1 1	
Cable gland	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Thread adapters
From page 660



EMC cable glands
From page 660



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B16, metal, sleeve housings with double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 60 mm



1x M25
1x M32
1x Pg16
1x Pg21

Type

Cable outlet: top
HC-STA-B16-HLWD-1TTM25-EL-AL
HC-STA-B16-HLWD-1TTM32-EL-AL
HC-STA-B16-HLWD-1TTP16-EL-AL
HC-STA-B16-HLWD-1TTP21-EL-AL
without bore hole
HC-STA-B16-HLWD-BLANK-EL-AL

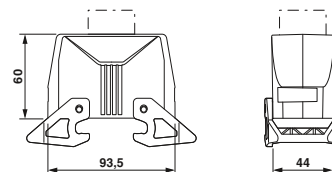
Order No.

1412738
1412739
1412740
1412741
1420036

Pcs./Pkt.

1
1
1
1
1

Dimensions



Sleeve housing
Height: 76 mm



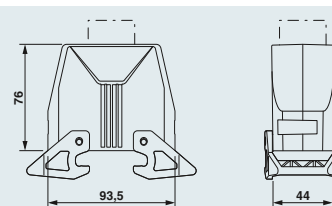
1x M32
1x M40
1x Pg21
1x Pg29

Type

Cable outlet: top
HC-STA-B16-HHWD-1TTM32-EL-AL
HC-STA-B16-HHWD-1TTM40-EL-AL
HC-STA-B16-HHWD-1TTP21-EL-AL
HC-STA-B16-HHWD-1TTP29-EL-AL
without bore hole
HC-STA-B16-HHWD-BLANK-EL-AL

1412708
1412709
1412715
1412716
1420044

1
1
1
1
1



Sleeve housing
Height: 60 mm



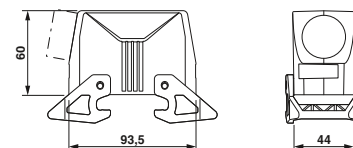
1x M25
1x M32
1x Pg16
1x Pg21

Type

Cable outlet: lateral
HC-STA-B16-HLWD-1STM25-EL-AL
HC-STA-B16-HLWD-1STM32-EL-AL
HC-STA-B16-HLWD-1STP16-EL-AL
HC-STA-B16-HLWD-1STP21-EL-AL
without bore hole
HC-STA-B16-HLWD-BLANK-EL-AL

1412733
1412734
1412735
1412737
1420036

1
1
1
1
1



Sleeve housing
Height: 76 mm



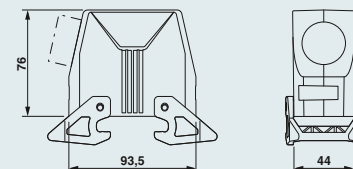
1x M32
1x M40
1x Pg21
1x Pg29

Type

Cable outlet: lateral
HC-STA-B16-HHWD-1STM32-EL-AL
HC-STA-B16-HHWD-1STM40-EL-AL
HC-STA-B16-HHWD-1STP21-EL-AL
HC-STA-B16-HHWD-1STP29-EL-AL
without bore hole
HC-STA-B16-HHWD-BLANK-EL-AL

1412703
1412704
1412705
1412706
1420044

1
1
1
1
1



Notes:

For further accessories, see from page 658
Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, plastic, ADVANCE sleeve housings with cable gland

General data

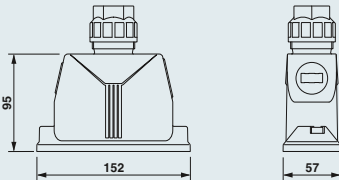
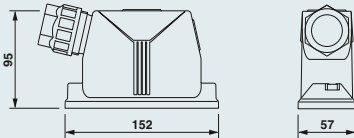
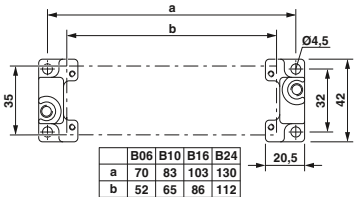
Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
Stainless steel
NBR
IP66 / IP67
12
-40°C ... 100°C



Ordering data

Description	Clamping area	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing¹⁾ Height: 95 mm 	11 mm ... 21 mm 19 mm ... 28 mm	Cable outlet: top HC-ADV-B24-HHWH-1TGM32-PL HC-ADV-B24-HHWH-1TGM40-PL	1404235 1404238	1 1	
Sleeve housing¹⁾ Height: 95 mm 	11 mm ... 21 mm 19 mm ... 28 mm	Cable outlet: lateral HC-ADV-B24-HHWH-1SGM32-PL HC-ADV-B24-HHWH-1SGM40-PL	1404237 1404239	1 1	
Panel mounting flange 		2 pcs. per housing HC-B-AF Set with 2 panel mounting flanges HC-B-AF-SET	1686533 1604638	20 1	
Protective cover Height: 31.2 mm 		for sleeve side, IP50 HC-B 24-TMS-SD-IP50 for panel mounting side, IP66 HC-B 24-TMS-SD-IP66	1690765 1411520	10 10	

Notes:

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ Screw locking with M6 Allen screws

Accessories



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products



Corrugated pipe adapters
see Catalog 3

Size B24, metal, ADVANCE sleeve housings



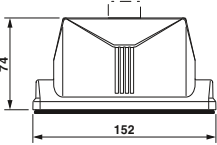
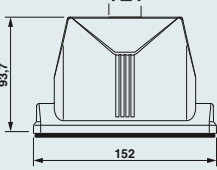
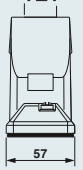
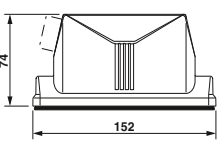
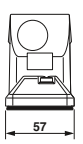
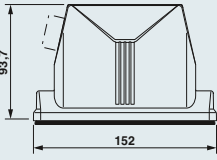
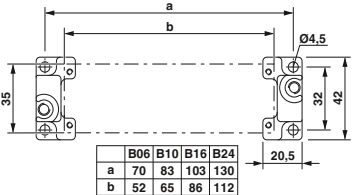
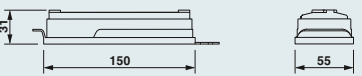
General data

Housing material
Surface material
Lock material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Uncoated / powder coated, black
Stainless steel
NBR, conductive / Viton
IP66 / IP68 / IP69K
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing¹⁾ Height: 74 mm					
	1x M25	Uncoated, EMC ready HC-ADV-B24-HLWH-1TTM25-EMC-AL Height: 74 mm	1414982	1	
	1x M25	HC-ADV-B24-HLWH-BLANK-ELC-AL Powder-coated, black	1420055	1	
		HC-ADV-B24-HLWH-1TTM25-MF-BK	1420929	1	
Sleeve housing¹⁾ Height: 93.7 mm					
	1x M25	Uncoated, EMC ready HC-ADV-B24-HHWH-1TTM25-EMC-AL	1414980	1	
	1x M32	HC-ADV-B24-HHWH-1TTM32-EMC-AL	1413430	1	
	1x M40	HC-ADV-B24-HHWH-1TTM40-EMC-AL	1413432	1	
		Uncoated, EMC ready, without drill hole HC-ADV-B24-HHWH-BLANK-ELC-AL	1420056	1	
	1x M25	HC-ADV-B24-HHWH-1TTM25-MF-BK	1420925	1	
	1x M32	HC-ADV-B24-HHWH-1TTM32-MF-BK	1420926	1	
	1x M40	HC-ADV-B24-HHWH-1TTM40-MF-BK	1420927	1	
Sleeve housing¹⁾ Height: 74 mm					
	1x M25	Uncoated, EMC ready HC-ADV-B24-HLWH-1STM25-EMC-AL Height: 74 mm	1414983	1	
	1x M25	HC-ADV-B24-HLWH-BLANK-ELC-AL Powder-coated, black	1420055	1	
		HC-ADV-B24-HLWH-1STM25-MF-BK	1420928	1	
Sleeve housing¹⁾ Height: 93.7 mm					
	1x M25	Uncoated, EMC ready HC-ADV-B24-HHWH-1STM25-EMC-AL	1414981	1	
	1x M32	HC-ADV-B24-HHWH-1STM32-EMC-AL	1413431	1	
	1x M40	HC-ADV-B24-HHWH-1STM40-EMC-AL	1413433	1	
		Uncoated, EMC ready, without drill hole HC-ADV-B24-HHWH-BLANK-ELC-AL	1420056	1	
	1x M25	HC-ADV-B24-HHWH-1STM25-MF-BK	1420922	1	
	1x M32	HC-ADV-B24-HHWH-1STM32-MF-BK	1420923	1	
	1x M40	HC-ADV-B24-HHWH-1STM40-MF-BK	1420924	1	
Panel mounting flange					
		2 pcs. per housing HC-B-AF Set with 2 panel mounting flanges HC-B-AF-SET	1686533	20	
			1604638	1	
Protective cover Height: 31.2 mm					
		for sleeve side, IP50 HC-B 24-TMS-SD-IP50 for panel mounting side, IP66 HC-B 24-TMS-SD-IP66	1690765	10	
			1411520	10	

Notes:

In order to achieve optimum shielding results, the mounting surface must be conductive

Marking label: US-EMLP-HA (20X9), Order No. **0830989**

¹⁾ Screw locking with M6 Allen screws

Accessories



Cable glands
From page 686



Allen keys
see Catalog 3



Replacement seals
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B24, plastic,
EVO housings,
single locking latch**

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



2x M25
2x M32
2x M40

2x M25
2x M32
2x M40

Coupling housing
Height: 90 mm



Cable gland



Clamping area
7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

Type Order No. Pcs./Pkt.

HC-EVO-B24-HLFS-PLBK

1420934

1

HC-EVO-B24-HHFS-PLBK

1407656

1

Without cover
HC-EVO-B24-BWS-PLRBK

1407659

1

With cover
HC-EVO-B24-BWSC-PLRBK

1407660

1

Without cover
HC-EVO-B24-SHWS-2SSM25-PLRBK
HC-EVO-B24-SHWS-2SSM32-PLRBK
HC-EVO-B24-SHWS-2SSM40-PLRBK

1421459

1

1421367

1

1407663

1

With cover
HC-EVO-B24-SHWS-2SSM25-PLRBK
HC-EVO-B24-SHWS-2SSM32-PLRBK
HC-EVO-B24-SHWS-2SSM40-PLRBK

1421460

1

1421369

1

1407664

1

HC-EVO-B24-CHWS-PLRBK

1407667

1

HC-B-G-M20-PLRBK
HC-B-G-M25-PLRBK
HC-B-G-M32-PLRBK
HC-B-G-M40-PLRBK

1407669

1

1407670

1

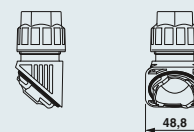
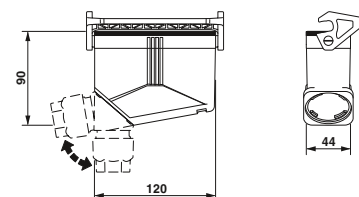
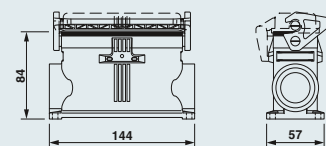
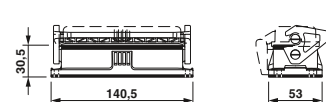
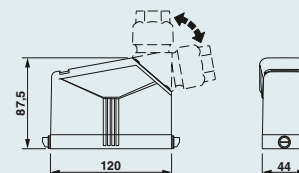
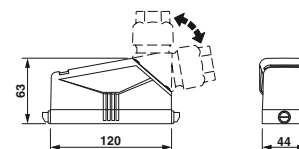
1407671

1

1407672

1

Dimensions



Notes:

For further accessories, see from page 658

Marking label: US-EMP (20X9) Order No. [0829439](#)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unlocking tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Connector sets
From page 646

Size B24, metal, EVO housings, single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Polyamide
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm		HC-EVO-B24-HHFS-EL-AL	1411473	1	
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B24-BWS-ELC-AL With cover HC-STA-B24-BWSC-ELC-AL	1411329 1411330	1 1	
Box mounting base¹) Height: 68 mm	2x M25 2x M32 2x Pg21	Without cover HC-STA-B24-SLWS-2SSM25-ELC-AL HC-STA-B24-SLWS-2SSM32-ELC-AL HC-STA-B24-SLWS-2SSP21-ELC-AL With cover HC-STA-B24-SLWSC-2SSM25-ELC-AL HC-STA-B24-SLWSC-2SSM32-ELC-AL HC-STA-B24-SLWSC-2SSP21-ELC-AL	1412877 1412878 1412879 1412881 1412882 1412883	1 1 1 1 1 1	
Box mounting base¹) Height: 84.7 mm	2x M32 2x M40 2x M25 2x M32 2x M40	Without cover HC-STA-B24-SHWS-2SSM32-ELC-AL HC-STA-B24-SHWS-2SSM40-ELC-AL With cover HC-STA-B24-SHWSC-2SSM25-ELC-AL HC-STA-B24-SHWSC-2SSM32-ELC-AL HC-STA-B24-SHWSC-2SSM40-ELC-AL	1082592 1082593 1082595 1082596 1082597	1 1 1 1 1	
Coupling housing Height: 79 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B24-CHWS-1TTM32-ELC-AL HC-STA-B24-CHWS-1TTM40-ELC-AL HC-STA-B24-CHWS-1TTP21-ELC-AL HC-STA-B24-CHWS-1TTP29-ELC-AL	1412746 1412747 1412748 1412749	1 1 1 1	
Cable gland	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹) Supplied with a plastic sealing cap

Accessories



EMC cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, metal, sleeve housings for single locking latch



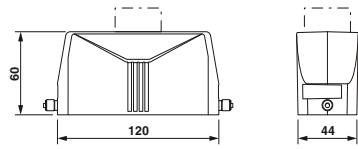
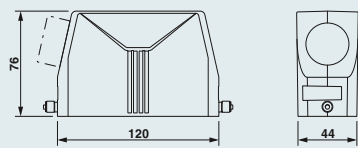
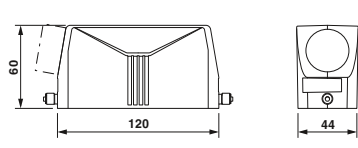
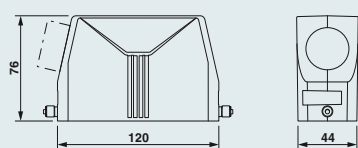
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 60 mm 	1x M25 1x M32 1x Pg16 1x Pg21 1x Pg29	Cable outlet: top			
		HC-STA-B24-HLFS-1TTM25-EL-AL	1412788	1	
		HC-STA-B24-HLFS-1TTM32-EL-AL	1412789	1	
		HC-STA-B24-HLFS-1TTP16-EL-AL	1412790	1	
		HC-STA-B24-HLFS-1TTP21-EL-AL	1412791	1	
		HC-STA-B24-HLFS-1TTP29-EL-AL	1412792	1	
		without bore hole			
Sleeve housing Height: 76 mm 	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top			
		HC-STA-B24-HHFS-1TTM32-EL-AL	1412761	1	
		HC-STA-B24-HHFS-1TTM40-EL-AL	1412098	1	
		HC-STA-B24-HHFS-1TTP21-EL-AL	1412762	1	
		HC-STA-B24-HHFS-1TTP29-EL-AL	1412763	1	
		without bore hole			
		HC-STA-B24-HHFS-BLANK-EL-AL	1419957	1	
Sleeve housing Height: 60 mm 	1x M25 1x M32 1x Pg16 1x Pg21	Cable outlet: lateral			
		HC-STA-B24-HLFS-1STM25-EL-AL	1412783	1	
		HC-STA-B24-HLFS-1STM32-EL-AL	1412784	1	
		HC-STA-B24-HLFS-1STP16-EL-AL	1412785	1	
		HC-STA-B24-HLFS-1STP21-EL-AL	1412786	1	
		without bore hole			
		HC-STA-B24-HLFS-BLANK-EL-AL	1419937	1	
Sleeve housing Height: 76 mm 	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: lateral			
		HC-STA-B24-HHFS-1STM32-EL-AL	1412757	1	
		HC-STA-B24-HHFS-1STM40-EL-AL	1412758	1	
		HC-STA-B24-HHFS-1STP21-EL-AL	1412759	1	
		HC-STA-B24-HHFS-1STP29-EL-AL	1412760	1	
		without bore hole			
		HC-STA-B24-HHFS-BLANK-EL-AL	1419957	1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B24, metal, supporting base elements with single locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B24-BWS-ELC-AL With cover HC-STA-B24-BWSC-ELC-AL	1411329 1411330	1 1	
Box mounting base¹⁾ Height: 68 mm	2x M25 2x M32 2x Pg21	Without cover HC-STA-B24-SLWS-2SSM25-ELC-AL HC-STA-B24-SLWS-2SSM32-ELC-AL HC-STA-B24-SLWS-2SSP21-ELC-AL With cover HC-STA-B24-SLWSC-2SSM25-ELC-AL HC-STA-B24-SLWSC-2SSM32-ELC-AL HC-STA-B24-SLWSC-2SSP21-ELC-AL	1412877 1412878 1412879 1412881 1412882 1412883	1 1 1 1 1 1	
Box mounting base¹⁾ Height: 84.7 mm	2x M25 2x M32 2x M40 2x M25 2x M32 2x M40	HC-STA-B24-SHWS-2SSM25-ELC-AL HC-STA-B24-SHWS-2SSM32-ELC-AL HC-STA-B24-SHWS-2SSM40-ELC-AL With cover HC-STA-B24-SHWSC-2SSM25-ELC-AL HC-STA-B24-SHWSC-2SSM32-ELC-AL HC-STA-B24-SHWSC-2SSM40-ELC-AL	1085185 1082592 1082593 1082595 1082596 1082597	1 1 1 1 1 1	
Coupling housing Height: 79 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B24-CHWS-1TTM32-ELC-AL HC-STA-B24-CHWS-1TTM40-ELC-AL HC-STA-B24-CHWS-1TTP21-ELC-AL HC-STA-B24-CHWS-1TTP29-ELC-AL	1412746 1412747 1412748 1412749	1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, plastic, EVO housings, double locking latch

General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	12
Ambient temperature (operation)	-40°C ... 125°C

Technical data

PA
PA
NBR
IP66
12
-40°C ... 125°C

Ordering data

Description	Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 87.5 mm



Double sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



2x M25
2x M32
2x M40

Coupling housing
Height: 90 mm



Type	Order No.	Pcs./Pkt.

HC-EVO-B24-HLFD-PLBK

1420935

1

HC-EVO-B24-HHFD-PLBK

1407657

1

for double locking latch
HC-EVO-B24-HHFD-2B-PL-BK

1411497

1

Without cover
HC-EVO-B24-BWD-PLRBK

1407661

1

Without cover
HC-EVO-B24-SHWD-2SSM25-PLRBK
HC-EVO-B24-SHWD-2SSM32-PLRBK
HC-EVO-B24-SHWD-2SSM40-PLRBK

1421461

1421370

1407665

1

1

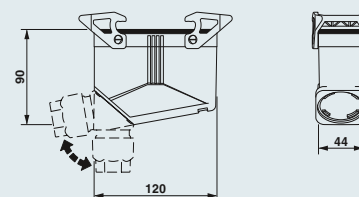
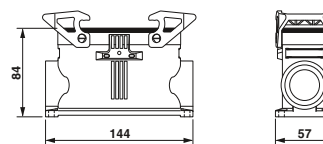
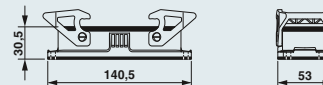
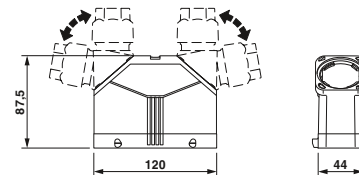
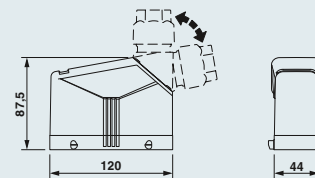
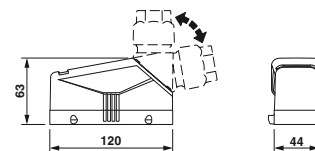
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HC-EVO-B24-CHWD-PLRBK

1407668

1

Dimensions



Notes:

For further accessories, see from page 654

Marking label: US-EMP (20X9) Order No. [0829439](https://www.phoenixcontact.net/products)

For coupling housings, visit [phoenixcontact.net/products](https://www.phoenixcontact.net/products)

¹⁾ One cable entry is sealed with a knockout cover

Accessories



Cable glands
From page 658



Thread adapters
From page 659



Replacement seals
[phoenixcontact.net/products](https://www.phoenixcontact.net/products)



Connector sets
From page 646

**Size B24, metal,
EVO housings,
double locking latch**


General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm		HC-EVO-B24-HHFD-EL-AL	1411472	1	
Panel mounting base Height: 30.5 mm		Without cover HC-STA-B24-BWD-ELC-AL	1411331	1	
Box mounting base¹⁾ Height: 68 mm	2x M25 2x M32 2x Pg21	Without cover HC-STA-B24-SLWD-2SSM25-ELC-AL HC-STA-B24-SLWD-2SSM32-ELC-AL HC-STA-B24-SLWD-2SSP21-ELC-AL	1412873 1412874 1412875	1 1 1	
Box mounting base¹⁾ Height: 84.7 mm	2x M25 2x M32 2x M40	Without cover HC-STA-B24-SHWD-2SSM25-ELC-AL HC-STA-B24-SHWD-2SSM32-ELC-AL HC-STA-B24-SHWD-2SSM40-ELC-AL	1082603 1082604 1082605	1 1 1	
Coupling housing Height: 77 mm	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B24-CHWD-1TTM32-ELC-AL HC-STA-B24-CHWD-1TTM40-ELC-AL HC-STA-B24-CHWD-1TTP21-ELC-AL HC-STA-B24-CHWD-1TTP29-ELC-AL	1412742 1412743 1412744 1412745	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 660



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Connector sets
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, metal, sleeve housings for double locking latch

new



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
-
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread

Sleeve housing
Height: 60 mm



1x M25
1x M32

1x Pg16
1x Pg21
1x Pg29

Type

Cable outlet: top
HC-STA-B24-HLFD-1TTM25-EL-AL
HC-STA-B24-HLFD-1TTM32-EL-AL
HC-STA-B24-HLFD-1TTP16-EL-AL
HC-STA-B24-HLFD-1TTP21-EL-AL
HC-STA-B24-HLFD-1TTP29-EL-AL
without bore hole
HC-STA-B24-HLFD-BLANK-EL-AL

Order No.

1412778
1412779
1412780
1412781
1412782

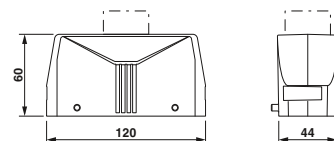
1420010

Pcs./Pkt.

1
1
1
1
1

1

Dimensions



Sleeve housing
Height: 76 mm



1x M32
1x M40

1x Pg21
1x Pg29

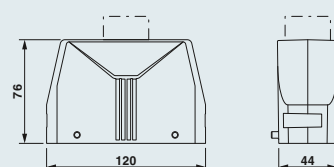
Cable outlet: top
HC-STA-B24-HHFD-1TTM32-EL-AL
HC-STA-B24-HHFD-1TTM40-EL-AL
HC-STA-B24-HHFD-1TTP21-EL-AL
HC-STA-B24-HHFD-1TTP29-EL-AL
without bore hole
HC-STA-B24-HHFD-BLANK-EL-AL

1412754
1412099
1412755
1412756

1420011

1
1
1
1

1



Sleeve housing
Height: 110.8 mm

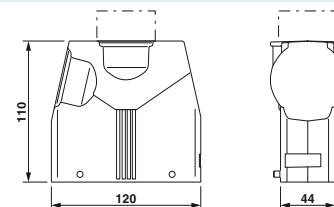


1x M50

Cable outlet: top
HC-STA-B24-HHFD-1TTM50-EL-AL

1082554

1



Sleeve housing
Height: 60 mm



1x M25
1x M32

1x Pg16
1x Pg21

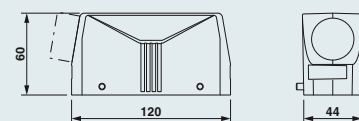
Cable outlet: lateral
HC-STA-B24-HLFD-1STM25-EL-AL
HC-STA-B24-HLFD-1STM32-EL-AL
HC-STA-B24-HLFD-1STP16-EL-AL
HC-STA-B24-HLFD-1STP21-EL-AL
without bore hole
HC-STA-B24-HLFD-BLANK-EL-AL

1412773
1412774
1412775
1412776

1420010

1
1
1
1

1



Sleeve housing
Height: 76 mm



1x M32
1x M40

1x Pg21
1x Pg29

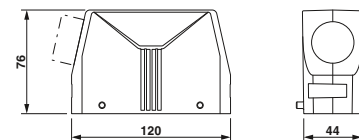
Cable outlet: lateral
HC-STA-B24-HHFD-1STM32-EL-AL
HC-STA-B24-HHFD-1STM40-EL-AL
HC-STA-B24-HHFD-1STP21-EL-AL
HC-STA-B24-HHFD-1STP29-EL-AL
without bore hole
HC-STA-B24-HHFD-BLANK-EL-AL

1412750
1412751
1412752
1412753

1420011

1
1
1
1

1



Sleeve housing
Height: 110.8 mm

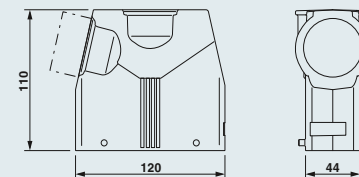


1x M50

Cable outlet: lateral
HC-STA-B24-HHFD-1STM50-EL-AL

1082553

1



Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Cover plates
From page 664



Connector sets
From page 647

Size B24, metal, base elements with double locking latch



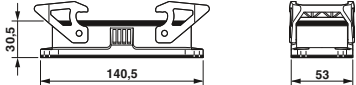
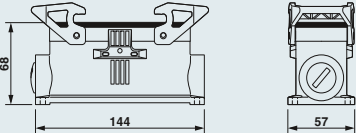
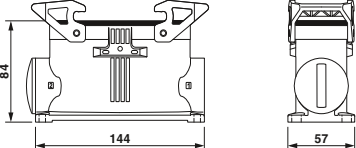
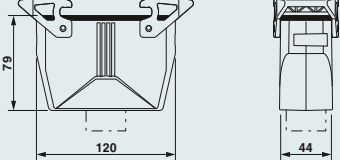
General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Panel mounting base Height: 30.5 mm 		Without cover HC-STA-B24-BWD-ELC-AL	1411331	1	
Box mounting base¹⁾ Height: 68 mm 	2x M25 2x M32 2x Pg21	Without cover HC-STA-B24-SLWD-2SSM25-ELC-AL HC-STA-B24-SLWD-2SSM32-ELC-AL HC-STA-B24-SLWD-2SSP21-ELC-AL	1412873 1412874 1412875	1 1 1	
Box mounting base¹⁾ Height: 84.7 mm 	2x M25 2x M32 2x M40	Without cover HC-STA-B24-SHWD-2SSM25-ELC-AL HC-STA-B24-SHWD-2SSM32-ELC-AL HC-STA-B24-SHWD-2SSM40-ELC-AL	1082603 1082604 1082605	1 1 1	
Coupling housing Height: 77 mm 	1x M32 1x M40 1x Pg21 1x Pg29	Cable outlet: top HC-STA-B24-CHWD-1TTM32-ELC-AL HC-STA-B24-CHWD-1TTM40-ELC-AL HC-STA-B24-CHWD-1TTP21-ELC-AL HC-STA-B24-CHWD-1TTP29-ELC-AL	1412742 1412743 1412744 1412745	1 1 1 1	

Notes:

For further accessories, see from page 658

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement protective covers
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, plastic, EVO housings, double locking latch

General data

Housing material	PA
Locking latch material	PA
Sealing material	NBR
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	12
Ambient temperature (operation)	-40°C ... 125°C

Technical data

Ordering data



Description	Thread

Sleeve housing
Height: 63 mm



Sleeve housing
Height: 87.5 mm



Panel mounting base
Height: 30.5 mm



Box mounting base¹⁾
Height: 84 mm



2x M25
2x M32
2x M40

Type	Order No.	Pcs./Pkt.

HC-EVO-B24-HLWD-PLBK

1420936

1

HC-EVO-B24-HHWD-PLBK

1407658

1

With cover
HC-EVO-B24-BFDC-PLRBK

1407662

1

With cover
HC-EVO-B24-SHFDC-2SSM25-PLRBK
HC-EVO-B24-SHFDC-2SSM32-PLRBK
HC-EVO-B24-SHFDC-2SSM40-PLRBK

1421462

1421380

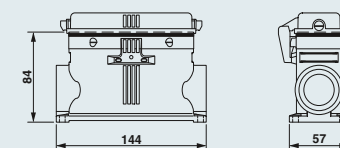
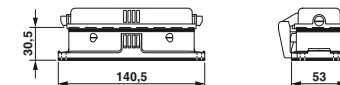
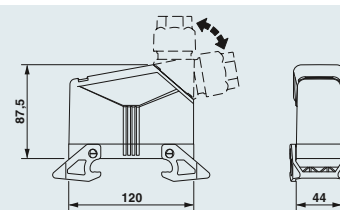
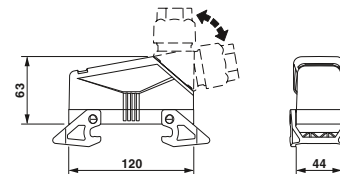
1407666

1

1

1

Dimensions



Cable gland



Clamping area

7 mm ... 13 mm
9 mm ... 17 mm
11 mm ... 21 mm
19 mm ... 28 mm

HC-B-G-M20-PLRBK
HC-B-G-M25-PLRBK
HC-B-G-M32-PLRBK
HC-B-G-M40-PLRBK

1407669

1407670

1407671

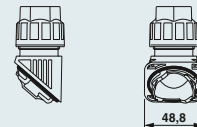
1407672

1

1

1

1



Notes:

For further accessories, see from page 654

Marking label: US-EMP (20X9) Order No. 0829439

For coupling housings, visit phoenixcontact.net/products

¹⁾ One cable entry is sealed with a knockout cover

Accessories



EVO unloading tools
From page 659



Thread adapters
From page 659



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

**Size B24, metal,
EVO housings,
double locking latch**

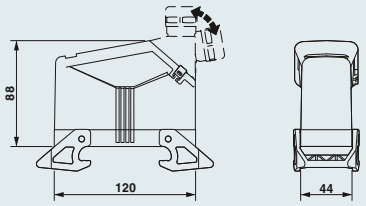
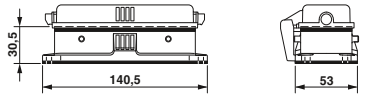
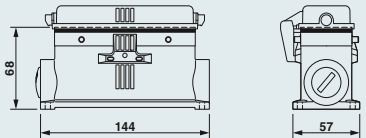
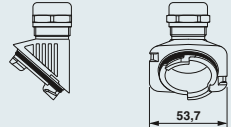

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Polyamide
NBR, conductive
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 88 mm 		HC-EVO-B24-HHWD-EL-AL	1411474	1	
Panel mounting base Height: 30.5 mm 		With cover HC-STA-B24-BFDC-ELC-AL	1411332	1	
Box mounting base¹⁾ Height: 68 mm 	2x M25 2x M32 2x Pg21	With cover HC-STA-B24-SLFDC-2SSM25-ELC-AL HC-STA-B24-SLFDC-2SSM32-ELC-AL HC-STA-B24-SLFDC-2SSP21-ELC-AL	1412869 1412870 1412871	1 1 1	
Cable gland 	Clamping area 9 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-EC-AL HC-B-G-M25-EC-AL HC-B-G-M32-EC-AL HC-B-G-M40-EC-AL	1411439 1411446 1411440 1411441	1 1 1 1	

Notes:

For further accessories, see from page 658

Marking label: US-EMLP-HA (20X9), Order No. 0830989

¹⁾ Supplied with a plastic sealing cap

Accessories


Thread adapters
From page 660

EMC cable glands
From page 660

Replacement seals
phoenixcontact.net/products

Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

Size B24, metal, sleeve housings with double locking latch



General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
NEMA degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
-
IP66 / IP67
4 / 4X / 12
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 60 mm



1x M25
1x M32

1x Pg16
1x Pg21
1x Pg29

Type

Cable outlet: top
HC-STA-B24-HLWD-1TTM25-EL-AL
HC-STA-B24-HLWD-1TTM32-EL-AL
HC-STA-B24-HLWD-1TTP16-EL-AL
HC-STA-B24-HLWD-1TTP21-EL-AL
HC-STA-B24-HLWD-1TTP29-EL-AL
without bore hole
HC-STA-B24-HLWD-BLANK-EL-AL

Order No.

1412799
1412800
1412801
1412802
1412803

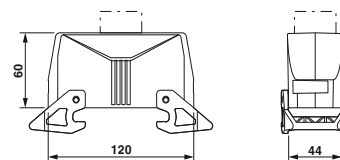
1420046

Pcs./Pkt.

1
1
1
1
1

1

Dimensions



Sleeve housing
Height: 76 mm



1x M32
1x M40

1x Pg21
1x Pg29

Cable outlet: top

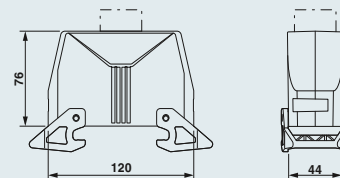
HC-STA-B24-HHWD-1TTM32-EL-AL
HC-STA-B24-HHWD-1TTM40-EL-AL
HC-STA-B24-HHWD-1TTP21-EL-AL
HC-STA-B24-HHWD-1TTP29-EL-AL
without bore hole
HC-STA-B24-HHWD-BLANK-EL-AL

1412769
1412770
1412771
1412772

1420047

1
1
1
1

1



Sleeve housing
Height: 60 mm



1x M25
1x M32

1x Pg16
1x Pg21

Cable outlet: lateral

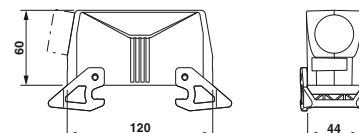
HC-STA-B24-HLWD-1STM25-EL-AL
HC-STA-B24-HLWD-1STM32-EL-AL
HC-STA-B24-HLWD-1STP16-EL-AL
HC-STA-B24-HLWD-1STP21-EL-AL
without bore hole
HC-STA-B24-HLWD-BLANK-EL-AL

1412793
1412795
1412796
1412797

1420046

1
1
1
1

1



Sleeve housing
Height: 76 mm



1x M32
1x M40

1x Pg21
1x Pg29

Cable outlet: lateral

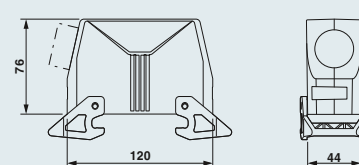
HC-STA-B24-HHWD-1STM32-EL-AL
HC-STA-B24-HHWD-1STM40-EL-AL
HC-STA-B24-HHWD-1STP21-EL-AL
HC-STA-B24-HHWD-1STP29-EL-AL
without bore hole
HC-STA-B24-HHWD-BLANK-EL-AL

1412764
1412766
1412767
1412768

1420047

1
1
1
1

1



Notes:

For further accessories, see from page 658
Marking label: US-EMLP-HA (20X9), Order No. 0830989

Accessories



Cable glands
From page 686



Protective covers
From page 654



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON B – housings

**Size B32, metal,
housings, double locking latch**

new

General data

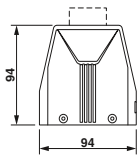
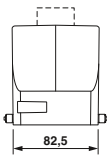
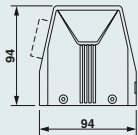
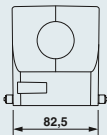
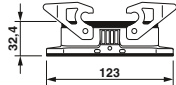
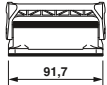
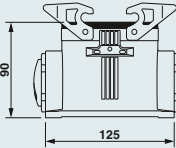
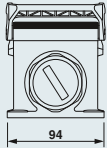
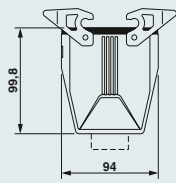
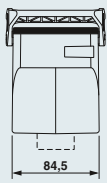
Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Polyamide
NBR, conductive
IP66 / IP67
-40°C ... 125°C



Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 94 mm	1x M32 1x M40 1x M50 1x Pg29 1x Pg36 1x Pg42	Cable outlet: top HC-STA-B32-HHFD-1TTM32-EL-AL HC-STA-B32-HHFD-1TTM40-EL-AL HC-STA-B32-HHFD-1TTM50-EL-AL HC-STA-B32-HHFD-1TTP29-EL-AL HC-STA-B32-HHFD-1TTP36-EL-AL HC-STA-B32-HHFD-1TTP42-EL-AL	1424830 1424831 1424832 1424827 1424828 1424829	1 1 1 1 1 1	 
Sleeve housing Height: 94 mm	1x M32 1x M40 1x M50 1x Pg29 1x Pg36 1x Pg42	Cable outlet: lateral HC-STA-B32-HHFD-1STM32-EL-AL HC-STA-B32-HHFD-1STM40-EL-AL HC-STA-B32-HHFD-1STM50-EL-AL HC-STA-B32-HHFD-1STP29-EL-AL HC-STA-B32-HHFD-1STP36-EL-AL HC-STA-B32-HHFD-1STP42-EL-AL	1424836 1424837 1424838 1424833 1424834 1424835	1 1 1 1 1 1	 
Panel mounting base Height: 32.4 mm		Without cover HC-STA-B32-BWD-ELC-AL	1424845	1	 
Box mounting base¹⁾ Height: 90 mm	2x M32 2x M40 2x Pg29 2x Pg36	Without cover HC-STA-B32-SHWD-2SSM32-ELC-AL HC-STA-B32-SHWD-2SSM40-ELC-AL HC-STA-B32-SHWD-2SSP29-ELC-AL HC-STA-B32-SHWD-2SSP36-ELC-AL	1424848 1424849 1424846 1424847	1 1 1 1	 
Coupling housing Height: 99.8 mm	1x M32 1x M40 1x M50 1x Pg29 1x Pg36 1x Pg42	Cable outlet: top HC-STA-B32-CHWD-1TTM32-ELC-AL HC-STA-B32-CHWD-1TTM40-ELC-AL HC-STA-B32-CHWD-1TTM50-ELC-AL HC-STA-B32-CHWD-1TTP29-ELC-AL HC-STA-B32-CHWD-1TTP36-ELC-AL HC-STA-B32-CHWD-1TTP42-ELC-AL	1424842 1424843 1424844 1424839 1424840 1424841	1 1 1 1 1 1	 

Notes:

For further accessories, see from page 654

¹⁾ Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Size B48, metal,
housings, single locking latch

General data

Housing material
Locking latch material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
Polyamide
NBR, conductive
IP66 / IP67
-40°C ... 125°C



Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 107.5 mm	1x M32 1x M40 1x M50 1x Pg29 1x Pg36 1x Pg42	Cable outlet: top HC-STA-B48-HHFS-1TTM32-EM-AL HC-STA-B48-HHFS-1TTM40-EM-AL HC-STA-B48-HHFS-1TTM50-EM-AL HC-STA-B48-HHFS-1TTP29-EM-AL HC-STA-B48-HHFS-1TTP36-EM-AL HC-STA-B48-HHFS-1TTP42-EM-AL	1424854 1424855 1424856 1424851 1424852 1424853	1 1 1 1 1 1	
Sleeve housing Height: 107.5 mm	1x M32 1x M40 1x M50 1x Pg29 1x Pg36 1x Pg42	Cable outlet: lateral HC-STA-B48-HHFS-1STM32-EM-AL HC-STA-B48-HHFS-1STM40-EM-AL HC-STA-B48-HHFS-1STM50-EM-AL HC-STA-B48-HHFS-1STP29-EM-AL HC-STA-B48-HHFS-1STP36-EM-AL HC-STA-B48-HHFS-1STP42-EM-AL	1424860 1424861 1424862 1424857 1424858 1424859	1 1 1 1 1 1	
Panel mounting base Height: 39.4 mm		Without cover HC-STA-B48-BWS-EMC-AL With cover HC-STA-B48-BWSC-EMC-AL	1424863 1424864	1 1	
Box mounting base¹) Height: 99 mm	2x M32 2x M40 2x Pg29 2x Pg36	Without cover HC-STA-B48-SHWS-2SSM32-EMC-AL HC-STA-B48-SHWS-2SSM40-EMC-AL HC-STA-B48-SHWS-2SSP29-EMC-AL HC-STA-B48-SHWS-2SSP36-EMC-AL	1424867 1424868 1424865 1424866	1 1 1 1	
Box mounting base¹) Height: 99 mm	2x M32 2x M40 2x Pg29 2x Pg36	With cover HC-STA-B48-SHWSC-2SSM32-EMC-AL HC-STA-B48-SHWSC-2SSM40-EMC-AL HC-STA-B48-SHWSC-2SSP29-EMC-AL HC-STA-B48-SHWSC-2SSP36-EMC-AL	1424873 1424874 1424869 1424872	1 1 1 1	

Notes:

For further accessories, see from page 654

¹) Supplied with a plastic sealing cap

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products



			Ordering data					
Description	Pos.	Size	Type	Order No.	Pcs./Pkt.	Dimensions		
Connector set, with single locking latch 	6	B6	Cable outlet: top, with cover HC-STA-B06PT-BWSC-LT-M20-ELCAL	1416344	1			
	6	B6	Cable outlet: to the side, with cover HC-STA-B06PT-BWSC-LS-M20-ELCAL	1416353	1			
Connector set, with double locking latch 	10	B10	Cable outlet: top, without cover HC-STA-B10PT-BWD-LT-M25-ELCAL	1416346	1			
	10	B10	Cable outlet: to the side, without cover HC-STA-B10PT-BWD-LS-M25-ELCAL	1416355	1			
Connector set, with double locking latch 	16	B16	Cable outlet: top, without cover HC-STA-B16PT-BWD-LT-M25-ELCAL	1416349	1			
	16	B16	Cable outlet: to the side, without cover HC-STA-B16PT-BWD-LS-M25-ELCAL	1416357	1			
Connector set, with double locking latch 	24	B24	Cable outlet: top, without cover HC-STA-B24PT-BWD-LT-M32-ELCAL	1416352	1			
	24	B24	Cable outlet: to the side, without cover HC-STA-B24PT-BWD-LS-M32-ELCAL	1416359	1			



Heavy-duty connectors

HEAVYCON Compact – contact inserts

Compact series

Connection technology:

- Push-in connection
- Axial screw connection

To determine the corresponding housing, see the system cross-reference list on page 502.

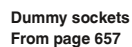
Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off

new



Type	Technical data			
	① HC-COM-Q08-I-PT-...		② HC-COM-Q4/2-I-AT-...	
	Power contacts	Control contacts	Power contacts	Control contacts
Approvals	-		-	
IEC data				
Rated current	[A]	-	-	-
Overvoltage category		III		III
Degree of pollution		3		3
Rated voltage (III/3) contacts	[V]	-	-	-
Rated surge voltage, contacts	[kV]	-	-	-
Connection cross section	[mm²]	-	-	-
UL data				
Rated voltage	[V]	-	-	-
Rated current	[A]	-	-	-
Connection cross section	AWG	-	-	-
CSA / cUL data				
Rated voltage	[V]	-	-	-
Rated current	[A]	-	-	-
Connection cross section	AWG	-	-	-
Material data				
Contact carrier material	PC		PC	
Inflammability class in acc. with UL 94	V0		V0	
Contact material	Copper alloy		Copper alloy	
Contact surface material	-	-	Ag	Ag (alternatively Au)
Temperature data				
Ambient temperature range	[°C]	-40 ... 125	-40 ... 125	
General data				
Connection method	-	-	-	-
Stripping length	[mm]	-	-	-
Number of positions	8	0	4	2
Contact numbering	-	-	-	-
Insertion/withdrawal cycles	≥ 500		≥ 500	

Accessories



	a	b	c	d
① Female	45		48.05	
Male				
② Female	42		48	
Male				

Heavy-duty connectors

HEAVYCON Compact – contact inserts

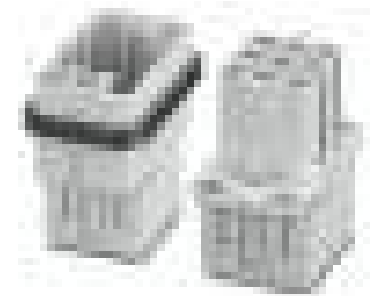
Compact series

Connection technology:
– Crimp connection

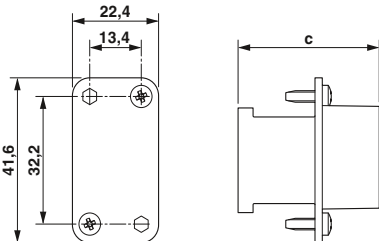
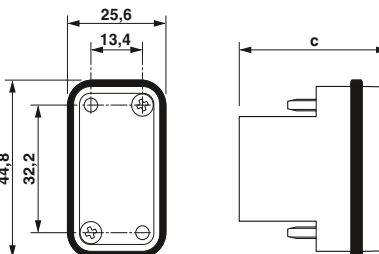
To determine the corresponding housing, see the system cross-reference list on page 502.

Notes:
For accessories, see from page 654
Only operate connectors when there is no load/the power is switched off

new



Type	Technical data			
	① HC-COM-Q08-I-CT-...		② HC-COM-Q4/2-I-CT-...	
	Power contacts	Control contacts	Power contacts	Control contacts
Approvals	-		-	
IEC data				
Rated current [A]	-	-	-	-
Overvoltage category	III		III	
Degree of pollution	3		3	
Rated voltage (III/3) contacts [V]	-	-	-	-
Rated surge voltage, contacts [kV]	-	-	-	-
Connection cross section [mm²]	-	-	-	-
UL data				
Rated voltage [V]	-	-	-	-
Rated current [A]	-	-	-	-
Connection cross section AWG	-	-	-	-
CSA / cUL data				
Rated voltage [V]	-	-	-	-
Rated current [A]	-	-	-	-
Connection cross section AWG	-	-	-	-
Material data				
Contact carrier material	PC		PC	
Inflammability class in acc. with UL 94	V0		V0	
Contact material	Copper alloy		Copper alloy	
Contact surface material	-	-	Ag	Ag (alternatively Au)
Temperature data				
Ambient temperature range [°C]	-40 ... 125		-40 ... 125	
General data				
Connection method	-	-	-	-
Stripping length [mm]	-	-	-	-
Number of positions	8	0	4	2
Contact numbering	-	-	-	-
Insertion/withdrawal cycles	≥ 500		≥ 500	

				Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs./Pkt.	Dimensions (in mm)			
					Female	Male					
Crimp connection											
	8	1 - 8	COM	① HC-COM-Q08-I-CT-...	1079547	1079548	1				
Crimp connection											
	4 / 2	1 - 4	COM	② HC-COM-Q4/2-I-CT-...	1079556	1079555	1				
Turned crimp contacts CK 1,6 Silver-plated											
			Cross section mm² / AWG	CK1,6-ED-0,37... AG	1663394	1663336	100				
			0.14 - 0.37 / 26 - 22	CK1,6-ED-0,50... AG	1663404	1663349	100				
			0.5 - 0.5 / 20	CK1,6-ED-0,75... AG	1663417	1663352	100				
			0.75 - 0.75 / 18	CK1,6-ED-1,00... AG	1663420	1663365	100				
			0.75 - 1 / 18	CK1,6-ED-1,50... AG	1663433	1663378	100				
			1.5 - 1.5 / 16	CK1,6-ED-2,50... AG	1663446	1663381	100				
			2.5 - 2.5 / 14								
Turned crimp contacts CK 2,5 Silver-plated											
			Cross section mm² / AWG	CK2,5-ED-0,50... AG	1663640	1663572	100				
			0.5 - 0.5 / 20	CK2,5-ED-0,75... AG	1663653	1663585	100				
			0.75 - 0.75 / 18	CK2,5-ED-1,00... AG	1663666	1663598	100				
			0.75 - 1 / 18	CK2,5-ED-1,50... AG	1663679	1663608	100				
			1.5 - 1.5 / 16	CK2,5-ED-2,50... AG	1663682	1663611	100				
			2.5 - 2.5 / 14	CK2,5-ED-4,00... AG	1663705	1663637	100				
			4 - 4 / 12								
Turned crimp contacts CK 4,0 Silver-plated											
			Cross section mm² / AWG	CK4,0-ED-1,50... AG	1663271	1663239	25				
			1.5 - 1.5 / 16	CK4,0-ED-2,50... AG	1663284	1663242	25				
			2.5 - 2.5 / 14	CK4,0-ED-4,00... AG	1663297	1663255	25				
			4 - 4 / 12	CK4,0-ED-6,00... AG	1663307	1663268	25				
			6 - 6 / 10								

Accessories



Dummy sockets
From page 657



Crimping tools
From page 670



Crimp contacts, gold-plated
From page 666

Heavy-duty connectors

HEAVYCON Compact – housings

Compact series, plastic housings

new

General data

Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

PC
PA
NBR
IP65 / IP66
-40°C ... 125°C

Ordering data

Description Thread

Sleeve housing
Height: 84 mm



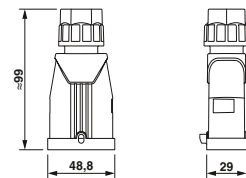
1x M25

HC-COM-HHFS-1TGM25-PL-BK

1012520

1

Dimensions



Sleeve housing
Height: 84 mm

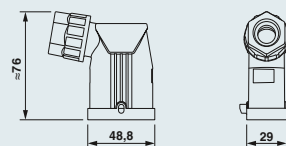


1x M25

HC-COM-HHFS-1SGM25-PL-BK

1012581

1



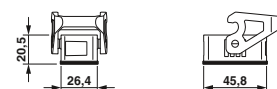
Panel mounting base
Height: 18.5 mm



HC-COM-BWS-PL-BK

1012538

1



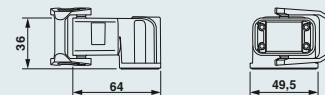
Panel mounting base
Height: 41.7 mm



HC-COM-BAWS-PL-BK

1012433

1



Box mounting base
Height: 68 mm

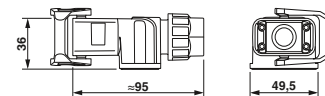


1x M25

HC-COM-SHOWS-1SGM25-PL-BK

1079393

1



Coupling housing
Height: 68 mm

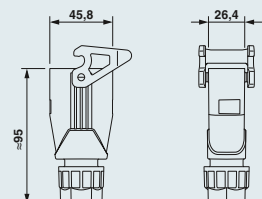


1x M25

HC-COM-CHWS-1TGM25-PL-BK

1012521

1



Notes:

For further accessories, see from page 654

Accessories



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Compact series,
metal housings

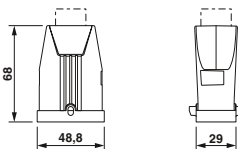
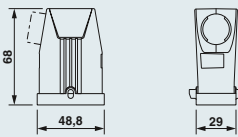
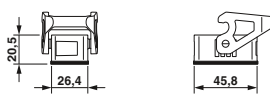
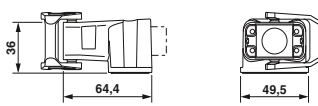
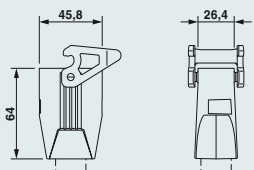
General data

Housing material
Lock material
Sealing material
IP degree of protection (when plugged in)
Ambient temperature (operation)

Technical data

Die-cast aluminum, salt water resistant
PA
NBR
IP65 / IP66
-40°C ... 125°C

Ordering data

Description	Thread	Type	Order No.	Pcs./Pkt.	Dimensions
Sleeve housing Height: 68 mm 	1x M25	HC-COM-HHFS-1TTM25-EL-AL	1078590	1	
Sleeve housing Height: 68 mm 	1x M25	HC-COM-HHFS-1STM25-EL-AL	1078592	1	
Panel mounting base Height: 19.8 mm 		HC-COM-BWS-EL-AL	1078594	1	
Panel mounting base Height: 41.7 mm 		HC-COM-BAWS-EL-AL	1078593	1	
Box mounting base Height: 68 mm 	1x M25	HC-COM-SHOWS-1STM25-EL-AL	1078596	1	
Coupling housing Height: 68 mm 	1x M25	HC-COM-CHWS-1TTM25-EL-AL	1078595	1	

Notes:

For further accessories, see from page 684

Accessories



Cable glands
From page 686



Replacement seals
phoenixcontact.net/products



Replacement latches
phoenixcontact.net/products

Heavy-duty connectors

HEAVYCON accessories

Protective covers for sleeve housings of the D7 and B series

- For sleeve housing without locking latch
- With lanyard
- With seal



Protective cover
with single locking latch



Protective cover
with double locking latch

General data	
Material, protective cover	PA
Degree of protection	IP66
Ambient temperature (operation)	-20 ... 100

Technical data	
Plastic, black	Metal
PA	Al
IP66	IP66
-20 ... 100	-40 ... 125

Description
Protective cover , for housing sizes:
D7, for female insert
D7, for male insert
B6
B10
B16
B24

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Plastic, black		Metal	
1419274	1		
1419275	1		
1414634	10	1644546	10
1414635	10	1584512	10
1414636	10	1584525	10
1414637	10	1584538	10

Technical data	
Plastic, black	Metal
PA	Al
IP66	IP66
-20 ... 100	-40 ... 125

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Plastic, black		Metal	
1414638	10	1584541	10
1414639	10	1584554	10
1414640	10	1584567	10

Protective covers for sleeve housings B series

- For sleeve housing with locking latch
- With lanyard
- With seal



Protective cover
without double locking latch

General data	
Material, protective cover	PA
Degree of protection	IP66
Ambient temperature (operation)	-20 ... 100

Technical data	
Plastic, black	Metal
PA	Al
IP66	IP66
-20 ... 100	-40 ... 125

Description
Protective cover , for housing sizes:
B10
B16
B24

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Plastic, black		Metal	
1414631	10	1647750	10
1414632	10	1647763	10
1414633	10	1647776	10

Protective covers for panel mounting bases of the D7, D and B series

- For panel mounting bases, box mounting bases, and coupling housings with locking latch
- With lanyard
- Without seal



Protective cover
without single locking latch



Protective cover
without double locking latch

		Technical data				Technical data			
		Plastic, black		Metal		Plastic, black		Metal	
General data		PA		Al		PA		Al	
Material, protective cover		IP66		IP66		IP66		IP66	
Degree of protection									
Ambient temperature (operation)		-20 ... 100		-40 ... 125		-20 ... 100		-40 ... 125	
		Ordering data				Ordering data			
Description		Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
		Plastic, black		Metal		Plastic, black		Metal	
Protective cover, for coupling housings:									
D7, for female insert		1419270	1						
D7, for male insert		1419271	1						
D15		1424374	1						
D25		1424401	1						
D50						1424417	1		
B6		1414623	10	1644559	10				
B10		1414625	10	1644562	10	1414628	10	1644575	10
B16		1414626	10	1644588	10	1414629	10	1644591	10
B24		1414627	10	1644601	10	1414630	10	1644614	10
B32						1424850	1		

Protective covers for sleeve housings, panel mounting bases of the B series

- For sleeve housings, panel mounting bases, and coupling housings
- Color: transparent/white
- Without seal



Protective cover
with clip locking

	Technical data		
General data			
Material, protective cover	PA		
Degree of protection	IP20		
Ambient temperature (operation)	0 ... 20		
	Ordering data		
	Type	Order No.	Pcs./Pkt.
Protective cover , for housing sizes:			
B6	HC-STA-B06-DC-PL	1421100	5
B10	HC-STA-B10-DC-PL	1421101	5
B16	HC-STA-B16-DC-PL	1421102	5
B24	HC-STA-B24-DC-PL	1421103	5

Heavy-duty connectors

HEAVYCON accessories

Coding profiles

- Can be coded in seconds, thanks to the coding profiles



HC / HC-S coding profile



HS2/MOD-K coding profile

General data
Material
Description
Coding profiles , for contact inserts in series: HC-B..., HC-B...A-UT..., HC-B...A-DT... HC-A10..., HC-A16..., HC-BB... Coding profiles , for contact inserts in series: HC-Q12... HC-A3..., HC-A4... HC-HS2-D7-E...S

Technical data		
PA		
Ordering data		
Type	Order No.	Pcs./Pkt.
CP-HC	1686478	10
CP-HC-S	1410916	10

Technical data		
PA		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-Q 12-COD	1409435	10
HC-MOD-K-CP	1408562	1
HC-HS 2-CP	1586280	50

Coding bolts

- Prevent up to 6 plug-in connections from being mismatched

Notes:
For assembly instructions, see phoenixcontact.net/products



Coded bolts

General data
Material
Description
Coding bolt , for contact inserts in series: HC-B...

Technical data		
Steel, galvanized		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CB	1772722	10

Guide pins, sockets

- Prevent up to 16 plug-in connections from being mismatched

Notes:

For assembly instructions, see phoenixcontact.net/products



Guide pin/guide socket

General data

Material

Technical data

Steel, galvanized

Ordering data
Description

Guide pin and guide socket, for coding to protect against mismatching and as a guide to prevent accidentally jamming the connector in at an angle

Guide pin

Guide socket

Type

HC-CST-MOD

HC-CBU-MOD

Order No.

1636127

1636130

Pcs./Pkt.

10

10

Dummy sockets

Prevent connectors of the same type from being mismatched. A dummy socket seals off a female contact. It is then no longer possible to insert a male contact in the same position as the dummy socket.

Notes:

For assembly instructions, see phoenixcontact.net/products



Dummy socket



Dummy socket

General data

Material

Technical data

PA

Ordering data
Description

Dummy sockets, for contact inserts with turned female contacts of type:

CK-2,5-ED...

CK-1,6-ED...

CK2,5-ED-BB

1584693

100

Technical data

Copper alloy

Ordering data
Type

CK1,6-ED-BB

Order No.

1645888

Pcs./Pkt.

50

Heavy-duty connectors

HEAVYCON accessories

Plastic cable glands and plastic thread adapters for EVO housings of the D and EVO-M1 series

Notes:

EVO unlocking tools for EVO plastic housing; see page 659



Plastic cable gland



Plastic thread adapter

Technical data

General data	
Material	PA
Ambient temperature (operation)	-40 ... 100 [°C]

Ordering data

Description	Thread type
Cable gland , for HEAVYCON EVO plastic housings of the D series and the EVO-M1 sleeve housing, for cable diameters:	
7 mm ... 13 mm	M20
9 mm ... 17 mm	M25
Thread adapter , for HEAVYCON EVO D series plastic housing	
	M25
	Pg16
	3/4 inch NPT

Type	Order No.	Pcs./Pkt.
HC-D-G-M20-PLRBK	1411350	1
HC-D-G-M25-PLRBK	1411351	1

Technical data

General data	
Material	PA
Ambient temperature (operation)	-40 ... 125

Ordering data

Type	Order No.	Pcs./Pkt.
HC-D-TA-M25-PLRBK	1411352	1
HC-D-TA-PG16-PLR-BK	1411353	1
HC-D-TA-NPT-3/4-PLR-BK	1411354	1

Plastic cable glands for EVO B series housings

Notes:

EVO unlocking tools for EVO plastic housing; see page 659



Plastic cable gland



Plastic cable gland

Technical data

General data	
Material	PA
Ambient temperature (operation)	-40 ... 100 [°C]

Ordering data

Description	Thread type
Cable gland , for HEAVYCON EVO B series plastic housing, for cable diameter:	
7 mm ... 13 mm	M20
9 mm ... 17 mm	M25
11 mm ... 21 mm	M32
19 mm ... 28 mm	M40
Cable gland , for B series HEAVYCON EVO plastic housing, with seal insert for cable diameter:	
without bore hole	M40
4x 10 mm	M40
5x 8.5 mm	M40
8x 6.5 mm	M40

Type	Order No.	Pcs./Pkt.
HC-B-G-M20-PLRBK	1407669	1
HC-B-G-M25-PLRBK	1407670	1
HC-B-G-M32-PLRBK	1407671	1
HC-B-G-M40-PLRBK	1407672	1

Technical data

General data	
Material	PA
Ambient temperature (operation)	-30 ... 100

Ordering data

Type	Order No.	Pcs./Pkt.
HC-B-GM0-M40-PLTBK	1414643	1
HC-B-GM4X10-M40-PLTBK	1414644	1
HC-B-GM5X8,5-M40-PLTBK	1414645	1
HC-B-GM8X6,5-M40-PLTBK	1414646	1

Plastic cable glands with bend protection and strain relief for B series EVO housings

Notes:

EVO unlocking tools for EVO plastic housing; see page 659



Plastic cable gland with bend protection



Plastic cable gland with strain relief

General data	
Material	PA
Ambient temperature (operation)	-40 ... 100 [°C]
Description	
	Thread type
Cable gland , for HEAVYCON EVO B series plastic housing, for cable diameter:	
6 mm ... 13 mm	M20
9 mm ... 17 mm	M25
13 mm ... 21 mm	M32

Technical data		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-B-GB-M20-PLRBK	1414660	1
HC-B-GB-M25-PLRBK	1414661	1
HC-B-GB-M32-PLRBK	1414662	1

Technical data		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-B-GTRS-M20-PLRBK	1414651	1
HC-B-GTRS-M25-PLRBK	1414652	1
HC-B-GTRS-M32-PLRBK	1414654	1

Plastic thread adapters for B series EVO housings and EVO unlocking tools tool

Notes:

For further conduit adapters, visit phoenixcontact.net/products

For protective hoses for corrugated pipe adapters, see Catalog 3



Plastic thread adapter



EVO unlocking tools

General data	
Material	PA
Ambient temperature (operation)	-40 ... 100 [°C]
Description	
	Thread type
Thread adapter , for B series HEAVYCON EVO plastic housing	
	M20
	M25
	M32
	M40
	Pg13.5
	Pg16
	Pg21
Water pump pliers , with groove joint, gripping surfaces with dual notching, acc. to VDE ISO 8976, size: 240 mm	

Technical data		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-B-TA-M20-PLR-BK	1414243	1
HC-B-TA-M25-PLR-BK	1414244	1
HC-B-TA-M32-PLR-BK	1414245	1
HC-B-TA-M40-PLR-BK	1414246	1
HC-B-TA-PG13-PLR-BK	1414247	1
HC-B-TA-PG16-PLR-BK	1414248	1
HC-B-TA-PG21-PLR-BK	1414249	1

Technical data		
Ordering data		
Type	Order No.	Pcs./Pkt.
UNIFOX-WP	1212365	1

Heavy-duty connectors

HEAVYCON accessories

Metal cable glands for EVO B series housings



Metal cable gland for EMC applications



Metal cable gland for multiple cables

General data	
Material	
Ambient temperature (operation)	[°C]

Technical data		
Die-cast aluminum, corrosion-resistant		
-40 ... 125		

Technical data		
Die-cast aluminum, corrosion-resistant		
-30 ... 100		

Description	Thread type

Cable gland, for HEAVYCON EVO B series metal housing, for EMC applications, for cable diameter:

9 mm ... 13 mm	M20
11 mm ... 16 mm	M25
14 mm ... 21 mm	M32
19 mm ... 27 mm	M40

Cable gland, for HEAVYCON EVO metal housing, for higher strain relief, with NBR seal, for cable diameter:

without bore hole	M40
4x 10 mm	M40
5x 8.5 mm	M40
8x 6.5 mm	M40

Ordering data		

Type	Order No.	Pcs./Pkt.
HC-B-G-M20-EC-AL	1411439	1
HC-B-G-M25-EC-AL	1411446	1
HC-B-G-M32-EC-AL	1411440	1
HC-B-G-M40-EC-AL	1411441	1

Ordering data		

Type	Order No.	Pcs./Pkt.
HC-B-GM0-M40-ET-AL	1414647	1
HC-B-GM4X10-M40-ET-AL	1414648	1
HC-B-GM5X8,5-M40-ET-AL	1414649	1
HC-B-GM8X6,5-M40-ET-AL	1414650	1

Metal cable glands with bend protection and strain relief for B series EVO housings



Metal cable gland with bend protection



Metal cable gland with strain relief

General data	
Material	
Ambient temperature (operation)	[°C]

Technical data		
-		
-40 ... 100		

Technical data		
-		
-40 ... 100		

Description	Thread type

Cable gland, for B series HEAVYCON EVO metal housing, for cable diameter:

6 mm ... 13 mm	M20
9 mm ... 17 mm	M25
13 mm ... 21 mm	M32
16 mm ... 28 mm	M40

Ordering data		

Type	Order No.	Pcs./Pkt.
HC-B-GB-M20-ER-AL	1414663	1
HC-B-GB-M25-ER-AL	1414664	1
HC-B-GB-M32-ER-AL	1414665	1
HC-B-GB-M40-ER-AL	1414666	1

Ordering data		

Type	Order No.	Pcs./Pkt.
HC-B-GTRS-M20-ER-AL	1414656	1
HC-B-GTRS-M25-ER-AL	1414657	1
HC-B-GTRS-M32-ER-AL	1414658	1
HC-B-GTRS-M40-ER-AL	1414659	1

Metal thread adapter for B series EVO housings



Metal thread adapter

General data		Technical data		
Material		Die-cast aluminum, corrosion-resistant		
Ambient temperature (operation)	[°C]	-40 ... 125		
		Ordering data		
Description	Thread type	Type	Order No.	Pcs./Pkt.
Thread adapter, for B series HEAVYCON EVO metal housings				
	M20	HC-B-TA-M20-ER-AL	1414256	1
	M25	HC-B-TA-M25-ER-AL	1414257	1
	M32	HC-B-TA-M32-ER-AL	1414258	1
	M40	HC-B-TA-M40-ER-AL	1414259	1
	Pg13.5	HC-B-TA-PG13-ER-AL	1414260	1
	Pg16	HC-B-TA-PG16-ER-AL	1414261	1
	Pg21	HC-B-TA-PG21-ER-AL	1414262	1
	Pg29	HC-B-TA-PG29-ER-AL	1414263	1
	1/2-inch NPT	HC-B-TA-NPT-1/2-ER-AL	1414264	1
	3/4 inch NPT	HC-B-TA-NPT-3/4-ER-AL	1414265	1
	1/1-inch NPT	HC-B-TA-NPT-1/1-ER-AL	1414266	1
	1 1/4 in. NPT	HC-B-TA-NPT-1 1/4-ER-AL	1414267	1

Heavy-duty connectors

HEAVYCON accessories

PE screws, PE multipliers

If several PE conductors are led via one contact insert, additional PE connections are required. This is done using an additional PE screw or the PE multiplier.



PE screw



PE multiplier

General data		Technical data			Technical data		
Material		Steel, galvanized			Brass, nickel-plated		
Connection cross section		-			0.5 ... 2.5		
Connection cross section		-			20 ... 14		
		Ordering data			Ordering data		
Description		Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
PE screw , for contact inserts in series:							
HC-B..., HC-BB..., HC-DD..., HC-D40..., HC-D64...		HC-B-PES	1604997	10			
HC-HS 6...		HC-HS-PES	1586219	10			
PE screw , for contact inserts in series:							
HC-A..., HC-D15..., HC-D25...		HC-A-PES	1584868	10			
PE multiplier , with 3 PE connections, for contact inserts in series:							
HC-B..., HC-BB..., HC-DD..., HC-D40..., HC-D64...					HC-B-3PE	1644326	1

Strain relief clamps

Cable trees with crimp contacts must not put a strain on the engaged contacts with their weight.

The use of strain relief clamps eliminates this type of strain.



Lateral cable outlet



Straight cable outlet

General data		Technical data			Technical data		
Material		Steel, galvanized			Steel, galvanized		
		Ordering data			Ordering data		
Description		Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Strain relief clamps , clamping area of 9 - 19 mm, for contact inserts in series:							
HC-B..., HC-BB..., HC-D40..., HC-D64..., HC-DD..., HC-HV...		HC-B-ZS	1685330	10	HC-B-ZG	1685327	10

Replacement bolts and sealing screws



Replacement bolt



Sealing screw

General data	Technical data			Technical data		
	Ordering data			Ordering data		
Material	Steel, galvanized			Steel, galvanized		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Replacement bolt , steel, for HEAVYCON HC-B...TFL... sleeve housing (not EMC housing) in size:						
B48	HC-B 48-LB ERSBOLZ	1636114	10			
M3 sealing screw , IP67, for HEAVYCON housing in size:						
D7				HC-D 7-DS-IP65	1686229	100

Docking frames

Docking frames ensure that male and female inserts are located in insert systems and contact is made reliably.

Notes:
Due to the floating frame, the mounting panel must be grounded.



Docking frames

General data	Technical data			Technical data		
	Ordering data			Ordering data		
Material	Stainless steel			Stainless steel		
Insertion/withdrawal cycles	≥ 500			≥ 500		
Ambient temperature (operation)	-40 ... 125 [°C]			-40 ... 125		
Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Docking frame , with 4 flat headed screws with shoulder, for contact inserts in series:						
B6, DD24, BB10, K, M	HC-B 6-ANDOCK	1586112	2			
B10, DD42, BB18, K, M	HC-B 10-ANDOCK	1586125	2			
B16, D40, DD72, BB32, K, M	HC-B 16-ANDOCK	1586138	2			
B24, D64, DD108, BB46, K, M	HC-B 24-ANDOCK	1586141	2			

Heavy-duty connectors

HEAVYCON accessories

Cover plates

For sealing unused openings in control cabinet manufacturing.



Cover plate,
height: 3.5 mm



Cover plate,
height: 7 mm

General data

Material	PA
Color	gray
Flammability rating in accordance with UL 94	HB
Ambient temperature (operation)	-20 ... 100

Technical data

Technical data

Material	PA
Color	gray
HB	HB
-20 ... 100	-20 ... 100

Ordering data

Ordering data

Description

Cover plate, for a panel cutout in size:

B6 (cutout: 35 mm x 52 mm)
B10 (cutout: 35 mm x 65 mm)
B16 (cutout: 35 mm x 86 mm)
B24 (cutout: 35 mm x 113 mm)
D15 (cutout: 24 mm x 58 mm)
D25 (cutout: 24 mm x 74 mm)

Type

Order No.

Pcs./Pkt.

HC-B 6-AP-GY	1660368	10
HC-B 10-AP-GY	1660371	10
HC-B 16-AP-GY	1660384	10
HC-B 24-AP-GY	1660397	10
HC-D 15-AP-GY	1660342	10
HC-D 25-AP-GY	1660355	10

Type

Order No.

Pcs./Pkt.

HC-B 16-APV-GY	1661121	10
HC-B 24-APV-GY	1661037	10

Adapter plates

For changing panel cutouts to different size.



Adapter plate



Adapter plate

General data

Material	PA
Color	gray
Flammability rating in accordance with UL 94	HB
Ambient temperature (operation)	-20 ... 100

Technical data

Technical data

Material	PA
Color	gray
HB	HB
-20 ... 100	-20 ... 100

Ordering data

Ordering data

Description

Adapter plate, for reduction from a B24 panel cutout to:

3 x D7 (cutout: 21.5 mm x 21.5 mm)

Adapter plate, for reduction from a B24 panel cutout to:

3 x circular connector cutouts (Ø 21 mm)

Type

Order No.

Pcs./Pkt.

HC-B 24-ADP-3D 7-GY	1661448	10

Type

Order No.

Pcs./Pkt.

HC-B 24-ADP-3RST-GY	1662175	10

D-SUB adapter plates, D series

For installing D-SUB connectors in
HEAVYCON D series housing.

Notes:

- Order D-SUB connectors separately
- D-SUB assembly in the adapter plate: front mounting
- For D-SUB insert matrix see page 446



Adapter plate
for a D-SUB connector

Technical data

General data	
Material	PA
Color	gray
Ambient temperature (operation)	-20 ... 100 [°C]

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB adapter plate , for equipping HC-D15... housings with one D-SUB connector, D-SUB type:			
D-SUB 09	HC-D 15-ADP/1 DSUB 9	1661312	2
D-SUB 15	HC-D 15-ADP/1 DSUB 15	1775253	2
D-SUB 25	HC-D 15-ADP/1 DSUB 25	1775266	2

D-SUB adapter plates, B series

For installing D-SUB connectors in
HEAVYCON B series housing.

Notes:

- Order D-SUB connectors separately
- D-SUB assembly in the adapter plate: front mounting
- For D-SUB insert matrix see page 446



Adapter plate
for a D-SUB connector

Technical data

General data	
Material	PA
Color	gray
Flammability rating in accordance with UL 94	HB
Ambient temperature (operation)	-20 ... 100 [°C]

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB adapter plate , for mounting HEAVYCON housings with D-SUB connector, for housing size / D-SUB type:			
B6 / D-SUB 09	HC-B 6-ADP/1 DSUB 9	1775457	2
B6 / D-SUB 15	HC-B 6-ADP/1 DSUB 15	1775473	2
B10 / D-SUB 25	HC-B 10-ADP/1 DSUB 25	1775499	2
B16 / D-SUB 37	HC-B 16-ADP/1 DSUB 37	1775512	2
B16 / D-SUB 50	HC-B 16-ADP/1 DSUB 50	1775538	2



Adapter plate
for two D-SUB connectors

Technical data

General data	
Material	PA
Color	gray
Flammability rating in accordance with UL 94	HB
Ambient temperature (operation)	-20 ... 100 [°C]

Ordering data

Description	Type	Order No.	Pcs./Pkt.
D-SUB adapter plate , for mounting HEAVYCON housings with D-SUB connector, for housing size / D-SUB type:			
B6 / D-SUB 09	HC-B 6-ADP/2 DSUB 9	1775460	2
B6 / D-SUB 15	HC-B 6-ADP/2 DSUB 15	1775486	2
B10 / D-SUB 25	HC-B 10-ADP/2 DSUB 25	1775509	2
B16 / D-SUB 37	HC-B 16-ADP/2 DSUB 37	1775525	2
B16 / D-SUB 50	HC-B 16-ADP/2 DSUB 50	1775541	2

Heavy-duty connectors

HEAVYCON accessories

Crimp contacts

Crimp machines for turned/rolled contacts on request.

Notes:

For voltages less than 5 V and currents less than 5 mA, gold-plated contacts are recommended.



Ø 1.6 mm, turned crimp contacts



Ø 2.5 mm, turned crimp contacts

ERC

Technical data

Material data
Contact material
Stripping length of the individual wire
Insertion/withdrawal cycles
Ambient temperature (operation)

Hard silver-plated	Hard gold-plated
Copper alloy	Copper alloy
8 mm	8 mm
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Ordering data

Description

Turned female contacts, silver-plated, for wire cross section:

0.14 mm² ... 0.37 mm² / AWG 26 ... 22
0.50 mm² / AWG 20
0.75 mm² / AWG 18
0.75 mm² ... 1.00 mm² / AWG 18
1.50 mm² / AWG 16
2.50 mm² / AWG 14
3.00 mm² / AWG 12
4.00 mm² / AWG 12
6.00 mm² / AWG 10
10 mm²/AWG 8

Turned male contacts, silver-plated, for wire cross section:

0.14 mm² ... 0.37 mm² / AWG 26 ... 22
0.50 mm² / AWG 20
0.75 mm² / AWG 18
0.75 mm² ... 1.00 mm² / AWG 18
1.50 mm² / AWG 16
2.50 mm² / AWG 14
3.00 mm² / AWG 12
4.00 mm² / AWG 12
6.00 mm² / AWG 10
10 mm²/AWG 8

Turned female contacts, gold-plated, for wire cross section:

0.14 mm² ... 0.37 mm² / AWG 26 ... 22
0.50 mm² / AWG 20
0.75 mm² / AWG 18
0.75 mm² ... 1.00 mm² / AWG 18
1.50 mm² / AWG 16
2.50 mm² / AWG 14
4.00 mm² / AWG 12

Turned male contacts, gold-plated, for wire cross section:

0.14 mm² ... 0.37 mm² / AWG 26 ... 22
0.50 mm² / AWG 20
0.75 mm² / AWG 18
0.75 mm² ... 1.00 mm² / AWG 18
1.50 mm² / AWG 16
2.50 mm² / AWG 14
4.00 mm² / AWG 12

Turned switch contacts, (male 2 mm lagging), for HC-HV-..., silver-plated, for wire cross section:

1.00 mm² / AWG 18
1.50 mm² / AWG 16
2.50 mm² / AWG 14

Punched-rolled female contacts, silver-plated, for wire cross section:

0.34 mm² ... 1.00 mm² / AWG 22 ... 18
1.50 mm² ... 2.50 mm² / AWG 16 ... 14

Punched-rolled male contacts, silver-plated, for wire cross section:

0.34 mm² ... 1.00 mm² / AWG 22 ... 18
1.50 mm² ... 2.50 mm² / AWG 16 ... 14

ERC

Technical data

Hard silver-plated	Hard gold-plated
Copper alloy	Copper alloy
7.5 mm (9.5 mm at HC-M-HV...)	7.5 mm (9.5 mm at HC-M-HV...)
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Ordering data

Type	Order No.	Pcs./Pkt.

CK2,5-ED-0,50BU AG	1663640	100
CK2,5-ED-0,75BU AG	1663653	100
CK2,5-ED-1,00BU AG	1663666	100
CK2,5-ED-1,50BU AG	1663679	100
CK2,5-ED-2,50BU AG	1663682	100
CK2,5-ED-3,00BU AG	1663695	100
CK2,5-ED-4,00BU AG	1663705	100

CK2,5-ED-0,50ST AG	1663572	100
CK2,5-ED-0,75ST AG	1663585	100
CK2,5-ED-1,00ST AG	1663598	100
CK2,5-ED-1,50ST AG	1663608	100
CK2,5-ED-2,50ST AG	1663611	100
CK2,5-ED-3,00ST AG	1663624	100
CK2,5-ED-4,00ST AG	1663637	100

CK2,5-ED-0,37BU AU	1585647	100
CK2,5-ED-0,50BU AU	1674859	100
CK2,5-ED-1,00BU AU	1674833	100
CK2,5-ED-1,50BU AU	1674820	100
CK2,5-ED-2,50BU AU	1674862	100
CK2,5-ED-4,00BU AU	1674846	100

CK2,5-ED-0,37ST AU	1585663	100
CK2,5-ED-0,50ST AU	1674804	100
CK2,5-ED-1,00ST AU	1674781	100
CK2,5-ED-1,50ST AU	1674778	100
CK2,5-ED-2,50ST AU	1674817	100
CK2,5-ED-4,00ST AU	1674794	100

CK2,5-ED-1,00ST-S AG	1663857	100
CK2,5-ED-1,50ST-S AG	1663860	100
CK2,5-ED-2,50ST-S AG	1663873	100

new

new



Ø 4.0 mm, turned crimp contacts

Ø 1.6 mm, punched-rolled crimp contacts,
tapedØ 1.6 mm, punched-rolled crimp contacts,
single contacts

ERIC

Technical data
Copper alloy 9 mm (9.6 mm (4 - 6 mm ²)/18 mm (10 mm ²))
≥ 500 -40°C ... 125°C

Ordering data		
Type	Order No.	Pcs./Pkt.

CK4,0-ED-1,50BU AG	1663271	25
CK4,0-ED-2,50BU AG	1663284	25
CK4,0-ED-4,00BU AG	1663297	25
CK4,0-ED-6,00BU AG	1663307	25
CK4,0-ED-10,00BU AG	1586183	25

CK4,0-ED-1,50ST AG	1663239	25
CK4,0-ED-2,50ST AG	1663242	25
CK4,0-ED-4,00ST AG	1663255	25
CK4,0-ED-6,00ST AG	1663268	25
CK4,0-ED-10,00ST AG	1586198	25

Technical data
Cu alloy, nickel-plated 4 mm
≥ 50 -40°C ... 125°C

Ordering data		
Type	Order No.	Pcs./Pkt.

CK1,6-BR-1,00BU OIC AG	1004381	7000
CK1,6-BR-2,50BU OIC AG	1004383	5000
CK1,6-BR-1,00ST OIC AG	1004380	7000
CK1,6-BR-2,50ST OIC AG	1004382	5000

Technical data
Cu alloy, nickel-plated 4 mm
≥ 50 -40°C ... 125°C

Ordering data		
Type	Order No.	Pcs./Pkt.

CK1,6-ER-1,00BU OIC AG	1004362	100
CK1,6-ER-2,50BU OIC AG	1004366	100
CK1,6-ER-1,00ST OIC AG	1004360	100
CK1,6-ER-2,50ST OIC AG	1004365	100

Heavy-duty connectors

HEAVYCON accessories

Type J iron and constantan crimp contacts

In hot runner injection molding machines, temperatures are often measured using iron or constantan thermocouples. Iron or constantan elements are used for temperatures up to around 450 °C.

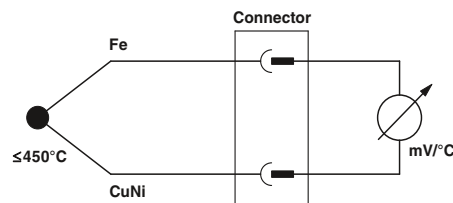
Temperature measurements using iron or constantan elements on the brass crimp contact of a connector cause thermoelectric voltages that falsify the measuring result. The use of iron or constantan crimp contacts is therefore recommended.

Crimp contacts made from iron or constantan can be used in the A/B/BB/HV series contact inserts and in the HC-Q05..., HC-M-06..., HC-M-08..., HC-M-20... modules.

It is possible to use mixed contact configurations (standard, thermal contacts) for the crimp contact inserts.

Notes:

For crimping pliers, assembly and removal tools, see page 670



Material data

Contact material
Contact surface material
Stripping length of the individual wire

Insertion/withdrawal cycles

Temperature data

Ambient temperature (operation)

Description

Turned female contacts, 0.5 mm²

Iron (Fe), Au surface
Constants (CuNi), uncoated

Turned male contacts, 0.5 mm²

Iron (Fe), Au surface
Constants (CuNi), uncoated



Turned crimp contacts, for CK 2,5 crimp contacts:
HC-A..., HC-B..., HC-BB..., HC-Q05..., HC-M...

Technical data

Iron	Copper-nickel (constants)
Hard gold-plated	-
7.5 mm (9.5 mm at HC-M-HV...)	7.5 mm (9.5 mm at HC-M-HV...)
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Ordering data

Type	Order No.	Pcs./Pkt.
CK2,5-ED-0,5BU FE	1585773	25
CK2,5-ED-0,5BU CUNI	1585757	25
CK2,5-ED-0,5ST FE	1585760	25
CK2,5-ED-0,5ST CUNI	1585744	25

FO crimp contacts

Fiber optic crimp contacts (980/1000 µm) are suitable for coupling fiber optics (polymer optical fibers). You can use the following crimp contact carriers:

- VC-D (for turned contacts)
- HC M 12..., HC-M-17..., HC-M-03/04...
- HC-D... (for turned contacts) and
- HC-DD...

The optic fibers are polished, stripped, and then crimped.



Crimp contacts for fiber optic cables,
polymer optic fibers (POF)

Technical data

Nickel silver
≥ 500

Ordering data

Type	Order No.	Pcs./Pkt.
CK1,6-ED-BU-POF	1885004	50
CK1,6-ED-ST-POF	1884995	50
CRIMPFOX-1,6-ED-POF-N	1584839	1
POLISHER-POF	1686122	1
POLFOL 1 MIC-POF	1636800	10
POLPAP 1500-POF	1636813	10

Material data

Contact material
Insertion/withdrawal cycles

Description

Fiber optic contact POF, turned, for VC-D contact carriers

Female

Male

Tools, for fiber optics:

Crimping pliers
Polisher
Polishing strip
Polishing paper

Shield connection



The HEAVYCON D bus contact is used to connect shielded, 2-core bus conductors.

The connection takes up 4 adjacent positions in the contact carrier. The overall shielding braid is also suitable as a T-coupler (two positions for the cable shield).

Electrical data	
Rated voltage	60 V
Rated current	-
Transmission speed	-
Material specifications for distributor	
Contact material	Copper alloy
Contact surface material	hard-silver plated
Mechanical data	
External cable diameter	6 mm ... 9 mm
Temperature data	
Ambient temperature (operation)	-40°C ... 60°C

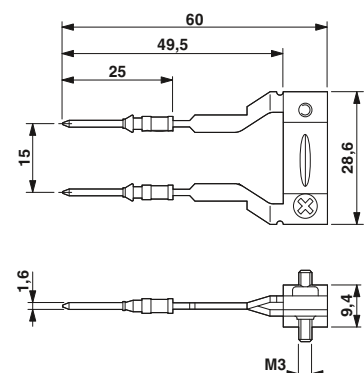
Description	
Shield connection , for two shielded cables, incl. two loose female crimp contacts for PROFIBUS cables.	
Shield connection , for a shielded line on male contact carriers, incl. two loose crimp contacts for PROFIBUS line	
Shield connection , for shielded cables on female contact carriers, without loose crimp contacts	
For one bus line For two bus lines	
Shield connection , for shielded cables on male contact carriers, without loose crimp contacts	
For one bus line For two bus lines	
Crimping pliers	
- For turned contacts; 0.14 ... 4 mm ²	
Assembly tool	
- For contacts CK1,6-ED.../CK2,5-ED.../CK1,6-ER...	



For crimp contact carriers of series
HC-D40 / -D64 / HC-M-12

ERC

Technical data			
Ordering data			
Type	Order No.	Pcs./Pkt.	
HC-D 4-BU-2BUS	1886139	1	
HC-D 4-ST-1BUS	1886142	1	
HC-D 4-1BU	1886143	1	
HC-D 4-2BU	1886140	1	
HC-D 4-1ST	1886144	1	
HC-D 4-2ST	1886141	1	
CRIMPFOX-1,6/2,5-ED-4,0	1687419	1	
UNIFOX MT-CK 1.6/2.5	1089092	1	



HC-D 4-...BUS

Heavy-duty connectors

HEAVYCON accessories

CRIMPFOX crimping pliers for turned contacts

- The integrated positioning tool ensures that the contacts are perfectly aligned in the die
- Marked die stations for precise processing of the relevant cross sections

Notes:

Spare dies and spare retaining springs can be found in the product area on our website at phoenixcontact.net/products.



Conductor cross section of 0.14 ... 4 mm²



Conductor cross section 6 ... 10 mm²

Application range	
Conductor	[mm ²] / AWG
Compression	

Description

Crimping pliers, for turned male and female contacts, CK1,6-ED..., CK2,5-ED..., CK4,0-ED...

- For turned contacts; 0.14 to 4 mm²
- For CK4,0-ED...6 - 10 mm² turned contacts

Contact removal tool, for crimp contacts
- For turned and rolled CK-1,6-... contacts

- For turned CK-2,5-... contacts
- For turned CK-4,0-... contacts

Technical data

0.14 ... 4 / 26 ... 12
Square crimp

Ordering data

Type	Order No.	Pcs./Pkt.
CRIMPFOX-TC 4	1212113	1

Accessories

UNIFOX RT-CK 1.6	1072069	1
UNIFOX RT-CK 2.5	1072067	1
UNIFOX RT-CK 4.0	1072064	1

Technical data

6 ... 10 / 10 ... 8
Square crimp

Ordering data

Type	Order No.	Pcs./Pkt.
CRIMPFOX-TC 10	1212114	1

Accessories

UNIFOX RT-CK 4.0	1072064	1

CRIMPFOX universal pliers for accommodating various crimp inserts

- One of the key features of the CRIMPFOX-M crimping pliers is the way the crimp inserts can be quickly replaced without the need for tools

Notes:

For more crimping dies for ferrules, cable lugs, slip-on sleeves, turned contacts, coaxial, RJ45, and RJ11 plugs, visit phoenixcontact.net/products



Basic pliers

Application range	
Compression	

Description

Basic pliers, for accommodating dies for various contact types, unlockable pressure lock, lateral entry

Technical data

universal

Ordering data

Type	Order No.	Pcs./Pkt.
CRIMPFOX-M	1212072	1

Accessories

CRIMPFOX-M TC 4/DIE	1212075	1
CRIMPFOX-M TC 10/DIE	1212076	1

Die, for turned male and female contacts

CK2,5-ED..., CK4,0-ED..., cross section 0.5 - 4 mm²
CK4,0-ED..., cross section 6 - 10 mm²

CRIMPFOX crimping pliers for rolled contacts

new

Conductor cross section of 0.14 ... 2.5 mm²

Technical data	
Application range	
Conductor	[mm ²] / AWG
Compression	0.14 ... 2.5 / 26 ... 14 B crimp
Ordering data	
Type	Order No.
CRIMPFOX-P CK 1.6 ER 2.5 OIC-L	1069228
Pcs./Pkt.	
1	
Accessories	
UNIFOX MT-CK 1.6/2.5	1089092
1	

CRIMPFOX crimping pliers for coaxial connectors

- The CRIMPFOX–CX 4,2 tool is a pair of crimping pliers for processing coaxial contacts
- The CRIMPFOX–TC MP tool is a pair of crimping pliers for processing D-SUB contacts

Notes:

Spare dies and spare retaining springs can be found in the product area on our website at phoenixcontact.net/products.



For coaxial connectors

0.08 ... 2.5 mm² conductor cross section

Technical data		Technical data	
Application range		Application range	
Compression	HEX crimp	Compression	Four-mandrel crimping
Ordering data		Ordering data	
Type	Order No.	Type	Order No.
CRIMPFOX-CX 4,52	1212094		
Pcs./Pkt.		Pcs./Pkt.	
1		1	
Accessories		Accessories	
HC-M4-KOAX-EWZ	1676747	EWR	1665075
1		1	

Description	
Crimping pliers for coaxial connectors, 1.69 mm, 3.25 mm, 4.52 mm, three marked die stations, unlockable pressure lock, lateral entry, hex crimp	
Crimping pliers , for turned contacts, universal cross section setting, up to a maximum of 2.5 mm ² , digital display with 0.01 mm increments, unlockable pressure lock, lateral entry, including positioning tool	
- For turned contacts, four-mandrel crimping	
Removal tool - For coax contacts HC-M-04...KOAX... - For D-SUB contacts VS-...CD...	

Technical data		
Four-mandrel crimping		
Ordering data		
Type	Order No.	Pcs./Pkt.
CRIMPFOX-TC MP	1212510	1
Accessories		
EWR	1665075	1



DUPLICON is a comprehensive power distribution system for $6 \times 4 \text{ mm}^2$ and PE conductors (25 A / 400/690 V). The system has a minimum of components and is flexible in terms of handling. The robust metal housing with vibration-proof locking latches qualifies DUPLICON for the harshest operating conditions.

DUPLICON features IP67 degree of protection. The contact inserts have a leading PE contact. The screw connections can be assembled with standard tools. DUPLICON acts as an interface between the control cabinet and the device or actuators and drives.

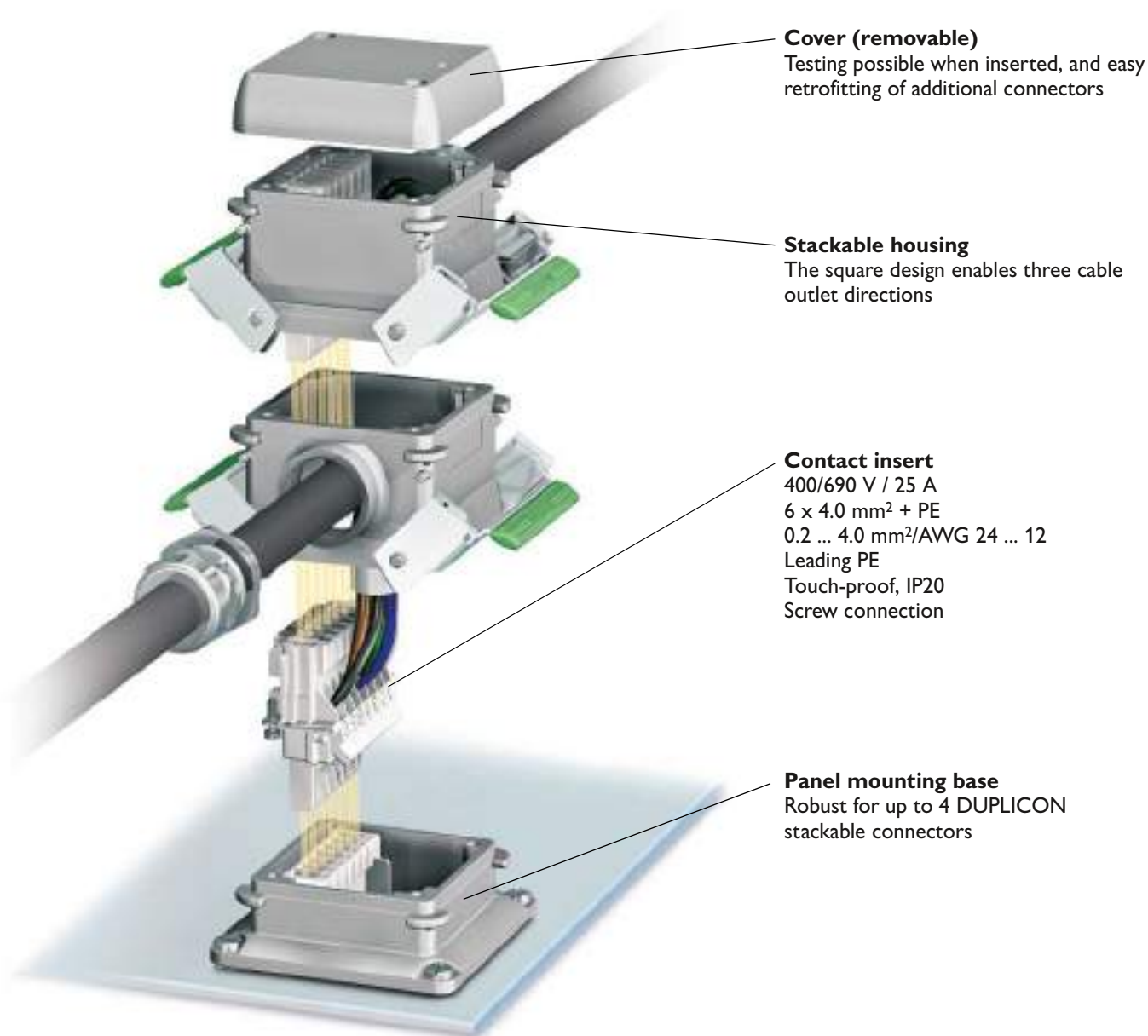
With its additional connections, DUPLICON provides a broad range of possible applications:

Connection of 24 V, connection of

two-wire bus lines for AS-i or PROFIBUS, and connection to the signal network.

Thanks to the plug-in design, all cables can be conveniently assembled in the workshop and quickly connected together in the system. All connections are touch-proof in accordance with DIN VDE 0105 and meet the demands of the BGV A2 accident prevention regulations.

i Your web code: #0004



Cover (removable)

Testing possible when inserted, and easy retrofitting of additional connectors

Stackable housing

The square design enables three cable outlet directions

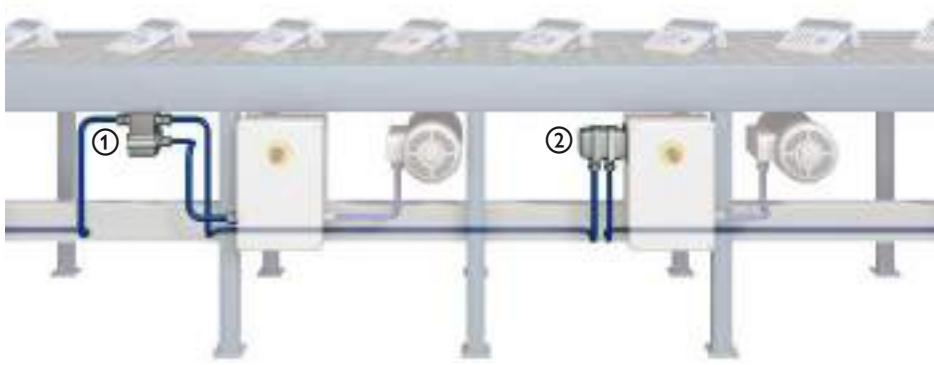
Contact insert

400/690 V / 25 A
 $6 \times 4.0 \text{ mm}^2 + \text{PE}$
 $0.2 \dots 4.0 \text{ mm}^2 / \text{AWG } 24 \dots 12$
Leading PE
Touch-proof, IP20
Screw connection

Panel mounting base

Robust for up to 4 DUPLICON stackable connectors

Stationary power distribution



There are two DUPLICON options for stationary power distribution:

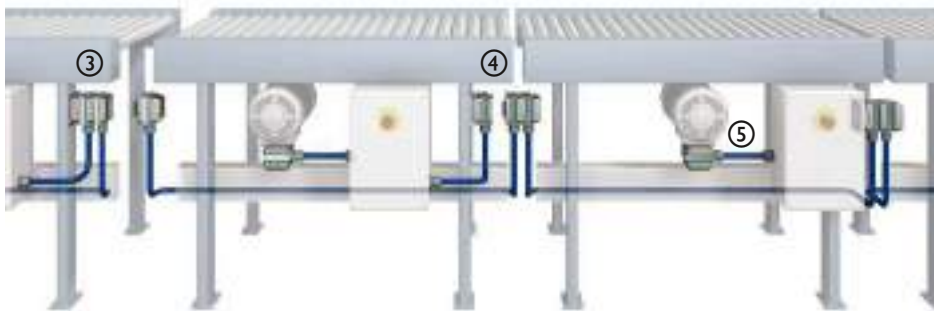
① Using a T-box, which is installed permanently next to the power consumer and has a plug-in cable outlet.

② With a stackable device connection. Direct device connection is always the best

option, but this requires design-based integration.

The main advantage is the ability to plug in the cables separately. This simplifies startup and also enables the device to be replaced without interruption during subsequent servicing

Modular power distribution



③ You can configure your power distribution in advance, thanks the stackable design. Plug and Play ensures fast and safe startup.

④ During servicing, the main power cable is disconnected from the load without causing any interruption. The system continues to run.

⑤ DUPLICON is also suitable for use as a motor connector.

The square design enables three different cable outlet directions.

The vibration-resistant locking mechanism can withstand the harshest operating conditions.

Cable routing options



With hybrid cables

In the simplest case, one cable is inserted per stackable housing. With the aid of an M25 adapter screw connection, cables with a diameter of up to 21 mm can be connected.



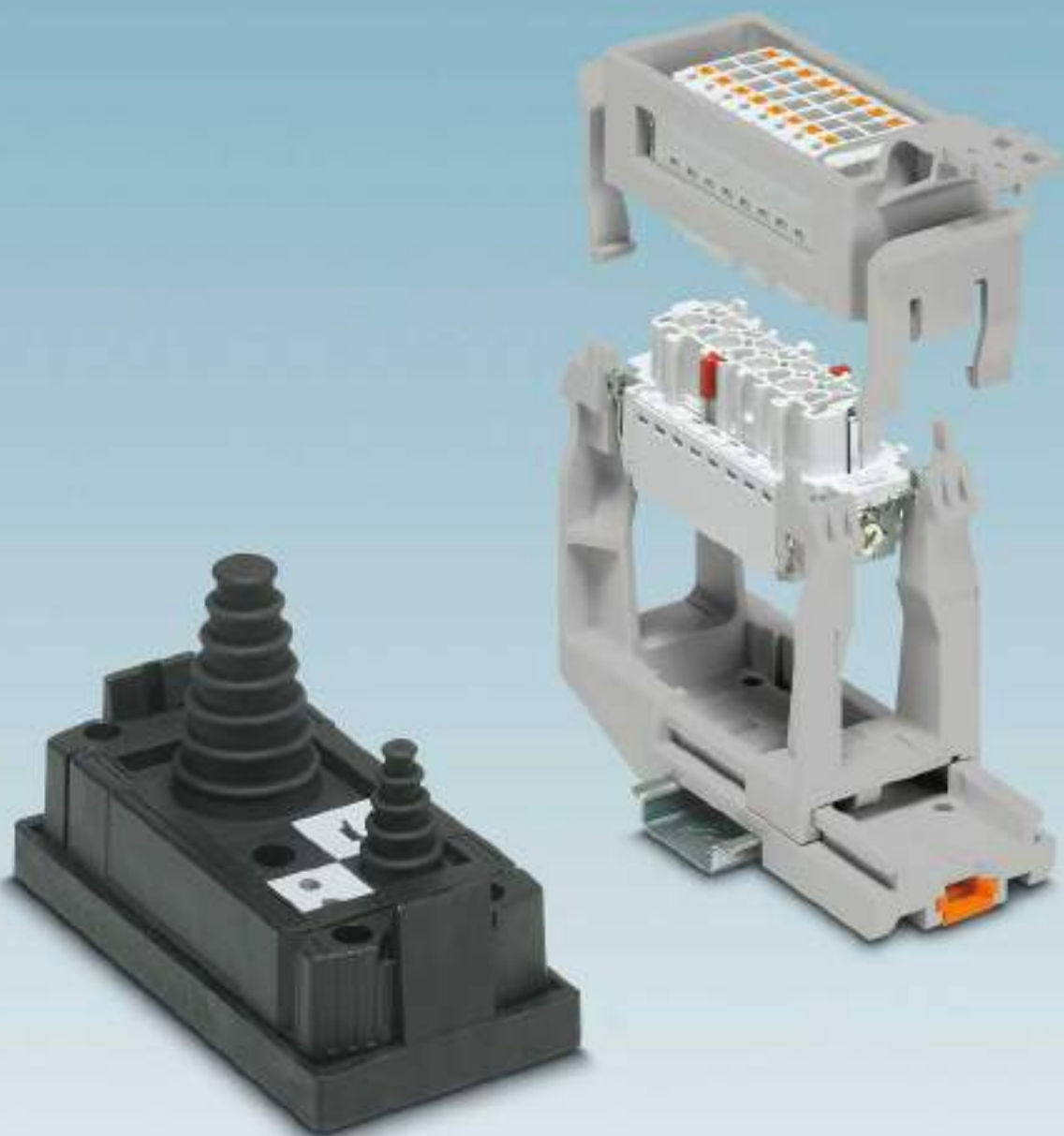
With separate cables

The cable glands with two drill holes allow thin power and 24 V cables to be routed separately into a stackable housing.



With opposing cables

Housings with two cable entries allow cables with larger diameters or combinations, e.g., with AS-i cables or PROFIBUS, to be routed in.



Installation and mounting material

Phoenix Contact installation and mounting material gives you virtually unlimited possibilities when it comes to laying cables into and out of the control cabinet into the field:

The CES system enables water- and dust-proof cable entry into the control cabinet. Frames with modules that can be flexibly combined or space-saving membrane plates are available for this.

Wherever cables are subjected to high tensile forces, cable glands are an excellent alternative to panel feed-through systems.

With DIN rail mounting frames from Phoenix Contact, you can implement the plug-in connection on the DIN rail. This saves entire marshalling levels in the control cabinet. The frames accommodate pre-assembled contact inserts and can be combined with HEAVYCON EVO sleeve housings.

Space-saving service interfaces simplify maintenance, service, and diagnostics on control cabinets and devices.

Marking material for cables and connectors, matching tools, and protective hoses simplify assembly and provide a clearer overview in control cabinets and systems.

 **Your web code: #0005**

Modular cable entry system	676
Multigates cable entry plates	683
DIN rail mounting frames	684
Cable glands	686
Service interfaces	708
Marking and labeling	722

Installation and mounting material

Modular cable entry system

Sealing frames for cable sleeves



- Sealing frame with integrated metal reinforcement to protect against deformation
- Only two locking elements are required (screws or latch)
- Suitable for standard panel cutouts
- Snap-on frame for simplifying on-site installation
- Sealing frame with convenient locking latch for tool-free actuation
- Marking for cable sleeve location on the underside of the frame

Notes:
For assembly instructions, see phoenixcontact.net/products
If the panel cutout width is 51 mm, HC industrial connectors and CIF DIN rail mounting frames can also be fed through the panel using the cable entry system (CES).



Sealing frame with locking latch



General data	
Material of frames	PA
Material of cable sleeves	-
Degree of protection	IP54
Flammability rating in accordance with UL 94	V0
Temperature range	-40 ... 120 [°C]

Technical data		

Description
Sealing frame , including flat gasket, for accommodating cable sleeves, for standard cutout:
B10 (cutout: 35 mm x 65 mm), for up to 6 cable sleeves
B16 (cutout: 35 mm x 86 mm), for up to 8 cable sleeves
B24 (cutout: 35 mm x 113 mm), for up to 10 cable sleeves
Pre-assembled sealing frames with cone-shaped cable sleeves , for cables with a diameter of 2 mm ... 11 mm, for standard cutouts:
B16 (cutout: 36 mm x 86 mm)
B24 (cutout: 36 mm x 113 mm)
Snap-on frame , including integrated seal for mounting panel, for accommodating sealing frames, for standard cutouts:
B10 (cutout: 35 mm x 65 mm)
B16 (cutout: 35 mm x 86 mm)
B24 (cutout: 35 mm x 113 mm)

Ordering data		
Type	Order No.	Pcs./Pkt.
CES-B10-HFFS-PLBK	0801663	1
CES-B16-HFFS-PLBK	0801662	1
CES-B24-HFFS-PLBK	0801661	1

Replacement flat gasket , for sealing frame with standard cutout:
B10 (cutout: 35 mm x 65 mm)
B16 (cutout: 35 mm x 86 mm)
B24 (cutout: 35 mm x 113 mm)
Locking plate , metal, locks an unused snap-up frame, transport protection, for standard cutouts:
B10
B16
B24
Electrician's scissors , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum (flexible), Kevlar® fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint
M4 replacement locking screw , with 3 mm Allen screw head, for sealing frame with screw locking
Bit screwdriver , with 1/4" quick-action chuck, suitable for bits in accordance with DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic
Bit screwdriver
Screw bit , hexagonal, E6.3-1/4" drive, hardened, suitable for holder in accordance with DIN 3126-F 6.3/ISO 1173, size: hex 3 x 50 mm
Screw bit , size: hex 3 x 50 mm

Accessories		
CES-B10-WRG-BK	0801725	10
CES-B16-WRG-BK	0801726	10
CES-B24-WRG-BK	0801727	10



Sealing frame
with screw locking



Sealing frame with cone-shaped cable sleeves
and screw locking



Snap-on frame



Technical data		
PA		
-		
IP54 / IP65		
V0		
-40 ... 120		

Ordering data		
Type	Order No.	Pcs./Pkt.
CES-B10-SFFS-PLBK	0801660	1
CES-B16-SFFS-PLBK	0801659	1
CES-B24-SFFS-PLBK	0801658	1

Accessories		
CES-B10-WRG-BK	0801725	10
CES-B16-WRG-BK	0801726	10
CES-B24-WRG-BK	0801727	10
CES-SFFS-H	0801728	10
SF-M BH	1212070	5
SF-BIT-HEX 3-50	1212647	5



Technical data		
PA		
NBR		
IP54 / IP65		
-		
-40 ... 120		

Ordering data		
Type	Order No.	Pcs./Pkt.
CES-B16-8XSRC-BK	1411073	1
CES-B24-10XSRC-BK	1411074	1

Accessories		
CUTFOX-ES	1212621	1
CES-SFFS-H	0801728	10
SF-M BH	1212070	5
SF-BIT-HEX 3-50	1212647	5

Technical data		
PA		
-		
IP54		
V0		
-20 ... 80		

Ordering data		
Type	Order No.	Pcs./Pkt.
CES-B10-SF-PLBK	0801655	1
CES-B16-SF-PLBK	0801651	1
CES-B24-SF-PLBK	0801647	1

Accessories		
CES-B10-SFC-M-15,6	1423743	10
CES-B16-SFC-M-15,6	1423744	10
CES-B24-SFC-M-15,6	1423745	10

Installation and mounting material

Modular cable entry system

Cable sleeves, rubber

Advantages:

- Resistant to oil, fuels, and grease
- Halogen-free

Notes:

The CES cable entry system was developed in accordance with DIN EN 50262 (Cable glands for electrical installations).

Assemble the cable sleeves in accordance with the enclosed assembly instructions.



Cable sleeves, small



Cable sleeves, large

(R)

Technical data

General data

Material	NBR
Degree of protection	IP54
Temperature range	-40 ... 125 [°C]

Ordering data

Description	Color

Cone-shaped cable sleeves, IP65 in sealing frames with screw locking and cable binders, IP65 in sealing frames with locking latch. For cables with a diameter of:

2 mm ... 11 mm	black
7 mm ... 24 mm	black

Cable sleeves, IP54, without bore hole, can be used in sealing frames with locking latch and screw locking

black

Cable sleeves, small, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:

1 mm ... 2 mm	black
2 mm ... 3 mm	black
3 mm ... 4 mm	black
4 mm ... 5 mm	black
5 mm ... 6 mm	black
6 mm ... 7 mm	black
7 mm ... 8 mm	black
8 mm ... 9 mm	black
9 mm ... 10 mm	black
10 mm ... 11 mm	black
11 mm ... 12 mm	black
12 mm ... 13 mm	black
13 mm ... 14 mm	black
14 mm ... 15 mm	black
15 mm ... 16 mm	black
16 mm ... 17 mm	black

Cable sleeves, large, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:

14 mm ... 15 mm	black
15 mm ... 16 mm	black
16 mm ... 17 mm	black
17 mm ... 18 mm	black
18 mm ... 19 mm	black
19 mm ... 20 mm	black
20 mm ... 21 mm	black
21 mm ... 22 mm	black
22 mm ... 23 mm	black
23 mm ... 24 mm	black
24 mm ... 25 mm	black
25 mm ... 26 mm	black
26 mm ... 27 mm	black
27 mm ... 28 mm	black
28 mm ... 29 mm	black
29 mm ... 30 mm	black
30 mm ... 31 mm	black
31 mm ... 32 mm	black
32 mm ... 33 mm	black

Type	Order No.	Pcs./Pkt.

CES-SRC-BK	0801718	10

CES-SRG-BK	0801670	10

CES-SRG-BK-2	0801635	10
CES-SRG-BK-3	0801633	10
CES-SRG-BK-4	0801632	10
CES-SRG-BK-5	0801630	10
CES-SRG-BK-6	0801628	10
CES-SRG-BK-7	0801627	10
CES-SRG-BK-8	0801625	10
CES-SRG-BK-9	0801622	10
CES-SRG-BK-10	0801620	10
CES-SRG-BK-11	0801618	10
CES-SRG-BK-12	0801617	10
CES-SRG-BK-13	0801616	10
CES-SRG-BK-14	0801615	10
CES-SRG-BK-15	1410563	10
CES-SRG-BK-16	1410576	10
CES-SRG-BK-17	1410589	10

(R)

Technical data

NBR
IP54
-40 ... 125

Ordering data

Type	Order No.	Pcs./Pkt.

CES-LRC-BK	0801719	10

CES-LRG-BK	0801671	10

CES-LRG-BK-15	0801619	10
CES-LRG-BK-16	0801621	10
CES-LRG-BK-17	0801624	10
CES-LRG-BK-18	0801626	10
CES-LRG-BK-19	0801629	10
CES-LRG-BK-20	0801631	10
CES-LRG-BK-21	0801634	10
CES-LRG-BK-22	0801637	10
CES-LRG-BK-23	0801638	10
CES-LRG-BK-24	0801639	10
CES-LRG-BK-25	0801640	10
CES-LRG-BK-26	0801643	10
CES-LRG-BK-27	0801644	10
CES-LRG-BK-28	0801646	10
CES-LRG-BK-29	0801648	10
CES-LRG-BK-30	0801650	10
CES-LRG-BK-31	0801653	10
CES-LRG-BK-32	0801654	10
CES-LRG-BK-33	0801656	10

Cable sleeves, rubber, special formats

Advantages:

- Resistant to oil, fuels, and grease
- Halogen-free

Notes:
The CES cable entry system was developed in accordance with DIN EN 50262 (Cable glands for electrical installations).
Assemble the cable sleeves in accordance with the enclosed assembly instructions.



Cable sleeves, small, with several bore holes



Cable sleeves, small, for AS interface cables

(6)

General data			Technical data			Technical data		
Material			NBR			NBR		
Degree of protection			IP54			IP54		
Temperature range		[°C]	-40 ... 125			-40 ... 125		
Ordering data			Ordering data			Ordering data		
Description	Color		Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Cable sleeves, with 2 bore holes, small, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:								
2x 2 mm ... 3 mm	black		CES-SRG-BK-2X3	1410398	10			
2x 3 mm ... 4 mm	black		CES-SRG-BK-2X4	1410408	10			
2x 4 mm ... 5 mm	black		CES-SRG-BK-2X5	0801657	10			
2x 5 mm ... 6 mm	black		CES-SRG-BK-2X6	0801664	10			
2x 6 mm ... 7 mm	black		CES-SRG-BK-2X7	1410084	10			
2x 7 mm ... 8 mm	black		CES-SRG-BK-2X8	1410097	10			
2x 8 mm ... 9 mm	black		CES-SRG-BK-2X9	1410411	10			
Cable sleeves, with 4 bore holes, small, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:								
4 x 2 mm ... 3 mm	black		CES-SRG-BK-4X3	0801665	10			
4 x 3 mm ... 4 mm	black		CES-SRG-BK-4X4	0801666	10			
4 x 4 mm ... 5 mm	black		CES-SRG-BK-4X5	1410107	10			
4 x 5 mm ... 6 mm	black		CES-SRG-BK-4X6	1410152	10			
Cable sleeve, IP54, slotted, for one AS-Interface cable, cable arrangement:								
L	black					CES-SRG-BK-1ASI-L	1410042	10
R	black					CES-SRG-BK-1ASI-R	0801667	10
Cable sleeve, IP54, slotted, for two AS-Interface cables, cable arrangement:								
LL	black					CES-SRG-BK-2ASI-LL	1410055	10
RR	black					CES-SRG-BK-2ASI-RR	0801668	10
LR	black					CES-SRG-BK-2ASI-LR	0801669	10

Installation and mounting material

Modular cable entry system

Cable sleeves, thermoplastic

Advantages:

- Low flammability in accordance with UL 94 V0 of thermoplastic sleeves
- Good resistance to acids and lyes

Notes:
The CES cable entry system was developed in accordance with DIN EN 50262 (Cable glands for electrical installations).
Assemble the cable sleeves in accordance with the enclosed assembly instructions.



Cable sleeves, small



Cable sleeves, large



Technical data
SEBS
IP54
V0
-40 ... 80

Ordering data

Type	Order No.	Pcs./Pkt.
CES-STPG-GY-2	0801672	10
CES-STPG-GY-3	0801673	10
CES-STPG-GY-4	0801674	10
CES-STPG-GY-5	0801675	10
CES-STPG-GY-6	0801676	10
CES-STPG-GY-7	0801677	10
CES-STPG-GY-8	0801679	10
CES-STPG-GY-9	0801680	10
CES-STPG-GY-10	0801682	10
CES-STPG-GY-11	0801683	10
CES-STPG-GY-12	0801684	10
CES-STPG-GY-13	0801685	10
CES-STPG-GY-14	0801686	10
CES-STPG-GY-15	1410521	10
CES-STPG-GY-16	1410534	10
CES-STPG-GY-17	1410547	10



Technical data
SEBS
IP54
V0
-40 ... 80

Ordering data

Type	Order No.	Pcs./Pkt.
CES-LTPG-GY-15	0801687	10
CES-LTPG-GY-16	0801688	10
CES-LTPG-GY-17	0801689	10
CES-LTPG-GY-18	0801690	10
CES-LTPG-GY-19	0801691	10
CES-LTPG-GY-20	0801692	10
CES-LTPG-GY-21	0801693	10
CES-LTPG-GY-22	0801695	10
CES-LTPG-GY-23	0801696	10
CES-LTPG-GY-24	0801697	10
CES-LTPG-GY-25	0801698	10
CES-LTPG-GY-26	0801699	10
CES-LTPG-GY-27	0801700	10
CES-LTPG-GY-28	0801701	10
CES-LTPG-GY-29	0801702	10
CES-LTPG-GY-30	0801703	10
CES-LTPG-GY-31	0801705	10
CES-LTPG-GY-32	0801706	10
CES-LTPG-GY-33	0801707	10

General data
Material
Degree of protection
Flammability rating in accordance with UL 94
Temperature range

Description	Color

Cable sleeves, small, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:

1 mm ... 2 mm	gray
2 mm ... 3 mm	gray
3 mm ... 4 mm	gray
4 mm ... 5 mm	gray
5 mm ... 6 mm	gray
6 mm ... 7 mm	gray
7 mm ... 8 mm	gray
8 mm ... 9 mm	gray
9 mm ... 10 mm	gray
10 mm ... 11 mm	gray
11 mm ... 12 mm	gray
12 mm ... 13 mm	gray
13 mm ... 14 mm	gray
14 mm ... 15 mm	gray
15 mm ... 16 mm	gray
16 mm ... 17 mm	gray

Cable sleeves, large, slotted, can be used in sealing frames with locking latch and screw locking, for cable diameter of:

14 mm ... 15 mm	gray
15 mm ... 16 mm	gray
16 mm ... 17 mm	gray
17 mm ... 18 mm	gray
18 mm ... 19 mm	gray
19 mm ... 20 mm	gray
20 mm ... 21 mm	gray
21 mm ... 22 mm	gray
22 mm ... 23 mm	gray
23 mm ... 24 mm	gray
24 mm ... 25 mm	gray
25 mm ... 26 mm	gray
26 mm ... 27 mm	gray
27 mm ... 28 mm	gray
28 mm ... 29 mm	gray
29 mm ... 30 mm	gray
30 mm ... 31 mm	gray
31 mm ... 32 mm	gray
32 mm ... 33 mm	gray

Cable sleeves, IP54, without bore hole, can be used in sealing frames with locking latch and screw locking

gray

CES-STPG-GY	0801715	10

CES-LTPG-GY	0801716	10

Installation and mounting material

Accessories

Filler plugs, EMC cable catch rails

Notes:

For assembly instructions, see phoenixcontact.net/products



Filler plugs
with a diameter of 2 mm to 17 mm



EMC cable catch rail
for mounting on CES sealing frames

General data

Material	PA
Degree of protection	IP54
Temperature range	-20 ... 80

Technical data

Technical data

Stainless steel
-
- ... -

Ordering data

Ordering data

Description

Filler plugs, for sealing unused cable sleeves with a diameter of:

2 mm / 3 mm / 4 mm
5 mm / 6 mm / 7 mm
8 mm / 9 mm / 10 mm
11 mm / 12 mm / 13 mm
14 mm / 15 mm / 16 mm
17 mm

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.
1410220	25	3063921	25	3063934	25
3063947	25	3063950	25	3063963	25
3063976	25	3063989	25	3063992	25
3064001	25	3062016	25	3062029	25
3062032	25	3062045	25	3062058	25
3062061	25				

EMC cable catch rail, for mounting on CES sealing frames

CES-B16-... Long side
CES-B24-... Long side
CES-B16-..., CES-B24-... Short side

Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.	Order No.	Pcs./ Pkt.

3063507	5
3063510	5
3063523	5

Module plates

For accommodating CES B24 sealing
frames and CES Multigates cable
feed-throughs.

Pre-assembled for time-saving and
easy assembly:

- Partition plates
- Control cabinet bottom



Module plate

Notes:

For assembly instructions, see phoenixcontact.net/products

General data

Material	Stainless steel 1.4301/AISI 304
Sealing material	NBR
Degree of protection	IP54
Temperature range	-40 ... 100

Technical data

Ordering data

Description

B24 module plates, with seal, for the CES B24 sealing frames
and the B24 Multigates cable feed-throughs

3 openings
4 openings

Type	Order No.	Pcs./Pkt.
MD-INB24-3-SZP-S	1415242	1
MD-INB24-4-SZP-S	1415243	1

Multigates cable feed-throughs

- High degree of protection thanks to double membrane sealing
- Quick installation of unassembled cables
- Sealing frame stable in form, thanks to metal reinforcement
- Flame-retardant
- Size: 222 mm x 92 mm

Notes:
Other versions available on request.
For assembly instructions, see phoenixcontact.net/products



CES Multigates cable feed-through, light gray



CES Multigates cable feed-through, black, oil-resistant in accordance with UL 157

General data
Material
Degree of protection
Flammability rating in accordance with UL 94
Temperature range

Technical data		
TPE-SEBS		
IP66 / IP67		
V0		
-40 ... 100		

Description
CES Multigates , cable feed-throughs for cable diameter:
4 x 8 - 16 mm, 2 x 24 - 54 mm, 1 x 30 - 60 mm
4 x 5 - 7 mm, 4 x 8 - 12 mm, 12 x 10 - 14 mm,
4 x 14 - 20 mm, 1 x 20 - 26 mm
4 x 5 - 7 mm, 4 x 8 - 12 mm, 13 x 10 - 14 mm,
4 x 14 - 20 mm, 2 x 20 - 26 mm
2 x 6 - 10 mm, 14 x 7 - 12 mm, 16 x 10 - 14 mm,
2 x 12 - 18 mm, 1 x 17 - 32 mm
4 x 6 - 10 mm, 14 x 8-12 mm, 16 x 10 - 14 mm,
2 x 12 - 18 mm, 1 x 17 - 32 mm

Ordering data		
Type	Order No.	Pcs./Pkt.
MC-3/7-MULTI-67-PV-LG	1415234	1
MC-25-MULTI-65-PV-LG	1422348	1
MC-25/27-MULTI-67-PV-LG	1415236	1
MC-35-MULTI-65-PV-LG	1422350	1
MC-35/37-MULTI-67-PV-LG	1415240	1

Technical data		
TPE-SEBS		
IP66 / IP67		
V0		
-40 ... 100		

Ordering data		
Type	Order No.	Pcs./Pkt.
MC-3/7-MULTI-67-PVO-BK	1415235	1
MC-25-MULTI-65-PVO-BK	1422349	1
MC-25/27-MULTI-67-PVO-BK	1415237	1
MC-35-MULTI-65-PVO-BK	1422351	1
MC-35/37-MULTI-67-PVO-BK	1415241	1

B24 Multigates cable feed-throughs

- High degree of protection thanks to double membrane sealing
- Quick installation of unassembled cables
- Sealing frame stable in form, thanks to metal reinforcement
- Flame-retardant
- Size: B24



CES B24 Multigates cable feed-through, black

Notes:
Other versions available on request.
For assembly instructions, see phoenixcontact.net/products

General data
Material
Degree of protection
Flammability rating in accordance with UL 94
Temperature range

Technical data		
TPE-SEBS		
IP65		
V0		
-40 ... 90		

Description
CES B24 Multigates , cable feed-throughs for cable diameter:
3 x 3 - 6 mm, 9 x 3 - 7 mm, 8 x 6 - 9 mm,
4 x 6 - 12 mm, 1 x 10 - 20 mm
26 x 3 - 6 mm, 1 x 10 - 20 mm
6 x 2 - 6 mm, 2 x 2 - 18 mm, 2 x 2 - 30 mm

Ordering data		
Type	Order No.	Pcs./Pkt.
MH-25-MULTI-65-PV-BK	1424582	1
MH-27-MULTI-65-PV-BK	1424583	1
MH-10CL-MULTI-55-PV-BK	1424584	1

Installation and mounting material

DIN rail mounting frames

Plastic DIN rail mounting frames, base frames and top frames

- For pre-assembled contact inserts
- Variable cable laying, thanks to open base frame

Notes:
For assembly instructions, see phoenixcontact.net/products



Base frame



Top frame

General data	
Material	PC
Ambient temperature (operation)	-40 ... 125 [°C]
Description	
Size	
DIN rail mounting frame, base frame, sizes can be variably adjusted	B6 - B24
DIN rail mounting frame, top frame	B6 B10 B16 B24

Technical data		
PC		
-40 ... 125		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-B06-24-BFAFL-PL	1424338	1

Technical data		
PC		
-40 ... 125		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-B06-HFWL-PL	1424334	1
HC-CIF-B10-HFWL-PL	1424335	1
HC-CIF-B16-HFWL-PL	1424336	1
HC-CIF-B24-HFWL-PL	1424337	1

Adapters, strain reliefs, and interlocks for plastic DIN rail mounting frames

Notes:
For assembly instructions, see phoenixcontact.net/products



Adapter for D series contact inserts



Strain relief and interlock, for B series EVO plastic housing

General data	
Material	Steel, galvanized
Ambient temperature (operation)	- [°C]
Description	
Size	
Adapter insert, for D series contact inserts	D15 D25
Strain relief, for B series EVO plastic housing	B6 - B24
Interlock, for B series EVO plastic housing	B6 - B24

Technical data		
Steel, galvanized		
-		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-D15-AIWS-SM-NI	1424340	1
HC-CIF-D25-AIWS-SM-NI	1424341	1

Technical data		
PA		
-		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-B-SG-PL-BK	1424343	1
HC-CIF-B06-24-AEWL-PL-BK	1424342	1

Metal DIN rail mounting frames, base frames

- For pre-assembled contact inserts
- Grounding for DIN rail

Notes:
The aluminum design provides a capacitive PE.
For assembly instructions, see phoenixcontact.net/products



Base frame, without double locking latch, for screw locking



Base frame, with double locking latch

General data	
Material	
Ambient temperature (operation)	[°C]
Description	
Size	
DIN rail mounting frame, base frame	
	For 2xB6
	For B10
	For B16
	For B24
Bit screwdriver, with 1/4" quick-action chuck, suitable for bits in accordance with DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic	
Bit screwdriver	
Screw bit, size: hex 3 x 50 mm	

Technical data		
Cast aluminum, uncoated		
-40 ... 125		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-2B6-BFFD-FH-AL	1404214	1
HC-CIF-B10-BFFD-FH-AL	1404219	1
HC-CIF-B16-BFFD-FH-AL	1404216	1
HC-CIF-B24-BFFD-FH-AL	1404211	1
SF-M BH		
1212070		
SF-BIT-HEX 3-50		
1212647		

Technical data		
Cast aluminum, uncoated		
-40 ... 125		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-B10-BFWD-FH-AL	1404220	1
HC-CIF-B16-BFWD-FH-AL	1404217	1
HC-CIF-B24-BFWD-FH-AL	1404212	1
SF-M BH		
1212070		
SF-BIT-HEX 3-50		
1212647		

Plastic DIN rail mounting frames, top frames

- Housing made from robust die-cast aluminum

Notes:
The aluminum design provides a capacitive PE.
For assembly instructions, see phoenixcontact.net/products



Top frame, for double locking latch

General data	
Material	
Ambient temperature (operation)	[°C]
Description	
Size	
DIN rail mounting frame, top frame, for double locking latch and optionally with locking screws, Allen screw, wrench size 3	
	For 2xB6
	For B10
	For B16
	For B24
Bit screwdriver, with 1/4" quick-action chuck, suitable for bits in accordance with DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic	
Bit screwdriver	
Screw bit, size: hex 3 x 50 mm	

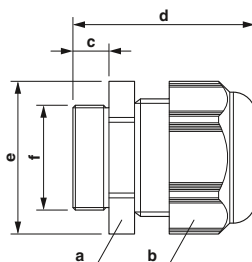
Technical data		
Cast aluminum, uncoated		
-40 ... 125		
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-CIF-2B6-HFFD-WH-AL	1404215	1
HC-CIF-B10-HFFD-WH-AL	1404221	1
HC-CIF-B16-HFFD-WH-AL	1404218	1
HC-CIF-B24-HFFD-WH-AL	1404213	1
SF-M BH		
1212070		
SF-BIT-HEX 3-50		
1212647		

Installation and mounting material

Cable glands

Plastic cable glands, metric, EN 60423

- Material: polyamide 6
- UV-resistant: f1 in accordance with UL 746C
- Cable seal: CR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP66/IP68
- Strain relief: integrated in accordance with EN 62444



Plastic cable gland

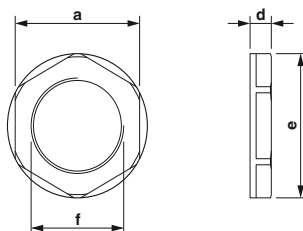
Thread type	Clamping area [mm]
M12 x 1.5	3.00 - 6.50
M16 x 1.5	4.00 - 8.00
M16 x 1.5	5.00 - 10.00
M20 x 1.5	6.00 - 12.00
M20 x 1.5	10.00 - 14.00
M25 x 1.5	11.00 - 17.00
M25 x 1.5	13.00 - 18.00
M32 x 1.5	15.00 - 21.00
M32 x 1.5	18.00 - 25.00
M40 x 1.5	19.00 - 28.00
M40 x 1.5	22.00 - 32.00
M50 x 1.5	30.00 - 36.00
M63 x 1.5	34.00 - 44.00

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	15.00	8.00	32.00	17.10	M12
19.00	19.00	8.00	43.00	25.00	M16
22.00	22.00	10.00	39.00	25.00	M16
24.00	24.00	10.00	42.00	27.80	M20
27.00	27.00	10.00	43.00	27.80	M20
29.00	29.00	8.00	43.00	33.50	M25
33.00	33.00	10.00	45.50	33.50	M25
36.00	36.00	10.00	50.00	40.90	M32
42.00	42.00	15.00	56.00	40.90	M32
46.00	46.00	10.00	55.00	52.00	M40
53.00	53.00	18.00	55.00	52.00	M40
60.00	60.00	18.00	71.00	67.70	M50
65.00	65.00	18.00	75.00	72.20	M63

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		silver-gray		black	
1417652	10	1411123	10	1411131	10
1424470	10	1424475	10	1424480	10
1417653	10	1411124	10	1411132	10
1414568	5	1411125	5	1411133	5
1424471	5	1424476	5	1424481	5
1417654	5	1411126	5	1411134	5
1424472	5	1424477	5	1424482	5
1417655	5	1411127	5	1411136	5
1424473	5	1424478	5	1424483	5
1417656	5	1411128	5	1411137	5
1424474	5	1424479	5	1424484	5
1417657	1	1411129	1	1411138	1
1417658	1	1411130	1	1411139	1

Plastic counter nuts, metric, EN 60423

- Material: polyamide 6
- Ambient temperature: -20°C ... +100°C



Plastic counter nut

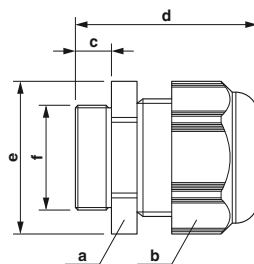
Thread type	Clamping area [mm]
M12 x 1.5	-
M16 x 1.5	-
M20 x 1.5	-
M25 x 1.5	-
M32 x 1.5	-
M40 x 1.5	-
M50 x 1.5	-
M63 x 1.5	-

Dimensions [mm]					Thread
a	b	c	d	e	f
18.00	-	-	5.00	19.50	M12
22.00	-	-	5.00	24.20	M16
26.00	-	-	6.00	28.60	M20
32.00	-	-	6.00	35.00	M25
41.00	-	-	7.00	46.10	M32
50.00	-	-	7.00	55.30	M40
60.00	-	-	8.00	66.10	M50
75.00	-	-	8.00	82.50	M63

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		silver-gray		black	
1417659	10	1411205	10	1411213	10
1417660	10	1411206	10	1411214	10
1414570	5	1411207	5	1411215	5
1417661	5	1411208	5	1411216	5
1417662	5	1411209	5	1411217	5
1417664	5	1411210	5	1411218	5
1417665	5	1411211	5	1411219	5
1417666	5	1411212	5	1411220	5

Plastic cable glands, Pg, EN 40430

- Material: polyamide 6
- UV-resistant: f1 in accordance with UL 746C
- Cable seal: CR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP66/IP68
- Strain relief: integrated



Plastic cable gland

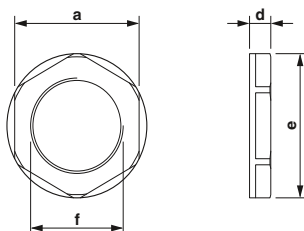
Thread type	Clamping area [mm]
Pg7	3.00 - 6.50
Pg9	4.00 - 8.00
Pg11	5.00 - 10.00
Pg13.5	6.00 - 12.00
Pg16	10.00 - 14.00
Pg21	13.00 - 18.00
Pg29	18.00 - 25.00
Pg36	22.00 - 32.00
Pg42	30.00 - 38.00
Pg48	34.00 - 44.00

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	15.00	8.00	32.00	17.10	Pg7
19.00	19.00	8.00	36.00	21.60	Pg9
22.00	22.00	8.00	38.00	25.00	Pg11
24.00	24.00	10.00	40.00	27.80	Pg13.5
27.00	27.00	10.00	44.00	30.80	Pg16
33.00	33.00	11.00	49.00	37.80	Pg21
42.00	42.00	11.00	53.00	48.00	Pg29
53.00	53.00	13.00	65.00	60.00	Pg36
60.00	60.00	13.00	65.00	67.70	Pg42
65.00	65.00	14.00	68.00	72.20	Pg48

Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		silver-gray		black	
1424485	10	1411140	10	1424495	10
1424486	10	1411141	10	1424496	10
1424487	5	1411142	5	1424497	5
1424488	5	1411143	5	1424498	5
1424489	5	1411144	5	1424499	5
1424490	5	1411145	5	1424500	5
1424491	5	1411146	5	1424501	5
1424492	5	1411147	5	1424502	5
1424493	1	1411149	1	1424503	1
1424494	1	1411150	1	1424504	1

Plastic counter nuts, Pg, EN 40430

- Material: polyamide 6
- Ambient temperature: -20°C ... +100°C



Plastic counter nut

Thread type	Clamping area [mm]
Pg7	-
Pg9	-
Pg11	-
Pg13.5	-
Pg16	-
Pg21	-
Pg29	-
Pg36	-
Pg42	-
Pg48	-

Dimensions [mm]					Thread
a	b	c	d	e	f
19.00	-	-	5.00	21.00	Pg7
22.00	-	-	5.00	24.00	Pg9
24.00	-	-	5.00	26.00	Pg11
27.00	-	-	6.00	29.00	Pg13.5
30.00	-	-	6.00	33.00	Pg16
36.00	-	-	7.00	39.00	Pg21
46.00	-	-	7.00	50.00	Pg29
60.00	-	-	8.00	66.00	Pg36
65.00	-	-	8.00	73.00	Pg42
70.00	-	-	8.00	78.00	Pg48

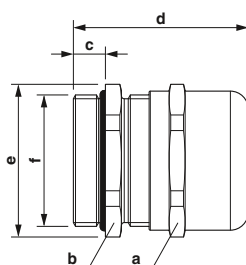
Ordering data					
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		silver-gray		black	
1424548	10	1411221	10	1424558	10
1424549	10	1411222	10	1424559	10
1424550	5	1411223	5	1424560	5
1424551	5	1411224	5	1424561	5
1424552	5	1411225	5	1424562	5
1424553	5	1411226	5	1424563	5
1424554	5	1411227	5	1424564	5
1424555	5	1411228	5	1424565	5
1424556	5	1411229	5	1424566	5
1424557	5	1411230	5	1424567	5

Installation and mounting material

Cable glands

Brass cable glands, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: CR
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP66/IP68/IP69
- Strain relief: integrated in accordance with EN 62444



Brass cable gland

Notes:

For alternative clamping ranges, see phoenixcontact.net/products

Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	3.00 - 6.50
M16 x 1.5	silver	4.00 - 8.00
M16 x 1.5	silver	5.00 - 10.00
M20 x 1.5	silver	6.00 - 12.00
M25 x 1.5	silver	10.00 - 14.00
M25 x 1.5	silver	11.00 - 17.00
M32 x 1.5	silver	13.00 - 18.00
M32 x 1.5	silver	15.00 - 21.00
M40 x 1.5	silver	18.00 - 25.00
M40 x 1.5	silver	19.00 - 28.00
M50 x 1.5	silver	22.00 - 32.00
M50 x 1.5	silver	27.00 - 38.00
M63 x 1.5	silver	34.00 - 44.00
M63 x 1.5	silver	37.00 - 53.00

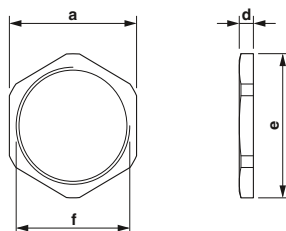
Dimensions [mm]					Thread
a	b	c	d	e	f
14.00	14.00	6.00	27.00	15.50	M12
17.00	18.00	7.00	30.00	22.00	M16
20.00	20.00	7.00	34.00	22.00	M16
22.00	22.00	8.00	37.00	24.50	M20
24.00	27.00	8.00	36.00	30.00	M25
27.00	27.00	8.00	40.00	30.00	M25
30.00	34.00	9.00	42.00	37.00	M32
34.00	34.00	8.00	43.00	37.00	M32
40.00	43.00	9.00	47.00	48.40	M40
43.00	43.00	9.00	53.00	48.40	M40
50.00	55.00	9.00	58.00	64.00	M50
58.00	58.00	9.00	61.00	64.00	M50
64.00	68.00	14.00	65.00	70.00	M63
75.00	75.00	10.00	60.00	70.00	M63

Ordering data

Type	Order No.	Pcs./Pkt.
G-INS-M12-S68N-NNES-S	1411160	10
G-INS-M16-T68N-NNES-S	1424526	10
G-INS-M16-S68N-NNES-S	1411162	10
G-INS-M20-S68N-NNES-S	1411163	5
G-INS-M25-S68N-NNES-S	1424527	5
G-INS-M25-M68N-NNES-S	1411165	5
G-INS-M32-S68N-NNES-S	1424528	5
G-INS-M32-M68N-NNES-S	1411166	5
G-INS-M40-S68N-NNES-S	1424529	5
G-INS-M40-M68N-NNES-S	1411167	5
G-INS-M50-M68N-NNES-S	1424530	1
G-INS-M50-L68N-NNES-S	1411168	1
G-INS-M63-L68N-NNES-S	1411169	1
G-INS-M63-E68N-NNES-S	1424531	1

Brass counter nuts, metric, EN 60423

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C



Brass counter nut

Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	-
M16 x 1.5	silver	-
M20 x 1.5	silver	-
M25 x 1.5	silver	-
M32 x 1.5	silver	-
M40 x 1.5	silver	-
M50 x 1.5	silver	-
M63 x 1.5	silver	-

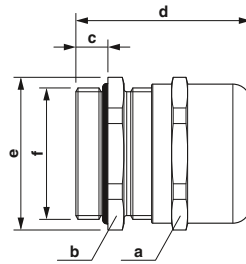
Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	-	-	2.80	16.50	M12
19.00	-	-	2.80	21.00	M16
24.00	-	-	3.00	27.00	M20
30.00	-	-	3.50	33.50	M25
36.00	-	-	4.00	40.00	M32
46.00	-	-	5.00	50.00	M40
57.00	-	-	5.00	65.00	M50
70.00	-	-	6.00	75.00	M63

Ordering data

Type	Order No.	Pcs./Pkt.
A-INL-M12-N-S	1411240	100
A-INL-M16-N-S	1411241	100
A-INL-M20-N-S	1411242	100
A-INL-M25-N-S	1411243	100
A-INL-M32-N-S	1411244	100
A-INL-M40-N-S	1411246	50
A-INL-M50-N-S	1411247	25
A-INL-M63-N-S	1411248	25

Brass cable glands, Pg, EN 40430

- Material: brass, nickel-plated
- Cable seal: CR
- O-ring: NBR
- Ambient temperature:
-40°C ... +100°C
- Degree of protection: IP68/IP69
- Strain relief: integrated



Brass cable gland

Thread type	Color	Clamping area [mm]
Pg7	silver	3.00 - 6.50
Pg9	silver	4.00 - 8.00
Pg11	silver	5.00 - 10.00
Pg13.5	silver	6.00 - 12.00
Pg16	silver	10.00 - 14.00
Pg21	silver	13.00 - 18.00
Pg29	silver	18.00 - 25.00
Pg36	silver	22.00 - 32.00
Pg42	silver	30.00 - 38.00
Pg48	silver	34.00 - 44.00

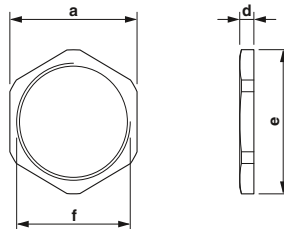
Dimensions [mm]					Thread
a	b	c	d	e	f
14.00	14.00	6.00	27.00	15.50	Pg7
17.00	17.00	6.00	28.00	18.90	Pg9
20.00	20.00	6.00	21.00	22.00	Pg11
22.00	22.00	6.50	30.00	24.50	Pg13.5
24.00	24.00	6.50	33.00	26.80	Pg16
30.00	30.00	7.20	38.00	33.00	Pg21
40.00	40.00	8.00	46.00	44.50	Pg29
50.00	50.00	9.00	57.00	55.50	Pg36
58.00	58.00	12.00	60.00	64.00	Pg42
64.00	64.00	14.00	63.00	70.00	Pg48

Ordering data

Type	Order No.	Pcs./Pkt.
G-INS-PG7-S68N-NNES-S	1411170	10
G-INS-PG9-S68N-NNES-S	1411171	10
G-INS-PG11-S68N-NNES-S	1411172	5
G-INS-PG13,5-S68N-NNES-S	1411173	5
G-INS-PG16-S68N-NNES-S	1411174	5
G-INS-PG21-M68N-NNES-S	1411175	5
G-INS-PG29-M68N-NNES-S	1411176	5
G-INS-PG36-L68N-NNES-S	1411178	5
G-INS-PG42-L68N-NNES-S	1411179	1
G-INS-PG48-L68N-NNES-S	1411181	1

Brass counter nuts, Pg, EN 40430

- Material: brass, nickel-plated
- Ambient temperature:
-70°C ... +220°C



Brass counter nut

Thread type	Color	Clamping area [mm]
Pg7	silver	-
Pg9	silver	-
Pg11	silver	-
Pg13.5	silver	-
Pg16	silver	-
Pg21	silver	-
Pg29	silver	-
Pg36	silver	-
Pg42	silver	-
Pg48	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	-	-	2.80	16.50	Pg7
18.00	-	-	2.80	20.00	Pg9
21.00	-	-	3.00	24.00	Pg11
23.00	-	-	3.00	26.00	Pg13.5
26.00	-	-	3.00	29.00	Pg16
32.00	-	-	3.50	36.00	Pg21
41.00	-	-	4.00	45.00	Pg29
51.00	-	-	5.00	56.00	Pg36
60.00	-	-	5.00	65.00	Pg42
64.00	-	-	5.50	69.00	Pg48

Ordering data

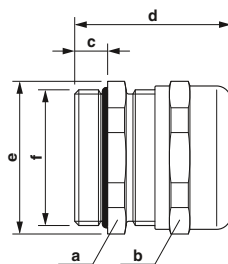
Type	Order No.	Pcs./Pkt.
A-INL-PG7-N-S	1411255	100
A-INL-PG9-N-S	1411256	100
A-INL-PG11-N-S	1411257	100
A-INL-PG13,5-N-S	1411259	100
A-INL-PG16-N-S	1411260	100
A-INL-PG21-N-S	1411262	100
A-INL-PG29-N-S	1411263	50
A-INL-PG36-N-S	1411264	50
A-INL-PG42-N-S	1411265	25
A-INL-PG48-N-S	1411266	25

Installation and mounting material

Cable glands

Brass EMC cable glands, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: CR
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP66/IP68
- Strain relief: integrated in accordance with EN 62444



Brass EMC cable gland

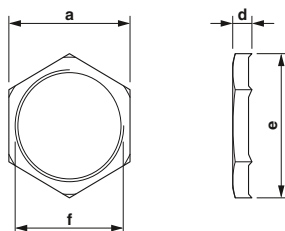
Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	4.00 - 6.50
M16 x 1.5	silver	5.00 - 10.00
M20 x 1.5	silver	9.00 - 13.00
M25 x 1.5	silver	11.00 - 16.00
M32 x 1.5	silver	14.00 - 21.00
M40 x 1.5	silver	19.00 - 27.00
M50 x 1.5	silver	24.00 - 35.00
M63 x 1.5	silver	32.00 - 42.00

Dimensions [mm]					Thread
a	b	c	d	e	f
14.00	14.00	6.00	28.00	15.50	M12
20.00	20.00	7.00	-	22.00	M16
22.00	22.00	6.00	33.00	24.00	M20
27.00	27.00	7.00	36.00	30.00	M25
34.00	34.00	8.00	38.00	36.00	M32
43.00	43.00	8.00	41.00	46.00	M40
55.00	55.00	9.00	49.00	60.00	M50
65.00	65.00	10.00	52.00	70.00	M63

Ordering data		
Type	Order No.	Pcs./Pkt.
G-INSEC-M12-S68N-NCRS-S	1411187	10
G-INSEC-M16-S68L-NCRS-S	1077099	10
G-INSEC-M20-S68N-NCRS-S	1411189	5
G-INSEC-M25-S68N-NCRS-S	1411190	5
G-INSEC-M32-M68N-NCRS-S	1411191	5
G-INSEC-M40-M68N-NCRS-S	1411192	5
G-INSEC-M50-L68N-NCRS-S	1411193	1
G-INSEC-M63-L68N-NCRS-S	1411194	1

Brass counter nuts, metric, EN 60423, ribbed

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C
- Version: ribbed



Brass counter nut

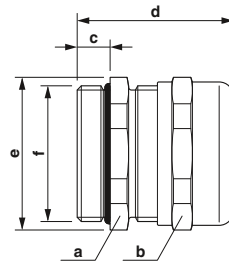
Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	-
M16 x 1.5	silver	-
M20 x 1.5	silver	-
M25 x 1.5	silver	-
M32 x 1.5	silver	-
M40 x 1.5	silver	-
M50 x 1.5	silver	-
M63 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	-	-	4.70	16.50	M12
19.00	-	-	4.70	21.00	M16
24.00	-	-	4.70	27.00	M20
30.00	-	-	5.20	33.50	M25
36.00	-	-	5.70	40.00	M32
46.00	-	-	6.50	50.00	M40
60.00	-	-	6.50	65.00	M50
70.00	-	-	7.00	75.00	M63

Ordering data		
Type	Order No.	Pcs./Pkt.
A-INLE-M12-N-S	1411267	100
A-INLE-M16-N-S	1411268	100
A-INLE-M20-N-S	1411269	100
A-INLE-M25-N-S	1411270	50
A-INLE-M32-N-S	1411271	50
A-INLE-M40-N-S	1411272	50
A-INLE-M50-N-S	1411273	10
A-INLE-M63-N-S	1411274	10

Brass EMC cable glands, Pg, EN 40430

- Material: brass, nickel-plated
- Cable seal: CR
- O-ring: NBR
- Ambient temperature:
-40°C ... +100°C
- Degree of protection: IP66/IP68
- Strain relief: integrated



Brass EMC cable gland

Thread type	Color	Clamping area [mm]
Pg7	silver	3.00 - 6.50
Pg9	silver	4.00 - 8.00
Pg11	silver	5.00 - 10.00
Pg13.5	silver	6.00 - 12.00
Pg16	silver	10.00 - 14.00
Pg21	silver	13.00 - 18.00
Pg29	silver	18.00 - 25.00
Pg36	silver	22.00 - 32.00
Pg42	silver	30.00 - 38.00
Pg48	silver	34.00 - 44.00

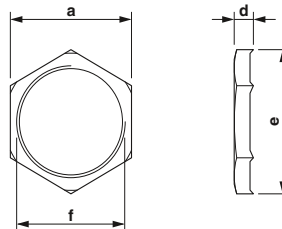
Dimensions [mm]					Thread
a	b	c	d	e	f
14.00	14.00	6.00	27.00	15.50	Pg7
17.00	17.00	6.00	29.00	18.90	Pg9
20.00	20.00	6.00	30.00	22.00	Pg11
22.00	22.00	6.50	30.00	24.50	Pg13.5
24.00	24.00	6.50	33.00	26.80	Pg16
30.00	30.00	7.20	38.00	33.00	Pg21
40.00	40.00	8.00	47.00	44.50	Pg29
50.00	50.00	9.00	57.00	55.50	Pg36
58.00	58.00	12.00	60.00	64.00	Pg42
64.00	64.00	14.00	65.00	70.00	Pg48

Ordering data

Type	Order No.	Pcs./Pkt.
G-INSEC-PG7-S68N-NNES-S	1411195	10
G-INSEC-PG9-S68N-NNES-S	1411196	10
G-INSEC-PG11-S68N-NNES-S	1411197	5
G-INSEC-PG13,5-S68N-NNES-S	1411198	5
G-INSEC-PG16-S68N-NNES-S	1411199	5
G-INSEC-PG21-M68N-NNES-S	1411200	5
G-INSEC-PG29-M68N-NNES-S	1411201	5
G-INSEC-PG36-L68N-NNES-S	1411202	5
G-INSEC-PG42-L68N-NNES-S	1411203	1
G-INSEC-PG48-L68N-NNES-S	1411204	1

Brass counter nuts, Pg, EN 40430, ribbed

- Material: brass, nickel-plated
- Ambient temperature:
-70°C ... +220°C
- Version: ribbed



Brass counter nut

Thread type	Color	Clamping area [mm]
Pg7	silver	-
Pg9	silver	-
Pg11	silver	-
Pg13.5	silver	-
Pg16	silver	-
Pg21	silver	-
Pg29	silver	-
Pg36	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	-	-	4.70	16.50	Pg7
18.00	-	-	4.70	20.00	Pg9
21.00	-	-	4.70	24.00	Pg11
23.00	-	-	4.70	26.00	Pg13.5
26.00	-	-	4.70	29.00	Pg16
32.00	-	-	5.20	36.00	Pg21
41.00	-	-	5.70	45.00	Pg29
51.00	-	-	6.50	56.00	Pg36

Ordering data

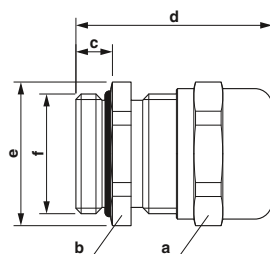
Type	Order No.	Pcs./Pkt.
A-INLE-PG7-N-S	1411275	100
A-INLE-PG9-N-S	1411276	100
A-INLE-PG11-N-S	1411277	100
A-INLE-PG13,5-N-S	1411278	100
A-INLE-PG16-N-S	1411279	100
A-INLE-PG21-N-S	1411280	50
A-INLE-PG29-N-S	1411281	50
A-INLE-PG36-N-S	1411282	50

Installation and mounting material

Cable glands

Stainless steel cable glands, metric, EN 60423

- Material: stainless steel
- Cable seal: CR
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP66/IP68/IP69
- Strain relief: integrated in accordance with EN 62444



Stainless steel cable gland

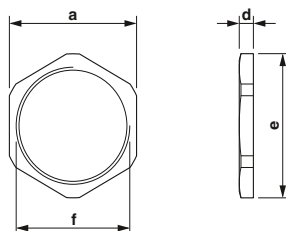
Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	3.00 - 6.50
M16 x 1.5	silver	5.00 - 10.00
M20 x 1.5	silver	6.00 - 12.00
M25 x 1.5	silver	11.00 - 17.00
M32 x 1.5	silver	15.00 - 21.00
M40 x 1.5	silver	19.00 - 28.00

Dimensions [mm]					Thread
a	b	c	d	e	f
14.00	14.00	6.00	33.50	15.50	M12
22.00	22.00	7.00	35.00	24.50	M16
22.00	22.00	8.00	33.00	24.50	M20
27.00	27.00	8.00	40.00	29.80	M25
36.00	36.00	8.00	45.00	38.90	M32
46.00	46.00	9.00	52.50	51.50	M40

Ordering data		
Type	Order No.	Pcs./Pkt.
G-INS-M12-M68N-SNES-S	1424541	1
G-INS-M16-M68N-SNES-S	1424542	1
G-INS-M20-M68N-SNES-S	1424543	1
G-INS-M25-M68N-SNES-S	1424544	1
G-INS-M32-M68N-SNES-S	1424545	1
G-INS-M40-M68N-SNES-S	1424546	1

Stainless steel counter nuts, metric, EN 60423

- Material: stainless steel
- Ambient temperature: -70°C ... +220°C



Stainless steel counter nut

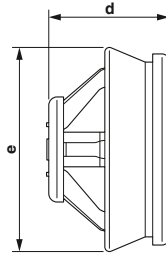
Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	-
M16 x 1.5	silver	-
M20 x 1.5	silver	-
M25 x 1.5	silver	-
M32 x 1.5	silver	-
M40 x 1.5	silver	-
M50 x 1.5	silver	-
M63 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
15.00	-	-	2.80	16.50	M12
19.00	-	-	2.80	20.90	M16
24.00	-	-	3.00	27.00	M20
30.00	-	-	3.50	33.50	M25
36.00	-	-	4.00	40.00	M32
46.00	-	-	5.00	50.00	M40
55.00	-	-	5.00	65.00	M50
70.00	-	-	6.00	75.00	M63

Ordering data		
Type	Order No.	Pcs./Pkt.
A-INL-M12-S-S	1425175	10
A-INL-M16-S-S	1425176	10
A-INL-M20-S-S	1411249	10
A-INL-M25-S-S	1411250	10
A-INL-M32-S-S	1411251	5
A-INL-M40-S-S	1411252	5
A-INL-M50-S-S	1411253	2
A-INL-M63-S-S	1411254	1

Membrane cable glands

- Material: polypropylene
- For panel thickness of 0.8 mm ... 3.5 mm
- UV-resistant
- Ambient temperature:
-40°C ... +65°C
- Degree of protection: IP66/IP67



Membrane cable gland

Thread type	Color	Clamping area [mm]
M16	light gray	4.00 - 10.00
M20	light gray	6.00 - 13.00
M25	light gray	9.00 - 17.00

Dimensions [mm]					Thread
a	b	c	d	e	f
-	-	8.00	15.00	32.00	M16
-	-	8.00	15.00	34.00	M20
-	-	8.00	15.00	40.00	M25

Ordering data		
Type	Order No.	Pcs./Pkt.
MG-INC-M16-S67L-PTES-LG	1415186	20
MG-INC-M20-S67L-PTES-LG	1415187	20
MG-INC-M25-M67L-PTES-LG	1415188	20

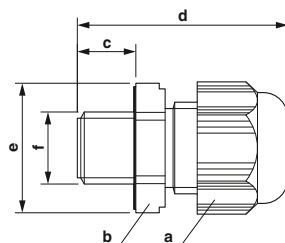
Installation and mounting material

Cable glands

Plastic pressure compensation cable glands, metric, EN 60423

Reduces the formation of condensation

- Material: polyamide
- Cable seal: CR
- Flat gasket: NBR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP66/IP67



Plastic pressure compensation cable gland

Notes:

For counter nuts, see page 686

Thread type	Clamping area [mm]
M12 x 1.5	4.00 - 7.00
M16 x 1.5	4.00 - 7.00
M20 x 1.5	6.00 - 11.00

Dimensions [mm]						Thread
a	b	c	d	e	f	
19.00	19.00	8.00	33.00	-		M12
19.00	19.00	10.00	35.50	-		M16
24.00	24.00	10.00	40.00	-		M20

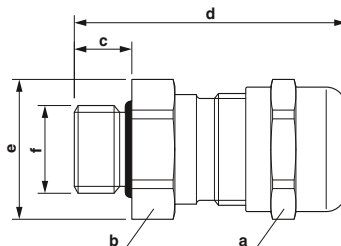
Ordering data

Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1424532	5	1424535	5
1424533	5	1424536	5
1424534	5	1424537	5

Brass pressure compensation cable glands, metric, EN 60423

Reduces the formation of condensation

- Material: brass, nickel-plated
- Cable seal: CR
- O-ring: NBR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP66/IP67



Brass pressure compensation cable gland

Notes:

For counter nuts, see page 692

Thread type	Color	Clamping area [mm]
M12 x 1.5	silver	4.00 - 7.00
M16 x 1.5	silver	4.00 - 7.00
M20 x 1.5	silver	6.00 - 11.00

Dimensions [mm]						Thread
a	b	c	d	e	f	
17.00	17.00	6.00	36.50	-		M12
17.00	17.00	5.00	32.00	-		M16
22.00	22.00	8.00	35.00	-		M20

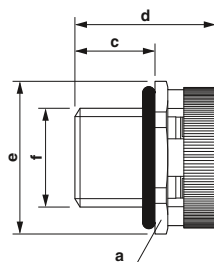
Ordering data

Type	Order No.	Pcs./Pkt.
G-INVEN-M12-M67N-NNES-S	1424538	1
G-INVEN-M16-M67N-NNES-S	1424539	1
G-INVEN-M20-M67N-NNES-S	1424540	1

Plastic pressure compensation elements, metric, EN 60423

Reduces the formation of condensation

- Material: polyamide
- O-ring: NBR
- Ambient temperature: -40°C ... +105°C
- Degree of protection: IP66/IP67/IP69



Plastic pressure compensation element

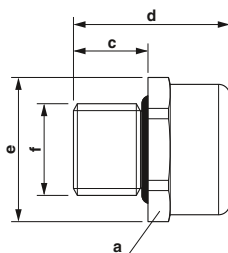
Thread type	Clamping area [mm]	Dimensions [mm]					Thread
		a	b	c	d	e	f
M12 x 1.5	-	17.00	-	10.00	17.50	18.50	M12

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1415222	5	1415223	5

Stainless steel pressure compensation element, metric, EN 60423

Reduces the formation of condensation

- Material: stainless steel
- O-ring: NBR
- Ambient temperature: -40°C ... +105°C
- Degree of protection: IP66/IP67/IP69



Stainless steel pressure compensation element

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread
			a	b	c	d	e	f
M12 x 1.5	silver	-	17.00	-	10.00	21.00	18.50	M12

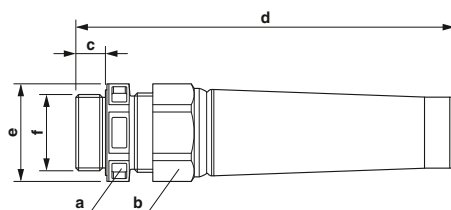
Ordering data		
Type	Order No.	Pcs./Pkt.
A-INB-M12-69KN-S-S	1415224	5

Installation and mounting material

Cable glands

Plastic cable glands with bend protection, metric, EN 60423

- Material: polyamide
- Cable seal: EPDM
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68/IP69



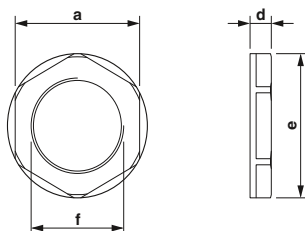
Plastic cable gland with bend protection

Thread type	Clamping area [mm]	Dimensions [mm]					Thread
		a	b	c	d	e	
M12 x 1.5	3.00 - 7.00	16.00	16.00	9.00	72.00	18.00	M12
M16 x 1.5	4.50 - 10.00	20.00	20.00	9.00	82.00	22.00	M16
M20 x 1.5	6.00 - 13.00	24.00	24.00	12.00	103.00	27.00	M20
M25 x 1.5	9.00 - 17.00	29.00	29.00	12.00	113.00	32.00	M25
M32 x 1.5	13.00 - 21.00	36.00	36.00	12.00	138.00	40.00	M32

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1415171	10	1415177	10
1415172	10	1415178	10
1415174	10	1415179	10
1415175	10	1415180	10
1415176	5	1415181	5

Plastic counter nuts, metric, EN 60423

- Material: polyamide 6
- Ambient temperature: -20°C ... +100°C



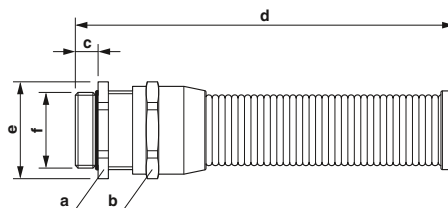
Plastic counter nut

Thread type	Clamping area [mm]	Dimensions [mm]					Thread
		a	b	c	d	e	
M12 x 1.5	-	18.00	-	-	5.00	19.50	M12
M16 x 1.5	-	22.00	-	-	5.00	24.20	M16
M20 x 1.5	-	26.00	-	-	6.00	28.60	M20
M25 x 1.5	-	32.00	-	-	6.00	35.00	M25
M32 x 1.5	-	41.00	-	-	7.00	46.10	M32

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1417659	10	1411213	10
1417660	10	1411214	10
1414570	5	1411215	5
1417661	5	1411216	5
1417662	5	1411217	5

Brass cable glands with bend protection, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: EPDM
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68/IP69



Brass cable gland with bend protection

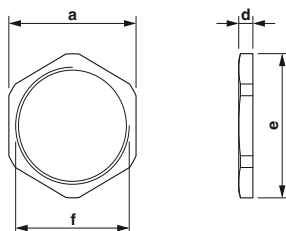
Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	6.00 - 13.00
M25 x 1.5	silver	9.00 - 17.00
M32 x 1.5	silver	13.00 - 21.00
M40 x 1.5	silver	16.00 - 28.00

Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	24.00	6.00	96.00	27.00	M20
29.00	29.00	7.00	120.00	32.00	M25
36.00	36.00	8.00	146.00	40.00	M32
46.00	46.00	8.00	184.00	51.00	M40

Ordering data		
Type	Order No.	Pcs./Pkt.
G-INB-M20-S68N-NEPDS-S	1415182	5
G-INB-M25-M68N-NEPDS-S	1415183	5
G-INB-M32-M68N-NEPDS-S	1415184	1
G-INB-M40-M68N-NEPDS-S	1415185	1

Brass counter nuts, metric, EN 60423

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C



Brass counter nut

Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	-
M25 x 1.5	silver	-
M32 x 1.5	silver	-
M40 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	-	-	3.00	27.00	M20
30.00	-	-	3.50	33.50	M25
36.00	-	-	4.00	40.00	M32
46.00	-	-	5.00	50.00	M40

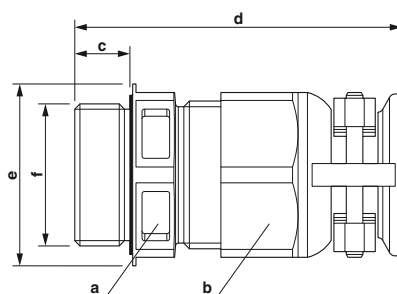
Ordering data		
Type	Order No.	Pcs./Pkt.
A-INL-M20-N-S	1411242	100
A-INL-M25-N-S	1411243	100
A-INL-M32-N-S	1411244	100
A-INL-M40-N-S	1411246	50

Installation and mounting material

Cable glands

Plastic cable glands with strain relief, metric, EN 60423

- Material: polyamide
- Cable seal: EPDM
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP68/IP69



Notes:

For counter nuts, see page 686



Plastic cable gland with strain relief

Thread type	Color	Clamping area [mm]
M20 x 1.5	jet black	6.00 - 13.00
M25 x 1.5	jet black	9.00 - 17.00
M32 x 1.5	jet black	13.00 - 21.00

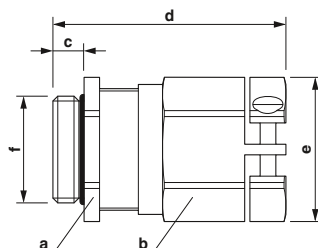
Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	24.00	10.00	49.00	27.00	M20
29.00	29.00	10.00	51.00	32.00	M25
36.00	36.00	12.00	57.00	40.00	M32

Ordering data

Type	Order No.	Pcs./Pkt.
G-INTRO-M20-S68N-PEPDS-BK	1415189	10
G-INTRO-M25-M68N-PEPDS-BK	1415190	10
G-INTRO-M32-M68N-PEPDS-BK	1415191	5

Brass cable glands with strain relief, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: EPDM
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68/IP69



Notes:

For counter nuts, see page 688



Brass cable gland with strain relief

Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	6.00 - 13.00
M25 x 1.5	silver	9.00 - 17.00
M32 x 1.5	silver	13.00 - 21.00
M40 x 1.5	silver	16.00 - 28.00

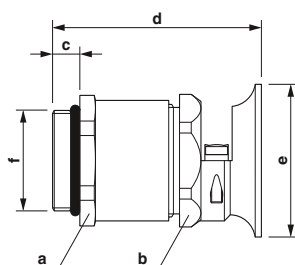
Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	24.00	6.00	37.00	27.00	M20
29.00	29.00	7.00	42.00	32.00	M25
36.00	36.00	8.00	45.00	40.00	M32
46.00	46.00	8.00	54.00	51.00	M40

Ordering data

Type	Order No.	Pcs./Pkt.
G-INESR-M20-S68N-NEPDS-S	1415192	5
G-INESR-M25-M68N-NEPDS-S	1415193	5
G-INESR-M32-M68N-NEPDS-S	1415194	1
G-INESR-M40-M68N-NEPDS-S	1415195	1

Brass cable glands with bend protection and strain relief, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: NBR
- O-ring: NBR
- Ambient temperature: -30°C ... +80°C
- Degree of protection: IP65



Notes:

For counter nuts, see page 688



Brass cable gland with cable bend protection and strain relief

Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	7.50 - 15.00
M25 x 1.5	silver	10.00 - 19.00
M32 x 1.5	silver	18.00 - 27.00

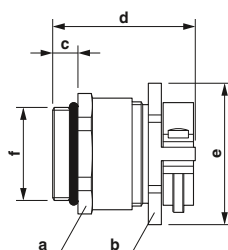
Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	24.00	6.00	40.00	32.00	M20
30.00	30.00	7.00	44.00	38.00	M25
41.00	40.00	8.00	51.00	50.00	M32

Ordering data

Type	Order No.	Pcs./Pkt.
HC-M-KV-T-M20	1646188	10
HC-M-KV-T-M25	1646191	10
HC-M-KV-T-M32	1646201	10

Brass cable glands with strain relief clamp, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: NBR
- O-ring: NBR
- Ambient temperature: -30°C ... +80°C
- Degree of protection: IP65



Notes:

For counter nuts, see page 688



Brass cable gland with strain relief clamp

Thread type	Color	Clamping area [mm]
M32 x 1.5	silver	18.00 - 27.00
M40 x 1.5	silver	24.00 - 33.00

Dimensions [mm]					Thread
a	b	c	d	e	f
42.00	40.00	8.00	43.00	47.00	M32
52.00	50.00	8.00	49.00	56.00	M40

Ordering data

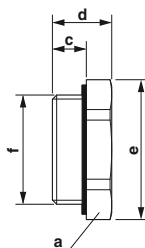
Type	Order No.	Pcs./Pkt.
HC-M-KV-Z-M32	1646162	10
HC-M-KV-Z-M40	1646175	10

Installation and mounting material

Cable glands

Plastic reducing adapters, metric, EN 60423

- Material: polyamide
- Flat gasket: CR
- Ambient temperature: -20°C ... +100°C



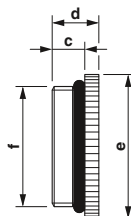
Plastic reducing adapter

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread
			a	b	c	d	e	
M25 x 1.5 / M20 x 1.5	black	-	-	-	8.00	14.00	32.00	M25 / M20
M32 x 1.5 / M20 x 1.5	black	-	-	-	10.00	16.00	40.00	M32 / M20
M32 x 1.5 / M25 x 1.5	black	-	-	-	10.00	16.00	40.00	M32 / M25
M40 x 1.5 / M25 x 1.5	black	-	-	-	10.00	16.00	50.50	M40 / M25
M40 x 1.5 / M32 x 1.5	black	-	-	-	10.00	16.00	50.50	M40 / M32

Ordering data		
Type	Order No.	Pcs./Pkt.
REDUC-K-KV-M25/M20 BK	1411232	10
REDUC-K-KV-M32/M20 BK	1410725	10
REDUC-K-KV-M32/M25 BK	1410712	10
REDUC-K-KV-M40/M25 BK	1410741	10
REDUC-K-KV-M40/M32 BK	1410738	10

Brass reducing adapters, metric, EN 60423

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature: -20°C ... +80°C



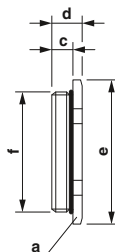
Brass reducing adapter

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread
			a	b	c	d	e	
M20 x 1.5 / M16 x 1.5	silver	-	-	-	6.50	9.00	24.00	M20 / M16
M25 x 1.5 / M20 x 1.5	silver	-	-	-	7.00	10.00	30.00	M25 / M20
M32 x 1.5 / M25 x 1.5	silver	-	-	-	8.00	11.50	37.00	M32 / M25
M40 x 1.5 / M32 x 1.5	silver	-	-	-	8.00	11.50	43.00	M40 / M32

Ordering data		
Type	Order No.	Pcs./Pkt.
REDUC-M-KV-M20/M16	1647611	10
REDUC-M-KV-M25/M20	1647624	10
REDUC-M-KV-M32/M25	1647637	10
REDUC-M-KV-M40/M32	1647640	10

Brass reducing adapters, Pg, EN 40430

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:
-20°C ... +80°C



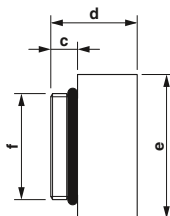
Brass reducing adapter

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread f
			a	b	c	d	e	
Pg16 / Pg13.5	silver	-	-	-	6.50	9.50	26.70	Pg16 / Pg13.5
Pg21 / Pg16	silver	-	-	-	7.00	10.00	33.50	Pg21 / Pg16
Pg29 / Pg21	silver	-	-	-	8.00	11.50	43.50	Pg29 / Pg21

Ordering data		
Type	Order No.	Pcs./Pkt.
A-INR-PG16/13-N-NS-S	1415216	10
A-INR-PG21/16-N-NS-S	1415217	10
A-INR-PG29/21-N-NS-S	1415218	10

Metal extensions

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:
-20°C ... +80°C



Metal extension adapter

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread f
			a	b	c	d	e	
M16 x 1.5 / M20 x 1.5	silver	-	-	-	6.00	17.50	22.00	M16 / M20
M20 x 1.5 / M25 x 1.5	silver	-	-	-	6.50	19.00	27.00	M20 / M25
M25 x 1.5 / M32 x 1.5	silver	-	-	-	6.50	21.00	34.00	M25 / M32
M32 x 1.5 / M40 x 1.5	silver	-	-	-	7.00	23.00	42.00	M32 / M40
Pg13.5 / Pg16	silver	-	-	-	6.50	19.00	24.00	Pg13.5 / Pg16
Pg16 / Pg21	silver	-	-	-	6.50	21.00	30.00	Pg16 / Pg21
Pg21 / Pg29	silver	-	-	-	7.00	23.00	39.00	Pg21 / Pg29

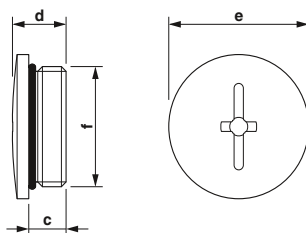
Ordering data		
Type	Order No.	Pcs./Pkt.
ENLAR-M-KV-M16/M20	1647653	10
ENLAR-M-KV-M20/M25	1647666	10
ENLAR-M-KV-M25/M32	1647679	10
ENLAR-M-KV-M32/M40	1647682	10
A-INE-PG13/16-N-NS-S	1415219	10
A-INE-PG16/21-N-NS-S	1415220	10
A-INE-PG21/29-N-NS-S	1415221	10

Installation and mounting material

Cable glands

Plastic screw plugs, metric, EN 60423

- Material: polyamide, fiberglass reinforced
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP66/IP68



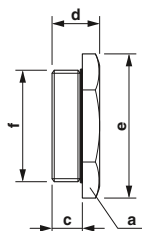
Plastic screw plugs

Thread type	Clamping area [mm]	Dimensions [mm]					Thread
		a	b	c	d	e	
M12 x 1.5	-	-	-	6.00	8.00	15.00	M12
M16 x 1.5	-	-	-	6.00	9.00	20.00	M16
M20 x 1.5	-	-	-	6.00	9.50	24.00	M20
M25 x 1.5	-	-	-	8.00	11.50	30.00	M25
M32 x 1.5	-	-	-	8.00	12.00	37.00	M32
M40 x 1.5	-	-	-	8.00	13.00	46.00	M40

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1045815	10	1045816	10
1045818	10	1045817	10
1424519	10	1415206	10
1424520	10	1415207	10
1424521	10	1415208	10
1424522	5	1415210	5

Brass screw plugs, metric, EN 60423

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature: -20°C ... +80°C
- Degree of protection: IP68



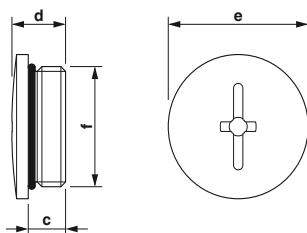
Metal screw plug

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread
			a	b	c	d	e	
M12 x 1.5	silver	-	14.00	-	5.00	7.50	14.00	M12
M16 x 1.5	silver	-	18.00	-	5.00	8.00	20.00	M16
M20 x 1.5	silver	-	22.00	-	6.00	9.00	24.00	M20
M25 x 1.5	silver	-	28.00	-	6.50	10.00	31.50	M25
M32 x 1.5	silver	-	35.00	-	7.00	10.50	39.00	M32
M40 x 1.5	silver	-	44.00	-	8.00	12.00	50.00	M40

Ordering data		
Type	Order No.	Pcs./Pkt.
HC-M-BS-M12	1046636	10
HC-M-BS-M16	1646227	10
HC-M-BS-M20	1645846	10
HC-M-BS-M25	1645859	10
HC-M-BS-M32	1645862	10
HC-M-BS-M40	1645875	10

Plastic screw plugs, Pg, EN 40430

- Material: polyamide, fiberglass reinforced
- O-ring: EPDM
- Ambient temperature:
-40°C ... +100°C
- Degree of protection: IP65



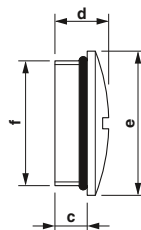
Plastic screw plugs

Thread type	Clamping area [mm]	Dimensions [mm]					Thread
		a	b	c	d	e	
Pg7	-	-	-	6.00	8.00	15.00	Pg7
Pg9	-	-	-	6.00	9.00	19.00	Pg9
Pg11	-	-	-	6.00	9.00	22.00	Pg11
Pg13.5	-	-	-	6.00	9.50	25.00	Pg13.5
Pg16	-	-	-	6.00	9.50	27.00	Pg16
Pg21	-	-	-	8.00	11.00	33.00	Pg21
Pg29	-	-	-	8.00	12.00	44.00	Pg29

Ordering data			
Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
light gray		black	
1047562	10	1047561	10
1047273	10	1047272	10
1047270	10	1047271	10
1046792	10	1046790	10
1424523	10	1415213	10
1424524	10	1415214	10
1424525	10	1415215	10

Brass screw plugs, Pg, EN 40430

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:
-20°C ... +80°C
- Degree of protection: IP68



Metal screw plug

Thread type	Color	Clamping area [mm]	Dimensions [mm]					Thread
			a	b	c	d	e	
Pg7	silver	-	-	-	5.00	7.50	15.00	Pg7
Pg9	silver	-	-	-	5.00	8.00	18.00	Pg9
Pg11	silver	-	-	-	4.50	8.00	22.00	Pg11
Pg13.5	silver	-	-	-	6.00	10.00	24.00	Pg13.5
Pg16	silver	-	-	-	6.00	10.00	26.00	Pg16
Pg21	silver	-	-	-	7.00	11.00	30.00	Pg21
Pg29	silver	-	-	-	7.00	12.00	39.00	Pg29
Pg36	silver	-	-	-	8.00	13.00	50.00	Pg36

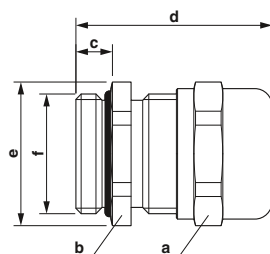
Ordering data		
Type	Order No.	Pcs./Pkt.
HC-BS-PG7	1046670	10
HC-BS-PG9	1046669	10
HC-BS-PG11	1674493	10
HC-BS-PG13	1674503	10
HC-BS-PG16	1674516	10
HC-BS-PG21	1674529	10
HC-BS-PG29	1674532	10
HC-BS-PG36	1674545	10

Installation and mounting material

Cable glands

Brass cable glands for one AS-Interface flat cable, metric, EN 60423

- Material: brass, nickel-plated
- Cable seal: TPE
- O-ring: NBR
- Ambient temperature:
-20°C ... +100°C
- Degree of protection: IP65



Brass cable gland

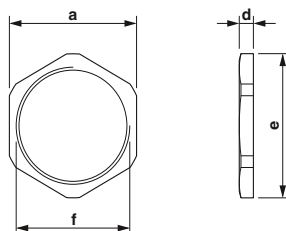
Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	-
M25 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
22.00	22.00	6.00	33.50	24.00	M20
27.00	27.00	7.00	36.50	36.00	M25

Ordering data		
Type	Order No.	Pcs./Pkt.
HC-M-KV-M20(1ASI)	1584017	10
HC-M-KV-M25(1ASI)	1584020	10

Brass counter nuts, metric, EN 60423

- Material: brass, nickel-plated
- Ambient temperature:
-70°C ... +220°C



Brass counter nut

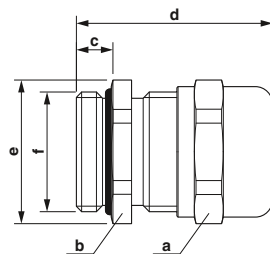
Thread type	Color	Clamping area [mm]
M20 x 1.5	silver	-
M25 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
24.00	-	-	3.00	27.00	M20
30.00	-	-	3.50	33.50	M25

Ordering data		
Type	Order No.	Pcs./Pkt.
A-INL-M20-N-S	1411242	100
A-INL-M25-N-S	1411243	100

Brass cable glands with seal, metric, EN 60423

- Seal with 10 mm and 11 mm drill hole
- Material: brass, nickel-plated
- Cable seal: TPE
- O-ring: NBR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP65



Brass cable gland

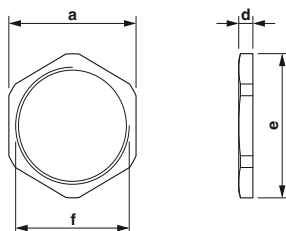
Thread type	Color	Clamping area [mm]
M25 x 1.5	silver	9.50 - 10.00

Dimensions [mm]					Thread
a	b	c	d	e	f
34.00	34.00	7.00	37.00	36.00	M25

Ordering data		
Type	Order No.	Pcs./Pkt.
HC-M-KV-M25(1X10/1X11)	1580228	10

Brass counter nuts, metric, EN 60423

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C



Brass counter nut

Thread type	Color	Clamping area [mm]
M25 x 1.5	silver	-

Dimensions [mm]					Thread
a	b	c	d	e	f
30.00	-	-	3.50	33.50	M25

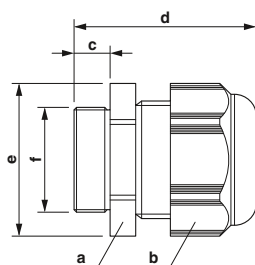
Ordering data		
Type	Order No.	Pcs./Pkt.
A-INL-M25-N-S	1411243	100

Installation and mounting material

Cable glands

Plastic cable glands for pre-assembled RJ45 cable, metric, EN 60423

- Material: polyamide
- Cable seal: CR
- Ambient temperature:
-20°C ... +100°C
- Degree of protection: IP66
- Strain relief: integrated



Plastic cable gland

Notes:

For counter nuts, see page 686

Thread type	Color	Clamping area [mm]
M25 x 1.5	black	3.00 - 7.00

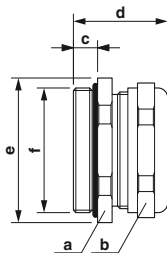
Dimensions [mm]					Thread
a	b	c	d	e	f
33.00	33.00	10.00	47.00	37.40	M25

Ordering data

Type	Order No.	Pcs./Pkt.
G-CCS-M25-M66N-PNES-BK	1076600	10

Brass cable glands, panel feed-throughs for data connectors

- Screw connection material: brass,
nickel-plated
- Pressure screw material: brass,
nickel-plated
- O-ring: NBR
- Ambient temperature:
-40°C ... +125°C
- Degree of protection: IP65



Brass cable gland
with split seal

Thread type	Color	Clamping area [mm]
M50	silver	7.50 - 8.00
M50	silver	9.50 - 10.00
M50	silver	5.50 - 6.00
M50	silver	8.50 - 9.00

Dimensions [mm]					Thread
a	b	c	d	e	f
50.00	54.00	10.00	39.00	58.00	M50
50.00	54.00	10.00	39.00	58.00	M50
50.00	54.00	10.00	39.00	58.00	M50
50.00	54.00	10.00	39.00	58.00	M50

Ordering data

Type	Order No.	Pcs./Pkt.
KV-M-M50-GD-(8)	1636509	5
KV-M-M50-GD-(10)	1636512	5
KV-M-M50-GD-(2X6)	1636525	5
KV-M-M50-GD-(2X9)	1636538	5

Sealing plugs



For sealing unused bore holes in multiple grommets and cable glands.



General data

Material
Ambient temperature (operation)

Technical data

PA
-60°C ... 100°C

Ordering data

Description	Color	Type	Order No.	Pcs./Pkt.
Closing cap				
Ø 3 mm		SEALING PLUG 3X12 RD	1400238	10
Ø 5 mm		SEALING PLUG 5X12 RD	1400253	10
Ø 6 mm		SEALING PLUG 6X16 RD	1400254	10
Ø 7 mm		SEALING PLUG 7X16 RD	1400255	10
Ø 8 mm		SEALING PLUG 8X16 RD	1400257	10
Ø 9 mm		SEALING PLUG 9X16 RD	1400259	10
Ø 10 mm		SEALING PLUG 10X16 RD	1400284	10
Ø 12 mm		SEALING PLUG 12X22 RD	1400260	10
Ø 13 mm		SEALING PLUG 13X22 RD	1400265	10
Ø 14 mm		SEALING PLUG 14X22 RD	1400270	10
Ø 17 mm		SEALING PLUG 17X17 RD	1421861	10
Ø 20 mm		SEALING PLUG 20X22 RD	1421862	10
Ø 25 mm		SEALING PLUG 25X30 RD	1421863	10
Ø 28 mm		SEALING PLUG 28X30 RD	1421864	10
Ø 35 mm		SEALING PLUG 35X35 RD	1421865	10
Ø 48 mm		SEALING PLUG 48X35 RD	1425357	5

Installation and mounting material

Service interfaces

EMC mounting frames

– Cover, transparent



EMC mounting frame
for one data front plate



EMC mounting frame
for two data front plates

Technical data
Housing material
Flammability rating in accordance with UL 94
Degree of protection
Ambient temperature (operation)

Zinc alloy
V0
IP65
-10°C ... 60°C

Zinc alloy
V0
IP65
-10°C ... 60°C

Ordering data

Description

Type	Order No.	Pcs./Pkt.
VS-SI-EB-EMV-1	1656482	1
USS 4	1203149	1

Mounting frame, with metal frame, matt nickel-plated, electrically conductive, transparent cover

for one data front plate
for two data front plates

Control cabinet key, for all popular control cabinets, closures: 5, 6, 7 - 8 mm, square, 7 - 8 mm triangle, 3-5 mm two-way key bit

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SI-EB-EMV-2	1656495	1
USS 4	1203149	1

VS-SI-EB-EMV-2

Mounting frames

– Cover, transparent



Mounting frame
for one data front plate



Mounting frame
for two data front plates

Technical data
Housing material
Flammability rating in accordance with UL 94
Degree of protection
Ambient temperature (operation)

PBT
V0
IP65
-30°C ... 70°C

PBT
V0
IP65
-30°C ... 70°C

Ordering data

Description

Type	Order No.	Pcs./Pkt.
SI-M1A	1404493	1

Mounting frame, with plastic frame, black, PC plastic cover, transparent, closure with 3 mm double bit or with enclosed knob

for one data front plate
for two data front plates

Ordering data

Type	Order No.	Pcs./Pkt.
SI-M1B	1404494	1

SI-M1B

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

PBT
IP20
-10°C ... 60°C

Technical data

Ordering data

Description

Data front plate, with the following contact inserts:

2x RJ45 CAT5e (female to female)

Data front plate, unequipped, for accommodating the following contact inserts:

2x RJ (with shroud)

Data front plate, with the following contact inserts:

1x RJ45 CAT5e, 1x D-SUB 9 BP

Type	Order No.	Pcs./Pkt.
VS-SI-FP-2RJ45-5-MOD-BU/BU	1657766	1
VS-SI-FP-2RJ-MOD	1656631	1

PBT
IP20
-10°C ... 60°C

Technical data

Ordering data

Type	Order No.	Pcs./Pkt.
SI-FP-R1A-D1E	1404500	1

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

PBT
IP20
-10°C ... 60°C

Technical data

Ordering data

Description

Data front plate, with the following contact inserts:

1x RJ45 CAT5e, 1x D-SUB 9

Data front plate, with the following contact inserts:

1x D-SUB 9

Type	Order No.	Pcs./Pkt.
SI-FP-R1A-D1A	1404496	1

PBT
IP20
-10°C ... 60°C

Technical data

Ordering data

Type	Order No.	Pcs./Pkt.
SI-FP-D1A	1404501	1

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Technical data
PBT IP20 -10°C ... 60°C

Technical data
PBT IP20 -10°C ... 60°C

Description
Data front plate , with the following contact inserts: 1x RJ45 CAT5e, 1x USB A 3.0 with 0.7 m cable Data front plate , with the following contact inserts: 1x RJ45 CAT5e, 1x USB A 3.0 with 0.7 m cable, 1x D-SUB 9

Ordering data		
Type	Order No.	Pcs./Pkt.
SI-FP-R1A-U1A/0,7	1404512	1

Ordering data		
Type	Order No.	Pcs./Pkt.
SI-FP-R1A-D1B-U1A/0,7	1404504	1

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Technical data
PBT IP20 -10°C ... 60°C

Technical data
PBT IP20 -10°C ... 60°C

Description
Data front plate , with the following contact inserts: 1x RJ45 CAT5e (female to female), 1x USB A 3.0 (female to female), 1x D-SUB 9 (female to female) Data front plate , with the following contact inserts: 2x D-SUB 9

Ordering data		
Type	Order No.	Pcs./Pkt.
SI-FP-R1A-U1A-D1A	1404497	1

Ordering data		
Type	Order No.	Pcs./Pkt.
VS-SI-FP-2DSUB9-GC-BU/ST	1657708	1

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Technical data		
PBT		
IP20		
-10°C ... 60°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
SI-FP-R1A-U1A	1404499	1

Description

Data front plate, with the following contact inserts:

1x RJ45 CAT5e, 1x USB A 3.0

Data front plate, with the following contact inserts:

2x RJ45 CAT5e, 1x USB A 3.0

Technical data		
PBT		
IP20		
-10°C ... 60°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
SI-FP-2R1A-U1A	1404506	1

Data front plates



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Technical data		
-		
IP20		
-10°C ... 60°C		
Ordering data		
Type	Order No.	Pcs./Pkt.
VS-SI-FP-BP	1656657	1

Description

Data front plate, without contact inserts

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

PBT
-
-10°C ... 60°C

PBT
-
-10°C ... 60°C

Description

Data front plate, unequipped, for accommodating the following contact inserts:

- 2x D-SUB 9
- 2 x D-SUB 15
- 2 x D-SUB 25

Data front plate, unequipped, for accommodating the following contact inserts:

- 1x D-SUB 9, 1x D-SUB 15
- 1x D-SUB 9, 1x D-SUB 25
- 1x D-SUB 15, 1x D-SUB 25

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SI-FP-2DSUB9	1656563	1
VS-SI-FP-2DSUB15	1656592	1
VS-SI-FP-2DSUB25	1656615	1

Ordering data

Type	Order No.	Pcs./Pkt.
VS-SI-FP-DSUB9-DSUB15	1656576	1
VS-SI-FP-DSUB9-DSUB25	1656589	1
VS-SI-FP-DSUB15-DSUB25	1656602	1

Inserts for data front plates



Gender changer

Technical data
Housing material
Degree of protection
Ambient temperature (operation)

Steel, yellow chromated
-
-55°C ... 125°C

Description

D-SUB gender changer

- 9-pos., female/female
- 15-pos., female/female
- 25-pos., female/female

Ordering data

Type	Order No.	Pcs./Pkt.
VS-09-GC-BU/BU	1688722	10
VS-15-GC-BU/BU	1652664	10
VS-25-GC-BU/BU	1652680	10

Data front plates



Front plate



Front plate

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Zinc die-cast, nickel-plated
IP20 / IP00
-5°C ... 50°C

Zinc die-cast, nickel-plated
IP20 / IP00
-5°C ... 50°C

Description

Data front plate, with grounding contact socket for Germany, including RJ45 gender changer (female/female, shielded), CAT6_A

Spring connection

Data front plate, with grounding contact socket for France, including RJ45 gender changer (female/female, shielded), CAT6_A

Screw connection

Technical data

Technical data

Ordering data

Ordering data

Type	Order No.	Pcs./Pkt.
VS-FP-SD-D-RJ456A-BUBU	1054542	1

Type	Order No.	Pcs./Pkt.
VS-FP-SD-FR-RJ456A-BUBU	1054543	1

Data front plates and accessories



Front plate



Gender changer, ground strap

Technical data
Material front plate
Degree of protection
Ambient temperature (operation)

Zinc die-cast, nickel-plated
IP20 / IP00
-5°C ... 50°C

-
IP20
-40°C ... 70°C

Description

Data front plate, with grounding contact socket for England, including RJ45 gender changer (female/female, shielded), CAT6_A

Screw connection

Gender changer
RJ45 CAT6_A, female/female shielded
USB 3.0, design: A, female/female
Ground strap, for functional ground

Ordering data

Ordering data

Type	Order No.	Pcs./Pkt.
VS-FP-SD-GB-RJ456A-BUBU	1054544	1

Type	Order No.	Pcs./Pkt.
VS-GC-RJ456A-BUBU	1055552	1
VS-GC-USBA3-A-BUBU	1055554	1
VS-ES-100-6	1055164	1

Control cabinet sockets



Sockets that can be mounted on DIN rails serve for easy connection of electrical auxiliary devices for assembly, testing, lighting, etc. They enable worldwide use in switchgear, control cabinets, and in simple sub-distributions. Worldwide use makes it essential to offer the sockets with pin connector patterns that are standard in each country, in accordance with the currently applicable standards and regulations. The mounting holes in the sockets mean that, in addition to mounting on a DIN rail in accordance with EN 60715, there is also the option of direct mounting in the service interface. The EO sockets are offered with both the proven screw connection, as well as the modern Push-in connection. The integrated functions such as LED, fuse, switch, circuit breaker or a combination of the functions with each other, offers a wide area of use.

L1, N, and PE are arranged on one side of the socket depending on the connection. You can select the following pin connector patterns for the sockets:

- Type AB, type CF, type D, type E, type G, type I, type J, type K, type L, and type N
- Type E, type G, and type L are also supplied with an integrated shutter system
- The USA versions are offered with integrated circuit breaker in 15 A and 20 A
- Housing color: gray or green

In combination with the EO-SI-FRAME adapter plate, the sockets can also be used in the VS-SI-... / SI-... mounting frames under different IP protection classes.

Notes:

To install a control cabinet socket in a VS-SI-... or SI-... mounting frame, you will need an EO-SI-FRAME adapter plate (see accessories).



Individual socket, Germany,
Push-in connection



Technical data

Nominal voltage	250 V AC (50 Hz)
Max. continuous current	16 A
General data	EO-...
Dimensions	45 mm / 75 mm / 60 mm
Connection data rigid/flexible/AWG	0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12
Degree of protection	IP20
Insulation material	PA
Ambient temperature range	-20°C ... 60°C
Standards/regulations	VDE 0620-1
Flammability rating in accordance with UL 94	V0

Ordering data

Description	Type	Order No.	Pcs./Pkt.
Sockets for the DIN rail, Push-in connection			
Default, gray	EO-CF/PT	0804038	5
Default, green	EO-CF/PT/GN	0804039	5
Standard, yellow	EO-CF/PT/YE	1068067	5
LED display, gray	EO-CF/PT/LED	0804040	5
LED display, green	EO-CF/PT/LED/GN	0804041	5
LED display, yellow	EO-CF/PT/LED/YE	1068075	5
LED display and fuse 5 x 20 mm, 6.3 A, gray	EO-CF/PT/LED/F	0804042	5
LED display and fuse 5 x 20 mm, 6.3 A, green	EO-CF/PT/LED/F/GN	0804043	5
Switch, gray	EO-CF/PT/S	0804045	5
Switch, LED display, gray	EO-CF/PT/LED/S	0804046	5
Fuse 5 x 20 mm, 6.3 A, gray	EO-CF/PT/F	0804047	5
Fuse 5 x 20 mm, 6.3 A, green	EO-CF/PT/F/GN	0804048	5
Socket for the DIN rail, screw connection			
Default, gray	EO-CF/UT	0804024	5
Default, green	EO-CF/UT/GN	0804025	5
Standard, yellow	EO-CF/UT/YE	1068038	5
LED display, gray	EO-CF/UT/LED	0804026	5
LED display, green	EO-CF/UT/LED/GN	0804027	5
LED display, yellow	EO-CF/UT/LED/YE	1068028	5
LED display and fuse 5 x 20 mm, 6.3 A, gray	EO-CF/UT/LED/F	0804029	5
LED display and fuse 5 x 20 mm, 6.3 A, green	EO-CF/UT/LED/F/GN	0804030	5
Switch, gray	EO-CF/UT/S	0804032	5
Switch, LED display, gray	EO-CF/UT/LED/S	0804033	5
Fuse 5 x 20 mm, 6.3 A, gray	EO-CF/UT/F	0804034	5
Fuse 5 x 20 mm, 6.3 A, green	EO-CF/UT/F/GN	0804035	5

Accessories

Adapter plate, for installing a control cabinet socket in a mounting frame, version:			
VS-SI-... or SI-...	EO-SI-FRAME	0804522	1
UniCard, for terminal blocks with a flat marker groove, 64-section, 7 individual labels per strip, for a terminal block width of 8.2 mm	UC-TMF 8	0818137	10
UniCard, for terminal blocks with a flat marker groove, 32-section, 4 individual labels per strip, for a terminal block width of 16 mm	UC-TMF 16	0819262	10
Zack marker strip, flat, 10-section, without color print	ZBF 8:UNBEDRUCKT	0808781	10
Zack marker strip, flat, 5-section, without color print	ZBF 16:UNPRINTED	0827464	10



Individual socket, USA,
Push-in connection



Individual socket, India, Africa,
Push-in connection

Technical data		
125 V AC (60 Hz)		
15 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
UL 508		
V0		

Technical data		
250 V AC (50 Hz)		
6 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
IS 1293		
V0		

Ordering data		

Type	Order No.	Pcs./Pkt.
EO-AB/PT/15	0804165	5
EO-AB/PT/LED/15	0804168	5
EO-AB/PT/LED/F	0804171	5
EO-AB/PT/S/15	0804173	5
EO-AB/PT/LED/S/15	0804174	5
EO-AB/PT/F	0804175	5

EO-AB/UT/15	0804152	5
EO-AB/UT/LED/15	0804155	5
EO-AB/UT/LED/F	0804157	5
EO-AB/UT/S/15	0804159	5
EO-AB/UT/LED/S/15	0804160	5
EO-AB/UT/F	0804161	5

Ordering data		

Type	Order No.	Pcs./Pkt.
EO-D/PT	0804009	5
EO-D/PT/GN	0804010	5
EO-D/PT/LED	0804011	5
EO-D/PT/LED/GN	0804012	5

EO-D/UT	0804000	5
EO-D/UT/GN	0804001	5
EO-D/UT/LED	0804003	5
EO-D/UT/LED/GN	0804004	5
EO-D/UT/F	0804005	5
EO-D/UT/F/GN	0804006	5

Accessories		

EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Accessories		

EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Control cabinet sockets



To prevent unintentional contact with live components, the type E, G, and L sockets have integrated touch protection (child-proofing). This is enshrined in the respective country standards, such as NF C61-314.

In combination with the EO-SI-FRAME adapter plate, the sockets can also be used in the VS-SI-... / SI-... mounting frames under different IP protection classes.

Notes:

To install a control cabinet socket in a VS-SI-... or SI-... mounting frame, you will need an EO-SI-FRAME adapter plate (see accessories).



Individual socket, Italy,
Push-in connection with shutter



Technical data

Nominal voltage	250 V AC (50 Hz)
Max. continuous current	16 A
General data	EO-...
Dimensions	W / H / D 45 mm / 75 mm / 57.5 mm
Connection data rigid/flexible/AWG	0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12
Degree of protection	IP20
Insulation material	PA
Ambient temperature range	-20°C ... 60°C
Standards/regulations	CEI 23-50
Flammability rating in accordance with UL 94	V0

Ordering data

Description	Color	Type	Order No.	Pcs./Pkt.
Sockets for the DIN rail, Push-in connection				
Default, gray		EO-L/PT/SH	0804132	5
Default, green		EO-L/PT/SH/GN	0804133	5
LED display, gray		EO-L/PT/SH/LED	0804134	5
LED display, green		EO-L/PT/SH/LED/GN	0804135	5
Switch, gray				
Switch, LED display, gray				
Socket for the DIN rail, screw connection				
Default, gray		EO-L/UT/SH	0804126	5
Default, green		EO-L/UT/SH/GN	0804127	5
LED display, gray		EO-L/UT/SH/LED	0804128	5
LED display, green		EO-L/UT/SH/LED/GN	0804129	5
Switch, gray				
Switch, LED display, gray				

Accessories

Adapter plate , for installing a control cabinet socket in a mounting frame, version:				
VS-SI-... or SI-...		EO-SI-FRAME	0804522	1
UniCard , for terminal blocks with a flat marker groove, 64-section, 7 individual labels per strip, for a terminal block width of 8.2 mm				
	white	UC-TMF 8	0818137	10
UniCard , for terminal blocks with a flat marker groove, 32-section, 4 individual labels per strip, for a terminal block width of 16 mm				
	white	UC-TMF 16	0819262	10
Zack marker strip , flat, 10-section, without color print				
	white	ZBF 8:UNBEDRUCKT	0808781	10
Zack marker strip , flat, 5-section, without color print				
	white	ZBF 16:UNPRINTED	0827464	10



Individual socket, France,
Push-in connection with shutter



Individual socket, Great Britain,
Push-in connection with shutter



Technical data		
250 V AC (50 Hz)		
16 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
NF C61-314		
V0		

Technical data		
250 V AC (50 Hz)		
13 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
BS 1363-1/-2		
V0		

Ordering data		
Type	Order No.	Pcs./Pkt.
EO-E/PT/SH	0804020	5
EO-E/PT/SH/GN	0804021	5
EO-E/PT/SH/LED	0804022	5
EO-E/PT/SH/LED/GN	0804023	5
EO-E/UT/SH	0804016	5
EO-E/UT/SH/GN	0804017	5
EO-E/UT/SH/LED	0804018	5
EO-E/UT/SH/LED/GN	0804019	5

Ordering data		
Type	Order No.	Pcs./Pkt.
EO-G/PT/SH	0804063	5
EO-G/PT/SH/GN	0804064	5
EO-G/PT/SH/LED	0804065	5
EO-G/PT/SH/LED/GN	0804066	5
EO-G/PT/SH/S	0804069	5
EO-G/PT/SH/LED/S	0804070	5
EO-G/UT/SH	0804051	5
EO-G/UT/SH/GN	0804052	5
EO-G/UT/SH/LED	0804053	5
EO-G/UT/SH/LED/GN	0804054	5
EO-G/UT/SH/S	0804058	5
EO-G/UT/SH/LED/S	0804059	5

Accessories		
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Accessories		
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Control cabinet sockets



The sockets can be operated independently of the control cabinet circuit. In the event of an error, this enables the use of current-operated external measurement devices that are necessary for fault analysis. An LED display advises of the voltage connected to the socket.

In combination with the EO-SI-FRAME adapter plate, the sockets can also be used in the VS-SI-... / SI-... mounting frames under different IP protection classes.

Notes:

To install a control cabinet socket in a VS-SI-... or SI-... mounting frame, you will need an EO-SI-FRAME adapter plate (see accessories).



Individual socket, Brazil, South Africa,
Push-in connection

Nominal voltage	250 V AC (50 Hz ... 60 Hz)
Max. continuous current	20 A
General data	EO-...
Dimensions	45 mm / 75 mm / 57.5 mm
Connection data rigid/flexible/AWG	0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12
Degree of protection	IP20
Insulation material	PA
Ambient temperature range	-20°C ... 60°C
Standards/regulations	NBR 14136
Flammability rating in accordance with UL 94	V0

Technical data

Nominal voltage	250 V AC (50 Hz ... 60 Hz)
Max. continuous current	20 A
General data	EO-...
Dimensions	45 mm / 75 mm / 57.5 mm
Connection data rigid/flexible/AWG	0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12
Degree of protection	IP20
Insulation material	PA
Ambient temperature range	-20°C ... 60°C
Standards/regulations	NBR 14136
Flammability rating in accordance with UL 94	V0

Ordering data

Description	Color
Socket for DIN rail, Push-in connection, 10 A	
Default, gray	
Default, green	
LED display, gray	
LED display, green	
Socket for DIN rail, screw connection, 20 A	
Default, gray	
Default, green	
LED display, gray	
LED display, green	

Type	Order No.	Pcs./Pkt.
EO-N/PT	0804146	5
EO-N/PT/GN	0804147	5
EO-N/PT/LED	0804148	5
EO-N/PT/LED/GN	0804149	5
EO-N/UT	0804139	5
EO-N/UT/GN	0804140	5
EO-N/UT/LED	0804142	5
EO-N/UT/LED/GN	0804143	5

Accessories

Adapter plate , for installing a control cabinet socket in a mounting frame, version:	
VS-SI-... or SI-...	
UniCard , for terminal blocks with a flat marker groove, 64-section, 7 individual labels per strip, for a terminal block width of 8.2 mm	
	white
UniCard , for terminal blocks with a flat marker groove, 32-section, 4 individual labels per strip, for a terminal block width of 16 mm	
	white
Zack marker strip, flat, 10-section, without color print	
	white
Zack marker strip, flat, 5-section, without color print	
	white

Accessories	Order No.	Pcs./Pkt.
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10



Individual socket, China, Australia,
Push-in connection



Individual socket, Switzerland,
Push-in connection



Individual socket, Denmark,
Push-in connection



Technical data		
250 V AC (50 Hz)		
10 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
GB 2099.1 and GB 1002		
V0		

Ordering data		
Type	Order No.	Pcs./Pkt.
EO-I/UT	0804087	5
EO-I/UT/GN	0804088	5
EO-I/UT/LED	0804089	5
EO-I/UT/LED/GN	0804090	5

Accessories		
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Technical data		
250 V AC (50 Hz)		
16 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
SEV 1011		
V0		

Ordering data		
Type	Order No.	Pcs./Pkt.
EO-J/PT	0804105	5
EO-J/PT/GN	0804106	5
EO-J/PT/LED	0804107	5
EO-J/PT/LED/GN	0804108	5
EO-J/UT	0804099	5
EO-J/UT/GN	0804100	5
EO-J/UT/LED	0804101	5
EO-J/UT/LED/GN	0804102	5

Accessories		
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10

Technical data		
250 V AC (50 Hz)		
16 A		
EO-...		
45 mm / 75 mm / 57.5 mm		
0.2 - 4 mm ² / 0.2 - 2.5 mm ² / 24 - 12		
IP20		
PA		
-20°C ... 60°C		
SR 107-2-D1		
V0		

Ordering data		
Type	Order No.	Pcs./Pkt.
EO-K/PT	0804119	5
EO-K/PT/GN	0804120	5
EO-K/PT/LED	0804121	5
EO-K/PT/LED/GN	0804122	5
EO-K/UT	0804113	5
EO-K/UT/GN	0804114	5
EO-K/UT/LED	0804115	5
EO-K/UT/LED/GN	0804116	5

Accessories		
EO-SI-FRAME	0804522	1
UC-TMF 8	0818137	10
UC-TMF 16	0819262	10
ZBF 8:UNBEDRUCKT	0808781	10
ZBF 16:UNPRINTED	0827464	10



Service socket

Technical data
Housing material
Ambient temperature (operation)

PA
-40°C ... 70°C

Description
Service socket, with the following contact inserts:

RJ45 CAT6_A
USB A 3.0

Technical data

Ordering data

Type	Order No.	Pcs./Pkt.
SI-RND-R1A	1425186	1
SI-RND-U1A	1425185	1

RJ45 patch cables

Notes:

For accessories, see page: 388

Ethernet

RJ45 patch cable
for IP20 applications

Technical data

	FL CAT5 PATCH 0,3	FL CAT6 PATCH 0,3
Cable, properties		
External diameter	5.50 mm	5.50 mm
Single wire, material	Cu litz wire	Cu litz wire
Single wires, quantity	8	8
Single wire, cross section	0.14 mm ²	0.14 mm ²
Outer sheath, material	LSFROH	LSFROH
Smallest bending radius, fixed installation	30 mm	30 mm
Shielding	SF/UTP	S/FTP
Male connector		
Contact resistance	≤ 0.003 Ω (IEC 60603-7)	≤ 0.003 Ω (IEC 60603-7)
General data		
Ambient temperature (operation)	-10°C ... 60°C	-10°C ... 60°C

Ordering data

Description	Length of cable	Type	Order No.	Pcs./Pkt.
Patch cable, CAT5, preassembled				
	0.3 m	FL CAT5 PATCH 0,3	2832250	10
	0.5 m	FL CAT5 PATCH 0,5	2832263	10
	1 m	FL CAT5 PATCH 1,0	2832276	10
	1.5 m	FL CAT5 PATCH 1,5	2832221	10
	2 m	FL CAT5 PATCH 2,0	2832289	10
	3 m	FL CAT5 PATCH 3,0	2832292	10
	5 m	FL CAT5 PATCH 5,0	2832580	10
	7.5 m	FL CAT5 PATCH 7,5	2832616	10
	10 m	FL CAT5 PATCH 10,0	2832629	10
Patch cable, CAT6, preassembled				
	0.3 m	FL CAT6 PATCH 0,3	2891181	10
	0.5 m	FL CAT6 PATCH 0,5	2891288	10
	1 m	FL CAT6 PATCH 1,0	2891385	10
	1.5 m	FL CAT6 PATCH 1,5	2891482	10
	2 m	FL CAT6 PATCH 2,0	2891589	10
	3 m	FL CAT6 PATCH 3,0	2891686	10
	5 m	FL CAT6 PATCH 5,0	2891783	10
	7.5 m	FL CAT6 PATCH 7,5	2891880	10
	10 m	FL CAT6 PATCH 10	2891877	10
	12.5 m	FL CAT6 PATCH 12,5	2891369	5
	15 m	FL CAT6 PATCH 15,0	2891372	5
	20 m	FL CAT6 PATCH 20,0	2891576	5
Patch cable, CAT6_A, pre-assembled, outer sheath color: water blue				
	0.3 m	NBC-R4AC1/0,3-94G/R4AC1-BU	1413158	1
	0.5 m	NBC-R4AC1/0,5-94G/R4AC1-BU	1413159	1
	1 m	NBC-R4AC1/1,0-94G/R4AC1-BU	1413160	1
	2 m	NBC-R4AC1/2,0-94G/R4AC1-BU	1413161	1
	3 m	NBC-R4AC1/3,0-94G/R4AC1-BU	1413162	1
	5 m	NBC-R4AC1/5,0-94G/R4AC1-BU	1413163	1
	10 m	NBC-R4AC1/10,0-94G/R4AC1-BU	1413164	1
	15 m	NBC-R4AC1/15,0-94G/R4AC1-BU	1413165	1
	20 m	NBC-R4AC1/20,0-94G/R4AC1-BU	1413166	1



Cable marking

The cables are supplied with marking collars. The marking is implemented by means of insert strips that can be marked and is protected by the carrier. Subsequent marking is therefore possible.



Distributor box marking

High-quality marking materials are available for the individual marking of distributor boxes.



Connector marking

Marking materials ranging from adhesive labels to high-quality engraved labels are available for marking heavy-duty connectors.



Cable markers

Markers can be fitted using cable binders almost regardless of cable diameter. The large marking area provides enough space for comprehensive marking.



Cable marker labels

Cable marker labels consist of a marking field and a transparent film that protects the marking against abrasion and dirt.



Plastic cable markers

Plastic cable markers are suitable for bundling and marking cables. The marking is protected against dirt and can be replaced.



Cable protection systems

We have the right solution for your application. Select from our comprehensive range of plastic and metal protective hoses. Protective hose screw connections with tool-free quick mounting function and various IP protection classes round off the range of products.

i Your web code: **#0572**

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # followed by the numbers in the search field.



Quality in quantity



Integrated management system

The objective of the Phoenix Contact integrated management system is to integrate all requirements pertaining to products, processes, and the organization.

Statutory and regulatory requirements, as well as those of international standards and our customers, are met and, in some cases, even exceeded in all phases of the product lifecycle.

The Phoenix Contact management system is monitored by internationally recognized independent bodies each year to ensure that quality, environmental protection, energy efficiency, and occupational safety have been integrated in conformance with the relevant requirements. Certification in accordance with international standards ISO 9001, ISO 14001, ISO 50001, and BS OHSAS 18001 is the result of our corporate philosophy of meeting the needs of our customers, staff, and environment as best as possible. This serves as the basis for innovative products with the familiar high Phoenix Contact quality standard, actively practiced environmental protection through efficient production and products that conserve resources, and responsibility in the field of occupational health and safety. It goes without saying that we integrate all further requirements of standards, international approvals or special customer requirements into our company processes.

The result of this system is a building block for the success of the Phoenix Contact Group as well as its products and services.

CE marking

CE marking was introduced as an important instrument for the free movement of goods and services within the single European market. By applying the mark to a product, the manufacturer confirms its compliance with all EU directives applicable to this product. The EU directives describe the product characteristics with regard to device safety and the avoidance of risks. They have been incorporated in national legislation.

Compliance with the requirements is a **condition for placing the product on the market within the EU.**

Where applicable, our products currently fall within the scope of the following directives in particular:

- 2014/35/EU
Electrical equipment designed for use within certain voltage limits (Low Voltage Directive)
- 2014/30/EU
Electromagnetic compatibility (EMC Directive)
- 2014/32/EU
Measuring instruments
- 2006/42/EC
Safety of machinery (Machinery Directive)
- 2014/34/EU
Equipment and protective systems intended for use in potentially explosive atmospheres (ATEX Directive)
- 2014/53/EU
Radio equipment (RED)
- 2011/65/EU
Restriction of the use of certain hazardous substances (RoHS Directive)
- 2012/19/EU
Waste electrical and electronic equipment (WEEE Directive)

The standards used as the basis for the aforementioned directives have been at the heart of our development standard for some time as a way of ensuring compliance with European directives. The numbers of the directives indicate their version at the time of publication. In the event of changes to directives and/or standards, our products will undergo conformity assessment again in good time and a new declaration of conformity will be issued promptly. The current declarations for each product can also be found in our download area.

Among the aforementioned European directives, the EMC Directive plays a particularly important role. It uses a directive enshrined in national legislation as the basis for defining electromagnetic compatibility as a fundamental device property.

European legislation therefore places great emphasis on the electromagnetic compatibility of devices and systems as a basic prerequisite for the error-free operation of machines and systems. As an international leader in the field of surge protection, Phoenix Contact has extensive expertise in EMC. This expertise and the experience gained over many years in the development and application of industrial interface and communication technology have resulted in an extremely high standard of quality for our products when it comes to electromagnetic compatibility.

Our independent laboratory, Phoenix Testlab, was founded in order to share this expertise with other companies. Phoenix Testlab GmbH

is an accredited service company, which carries out EMC testing in compliance with European standards. At Phoenix Testlab, devices are also tested with regard to their electrical safety, mechanical influences, and their behavior in relation to environmental influences. Phoenix Testlab is also a notified body in accordance with EMC Directive 2014/30/EU and Radio Equipment Directive (RED) 2014/53/EU. As a certification body (TCB, FCB, and RCB), Phoenix Testlab is also able to approve these products for the markets in the USA, Canada, and Japan.

Standards and regulations

All relevant standards and regulations are used as the basis for the development and maintenance of our products.

International standards are subject to continuous changes as a result of harmonization and new developments. In line with this process, the current version of all standards that are relevant to our products is documented in the product area on our website at phoenixcontact.net/products.

Online product information service on the world wide web

Phoenix Contact is continuously extending its product range.

Within the scope of our product monitoring obligation, all products are subject to an improvement process.

The Internet is an ideal platform to quickly communicate new product developments and improvements to the market.

You can quickly access the relevant Phoenix Contact website for your region via phoenixcontact.com. There you will always find an up-to-date overview of products, solutions, and services from Phoenix Contact. This includes technical documents such as data sheets and user manuals, current driver and demo software, and a direct link to the relevant contact person.

Connection cross section

IEC 60947-7-1/-2

The connection capacity for connectors is documented in the technical data. The connection capacity defines the conductor cross section that can be connected for conductors in rigid (single and multi-stranded) or flexible (fine-stranded) versions. Cross section ranges are also specified for the use of ferrules. Furthermore, ranges where two conductors in rigid and flexible versions are to be simultaneously connected are also listed.

Phoenix Contact connectors are designed so that copper wires can be connected untreated. "Special treatment" or the use of ferrules is not required. "Special treatment" includes tin-plating the litz wires of a conductor, using cable lugs, bending the

eyes, etc. However, it does not include straightening the conductor before inserting it into the terminal block or twisting a multi-stranded conductor in order to stabilize the ends.

If ferrules are nevertheless used as splicing protection for flexible conductors, the connection capacity of the flexible conductor is reduced by around one level. Conductors may not be soldered ("soldering all litz wires of a conductor together").

The use of Phoenix Contact CRIMPFOX crimping tools to crimp ferrules is recommended in all cases.

Structure and dimensions of connecting cables

Cross section	Single-stranded		Multi-stranded		Fine-stranded		American Wire Gauge [AWG]						
	Diameter max. dimension	Number of wires	Diameter max. dimension	Number of wires (Minimum number)	Diameter max. dimension	Number of wires (Guide value)	Gauge No.	Rigid wires*			Flexible wires*		
[mm²]							AWG	[Ø mm]	[circ. mils]	[mm²]	[Ø mm]	[circ. mils]	[mm²]
0.2	0.5	1	-	-	-	-	24	0.51	404	0.21	-	-	-
0.5	0.9	1	1.1	7	1.1	16	20	0.81	1022	0.52	0.97	1111	0.56
0.75	1.0	1	1.2	7	1.3	24	18	1.02	1620	0.82	1.16	1600	0.82
1	1.2	1	1.4	7	1.5	32	(17)	1.15	2050	1.04	-	-	-
-	-	-	-	-	-	-	16	1.29	2580	1.31	1.50	2580	1.32
1.5	1.5	1	1.7	7	1.8	30	(15)	1.45	3260	1.65	-	-	-
-	-	-	-	-	-	-	14	1.63	4110	2.08	1.85	4100	2.09
2.5	1.9	1	2.2	7	2.3	50	(13)	1.83	5180	2.63	-	-	-
-	-	-	-	-	-	-	12	2.05	6530	3.31	2.41	6500	3.32
4	2.4	1	2.7	7	2.9	56	(11)	2.30	8230	4.17	-	-	-
-	-	-	-	-	-	-	10	2.59	10380	5.26	2.95	10530	5.37
6	2.9	1	3.3	7	3.9	84	(9)	2.91	13100	6.63	-	-	-
-	-	-	-	-	-	-	8	3.26	16510	8.37	3.73	16625	8.48
10	3.7	1	4.2	7	5.1	80	(7)	3.67	20800	10.56	4.15	20820	10.55
-	-	-	-	-	-	-	6	4.12	26240	13.30	4.67	26250	13.39
16	4.6	1	5.3	7	6.3	126	(5)	4.62	33100	16.77	5.24	33100	16.77
-	-	-	-	-	-	-	4	5.19	41740	21.15	5.90	41650	21.24
25	-	-	6.6	7	7.8	196	3	5.83	52600	26.67	6.61	52630	26.67
35	-	-	7.9	7	9.2	276	2	6.54	66360	33.62	7.42	66150	33.74
-	-	-	-	-	-	-	1	7.35	83690	42.41	8.33	83706	42.69
50	-	-	9.1	19	11	396	1/0	8.25	105600	53.51	9.35	104640	53.36
70	-	-	11	19	13.1	360	2/0	9.27	133100	67.44	10.52	132300	67.47

Tightening torque for terminal block screws

DIN EN 60947-1

Table 4 of the standard specifies the tightening torque to demonstrate the mechanical strength of screw connections / screw terminal blocks.

These torques are sufficient for securely connecting conductors with Phoenix Contact terminal blocks.

The adjacent table lists recommended tightening torques that differ from those in this standard and will ensure gas-tight connections that remain stable in the long term.

Phoenix Contact torque screwdrivers can be set to the corresponding torques.

Extract from DIN EN 60947-1/ EN 60947-1, Table 4

The torque in accordance with IEC/EN and the recommended tightening torque for Phoenix Contact terminal blocks are specified.

Head screw with slot

Thread	Torque
	[Nm]
M1.6	0.1*
M2.0	0.2*
M2.5 (M2.6)	0.4*
M 3	0.5*
M 4	1.2*
M4.5	1.8*
M 5	2.0*
M 6	2.5*
M 8	3.5*
M 10	4.0* / 10**
M 12	14**
M 14	19**
M 16	25**
M 20	36**
M 24	50**

* Valid for nuts and screws tightened with screwdrivers.

** Valid for nuts and screws that can be tightened with tools other than screwdrivers.

Note:

Subject to changes that serve the purpose of technical progress.

Current carrying capacity

The standard IEC 60947-7-1 / EN 60947-7-1 / DIN VDE 0611-1 specifies the test currents for the individual conductor cross sections listed in the adjacent table. The corresponding currents are listed with the connection data for the individual terminal blocks. The type testing of terminal blocks is based on this data.

The current carrying capacity of connectors in accordance with DIN EN 61984 is dependent on the number of positions and is to be found in the product-specific documentation.

Test currents in accordance with IEC 60947-7-1/EN 60947-7-1, Table 5

Rated cross section	[mm²]	0.2	0.5	0.75	1.0	1.5	2.5	4	6	10	16
Test current	[A]	4	6	9	13.5	17.5	24	32	41	57	76

Rated cross section	[mm²]	25	35	50	70	95	120	150	185	240	300
Test current	[A]	101	125	150	192	232	269	309	353	415	520

Touch protection

IEC 60529 / DIN EN 50274

Electrical installations and systems must also afford service technicians a high level of safety. This applies for all measurements and testing as well as for servicing.

BGV A3 prescribes the voltage-free state of the affected low-voltage system or system parts up to 1000 V AC and 1500 V DC when working in the vicinity of live parts. To prevent electric shock, live parts must be secured against direct contact through the use of covers or barriers.

In electrical systems that are only accessible to electrically skilled persons or electrically instructed persons, contact inserts for heavy-duty connectors from Phoenix Contact provide touch protection based on EN 50274. During testing based on EN 50274, the test probes are led from the operating direction to the test object. Electrical contact between the test probes and live parts is not permitted with a test force of 20 N for proof of touch-proof safety and 20 N for back of hand safety.

More detailed information is provided in the product documentation.



Touch-proof safety

Test finger with 12.5 mm diameter



Back of hand safety

Test ball with 50 mm diameter

Color designations

Color	Code
White	WH
Red	RD
Blue	BU
Green	GN
Yellow	YE
Gray	GY
Brown	BN
Orange	OG
Black	BK
Turquoise	TQ
Ivory	IV
Beige	BE
Olive	OL
Beige	BE

EMC: Class A product:

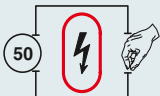
In accordance with statutory regulations, our products are indicated with this footnote if they are intended for use in industrial environments. This means that the permitted limit values for residential applications may be exceeded in the event of conducted and emitted disturbance variables. In such cases, the operator may have to take additional safety measures in order to ensure electromagnetic compatibility in residential applications.

Degrees of protection in accordance with DIN EN 60529

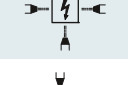
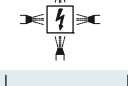
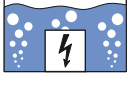
Definition:

The IP (Ingress Protection) degree of protection in accordance with DIN EN 60529 is defined by two digits (e.g. IP54), the meaning of which is explained in the following tables.

Degree of protection against access to dangerous parts and against rigid foreign objects

First digit	Short description	Example	Definition
0	Not protected		
1	Protected against rigid foreign objects		Protected against touching dangerous parts with the back of the hand. Protection against ingress of rigid foreign objects of $\varnothing > 50$ mm.
2	Protected against rigid foreign objects of $\varnothing$ 12.5 mm or more		Protected against touching dangerous parts with a finger. Protection against ingress of rigid foreign objects of $\varnothing > 12.5$ mm.
3	Protected against rigid foreign objects of $\varnothing$ 2.5 mm or more		Protected against touching dangerous parts with a tool. Protection against ingress of rigid foreign objects of $\varnothing > 2.5$ mm.
4	Protected against rigid foreign objects of $\varnothing$ 1 mm or more		Protected against touching dangerous parts with a wire. Protection against ingress of rigid foreign objects of $\varnothing > 1$ mm.
5	Protected against dust		Protected against touching dangerous parts with a wire. The ingress of dust is not completely prevented, but dust may not enter in amounts sufficient to impair the satisfactory operation of the device or its safety.
6	Dust-proof		Protected against touching dangerous parts with a wire. No ingress of dust.

Degree of protection against water

Second digit	Short description	Example	Definition
0	Not protected		
1	Protected against dripping water		Vertically falling drops shall have no effect.
2	Protected against dripping water if the housing is inclined at an angle of up to 15°		Vertically falling drops shall have no effect if the housing is inclined at an angle of up to 15° either side of the perpendicular.
3	Protected against spray water		Water that is sprayed at an angle of up to 60° either side of the perpendicular shall have no harmful effect.
4	Protected against splash water		Water that splashes against the housing from any direction shall have no harmful effect.
5	Protected against jet water		Water that is directed as a jet against the housing from any direction has no harmful effect.
6	Protected against powerful jet water		Water that is directed as a strong jet against the housing from any direction shall have no harmful effect.
7	Protected against the effect of temporary submersion in water		Water may not penetrate in a harmful quantity when the housing is temporarily submerged in water under standardized pressure and time conditions.
8	Protected against the effect of continuous submersion in water		Water may not penetrate in a harmful quantity when the housing is submerged in water continuously under conditions to be agreed between the manufacturer and user.
9K	Protected against water during high-pressure and jet-stream cleaning		Water that is directed against the housing under extremely high pressure from any direction shall have no harmful effect. (Example: IP69K in accordance with DIN 40050 Part 9)

For safety reasons, electrical equipment must be protected against external influences. This is the task of the housing, which protects electrical equipment against contact, ingress of solid objects, dust, and moisture.

The following table contains possible combinations of degrees of protection in accordance with DIN EN 60529 which can be practically applied to housing.

For safety reasons, electrical equipment must be protected against external influences. This is the task of the housing, which protects electrical equipment against contact, ingress of solid objects, dust, and moisture.

The following table contains possible combinations of degrees of protection in accordance with DIN EN 60529 which can be practically applied to housing.

		Protection against water										
		No protection	Protection against vertically falling dripping water	Protection against dripping water if the housing is inclined at an angle of up to 15°	Protection against spray water from all directions, even when inclined at an angle of up to 60°	Protection against splash water from all directions	Protection against jet water from all directions	Protection against powerful jet water from all directions	Protection against temporary submersion	Protection against the effects of continuous submersion in water	Protected against water during high-pressure and jet-stream cleaning (DIN 40050-9)	
Touch protection	Foreign object protection		IPx0	IPx1	IPx2	IPx3	IPx4	IPx5	IPx6	IPx7	IPx8	IPx9K
No touch protection	No protection against solid foreign objects	IP0x	IP00									
Back of hand safety	Protection against solid foreign objects >50 mm Ø	IP1x	IP10	IP11	IP12							
Touch-proof	Protection against solid foreign objects >12.5 mm Ø	IP2x	IP20	IP21	IP22	IP23						
Protection against touching with tools, wires, etc. >2.5 mm Ø	Protection against solid foreign objects >2.5 mm Ø	IP3x	IP30	IP31	IP32	IP33						
Protection against touching with tools, wires, etc. >1 mm Ø	Protection against solid foreign objects >1.5 mm Ø	IP4x	IP40	IP41	IP42	IP43	IP44					
Protection against touching with tools, wires, etc. >1 mm Ø	Protection against harmful dust accumulations inside the device	IP5x	IP50				IP54	IP55				
Protection against touching with tools, wires, etc. >1 mm Ø	No ingress of dust	IP6x	IP60					IP65	IP66	IP67	IP68	IP69K

Connector safety requirement and test

DIN EN 61984

Dimensioning of creepage distances for connectors with a degree of protection of IP54 or higher.

For a connector with a degree of protection of at least IP54 in accordance with IEC 60529, isolating parts (air clearances and creepage distances) within the encapsulation may be rated for a low pollution degree.

This also applies to plug-in connectors in which the encapsulation is assured by the connector housing and which are only separated for testing and maintenance purposes.

Quality features of insulation material

Our insulating housings are made from various thermoplastic materials. Depending on the application, the best-suited material is selected based on its electrical and mechanical properties.

All plastics used by Phoenix Contact are RoHS-compliant.

All plastics used at Phoenix Contact have been listed with UL (Underwriters Laboratories Inc.) in the USA.

Behavior of plastics under the influence of temperature (operating temperatures)

All plastics undergo thermal aging when they are subjected to heat over long periods. This process causes changes in the mechanical and electrical properties of the material. External influences, e.g., radiation, additional mechanical, chemical or electrical stresses, amplify this effect. All characteristics included in the table have been determined based on samples, which provides a good means of drawing comparisons between different plastics. However, applying these characteristics to an evaluation of molded plastic parts is only possible to a limited extent, and can only give the designer a rough guide when it comes to selecting a plastic material. This catalog uses the electrical RTI in accordance with UL 746B as an assessment criterion for temperature resistance.

Insulation materials

Polyamide: PA and PA-GF

Polyamide has excellent electrical, mechanical, and chemical properties even at high operating temperatures. Brief peak temperatures of up to approximately 200°C are permitted as a result of heat aging stabilization. The absorption of water makes the plastic stranded and resistant to breakage, even at low temperatures.

Fiber-reinforced polyamides feature greater rigidity and hardness and can be used at temperatures higher than those of non-reinforced materials.

Polyamide for high-temperature applications: PA HT and PA-GF HT

Special types of polyamide resistant to high temperatures are used in non-reinforced and fiberglass-reinforced versions for reflow applications. These high-temperature polyamides combine the excellent electrical properties of polyamides and the requirements of the reflow soldering process for temperature resistance.

Liquid crystal polymers: LCP GF

LCPs combine high temperature stability with excellent dimensional stability and creepage resistance for products used in reflow processes. LCPs have exceptional mechanical properties across a wide temperature range as well as a very low thermal expansion.

Polyester: PBT and PBT-GF

We use thermoplastic polyester in non-reinforced and fiberglass-reinforced versions for special applications that require increased dimensional and form stability.

In addition to the high operating temperature, the material is characterized by excellent mechanical stability, hardness, and excellent notched impact strength. PBT does not absorb moisture from its surroundings. PBT is therefore particularly suitable for strips, for example, which are soldered onto PCBs.

Polycarbonate: PC

Polycarbonate combines many advantages such as rigidity, impact strength, transparency, dimensional stability, good insulation properties, and resistance to heat.

The amorphous material only absorbs moisture to a very limited degree, and is used for items such as large, rigid electronic component housings.

In its transparent form, polycarbonate is particularly suitable for use as a material for cover profiles or marking materials.

Acrylonitrile butadiene styrene: ABS

We use ABS for products that must have good impact and notched impact properties in addition to high mechanical stability and rigidity. The products are also characterized by their special surface quality and hardness.

ABS is suitable for coating metal surfaces, e.g., nickel.

Polyvinyl chloride: PVC

While most thermoplastic materials are processed with injection molding using ready-to-use molding and extrusion material, PVC is processed as a granulate in the extruder. This is why it is used in our profile products. PVC is also self-extinguishing without flame protection and has high mechanical strength but is also notch-sensitive.

Polyoxymethylene: POM

Polyoxymethylene is a technical material that combines high rigidity with mechanical stability, excellent elastic properties, high toughness, dimensional accuracy, and exceptional sliding friction behavior.

Polyethylene: PE

Polyethylene is characterized by excellent chemical resistance and electrical insulation properties. PE is thermoplastic and can therefore be processed by almost all methods. Furthermore, PE has excellent toughness even at low temperatures and a good elongation at break.

Polypropylene: PP

PP has higher rigidity, hardness, and stability and is more heat-resistant than PE. However, PP is not as tough at low temperatures.

Thermoplastic polyurethane: TPU and TPU-GF

TPU is characterized by excellent electrical properties, a good surface feel, a high degree of flexibility over a wide temperature range, and high resistance to wear. Thermoplastic polyurethanes are also elastic and low-temperature impact resistant.

In contrast to non-reinforced materials, fiberglass-reinforced TPU is characterized by high rigidity and hardness.

Cross-linked ethylene-propylene-diene polymer/polypropylene: PP/EPDM

PP/EPDM is a polymer blend of PP and cross-linked EPDM. PP/EPDM is a rubber-like material that can be processed using thermoplastic methods. PP/EPDM combines high temperature resistance, a low compression set, good resistance to abrasion, and good resistance to chemicals.

Acrylonitrile butadiene styrene rubber: NBR

NBR is a rubber with excellent resistance to aging. It also features excellent resistance to abrasion and has a low plastic flow. Its elasticity is lower than other rubbers.

Fluorinated rubber: FPM

FPM rubbers are characterized by very high temperature resistance, but behave less favorably at low temperatures than other rubbers.

Chlorine-butadiene rubber: CR

CR rubber stands out against other rubbers with its excellent resistance to weather and ozone.

Properties	Standard	Unit	PA	PA GF	PA HT	PA GF HT	PBT	PBT GF	LCP GF	PC	ABS	PVC	POM	PP	PE
RTI elec ¹⁾	UL 746B	°C	≥105	≥105	≥105	≥105	≥105	≥105	≥130	≥105	≥80	≥50	≥105	65	50
Minimum temperature for use (without mechanical load)		°C	-40	-40	-40	-40	-40	-40	-40	-40	-40	-15	-40	-40	-40
Electric strength	IEC 60243-1 / DIN VDE 0303-21	kV/mm	25	18	20	33	28	40	50	30	41	40	35	30	50
Resistance to creepage CTI...	IEC 60112 / DIN VDE 0303-1	-	600	400	³ 250	225	600	225	175	175	600	600	600		
Resistance to creepage CTI...M	IEC 60112 / DIN VDE 0303-1	-	550	250			600	225		175	600	600	600		
Flammability rating	UL 94	HB – V0	V2, V0	HB, V0	V0	V0	V0	V0	V0	V2, V0		V0	HB	HB	HB
Termite resistance and resistance to tropical conditions			Good	Good			Good			Good					

¹⁾ Where "z" is shown, higher temperatures are possible, but not recommended due to increased aging of plastics and insufficient current carrying capacity.

Properties	Standard	Unit	TPU	TPU GF	EPDM/ PP	Properties	Standard	Unit	NBR	FPM	CR
RTI elec	UL 746B	°C	50	50	100	Operating temperature		°C	≤100	≤200	≤100
Minimum temperature for use (without mechanical load)		°C	-40	-40	-40	Minimum temperature for use (without mechanical load)		°C	-40	-25	-40
Electric strength	IEC 60243-1 / DIN VDE 0303-21	kV/mm	30	37		Electric strength	IEC 60243-1 / DIN VDE 0303-21	kV/cm	Not relevant as these are sealing materials		
Resistance to creepage CTI...	IEC 60112 / DIN VDE 0303-1	-	600	600	600	Resistance to creepage CTI...	IEC 60112 / DIN VDE 0303-1	-			
Resistance to creepage CTI...M	IEC 60112 / DIN VDE 0303-1	-	600			Resistance to creepage CTI...M	IEC 60112 / DIN VDE 0303-1	-			
Flammability rating	UL 94	HB – V0	V2	HB	HB	Flammability rating	UL 94	HB – V0			
Chemical resistance	See table for resistance to chemicals										

Resistance to chemicals

- Not resistant
- 0 Moderately resistant
- + Good resistance

Chemicals	Plastics																		
	Concentration in %	Temperature in °C	PA 66 / PA 6	PA 66 GF	PA 46 GF	PC GF	POM	NBR	PP	EPDM	PBT	PUR	PUR irradiated*	PVC-P (soft)	PE-LD	TPU	FPM (Viton)	CR (neoprene)	
Acetaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	-	0	
Acetone		20	+				+	-	+		0	0	0	-	-	-	-	0	
Acetate			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-	
Acetophenone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-	
Aldehyde			0	0	0	-	0	-	-	0		+	+	+	0	-	0	0	
Formic acid			-	-	0	0	+	-	+	+	+	0	0	-	+	0	0	+	
Amines			+	+	+	-	0	-	-	0	+	+	+	+	0	-	-	-	
Alcohols			0	0	0	0	+	0	+	+	+	+	+	-	+	+	0	+	
Ammonia	10	20	+				+	0	+	+	+	+	+	0	+	0	-	+	
Benzaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	-	0	
Gasoline		20	+	+	+	0	+	0	0	-	+	+	+	-	-	-	+	-	
Benzol		50	+	+	+	+	0	-	0	-	+	0	0	-	0	-	0	-	
Benzophenone		20	+	+	+	0	0	-	+	0	0	+	+	-	-	-	+	-	
Boracic acid	100	20	0				0	+		+	+	0	0	0	+	+	+	+	
Brake fluid		100	+				+	-		+	+	-	-	0	+	-	-	-	
Butyric acid			-	-	0	0	+	0	+	+	+	0	0	+	+	-	0	0	
Cyclohexanone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-	
Diesel oil			+				+	+	+	-	+	+	+	-	+	-	+	-	
Diethylamine			+	+	+	-	0	-	-	0	+	+	+	+	-	-	-	-	
Dimethylamine			+	+	+	-	0	-	-	0	+	+	+	+	0		-	-	
Glacial acetic acid		50	-	-	-	-	-	-	0	+	-	-	-	-	+	-	-	-	
Acetic acid	20		-	-	0	0	+	-	+	+	+	0	0	0	+	-	-	0	
Esters			+	+	+	0	-	-	-	0	+			-	+	-	-	-	
Ethanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	+	+	
Ether			+	+	+	-	0	-	0	0	+	+	+	-	0	+	-	-	
Greases			+	+	+	+	+	+	0	0				0	+	-	+	0	
Formaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	+	0	
Gear oil		100	+				+	+		-	+	+	+	+	+	-	+	-	
Halogens (fluorine, chlorine, bromine, iodine)			-	-	-	+	-	-	-	-	-	-	-	-	-	-	+	-	
Hydraulic oil		20	+				0	+		-	+	+	+	-	+	-	+	-	
Potassium hydroxide solution			+	+	+	-	+	0	+		-	+	+	+	+	0	+	-	
Kerosene		20	+				+				+	+	+	-	0	-	+	-	
Ketones			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-	
Hydrocarbons, aliphatic			+	+	+	+	+	+	0	0	+	+	+	-	+	+	+	-	
Hydrocarbons, aromatic			+	+	+	-	0	-	0	0	0	+	+	-	-	-	+	-	
Hydrocarbons, chlorinated			0	0	0	-	+	-	-	-	0	-	-	-	-	-	+	-	
Hydrocarbons, unsaturated chlorinated			0	0	0	-	+	-	-	-	0	0	0	-	-	-	+	-	
Fuels			+	+	+	0	+	0	0	-	+	+	+	-	-	-	+	-	
Alkalis, weak			+	+	+	-	+	0	+	+	+	+	+	+	+	0	+	0	
Alkalis, strong			0	-	-	-	+	-	+		+	-	-	+	0	0	-	-	
Inorganic salt solutions			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	
Machine oil			+				+				+	+	+	0	+	-	+	-	
Metal chloride			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	
Metal sulfate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	
Metal nitrate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	
Methanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	-	+	
Methylamine			+	+	+	-	0	-	-	0	+	+	+	+	+	0	0	-	
Lactic acid	10	20	+				+	+	+	+	+	+	+	-	+	+	+	+	
Mineral oil			+	+	+		+	+	+	-	+	+	+	-	+	-	+	-	
Motor oil		120	+	+	+	0	+	+	+	-	+	+	+	-	+	-	+	-	
Sodium hydroxide solution	50	50	0	0	+	-	+	+	+	+	-	+	+	+	+	0	0	0	
Nitrobenzene			0				0	-		0	+	-	-	-	0	+	0	-	
Ozone			0	0	0	-	0	-	+	+	+	0	0	+	+	0	+	-	
Propyl alcohol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	+	+	
Nitric acid	30	20	-	0	-	0	-	-	+	0	0	0	0	-	+	-	+	-	
Hydrochloric acid		20	-				-	0	+	0	0	-	-	-	+	0	+	0	
Sulfuric acid	50	50	-	0	-	0	-	-	+	+	-	0	0	+	+	0	+	-	
Salt water		20	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Turpentine			0	0	0	+	-	+	-	-	+	0	0	-	-	-	+	-	
UV resistance			+	+	+	0	0	-	-		+	+	+	0	0	+	+	+	
Detergent alkalis	2	100	0				+	+		+	+	+	+	-	+	+	+	0	
Water (dist.)		20												+					
Water, cold			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Water, hot			-	-	-	-	+	+	+	+	-	+	+	+	+	0	+	0	
Citric acid	10		+				+	+	+	+	+			+	+	+	+	0	

* The irradiated PUR version is generally more resistant than the non-irradiated version. This cannot be quantified and must be checked in individual cases.

The information in the table has been gathered from the recommendations of our plastic suppliers.

Since individual operating conditions can also affect the usability of each product, this information should be used as a guide only.

For applications where no prior experience exists, we recommend that the user carries out preliminary tests.

Insulation coordination for electrical equipment in low-voltage systems

Rating of air clearances and creepage distances in accordance with DIN EN 60664-1 / VDE 0110-1.

This part of the standard is based on IEC 60664. It contains the specifications for insulation coordination for equipment in low-voltage systems. This part is applicable for equipment for use up to an altitude of up to 2000 m above sea level. This basic safety standard is primarily aimed at technical committees. If suitable product directives are not available for a piece of equipment, the standard can be applied at the responsibility of the user. International and European product standards are cited in this catalog. These standards contain specifications for insulation coordination in accordance with DIN EN 60664 / VDE 0110-1.

Insulation coordination

Insulation coordination includes the selection of electrical insulation properties for equipment depending on the intended application and ambient conditions. Separate requirements must be applied for air clearances and creepage distances and for fixed insulation. The surge voltages to be expected, the characteristics of surge protective devices, and the pollution levels at the intended site must be considered when dimensioning clearances. Clearances are to be dimensioned in accordance with the external or internal surge voltages to be expected. Different overvoltages, grouped into categories, with a numerical value that determines an impulse withstand voltage, determine the required clearance directly. These overvoltage categories (I to IV) are used for equipment that is directly supplied by low-voltage grids. They are primarily based on a statistical study. Definitions of the individual categories are listed below as an extract of the DIN EN 60664 / VDE 0110-1 standards.

The clearances can be calculated in accordance with Table 2, Minimum clearances, depending on the homogeneity level of the field between the electrodes (case A – non-homogeneous field, case B – homogeneous field).

Clearances in accordance with case A are capable of withstanding the assigned impulse voltages under all conditions. Equipment rated in accordance with case a can therefore be used without further testing. Clearance values in accordance with case B are based on ideal conditions. Clearance values falling between case A and case B must be verified via an impulse voltage test.

The voltages present, the properties of the insulation materials, the pollution levels to be expected, and safety measures against pollution are considered when dimensioning creepage distances.

The effect of pollution is considered when determining the air clearances and creepage distances in accordance with three degrees of severity (pollution degree 1 to 3).

The creepage distances are based on the rated voltage, which is derived from the working voltage or nominal mains voltage. The minimum creepage distances are assigned to the rated voltages in accordance with the pollution degree in Table 4.

If the respective product descriptions do not contain any additional specifications, the products listed in this catalog are rated for overvoltage category III and pollution degree 3 in accordance with this provision (DIN EN 60664-1 / VDE 0110-1).

Overvoltage categories I to IV

– Equipment in **overvoltage category IV** can be used at the terminal point of the installation.

Note: Examples of this kind of equipment include electricity meters and primary overcurrent protection devices.

– Equipment in **overvoltage category III** can be used in fixed installations and in cases where there are special requirements on the reliability and availability of the equipment.

Note: Examples of this kind of equipment include switches in fixed installations and equipment for industrial use that is permanently connected to the fixed installation.

– Equipment in **overvoltage category II** is energy-consuming equipment fed by the fixed installation.

Note: Examples of this kind of equipment include household appliances, portable tools, other domestic appliances, and similar devices.

– Equipment in **overvoltage category I** can be connected to circuits in which measures have been taken to limit the transient overvoltages to a suitably low value.

Pollution degrees 1 to 4

The following four pollution degrees have been defined for the micro-environment in order to determine air clearances and creepage distances:

– Pollution degree 1

No pollution or only dry, non-conductive pollution occurs. The pollution does not have an effect.

– Pollution degree 2

Only non-conductive pollution occurs. However, temporary conductivity due to condensation is to be expected.

– Pollution degree 3

Conductive pollution occurs or dry, non-conductive pollution which becomes conductive, since condensation is to be expected.

– Pollution degree 4

Permanent conductivity occurs, caused by conductive dust, rain or moisture.

Insulation material

DIN EN 60664 / VDE 0110-1 classifies insulation materials into four groups depending on their CTI values obtained using solution A in accordance with IEC 60112.

Insulation material group I: $600 \leq CTI$

Insulation material group II:

$400 \leq CTI \leq 600$

Insulation material group III a:

$175 \leq CTI < 400$

Insulation material group III b:

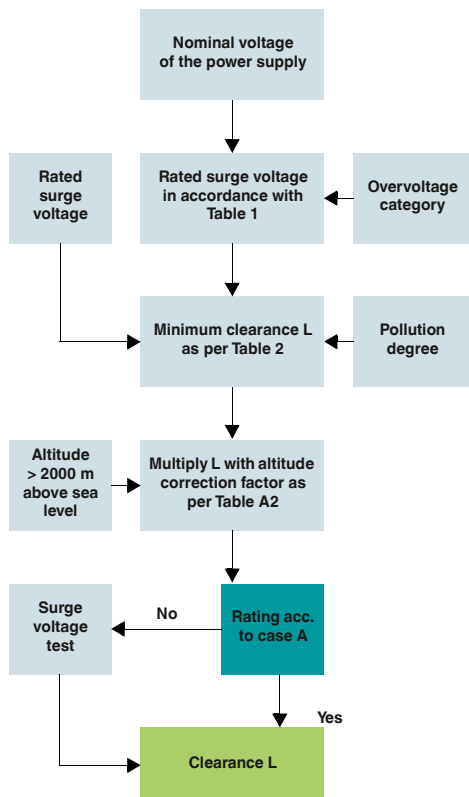
$100 \leq CTI < 175$.

The comparative tracking index of the creepage distance formation must have been determined based on suitable samples using test solution A in accordance with DIN IEC 60112.

The proof tracking index of the creepage distance formation (PTI) is used as proof of the creepage current properties of insulation materials.

Dimensioning of clearances

Schematic for determining clearances



Rated surge voltages for equipment that is directly supplied by the low-voltage network (extract from Table 1)

Nominal voltage of the power supply system ¹⁾ (mains) as per IEC 60038 ³⁾		Conductor-neutral conductor voltage derived from the total nominal AC voltage or nominal DC voltage	Rated surge voltage ²⁾ [V]			
Three-phase [V]	Single-phase [V]		Overvoltage category ⁴⁾			
			I	II	III	IV
	120 to 240	50	330	500	800	1500
		100	500	800	1500	2500
		150	800	1500	2500	4000
230/400		300	1500	2500	4000	6000
277/480		600	2500	4000	6000	8000
400/690		1000	4000	6000	8000	12000

¹⁾ Refer to Annex B for application in existing deviating low-voltage networks and their nominal voltages.

²⁾ Equipment with this rated surge voltage may be used in systems in accordance with IEC 60364-4-443.

³⁾ The slash, i.e., /, indicates a three-phase four-conductor system. The lower value is the conductor-to-neutral-conductor voltage, whereas the higher value is the conductor-to-conductor voltage. When only one value is specified, it refers to a three-phase three-conductor system, and indicates the conductor-to-conductor voltage.

⁴⁾ Refer to 2.2.2.1.1 for an explanation of overvoltage categories.

Minimum clearances for transient overvoltages (extract from Table 2)

Required impulse withstand voltage ¹⁾ ⁵⁾ [kV]	Condition A Non-homogeneous field (refer to 3.15)			Condition B Homogeneous field (refer to 3.14)		
	Pollution degree ⁶⁾			Pollution degree ⁶⁾		
	1 [mm]	2 [mm]	3 [mm]	1 [mm]	2 [mm]	3 [mm]
0.33 ²⁾	0.01	0.2 ³⁾ ⁴⁾	0.8 ⁴⁾	0.01	0.2 ³⁾ ⁴⁾	0.8 ⁴⁾
0.40	0.02			0.02		
0.5 ²⁾	0.04			0.04		
0.60	0.06			0.06		
0.80 ²⁾	0.10			0.10		
1.0	0.15	0.25	1.0	0.15	0.3	0.45
1.2	0.25			0.2		
1.5 ²⁾	0.5			0.3		
2.0	1.0	1.0	1.0	0.45	0.45	1.2
2.5 ²⁾	1.5	1.5	1.5	0.6	0.6	
3.0	2.0	2.0	2.0	0.8	0.8	
4.0 ²⁾	3	3	3	1.2	1.2	1.5
5.0	4	4	4	1.5	1.5	2
6.0 ²⁾	5.5	5.5	5.5	2	2	3
8.0 ²⁾	8	8	8	3	3	3.5
10	11	11	11	3.5	3.5	4.5
12 ²⁾	14	14	14	4.5	4.5	5.5
15	18	18	18	5.5	5.5	8
20	25	25	25	8	8	10
25	33	33	33	10	10	12.5
30	40	40	40	12.5	12.5	17
40	60	60	60	17	17	22
50	75	75	75	22	22	27
60	90	90	90	27	27	35
80	130	130	130	35	35	45
100	170	170	170	45	45	

¹⁾ This voltage is:

- For function insulation: the highest surge voltage expected for the clearance
- For basic insulation, if influenced directly or considerably by transient overvoltages from the low-voltage network: the rated surge voltage of the equipment
- For a different basic insulation: the highest surge voltage possible in the circuit.

²⁾ Preferred values

³⁾ For PCBs, the values of pollution degree 1 are applicable, except that no deviation below the value of 0.04 mm is permitted, as specified in Table 4.

⁴⁾ Minimum clearances for pollution degrees 2 and 3 are based on the corresponding creepage distances. This resistance is reduced due to the effects of humidity.

⁵⁾ Values can be interpolated for parts or circuits within equipment that are subjected to surge voltages.

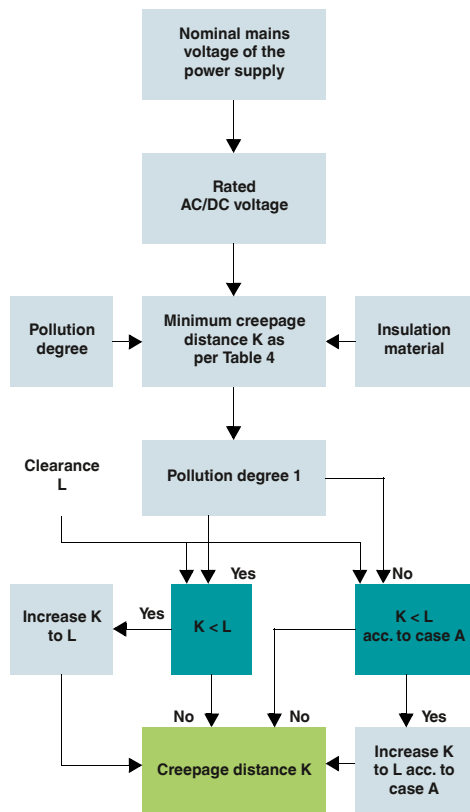
⁶⁾ The distances for pollution degree 4 are equal to those for pollution degree 3, except that the minimum clearance is 1.6 mm.

Altitude correction factors (extract from Table A.2)

Altitude [m]	Normal air pressure [kPa]	Multiplication factor for distances
2000	80.0	1.00
3000	70.0	1.14
4000	62.0	1.29
5000	54.0	1.48
6000	47.0	1.70
7000	41.0	1.95
8000	35.5	2.25
9000	30.5	2.62
10,000	26.5	3.02
15,000	12.0	6.67
20,000	5.5	14.50

Dimensioning of creepage distances

Schematic for determining creepage distances



Single-phase three or two-conductor AC or DC voltage systems (extract from Table 3 a)		
Nominal voltage of the power supply system (mains) *)	Voltages for Table 4	
	For conductor-to-conductor insulation 1)	For conductor-to-ground insulation 1) Three-conductor systems center point grounded
[V]	[V]	[V]
12.5	12.5	—
24	25	—
25	—	—
30	32	—
42	50	—
48	—	—
50 **)	—	—
60	63	—
30-60	63	32
100 **)	100	—
110	125	—
120	—	—
150 **)	160	—
220	250	—
110-220	250	125
220-240	—	—
300 **)	320	—
220-440	500	250
600 **)	630	—
480-960	1000	500
1000 **)	1000	—

1) Conductor-to-ground insulation levels for non-grounded systems or those grounded through impedance correspond to conductor-to-conductor insulation levels as the operating voltage of every conductor to ground can, in practice, reach the conductor-to-conductor voltage. This is based on the fact that the actual voltage to ground is determined by the insulation resistance and capacitive reactance of each conductor to ground. Therefore, a low (but permissible) insulation resistance of a conductor can practically ground this and raise the two others to conductor-to-conductor voltage to ground.

*) Refer to 2.2.1 for correlation with the rated voltage.

**) These values correspond to the values in Table 1.

Three-phase four or three-conductor AC voltage systems (extract from Table 3 b)			
Nominal voltage of the power supply system (mains) *)	Voltages for Table 4		
	For conductor-to-conductor insulation	Insulation for conductor to ground	
[V]	[V]	Three-phase four-conductor systems with grounded neutral conductor 2)	Three-phase three-conductor systems non-grounded 1) or conductor grounded
		[V]	[V]
60	63	32	63
110/120/127	125	80	125
150 **)	160	—	160
208	200	125	200
220/230/240	250	160	250
300 **)	320	—	320
380/400/415	400	250	400
440	500	250	400
480/500	500	320	500
575	630	400	630
600 **)	630	—	630
660/690	630	400	630
720/830	800	500	800
960	1000	630	1000
1000 **)	1000	—	1000

1) Conductor-to-ground insulation levels for non-grounded systems or those grounded through impedance correspond to conductor-to-conductor insulation levels as the operating voltage of every conductor to ground can, in practice, reach the conductor-to-conductor voltage. This is based on the fact that the actual voltage to ground is determined by the insulation resistance and capacitive reactance of each conductor to ground. Therefore, a low (but permissible) insulation resistance of a conductor can practically ground this and raise the two others to conductor-to-conductor voltage to ground.

2) For equipment designed for use in three-phase four-conductor and three-phase three-conductor systems, grounded as well as non-grounded, only the values for three-conductor systems may be used.

*) Refer to 2.2.1 for correlation with the rated voltage.

**) These values correspond to the values in Table 1.

Creepage distances to prevent failures occurring due to creepage (extract from Table 4)

Voltage 1) r.m.s. value	Minimum creepage distances								
	Printed circuits			Pollution degree					
	Pollution degree			1			2		
	1	2	3	1	2	3	1	2	3
[V]	All insulation material groups	All insulation material groups except III b	All insulation material groups	All insulation material groups	Insulation material group I	Insulation material group II	Insulation material group III	Insulation material group I	Insulation material group II
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
10	0.025	0.04	0.08	0.4	0.4	0.4	1.00	1.00	1.00
12.5	0.025	0.04	0.09	0.42	0.42	0.42	1.05	1.05	1.05
16	0.025	0.04	0.10	0.45	0.45	0.45	1.10	1.10	1.10
20	0.025	0.04	0.110	0.48	0.48	0.48	1.20	1.20	1.20
25	0.025	0.04	0.125	0.5	0.5	0.5	1.25	1.25	1.25
32	0.025	0.04	0.140	0.53	0.53	0.53	1.30	1.30	1.30
40	0.025	0.04	0.16	0.56	0.8	1.1	1.4	1.6	1.8
50	0.025	0.04	0.18	0.6	0.85	1.2	1.5	1.7	1.9
63	0.040	0.63	0.20	0.63	0.9	1.25	1.6	1.8	2.0
80	0.063	0.10	0.22	0.67	0.95	1.3	1.7	1.9	2.1
100	0.10	0.16	0.25	0.71	1.0	1.4	1.8	2.0	2.2
125	0.16	0.25	0.28	0.75	1.05	1.5	1.9	2.1	2.4
160	0.25	0.4	0.32	0.8	1.1	1.6	2.0	2.2	2.5
200	0.40	0.63	0.42	1.0	1.4	2.0	2.5	2.8	3.2
250	0.56	1.0	0.56	1.25	1.8	2.5	3.2	3.6	4.0
320	0.75	1.6	0.75	1.6	2.2	3.2	4.0	4.5	5.0
400	1.0	2.0	1.00	2.0	2.8	4.0	5.0	5.6	6.3
500	1.3	2.5	1.30	2.5	3.6	5.0	6.3	7.1	8.0
630	1.8	3.2	1.80	3.2	4.5	6.3	8.0	9	10.0
800	2.4	4.0	2.40	4.0	5.6	8.0	10.0	11	12.5
1000	3.2	5.0	3.20	5.0	7.1	10	12.5	14	16.0
1250			4.20	6.3	9	12.5	16	18	20
1600			5.60	8	11	16	20	22	25
2000			7.50	10	14	20	25	28	32
2500			10	12.5	18	25	32	36	40
3200			12.5	16	22	32	40	45	50
4000			16	20	28	40	50	56	63
5000			20	25	36	50	63	71	80
6300			25	32	45	63	80	90	100
8000			32	40	56	80	100	110	125
10,000			40	50	71	100	125	140	160

1) This voltage is:
a) For function insulation: the working voltage.
b) For basic and additional insulation of a circuit supplied directly by the low-voltage network: either the voltage selected from Table 3 a or 3 b on the basis of the rated voltage of the equipment or the rated insulation voltage.
c) For basic and additional insulation of systems, equipment, and internal circuits which are not supplied directly from the mains: the highest r.m.s. value of the voltage that, within the bounds of the rated data, can occur in the system, the equipment or the internal circuit, when supplied with rated voltage and in the case of the most unfavorable combination of operating conditions.

2) With pollution degree 3, insulation material group III b is not recommended for use if voltages are greater than 630 V.

Certification authorities and marks

Certification authorities and approvals	Country code	Explosion protection	Country code	Marine classification societies	Country code
 IECEE CB Scheme (in combination with certifying body)	International	 International Electrotechnical Commission	International	 DNV GL - MARITIME	DE
 CENELEC Certification Agreement (CCA inspection report) (in combination with certifying body)	EU	 ATEX Directive	EU	 Bureau Veritas	FR
 Canadian Standards Association (CSA)	CA	 Canadian Standards Association (CSA)	CA	 Lloyd's Register of Shipping	GB
 Canadian Standards Association (CSA) - CSA approval for the USA -	US	 Canadian Standards Association (CSA) - CSA approval for the USA -	US	 Nippon Kaiji Kyokai	JP
 Canadian Standards Association (CSA) combined logo - CSA approval for Canada and the USA -	CA US	 Canadian Standards Association (CSA) combined logo - CSA approval for Canada and the USA -	CA US	 Polski Rejestr Statków	PL
 Underwriters Laboratories Inc. (UL)	US	 Underwriters Laboratories Inc. (UL)	US	 Russian Maritime Register of Shipping	RU
 Underwriters Laboratories Inc. (UL) - UL approval for Canada -	CA	 Underwriters Laboratories Inc. (UL) - UL approval for Canada -	CA	 Korean Register of Shipping	KR
 Underwriters Laboratories Inc. (UL) combined logo - UL approval for the USA and Canada -	US CA	 Underwriters Laboratories Inc. (UL) combined logo - UL approval for the USA and Canada -	US CA	 American Bureau of Shipping	US
 INSIEME PER LA QUALITA'E LA SICUREZZA	IT	 FM Approvals	US	 Registro Italiano Navale	IT
 Eurasian Conformity	EAEU	 FM Approvals - FM approval for Canada -	CA		
 DEKRA Certification B.V.	NL	 FM Approvals - FM approval for the USA and Canada -	US CA		
 Österreichischer Verband für Elektrotechnik	AT	 Eurasian Conformity for Ex-products	EAEU		
 Eurofins Electrosuisse Product Testing AG SEV certification scheme	CH	 Korean Certification Mark for Ex-products	KR		
 Verband Deutscher Elektrotechniker e.V. (VDE) - Approval of drawings - Reports with production monitoring	DE	 National Institute of Metrology, Standardization and Industrial Quality	BR		
 Berufsgenossenschaft (BG) GS - Geprüfte Sicherheit (tested safety)	DE	 National Supervision and Inspection Center for Explosion Protection and Safety of Instrumentation	CN		
 Intertek ETL Listed - Approval for the USA -	US	 Corp. Centro de Investigación y Desarrollo Tecnológico del Sector Eléctrico	CO		
 Intertek ETL Listed - Approval for Canada -	CA				
 Intertek ETL Listed - Approval for the USA and Canada -	US CA				
 TÜV Rheinland Industrie Service GmbH	DE				
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 Korean Certification Mark	KR				

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A-INE-PG21/29-N-NS-S	1415221	701	A-INL-PG9-P-LG	1424549	687	CA-06P1N12T006	1620290	92	CA-06S1N8AT008S	1619368	90
A-INL-M12-N-S	1411240	688	A-INLE-M12-N-S	1411267	690	CA-06P1N12T006S	1619423	90	CA-06S1N8AT0DN	1619341	92
A-INL-M12-P-BK	1411213	686	A-INLE-M16-N-S	1411268	690	CA-06P1N12T007	1620261	92	CA-06S1N8AT0DNS	1619448	90
A-INL-M12-P-GY	1411205	686	A-INLE-M20-N-S	1411269	690	CA-06P1N12T007S	1619397	90	CA-07P1N122S00	1619988	100
A-INL-M12-P-LG	1417659	686	A-INLE-M25-N-S	1411270	690	CA-06P1N12T008	1620211	92	CA-07P1N126L00	1624046	98
A-INL-M12-S-S	1425175	692	A-INLE-M32-N-S	1411271	690	CA-06P1N12T008S	1619371	90	CA-07P1N126Y00	1619872	96
A-INL-M16-N-S	1411241	688	A-INLE-M40-N-S	1411272	690	CA-06P1N12T0DN	1619342	92	CA-07P1N126Z00	1619898	94
A-INL-M16-P-BK	1411214	686	A-INLE-M50-N-S	1411273	690	CA-06P1N12T0DNS	1619449	90	CA-07P1N128006	1619745	86
A-INL-M16-P-GY	1411206	686	A-INLE-M63-N-S	1411274	690	CA-06P1N8A2500	1619990	100	CA-07P1N128006S	1619574	84
A-INL-M16-P-LG	1417660	686	A-INLE-PG11-N-S	1411277	691	CA-06P1N8A6L00	1624022	98	CA-07P1N128007	1619719	86
A-INL-M16-S-S	1425176	692	A-INLE-PG13,5-N-S	1411278	691	CA-06P1N8A6Y00	1619874	96	CA-07P1N128007S	1619529	84
A-INL-M20-N-S	1411242	688	A-INLE-PG16-N-S	1411279	691	CA-06P1N8A6Z00	1619900	94	CA-07P1N128008	1619654	86
A-INL-M20-P-BK	1411215	686	A-INLE-PG21-N-S	1411280	691	CA-06P1N8A8006	1619747	86	CA-07P1N128008S	1619503	84
A-INL-M20-P-GY	1411207	686	A-INLE-PG29-N-S	1411281	691	CA-06P1N8A8006S	1619576	84	CA-07P1N1280DN	1619771	86
A-INL-M20-P-LG	1414570	688	A-INLE-PG36-N-S	1411282	691	CA-06P1N8A8007	1619721	86	CA-07P1N1280DNS	1619600	84
A-INL-M20-S-S	1411249	692	A-INLE-PG7-N-S	1411275	691	CA-06P1N8A8007S	1619531	84	CA-07P1N129006	1620140	88
A-INL-M25-N-S	1411243	688	A-INLE-PG9-N-S	1411276	691	CA-06P1N8A8008	1619656	86	CA-07P1N129007	1620114	88
A-INL-M25-P-BK	1411216	686	A-INR-PG16/13-N-NS-S	1415216	701	CA-06P1N8A8008S	1619505	84	CA-07P1N129008	1620041	88
A-INL-M25-P-GY	1411208	686	A-INR-PG21/16-N-NS-S	1415217	701	CA-06P1N8A800DN	1619773	86	CA-07P1N12900DN	1620167	88
A-INL-M25-P-LG	1417661	686	A-INR-PG29/21-N-NS-S	1415218	701	CA-06P1N8A800DNS	1619602	84	CA-07P1N12HZ00	1619846	102
A-INL-M25-S-S	1411250	692	A-INSP-M12-68N-P-BK	1045816	702	CA-06P1N8A9006	1620142	88	CA-07P1N12T006	1620286	92
A-INL-M32-N-S	1411244	688	A-INSP-M12-68N-P-LG	1045815	702	CA-06P1N8A9007	1620116	88	CA-07P1N12T006S	1619419	90
A-INL-M32-P-BK	1411217	686	A-INSP-M16-68N-P-BK	1045817	702	CA-06P1N8A9008	1620043	88	CA-07P1N12T007	1620257	92
A-INL-M32-P-GY	1411209	686	A-INSP-M16-68N-P-LG	1045818	702	CA-06P1N8A900DN	1620169	88	CA-07P1N12T007S	1619393	90
A-INL-M32-P-LG	1417662	686	A-INSP-M20-65N-P-BK	1415206	702	CA-06P1N8AHZ00	1619848	102	CA-07P1N12T008	1620207	92
A-INL-M32-S-S	1411251	692	A-INSP-M20-68N-P-LG	1424519	702	CA-06P1N8AT006	1620288	92	CA-07P1N12T008S	1619365	90
A-INL-M40-N-S	1411246	688	A-INSP-M25-65N-P-BK	1415207	702	CA-06P1N8AT006S	1619421	90	CA-07P1N12T0DN	1619338	92
A-INL-M40-P-BK	1411218	686	A-INSP-M25-68N-P-LG	1424520	702	CA-06P1N8AT007	1620259	92	CA-07P1N12T0DNS	1619445	90
A-INL-M40-P-GY	1411210	686	A-INSP-M32-65N-P-BK	1415208	702	CA-06P1N8AT007S	1619395	90	CA-07P1N8A2500	1619986	100
A-INL-M40-P-LG	1417664	686	A-INSP-M32-68N-P-LG	1424521	702	CA-06P1N8AT008	1620209	92	CA-07P1N8A6L00	1624023	98
A-INL-M40-S-S	1411252	692	A-INSP-M40-65N-P-BK	1415210	702	CA-06P1N8AT008S	1619367	90	CA-07P1N8A6Y00	1619870	96
A-INL-M50-N-S	1411247	688	A-INSP-M40-68N-P-LG	1424522	702	CA-06P1N8AT0DN	1619340	92	CA-07P1N8A6Z00	1619896	94
A-INL-M50-P-BK	1411219	686	A-INSP-PG11-65N-P-BK	1047271	703	CA-06P1N8AT00DNS	1619447	90	CA-07P1N8A8006	1619743	86
A-INL-M50-P-GY	1411211	686	A-INSP-PG11-65N-P-LG	1047270	703	CA-06S1N122500	1619993	100	CA-07P1N8A8006S	1619572	84
A-INL-M50-P-LG	1417665	686	A-INSP-PG13-65N-P-BK	1046790	703	CA-06S1N126L00	1624045	98	CA-07P1N8A8007	1619717	86
A-INL-M50-S-S	1411253	692	A-INSP-PG13-65N-P-LG	1046792	703	CA-06S1N126Y00	1619877	96	CA-07P1N8A8007S	1619527	84
A-INL-M63-N-S	1411248	688	A-INSP-PG16-65N-P-BK	1415213	703	CA-06S1N126Z00	1619903	94	CA-07P1N8A8008	1619652	86
A-INL-M63-P-BK	1411220	686	A-INSP-PG16-65N-P-LG	1424523	703	CA-06S1N128006	1619750	86	CA-07P1N8A8008S	1619501	84
A-INL-M63-P-GY	1411212	686	A-INSP-PG21-65N-P-BK	1415214	703	CA-06S1N128006S	1619579	84	CA-07P1N8A800DN	1619769	86
A-INL-M63-P-LG	1417666	686	A-INSP-PG21-65N-P-LG	1424524	703	CA-06S1N128007	1619724	86	CA-07P1N8A800DNS	1619598	84
A-INL-M63-S-S	1411254	692	A-INSP-PG29-65N-P-BK	1415215	703	CA-06S1N128007S	1619534	84	CA-07P1N8A9006	1620138	88
A-INL-PG11-N-S	1411257	689	A-INSP-PG29-65N-P-LG	1424525	703	CA-06S1N128008	1619659	86	CA-07P1N8A9007	1620080	88
A-INL-PG11-P-BK	1424560	687	A-INSP-PG7-65N-P-BK	1047561	703	CA-06S1N128008S	1619508	84	CA-07P1N8A9008	1620037	88
A-INL-PG11-P-GY	1411223	687	A-INSP-PG7-65N-P-LG	1047562	703	CA-06S1N1280DN	1619776	86	CA-07P1N8A900DN	1620165	88
A-INL-PG11-P-LG	1424550	687	A-INSP-PG9-65N-P-BK	1047272	703	CA-06S1N1280DNS	1619605	84	CA-07P1N8AHZ00	1619844	102
A-INL-PG13,5-N-S	1411259	689	A-INSP-PG9-65N-P-LG	1047273	703	CA-06S1N129006	1620145	88	CA-07P1N8AT006	1620284	92
A-INL-PG13,5-P-BK	1424561	687	ALU-SB	1404531	480	CA-06S1N129007	1620119	88	CA-07P1N8AT006S	1619417	90
A-INL-PG13,5-P-GY	1411224	687	ASI CC ADR	2741338	441	CA-06S1N129008	1620046	88	CA-07P1N8AT007	1620255	92
A-INL-PG13,5-P-LG	1424551	687	ASI CC ADR CAB CINCH	2741341	442	CA-06S1N12900DN	1620172	88	CA-07P1N8AT007S	1619391	90
A-INL-PG16-N-S	1411260	689				CA-06S1N12HZ00	1619851	102	CA-07P1N8AT008	1620191	92
A-INL-PG16-P-BK	1424562	687				CA-06S1N12T006	1620291	92	CA-07P1N8AT008S	1619363	90
A-INL-PG16-P-GY	1411225	687				CA-06S1N12T006S	1619424	90	CA-07P1N8AT0DN	1619336	92
A-INL-PG16-P-LG	1424552	687				CA-06S1N12T007	1620262	92	CA-07P1N8AT0DNS	1619443	90
A-INL-PG21-N-S	1411262	689				CA-06S1N12T007S	1619398	90	CA-07S1N122S00	1619989	100
A-INL-PG21-P-BK	1424563	687				CA-06S1N12T008	1620212	92	CA-07S1N126L00	1624047	98
A-INL-PG21-P-GY	1411226	687				CA-06S1N12T008S	1619372	92	CA-07S1N126Y00	1619873	96
A-INL-PG21-P-LG	1424553	687				CA-06S1N12T0DN	1619343	90	CA-07S1N126Z00	1619899	94
A-INL-PG29-N-S	1411263	689				CA-06S1N12T0DNS	1619450	90	CA-07S1N128006	1619746	86
A-INL-PG29-P-BK	1424564	687	BMKL 64X16 WH	0821807	442	CA-06S1N8A2500	1619991	100	CA-07S1N128006S	1619575	84
A-INL-PG29-P-GY	1411227	687				CA-06S1N8A6L00	1624030	98	CA-07S1N128007	1619720	86
A-INL-PG29-P-LG	1424554	687				CA-06S1N8A6Y00	1619875	96	CA-07S1N128007S	1619530	84
A-INL-PG36-N-S	1411264	689				CA-06S1N8A6Z00	1619901	94	CA-07S1N128008	1619655	86
A-INL-PG36-P-BK	1424565	687				CA-06S1N8A8006	1619748	86	CA-07S1N128008S	1619504	84
A-INL-PG36-P-GY	1411228	687	CA-06P1N122S00	1619992	100	CA-06S1N8A8006S	1619577	84	CA-07S1N1280DN	1619772	86
A-INL-PG36-P-LG	1424555	687	CA-06P1N126L00	1624044	98	CA-06S1N8A8007	1619722	86	CA-07S1N1280DNS	1619601	84
A-INL-PG42-N-S	1411265	689	CA-06P1N126Y00	1619876	96	CA-06S1N8A8007S	1619532	84	CA-07S1N129006	1620141	88
A-INL-PG42-P-BK	1424566	687	CA-06P1N126Z00	1619902	94	CA-06S1N8A8007S	1619657	86	CA-07S1N129007	1620115	88

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CA-09P1N12AD00	1621746	104	CA-09S1N8AT007	1620252	92	CA-12P1N8A2S00	1619966	100	CA-17F1N8A8504	1619608	110
CA-09P1N12HZ00	1619842	102	CA-09S1N8AT007S	1619388	90	CA-12P1N8A6L00	1624026	96	CA-17F1N8A8504S	1619452	110
CA-09P1N12T006	1620282	92	CA-09S1N8AT008	1620188	92	CA-12P1N8A6Y00	1619862	98	CA-17F1N8A85DU	1619629	110
CA-09P1N12T006S	1619415	90	CA-09S1N8AT008S	1619360	90	CA-12P1N8A6Z00	1619888	94	CA-17F1N8A85DUS	1619470	110
CA-09P1N12T007	1620253	92	CA-09S1N8AT0DN	1619333	92	CA-12P1N8A8006	1619735	86	CA-17F1N8A9502	1620007	111
CA-09P1N12T007S	1619389	90	CA-09S1N8AT0DNS	1619440	90	CA-12P1N8A8006S	1619546	84	CA-17F1N8A9503	1620001	111
CA-09P1N12T008	1620189	92	CA-12F1N8A8502	1619625	110	CA-12P1N8A8007	1619707	86	CA-17F1N8A9504	1619995	111
CA-09P1N12T008S	1619361	90	CA-12F1N8A8502S	1619466	110	CA-12P1N8A8007S	1619519	84	CA-17F1N8A95DU	1620014	111
CA-09P1N12T0DN	1619334	92	CA-12F1N8A8503	1619616	110	CA-12P1N8A8008	1619644	86	CA-17M1N8A8502	1619619	110
CA-09P1N12T0DNS	1619441	90	CA-12F1N8A8503S	1619460	110	CA-12P1N8A8008S	1619488	84	CA-17M1N8A8502S	1619463	110
CA-09P1N8A2S00	1619970	100	CA-12F1N8A8504	1619610	110	CA-12P1N8A80DN	1619761	86	CA-17M1N8A8503	1619613	110
CA-09P1N8A6L00	1624024	98	CA-12F1N8A8504S	1619454	110	CA-12P1N8A80DNS	1619590	84	CA-17M1N8A8503S	1619457	110
CA-09P1N8A6Y00	1619866	96	CA-12F1N8A85DU	1619631	110	CA-12P1N8A9006	1620130	88	CA-17M1N8A8504	1619607	110
CA-09P1N8A6Z00	1619892	94	CA-12F1N8A85DUS	1619472	110	CA-12P1N8A9007	1620072	88	CA-17M1N8A8504S	1619451	110
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CA-09P1N8A8007	1619711	86	CA-12F1N8A9504	1619997	111	CA-12P1N8AAD00	1621738	104	CA-17M1N8A9502	1620006	111
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CA-09P1N8A80DNS	1619594	84	CA-12F2N8A8503S	1619462	110	CA-12P1N8AT007S	1619383	90	CA-17P1N126L00	1624055	99
CA-09P1N8A9006	1620134	88	CA-12F2N8A8504	1619612	110	CA-12P1N8AT008	1620183	92	CA-17P1N126Y00	1619856	97
CA-09P1N8A9007	1620076	88	CA-12F2N8A8504S	1619456	110	CA-12P1N8AT008S	1619354	90	CA-17P1N126Z00	1619882	95
CA-09P1N8A9008	1620033	88	CA-12F2N8A85DU	1619633	110	CA-12P1N8AT0DN	1620302	92	CA-17P1N128006	1619729	87
CA-09P1N8A90DN	1620161	88	CA-12F2N8A85DUS	1619474	110	CA-12P1N8AT0DNS	1619435	90	CA-17P1N128006S	1619540	85
CA-09P1N8AAD00	1621735	104	CA-12F2N8A9502	1620011	111	CA-12S1N122S00	1619969	100	CA-17P1N128007	1619701	8

Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page
CA-17P1N128008	1619638	87	CA-17S1N8A80DNS	1619583	85	CA-1RP1N8AHZ00	1624020	103	CES-LRG-BK-15	0801619	678
CA-17P1N128008S	1619482	85	CA-17S1N8A9006	1620123	89	CA-1RP1N8AT006	1624076	93	CES-LRG-BK-16	0801621	678
CA-17P1N1280DN	1619755	87	CA-17S1N8A9007	1620050	89	CA-1RP1N8AT006S	1624085	91	CES-LRG-BK-17	0801624	678
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CA-17P1N129006	1620124	89	CA-17S1N8A90DN	1620149	89	CA-1RP1N8AT007S	1624086	91	CES-LRG-BK-19	0801629	678
CA-17P1N129007	1620051	89	CA-17S1N8AHZ00	1619780	103	CA-1RP1N8AT008	1624078	93	CES-LRG-BK-20	0801631	678
CA-17P1N129008	1620023	89	CA-17S1N8AT006	1620266	93	CA-1RP1N8AT008S	1624087	91	CES-LRG-BK-21	0801634	678
CA-17P1N1290DN	1620150	89	CA-17S1N8AT006S	1619402	91	CA-1RP1N8AT0DN	1624075	93	CES-LRG-BK-22	0801637	678
CA-17P1N12AD00	1621745	104	CA-17S1N8AT007	1620216	93	CA-1RP1N8AT0DNS	1624084	91	CES-LRG-BK-23	0801638	678
CA-17P1N12HZ00	1619781	103	CA-17S1N8AT007S	1619376	91	CA-1RS1N8A2S00	1624015	101	CES-LRG-BK-24	0801639	678
CA-17P1N12T006	1620267	93	CA-17S1N8AT008	1620176	93	CA-1RS1N8A6L00	1623629	99	CES-LRG-BK-25	0801640	678
CA-17P1N12T006S	1619403	91	CA-17S1N8AT008S	1619347	91	CA-1RS1N8A6Y00	1624017	97	CES-LRG-BK-26	0801643	678
CA-17P1N12T007	1620217	93	CA-17S1N8AT0DN	1620295	93	CA-1RS1N8A6Z00	1624019	95	CES-LRG-BK-27	0801644	678
CA-17P1N12T007S	1619377	91	CA-17S1N8AT0DNS	1619428	91	CA-1RS1N8A8006	1623844	87	CES-LRG-BK-28	0801646	678
CA-17P1N12T008	1620177	93	CA-19P1N122S00	1619956	101	CA-1RS1N8A8006S	1623836	85	CES-LRG-BK-29	0801648	678
CA-17P1N12T008S	1619348	91	CA-19P1N126L00	1624057	99	CA-1RS1N8A8007	1623842	87	CES-LRG-BK-30	0801650	678
CA-17P1N12T0DN	1620296	93	CA-19P1N126Y00	1619852	97	CA-1RS1N8A8007S	1623834	85	CES-LRG-BK-31	0801653	678
CA-17P1N12T0DNS	1619429	91	CA-19P1N126Z00	1619878	95	CA-1RS1N8A8008	1623840	87	CES-LRG-BK-32	0801654	678
CA-17P1N8A2S00	1619958	101	CA-19P1N128006	1619725	87	CA-1RS1N8A8008S	1623832	85	CES-LRG-BK-33	0801656	678
CA-17P1N8A6L00	1624029	99	CA-19P1N128006S	1619536	85	CA-1RS1N8A80DN	1623846	87	CES-LTPG-GY	0801716	680
CA-17P1N8A6Y00	1619854	97	CA-19P1N128007	1619660	87	CA-1RS1N8A80DNS	1623838	85	CES-LTPG-GY-15	0801687	680
CA-17P1N8A6Z00	1619880	95	CA-19P1N128007S	1619509	85	CA-1RS1N8A8006	1624009	89	CES-LTPG-GY-16	0801688	680
CA-17P1N8A8006	1619727	87	CA-19P1N128008	1619634	87	CA-1RS1N8A9007	1624008	89	CES-LTPG-GY-17	0801689	680
CA-17P1N8A8006S	1619538	85	CA-19P1N128008S	1619478	85	CA-1RS1N8A9008	1624007	89	CES-LTPG-GY-18	0801690	680
CA-17P1N8A8007	1619699	87	CA-19P1N1280DN	1619751	87	CA-1RS1N8A90DN	1624006	89	CES-LTPG-GY-19	0801691	680
CA-17P1N8A8007S	1619511	85	CA-19P1N1280DNS	1619580	85	CA-1RS1N8AHZ00	1624021	103	CES-LTPG-GY-20	0801692	680
CA-17P1N8A8008	1619636	87	CA-19P1N129006	1620120	89	CA-1RS1N8AT006	1624072	93	CES-LTPG-GY-21	0801693	680
CA-17P1N8A8008S	1619480	85	CA-19P1N129007	1620047	89	CA-1RS1N8AT006S	1624081	91	CES-LTPG-GY-22	0801695	680
CA-17P1N8A80DN	1619753	87	CA-19P1N129008	1620019	89	CA-1RS1N8AT007	1624073	93	CES-LTPG-GY-23	0801696	680
CA-17P1N8A80DNS	1619582	85	CA-19P1N1290DN	1620146	89	CA-1RS1N8AT007S	1624082	91	CES-LTPG-GY-24	0801697	680
CA-17P1N8A9006	1620122	89	CA-19P1N12HZ00	1619777	103	CA-1RS1N8AT008	1624074	93	CES-LTPG-GY-25	0801698	680
CA-17P1N8A9007	1620049	89	CA-19P1N12T006	1620263	93	CA-1RS1N8AT008S	1624083	91	CES-LTPG-GY-26	0801699	680
CA-17P1N8A9008	1620021	89	CA-19P1N12T006S	1619399	91	CA-1RS1N8AT0DN	1624071	93	CES-LTPG-GY-27	0801700	680
CA-17P1N8A90DN	1620148	89	CA-19P1N12T007	1620213	93	CA-1RS1N8AT0DNS	1624080	91	CES-LTPG-GY-28	0801701	680
CA-17P1N8AAD00	1621744	104	CA-19P1N12T007S	1619373	93	CA-Z0001	1620699	179	CES-LTPG-GY-29	0801702	680
CA-17P1N8AHZ00	1619779	103	CA-19P1N12T008	1620173	91	CA-Z0077	1627224	182	CES-LTPG-GY-30	0801703	680
CA-17P1N8AT006	1620265	93	CA-19P1N12T008S	1619344	91	CA-Z0110	1620700	180	CES-LTPG-GY-31	0801705	680
CA-17P1N8AT006S	1619401	91	CA-19P1N12T0DN	1620292	93	CA-Z0111	1620701	180	CES-LTPG-GY-32	0801706	680
CA-17P1N8AT007	1620215	93	CA-19P1N12T0DNS	1619425	91	CA-Z0112	1620702	180	CES-LTPG-GY-33	0801707	680
CA-17P1N8AT007S	1619375	91	CA-19S1N122S00	1619957	101	CA-Z0120	1620704	180	CES-SFFS-H	0801728	677
CA-17P1N8AT008	1620175	93	CA-19S1N126L00	1624058	99	CA-Z0121	1620705	180	CES-SRC-BK	0801718	678
CA-17P1N8AT008S	1619346	91	CA-19S1N126Y00	1619853	97	CA-Z0122	1620706	180	CES-SRG-BK	0801670	678
CA-17P1N8AT0DN	1620294	93	CA-19S1N126Z00	1619879	95	CC-0,8-ST-0,34-MS AU	1452372	45	CES-SRG-BK-10	0801620	678
CA-17P1N8AT0DNS	1619427	91	CA-19S1N128006	1619726	87	CC-1,0-ST-0,34-MS AU	1452356	45	CES-SRG-BK-11	0801618	678
CA-17S1N122S00	1619961	101	CA-19S1N128006S	1619537	85	CC0,6-TS-0,34M AU	1423643	27	CES-SRG-BK-12	0801617	678
CA-17S1N126L00	1624056	99	CA-19S1N128007	1619661	87	CC1,0-TS-0,34F AU	1064041	27	CES-SRG-BK-13	0801616	678
CA-17S1N126Y00	1619857	97	CA-19S1N128007S	1619510	85	CC1,0-TS-0,34M AU	1064040	27	CES-SRG-BK-14	0801615	678
CA-17S1N126Z00	1619883	95	CA-19S1N128008	1619635	87	CC1,0-TS-1,00F AU	1423646	27	CES-SRG-BK-15	1410563	678
CA-17S1N128006	1619730	87	CA-19S1N128008S	1619479	85	CC1,0-TS-1,00M AU	1423645	27	CES-SRG-BK-16	1410576	678
CA-17S1N128006S	1619541	85	CA-19S1N1280DN	1619752	87	CC1,5-TS-2,10F K/L AU	1029396	278	CES-SRG-BK-17	1410589	678
CA-17S1N128007	1619702	87	CA-19S1N1280DNS	1619581	85	CC1,5-TS-2,10F S/T AU	1029395	278	CES-SRG-BK-1ASI-L	1410042	679
CA-17S1N128007S	1619514	85	CA-19S1N129006	1620121	89	CC1,5-TS-2,10FFE K/L AU	1029401	278	CES-SRG-BK-1ASI-R	0801667	679
CA-17S1N128008	1619639	87	CA-19S1N129007	1620048	89	CC1,5-TS-2,10FFE S/T AU	1029400	278	CES-SRG-BK-2	0801635	678
CA-17S1N128008S	1619483	85	CA-19S1N129008	1620020	89	CC1,5-TS-2,10M AU	1029394	278	CES-SRG-BK-2ASI-LL	1410055	679
CA-17S1N1280DN	1619756	87	CA-19S1N1290DN	1620147	89	CC1,5-TS-2,10MPE AU	1029398	278	CES-SRG-BK-2ASI-LR	0801669	679
CA-17S1N1280DNS	1619585	85	CA-19S1N12HZ00	1619778	103	CC1,5-TS-2,50F K/L AU	1029392	278	CES-SRG-BK-2ASI-RR	0801668	679
CA-17S1N129006	1620125	89	CA-19S1N12T006	1620264	93	CC1,5-TS-2,50F S/T AU	1029390	278	CES-SRG-BK-2X3	1410398	679
CA-17S1N129007	1620052	89	CA-19S1N12T006S	1619400	91	CC1,5-TS-2,50FFE K/L AU	1029393	278	CES-SRG-BK-2X4	1410408	679
CA-17S1N129008	1620024	89	CA-19S1N12T007	1620214	93	CC1,5-TS-2,50FFE S/T AU	1029391	278	CES-SRG-BK-2X5	0801657	679
CA-17S1N1290DN	1620151	89	CA-19S1N12T007S	1619374	91	CC1,5-TS-2,50M AU	1029388	278	CES-SRG-BK-2X6	0801664	679
CA-17S1N12HZ00	1619782	103	CA-19S1N12T008	1620174	93	CC1,5-TS-2,50MPE AU	1029389	278	CES-SRG-BK-2X7	1410084	679
CA-17S1N12T006	1620268	93	CA-19S1N12T008S	1619345	91	CES-B10-HFFS-PLBK	0801663	676	CES-SRG-BK-2X8	1410097	679
CA-17S1N12T006S	1619404	91	CA-19S1N12T0DN	1620293	93	CES-B10-SF-PLBK	0801655	677	CES-SRG-BK-2X9	1410411	679
CA-17S1N12T007	1620218	93	CA-19S1N12T0DNS	1619426	91	CES-B10-SFC-M-15,6	1423743	677	CES-SRG-BK-3	0801633	678
CA-17S1N12T007S	1619378	91	CA-1RP1N8A2S00	1624014	101	CES-B10-SFFS-PLBK	0801660	677	CES-SRG-BK-4	0801632	678
CA-17S1N12T008	1620178	93	CA-1RP1N8A6L00	1623630	97	CES-B10-WRG-BK	0801725	676	CES-SRG-BK-4X3	0801665	679
CA-17S1N12T008S	1619349	91	CA-1RP1N8A6Y00	1624016	97	CES-B16-8XSRC-BK	1411073	677	CES-SRG-BK-4X4	0801666	679
CA-17S1N12T0DN	1620297	93	CA-1RP1N8A6Z00	1624018	95	CES-B16-HFFS-PLBK	0801662	676	CES-SRG-BK-4X5	1410107	679
CA-17S1N12T0DNS	1619430	91	CA-1RP1N8A8006	1623843	87	CES-B16-SF-PLBK	0801651	677	CES-SRG-BK-4X6	1410152	679
CA-17S1N8A2S00	1619959	101	CA-1RP1N8A8006S	1623835	85	CES-B16-SFC-M-15,6	1423744	677	CES-SRG-BK-5	0801630	678
CA-17S1N8A6L00	1624035	99	CA-1RP1N8A8007	1623841	87	CES-B16-SFFS-PLBK	0801659	677	CES-SRG-BK-6	0801628	678
CA-17S1N8A6Y00	1619855	97	CA-1RP1N8A8007S	1623833	85	CES-B16-WRG-BK	0801726	676	CES-SRG-BK-7	0801627	678
CA-17S1N8A6Z00	1619881	95	CA-1RP1N8A8008	1623839	87	CES-B24-10XSRC-BK	1411074	677	CES-SRG-BK-8	0801625	678
CA-17S1N8A8006	1619728	87	CA-1RP1N8A8008S	1623831	85	CES-B24-HFFS-PLBK	0801661	676	CES-SRG-BK-9	0801622	678
CA-17S1N8A8006S	1619539	85	CA-1RP1N8A80DN	1623845	87	CES-B24-SF-PLBK	0801647	677	CES-STPG-GY	0801715	680
CA-17S1N8A8007	1619700	85	CA-1RP1N8A80DNS	1623837	85	CES-B24-SFC-M-15,6	1423745	677	CES-STPG-GY-10	0801682	680
CA-17S1N8A8007S	1619512	87	CA-1RP1N8A9006	1624013	89	CES-B24-SFFS-PLBK	0801658	677	CES-STPG-GY-11	0801683	680
CA-17S1N8A8008	1619637	87	CA-1RP1N8A9007	1624012	89	CES-B24-WRG-BK	0801727	676	CES-STPG-GY-12	0801684	680
CA-17S1N8A8008S	1619481	85	CA-1RP1N8A9008	1624011	89	CES-LRC-BK	0801719	678	CES-STPG-GY-13	0801685	680
CA-17S1N8A80DN	1619754	87	CA-1RP1N8A90DN	1624010	89	CES-LRG-BK	0801671	678	CES-STPG-GY-14	0801686	680

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CES-STPG-GY-15	1410521	680	CK2,5-ED-1,50BU AU	1674820	509	CUC-PPC-C2ZNI-SX/24FKP5:WO	1032276	364	EO-D/UT/GN	0804001	715
CES-STPG-GY-16	1410534	680	CK2,5-ED-1,50ST AG	1663608	509	CUC-STD-C1PGN-S/R4E8:1	1414400	372	EO-D/UT/LED	0804003	715
CES-STPG-GY-17	1410547	680	CK2,5-ED-1,50ST AU	1674778	509	CUC-STD-C1PGN-S/R4EA:1	1414402	372	EO-D/UT/LED/GN	0804004	715
CES-STPG-GY-1ASHL	1410068	681	CK2,5-ED-1,50ST-S AG	1663860	561	CUC-STD-C1PGY-S/R4E8:1	1414382	372	EO-E/PT/SH	0804020	717
CES-STPG-GY-1ASH-R	0801712	681	CK2,5-ED-2,50BU AG	1663682	509	CUC-STD-C1PGY-S/R4EA:1	1414395	372	EO-E/PT/SH/GN	0804021	717
CES-STPG-GY-2	0801672	680	CK2,5-ED-2,50BU AU	1674862	509	CUC-V06-C1PBK-S/R4CE8:1	1414408	350	EO-E/PT/SH/LED	0804022	717
CES-STPG-GY-2ASHLL	1410071	681	CK2,5-ED-2,50ST AG	1663611	509	CUC-V06-C1PBK-S/R4CEA:1	1414410	350	EO-E/PT/SH/LED/GN	0804023	717
CES-STPG-GY-2ASHLR	0801714	681	CK2,5-ED-2,50ST AU	1674817	509	CUC-V06-C1PGY-S/R4CE8:1	1414383	350	EO-E/UT/SH	0804016	717
CES-STPG-GY-2ASH-RR	0801713	681	CK2,5-ED-2,50ST-S AG	1663873	561	CUC-V06-C1PGY-S/R4CEA:1	1414406	350	EO-E/UT/SH/GN	0804017	717
CES-STPG-GY-2X3	1410424	681	CK2,5-ED-3,00BU AG	1663695	509	CUC-V06-F1PGY-UBA/UBBB	1411904	453	EO-E/UT/SH/LED	0804018	717
CES-STPG-GY-2X4	1410438	681	CK2,5-ED-3,00ST AG	1663624	509	CUC-V06-F1PGY-UBB/UBAB	1411905	453	EO-E/UT/SH/LED/GN	0804019	717
CES-STPG-GY-2X5	0801708	681	CK2,5-ED-4,00BU AG	1663705	519	CUC-V14-A-SCREW-M3:20	1413987	360	EO-G/PT/SH	0804063	717
CES-STPG-GY-2X6	0801709	681	CK2,5-ED-4,00BU AU	1674846	519	CUC-V14-A1PBK-BA:50	1413979	360	EO-G/PT/SH/GN	0804064	717
CES-STPG-GY-2X7	1410110	681	CK2,5-ED-4,00ST AG	1663637	519	CUC-V14-A1PBK-PC	1413970	360	EO-G/PT/SH/LED	0804065	717
CES-STPG-GY-2X8	1410123	681	CK2,5-ED-4,00ST AU	1674794	519	CUC-V14-A1RBK-PC	1413985	360	EO-G/PT/SH/LED/GN	0804066	717
CES-STPG-GY-2X9	1410440	681	CK2,5-ED-BB	1584693	657	CUC-V14-A1ZNI-R45	1413988	360	EO-G/PT/SH/LED/S	0804070	717
CES-STPG-GY-3	0801673	680	CK4,0-ED-1,50BU AG	1663271	511	CUC-V14-A1ZNI-S180	1413989	360	EO-G/PT/SH/S	0804069	717
CES-STPG-GY-4	0801674	680	CK4,0-ED-1,50ST AG	1663239	511	CUC-V14-A3ST-SR	1413990	360	EO-G/UT/SH/LED	0804051	717
CES-STPG-GY-4X3	0801710	681	CK4,0-ED-10,00BU AG	1586183	511	CUC-V14-C1ZNI-B/R4E8	1422662	358	EO-G/UT/SH/GN	0804052	717
CES-STPG-GY-4X4	0801711	681	CK4,0-ED-10,00ST AG	1586198	511	CUC-V14-C1ZNI-B/R4P8	1422665	358	EO-G/UT/SH/LED	0804053	717
CES-STPG-GY-4X5	1410136	681	CK4,0-ED-2,50BU AG	1663284	511	CUC-V14-C1ZNI-S/R4E8	1422661	357	EO-G/UT/SH/LED/GN	0804054	717
CES-STPG-GY-4X6	1410149	680	CK4,0-ED-2,50ST AG	1663242	511	CUC-V14-C1ZNI-S/R4P8	1422664	357	EO-G/UT/SH/LED/S	0804059	717
CES-STPG-GY-5	0801675	680	CK4,0-ED-4,00BU AG	1663297	511	CUC-V14-C1ZNI-T/R4E8	1422663	357	EO-G/UT/SH/S	0804058	717
CES-STPG-GY-6	0801676	680	CK4,0-ED-4,00ST AG	1663255	511	CUC-V14-C1ZNI-T/R4P8	1422667	357	EO-I/UT	0804087	719
CES-STPG-GY-7	0801677	680	CK4,0-ED-6,00BU AG	1663307	511	CUC-V14-F1ZNI-EM/R4B8	1413962	360	EO-I/UT/GN	0804088	719
CES-STPG-GY-8	0801679	680	CK4,0-ED-6,00ST AG	1663268	511	CUC-V14-F1ZNI-EM/R4F8	1413961	360	EO-I/UT/LED	0804089	719
CES-STPG-GY-9	0801680	680	CP QPD 4X2,5	1425950	488	CUTFOX-ES	1212621	384	EO-I/UT/LED/GN	0804090	719
CK1,6-BR-1,00BU OIC AG	1004381	667	CP-HC	1686478	656	CUTFOX-SCRJ-POF	1405247	384	EO-J/PT	0804105	719
CK1,6-BR-1,00ST OIC AG	1004380	667	CP-HC-S	1410916	656				EO-J/PT/GN	0804106	719
CK1,6-BR-2,50BU OIC AG	1004383	667	CP-QPD 3/4X1,5	1414729	480				EO-J/PT/LED	0804107	719
CK1,6-BR-2,50ST OIC AG	1004382	667	CP-QPD 5X1,5	1414760	480				EO-J/PT/LED/GN	0804108	719
CK1,6-ED-0,37BU AG	1663394	507	CP-QPD 5X2,5	1404530	488				EO-J/UT	0804099	719
CK1,6-ED-0,37BU AU	1674969	507	CP-QPD 5X6,0	1411402	494	EMLP (13X9)R	0819453	480	EO-J/UT/GN	0804100	719
CK1,6-ED-0,37ST AG	1663336	507	CRIMPFOX RC 2,5	1205448	446	ENLAR-M-KV-M16/M20	1647653	701	EO-J/UT/LED	0804101	719
CK1,6-ED-0,37ST AU	1674901	507	CRIMPFOX 1,6-ED-POF-N	1584839	668	ENLAR-M-KV-M20/M25	1647666	701	EO-J/UT/LED/GN	0804102	719
CK1,6-ED-0,50BU AG	1663404	507	CRIMPFOX 1,6/2,5-ED-4,0	1687419	669	ENLAR-M-KV-M25/M32	1647679	701	EO-K/PT	0804119	719
CK1,6-ED-0,50BU AU	1674480	507	CRIMPFOX-CX 4,52	1212094	671	ENLAR-M-KV-M32/M40	1647682	701	EO-K/PT/GN	0804120	719
CK1,6-ED-0,50ST AG	1663349	507	CRIMPFOX-M	1212072	670	EO-AB/PT/15	0804165	715	EO-K/PT/LED	0804121	719
CK1,6-ED-0,50ST AU	1672453	507	CRIMPFOX-M TC 10/DIE	1212076	670	EO-AB/PT/F	0804175	715	EO-K/PT/LED/GN	0804122	719
CK1,6-ED-0,75BU AG	1663417	507	CRIMPFOX-M TC 4/DIE	1212075	670	EO-AB/PT/LED/15	0804168	715	EO-K/UT	0804113	719
CK1,6-ED-0,75BU AU	1672440	507	CRIMPFOX-P CK 1.6 ER 2,5 OIC-L	1069228	671	EO-AB/PT/LED/F	0804171	715	EO-K/UT/GN	0804114	719
CK1,6-ED-0,75ST AG	1663352	507	CRIMPFOX-TC 10	1212114	670	EO-AB/PT/LED/S/15	0804174	715	EO-K/UT/LED	0804115	719
CK1,6-ED-0,75ST AU	1674914	507	CRIMPFOX-TC 4	1212113	670	EO-AB/PT/S/15	0804173	715	EO-K/UT/LED/GN	0804116	719
CK1,6-ED-1,00BU AG	1663420	507	CRIMPFOX-TC MP	1212510	671	EO-AB/UT/15	0804152	715	EO-L/PT/SH	0804132	716
CK1,6-ED-1,00BU AU	1674943	507	CUC-BH-M12A1PBK-A/R4BE	1414393	348	EO-AB/UT/F	0804161	715	EO-L/PT/SH/GN	0804133	716
CK1,6-ED-1,00ST AG	1663365	507	CUC-BH-M12A1PBK-S/R4BE	1414396	348	EO-AB/UT/LED/15	0804155	715	EO-L/PT/SH/LED	0804134	716
CK1,6-ED-1,00ST AU	1674888	507	CUC-BH-M12D1PBK-A/R4BE	1414397	348	EO-AB/UT/LED/F	0804157	715	EO-L/PT/SH/LED/GN	0804135	716
CK1,6-ED-1,50BU AG	1663433	507	CUC-BH-M12D1PBK-S/R4BE	1414398	348	EO-AB/UT/LED/S/15	0804160	715	EO-L/UT/SH	0804126	716
CK1,6-ED-1,50BU AU	1674930	507	CUC-DSC-C1BAU-S/DSC22	1418789	446	EO-AB/UT/S/15	0804159	715	EO-L/UT/SH/GN	0804127	716
CK1,6-ED-1,50ST AG	1663378	507	CUC-DSC-C1BAU-S/DSC24	1418786	446	EO-CF/PT	0804038	714	EO-L/UT/SH/LED	0804128	716
CK1,6-ED-1,50ST AU	1674875	507	CUC-DSC-C1BAU-S/DSC28	1418784	446	EO-CF/PT/F	0804047	714	EO-L/UT/SH/LED/GN	0804129	716
CK1,6-ED-2,50BU AG	1663446	507	CUC-DSC-C1MAU-S/DSL:100	1426073	447	EO-CF/PT/F/GN	0804048	714	EO-N/PT	0804146	718
CK1,6-ED-2,50BU AU	1674985	507	CUC-DSC-J1BAU-S/DSC22	1418790	446	EO-CF/PT/GN	0804039	714	EO-N/PT/GN	0804147	718
CK1,6-ED-2,50ST AG	1663381	507	CUC-DSC-J1BAU-S/DSC24	1418788	446	EO-CF/PT/LED	0804040	714	EO-N/PT/LED	0804148	718
CK1,6-ED-2,50ST AU	1674927	507	CUC-DSC-J1BAU-S/DSC28	1418787	446	EO-CF/PT/LED/F	0804042	714	EO-N/PT/LED/GN	0804149	718
CK1,6-ED-BB	1645888	657	CUC-DSC-J1MAU-S/DSL:100	1426074	447	EO-CF/PT/LED/F/GN	0804043	714	EO-N/UT	0804139	718
CK1,6-ED-BU-POF	1885004	668	CUC-F-D1ZNI-S/R4GC8	1419022	351	EO-CF/PT/LED/GN	0804041	714	EO-N/UT/GN	0804140	718
CK1,6-ED-ST-POF	1884995	668	CUC-F-J1ZNI-S/R4DC8	1418984	351	EO-CF/PT/LED/S	0804046	714	EO-N/UT/LED	0804142	718
CK1,6-ER-1,00BU OIC AG	1004362	667	CUC-I-D1ZNI-S/R4GC8	1041760	375	EO-CF/PT/LED/YE	1088075	714	EO-N/UT/LED/GN	0804143	718
CK1,6-ER-1,00ST OIC AG	1004360	667	CUC-I-J1ZNI-S/R4DC8	1417274	375	EO-CF/PT/S	0804045	714	EO-SI-FRAME	0804522	714
CK1,6-ER-2,50BU OIC AG	1004366	667	CUC-IND-C1ZNI-B/R4IE8	1421876	373	EO-CF/PT/YE	1088067	714	EWR	1665075	671
CK1,6-ER-2,50ST OIC AG	1004365	667	CUC-IND-C1ZNI-B/R4IP8	1421127	373	EO-CF/UT	0804024	714			
CK2,5-ED-0,37BU AU	1585647	666	CUC-IND-C1ZNI-S/R4IE8	1421607	373	EO-CF/UT/F	0804034	714			
CK2,5-ED-0,37ST AU	1585663	666	CUC-IND-C1ZNI-S/R4IP8	1421126	373	EO-CF/UT/F/GN	0804035	714			
CK2,5-ED-0,50BU AG	1663640	509	CUC-IND-C1ZNI-T/R4IE8	1421877	373	EO-CF/UT/GN	0804025	714			
CK2,5-ED-0,50BU AU	1674859	509	CUC-IND-C1ZNI-T/R4IP8	1421128	373	EO-CF/UT/LED	0804026	714			
CK2,5-ED-0,50ST AG	1663572	509	CUC-INI-C1ZNI-S/R4IE8	1421608	513	EO-CF/UT/LED/F	0804029	714			
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CK2,5-ED-0,5BU CUNI	1585757	668	CUC-K-J1ZNI-S/R4DC8	1419021	374	EO-CF/UT/LED/GN	0804027	714	FL CAT5 PATCH 0,3	2832250	721
CK2,5-ED-0,5BU FE	1585773	668	CUC-PP-D1PGY/R4GC8	1418094	375	EO-CF/UT/LED/S	0804033	714	FL CAT5 PATCH 0,5	2832263	721
CK2,5-ED-0,5ST CUNI	1585744	668	CUC-PP-D1PGY/R4DC8	1419024	375	EO-CF/UT/LED/YE	1088028	714	FL CAT5 PATCH 1,0	2832276	513
CK2,5-ED-0,5ST FE	1585760	668	CUC-PP-FR19:1U-I-EMPTY:24	1422978	391	EO-CF/UT/S	0804032	714	FL CAT5 PATCH 1,5	2832221	721
CK2,5-ED-0,75BU AG	1663653	509	CUC-PP-FR19:1U-I-EMPTY:24 BK	1422979	391	EO-CF/UT/YE	1088038	714	FL CAT5 PATCH 10,0	2832629	721
CK2,5-ED-0,75ST AG	1663585	509	CUC-PPC-A2RBK-PC	1424989	364	EO-D/PT	0804009	715	FL CAT5 PATCH 2,0	2832289	721
CK2,5-ED-1,00BU AG	1663666	509	CUC-PPC-C2ZNI-DC	1001432	364	EO-D/PT/GN	0804010	715	FL CAT5 PATCH 3,0	2832292	721
CK2,5-ED-1,00BU AU	1674833	509	CUC-PPC-C2ZNI-SS/24FKP5	1421785	364	EO-D/PT/LED	0804011	715	FL CAT5 PATCH 5,0	2832580	721
CK2,5-ED-1,00ST AG	1663598	509	CUC-PPC-C2ZNI-SS/24FKP5:FC	1425515	364	EO-D/PT/LED/GN	0804012	715	FL CAT6 PATCH 7,5	2832616	721
CK2,5-ED-1,00ST AU	1674781	509	CUC-PPC-C2ZNI-SX/24FKP5	1421783	364	EO-D/UT	0804000	715	FL CAT6 PATCH 0,3	2891181	721
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FL PLUG GUARD RD	2891712	388	FOC-FS-A-LC-A-GZ04/...	1413787	415	FOC-SC-A-SJA-A-GZ02/...	1405701	418	G-INB-M40-M68N-NEPDS-S	1415185	697
FL PLUG GUARD WH	2891819	388	FOC-FS-A-LC-A-GZ04/1	1413825	415	FOC-SC-A-SJA-A-GZ02/1	1409811	418	G-INESR-M20-S68N-NEPDS-S	1415192	698
FL PORT GUARD	2891220	388	FOC-FS-A-SC-A-GZ04/...	1406536	414	FOC-SC-A-SJA-A-GZ02/2	1400691	418	G-INESR-M25-M68N-NEPDS-S	1415193	698
FL RJ45 PROTECT CAP	2832991	389	FOC-FS-A-SC-A-GZ04/1	1409857	414	FOC-SC-A-SJA-A-GZ03/...	1405702	420	G-INESR-M32-M68N-NEPDS-S	1415194	698
FL RJ45 PROTECT CAP GY	1065531	389	FOC-FS-A-ST-A-GZ04/...	1406535	415	FOC-SC-A-SJA-A-GZ03/1	1409812	420	G-INESR-M40-M68N-NEPDS-S	1415195	698
FL SM PATCH 1,0 LC-LC	2989187	406	FOC-FS-A-ST-A-GZ04/1	1409856	415	FOC-SC-A-SJA-A-GZ03/2	1400695	420	G-INS-M12-M68N-NEPDS-S	1424541	692
FL SM PATCH 1,0 LC-SC	2989190	407	FOC-HCS-RUGGED-1014/...	1402191	413	FOC-SC-A-ST-A-GZ04/...	1413791	415	G-INS-M12-S68N-NNES-S	1411160	688
FL SM PATCH 1,0 LC-ST	2989242	407	FOC-HCS-RUGGED-1014/IP20/...	2901555	412	FOC-SC-A-ST-A-GZ04/1	1413830	415	G-INS-M12-S68N-PNES-BK	1411131	686
FL SM PATCH 1,0 LC-SC	2901829	407	FOC-I-D1PGN-S/LCGCSM	1041780	375	FOC-SHINKSPICE-PROTECT	1019676	381	G-INS-M12-S68N-PNES-GY	1411123	686
FL SM PATCH 1,0 SC-ST	2901832	407	FOC-I-D1PGR-S/SCGCSM	1041800	375	FOC-SJ-14-ST/.../...	1417723	409	G-INS-M12-S68N-PNES-LG	1417652	686
FL SM PATCH 1,0 ST-ST	2901836	407	FOC-I-D1PGY-S/MPAGC	1041820	375	FOC-SJA-A-SJA-A-GZ01/...	1405703	416	G-INS-M16-M68N-SNES-S	1424542	692
FL SM PATCH 2,0 LC-LC	2989284	406	FOC-I-D1PGY-S/MPBGC	1041840	375	FOC-SJA-A-SJA-A-GZ01/1	1409813	416	G-INS-M16-S68N-NNES-S	1411162	688
FL SM PATCH 2,0 LC-SC	2989297	407	FOC-LC-A-LC-A-GZ01/...	1405688	417	FOC-SJA-A-SJA-A-GZ01/2	1400697	416	G-INS-M16-S68N-PNES-BK	1411132	686
FL SM PATCH 2,0 LC-ST	2989349	407	FOC-LC-A-LC-A-GZ01/1	1409787	417	FOC-SJA-A-SJA-A-GZ02/...	1405704	418	G-INS-M16-S68N-PNES-GY	1411124	686
FL SM PATCH 2,0 SC-SC	2901830	407	FOC-LC-A-LC-A-GZ01/2	1400604	417	FOC-SJA-A-SJA-A-GZ02/1	1409814	418	G-INS-M16-S68N-PNES-LG	1417653	686
FL SM PATCH 2,0 SC-ST	2901833	407	FOC-LC-A-LC-A-GZ02/1	1409788	419	FOC-SJA-A-SJA-A-GZ02/2	1400699	418	G-INS-M16-T68N-NNES-S	1424526	688
FL SM PATCH 2,0 ST-ST	2901837	407	FOC-LC-A-LC-A-GZ02/2	1400621	419	FOC-SJA-A-SJA-A-GZ03/...	1405705	420	G-INS-M16-T68N-PNES-BK	1424480	686
FL SM PATCH 5,0 LC-LC	2901826	406	FOC-LC-A-LC-A-GZ03/...	1405690	421	FOC-SJA-A-SJA-A-GZ03/1	1409815	420	G-INS-M16-T68N-PNES-GY	1424475	686
FL SM PATCH 5,0 LC-SC	2901827	407	FOC-LC-A-LC-A-GZ03/1	1409789	421	FOC-SJA-A-SJA-A-GZ03/2	1400700	420	G-INS-M16-T68N-PNES-LG	1424470	686
FL SM PATCH 5,0 LC-ST	2901828	407	FOC-LC-A-LC-A-GZ03/2	1400622	421	FOC-ST-A-LC-A-GZ01/...	1405706	417	G-INS-M20-M68N-PNES-BK	1424481	686
FL SM PATCH 5,0 SC-SC	2901831	407	FOC-LC-A-LC-A-GZ04/...	1413788	415	FOC-ST-A-LC-A-GZ01/1	1409816	417	G-INS-M20-M68N-PNES-GY	1424476	686
FL SM PATCH 5,0 SC-ST	2901834	407	FOC-LC-A-LC-A-GZ04/1	1413826	415	FOC-ST-A-LC-A-GZ01/2	1400701	417	G-INS-M20-M68N-PNES-LG	1424471	686
FL SM PATCH 5,0 ST-ST	2901838	407	FOC-LC-A-SJA-A-GZ01/...	1405694	417	FOC-ST-A-LC-A-GZ02/...	1405707	419	G-INS-M20-M68N-SNES-S	1424543	692
FL SM PATCH COUPLER LC-LC	2700313	380	FOC-LC-A-SJA-A-GZ01/1	1409793	417	FOC-ST-A-LC-A-GZ02/1	1409818	419	G-INS-M20-S68N-NNES-S	1411163	688
FLX ASI 3,0 DIO 4/4 M12-2A	2773474	443	FOC-LC-A-SJA-A-GZ01/2	1400682	417	FOC-ST-A-LC-A-GZ02/2	1400702	419	G-INS-M20-S68N-PNES-BK	1411133	686
FLX ASI DI 4 M12	2773429	442	FOC-LC-A-SJA-A-GZ02/...	1405695	419	FOC-ST-A-LC-A-GZ04/...	1413792	415	G-INS-M20-S68N-PNES-GY	1411125	686
FLX ASI DI 4 M8	2773403	441	FOC-LC-A-SJA-A-GZ02/1	1409796	419	FOC-ST-A-LC-A-GZ04/1	1413831	415	G-INS-M20-S68N-PNES-LG	1414568	686
FLX ASI DIO 2/2 M12-2A	2773432	443	FOC-LC-A-SJA-A-GZ02/2	1400683	419	FOC-ST-A-SC-A-GZ01/...	1405708	417	G-INS-M25-L68N-PNES-BK	1424482	686
FLX ASI DIO 4/3 M12-2A	2773445	443	FOC-LC-A-SJA-A-GZ03/...	1405696	421	FOC-ST-A-SC-A-GZ01/1	1409819	417	G-INS-M25-L68N-PNES-GY	1424477	686
FLX ASI DIO 4/4 M8-1A	2773416	441	FOC-LC-A-SJA-A-GZ03/1	1409797	421	FOC-ST-A-SC-A-GZ01/2	1400703	417	G-INS-M25-L68N-PNES-LG	1424472	686
FLX ASI DO 4 M12-2A	2773458	442	FOC-LC-A-SJA-A-GZ03/2	1400684	421	FOC-ST-A-SC-A-GZ02/...	1405709	419	G-INS-M25-M68N-NNES-S	1411165	688
FOC-C-LC-P-GOF-MM	1411294	378	FOC-MODUL-3U-OS12-LCD6-OM1	1419978	390	FOC-ST-A-SC-A-GZ02/1	1409821	419	G-INS-M25-M68N-PNES-BK	1411134	686
FOC-C-LC-P-GOF-SM-APC	1412476	378	FOC-OE-OE-GB01/...	1406429	408	FOC-ST-A-SC-A-GZ02/2	1400705	419	G-INS-M25-M68N-PNES-GY	1411126	686
FOC-C-LC-P-GOF-SM-PC	1411295	378	FOC-OE-OE-GB02/...	1406430	408	FOC-ST-A-SJA-A-GZ01/...	1405710	417	G-INS-M25-M68N-PNES-LG	1417654	686
FOC-C-LCDU-GOF-MM	1411052	378	FOC-OE-OE-GB03/...	1406431	408	FOC-ST-A-SJA-A-GZ01/1	1409822	417	G-INS-M25-M68N-SNES-S	1424544	692
FOC-C-LCDU-GOF-MM/10	1411298	378	FOC-OE-OE-GZ01/...	1411561	416	FOC-ST-A-SJA-A-GZ01/2	1400706	417	G-INS-M32-M68N-NNES-S	1424527	688
FOC-C-LCDU-GOF-SM-APC	1412472	378	FOC-OE-OE-GZ02/...	1411563	418	FOC-ST-A-SJA-A-GZ02/...	1405711	419	G-INS-M32-L68N-PNES-BK	1424483	686
FOC-C-LCDU-GOF-SM-APC/10	1412479	378	FOC-OE-OE-GZ03/...	1411564	420	FOC-ST-A-SJA-A-GZ02/1	1409823	419	G-INS-M32-L68N-PNES-GY	1424478	686
FOC-C-LCDU-GOF-SM-PC	1411053	378	FOC-OE-OE-GZ04/...	1411566	414	FOC-ST-A-SJA-A-GZ02/2	1400711	419	G-INS-M32-L68N-PNES-LG	1424473	686
FOC-C-LCDU-GOF-SM-PC/10	1411299	378	FOC-OE-OE-HB01/...	1406432	408	FOC-ST-A-ST-A-GZ01/...	1405712	417	G-INS-M32-M68N-NNES-S	1411166	688
FOC-C-SC-P-GOF-MM	1411296	379	FOC-OP12-OP12-GL02/10	1415353	390	FOC-ST-A-ST-A-GZ01/1	1409824	417	G-INS-M32-M68N-PNES-BK	1411136	686
FOC-C-SC-P-GOF-SM-APC	1412478	379	FOC-PN-HCS-1018/...	1402190	410	FOC-ST-A-ST-A-GZ01/2	1404768	417	G-INS-M32-M68N-PNES-GY	1411127	686
FOC-C-SC-P-GOF-SM-PC	1411297	379	FOC-PN-HCS-1018/IP20/...	2901556	411	FOC-ST-A-ST-A-GZ04/...	1413821	415	G-INS-M32-M68N-PNES-LG	1417655	686
FOC-C-SCDU-GOF-MM	1411292	379	FOC-POLISHINGDISC-1.25	1407024	383	FOC-ST-A-ST-A-GZ04/1	1413832	415	G-INS-M32-M68N-SNES-S	1424545	692
FOC-C-SCDU-GOF-MM/10	1411302	379	FOC-POLISHINGDISC-2.50	1407021	383	FOC-TOOL-CERAMIC-BLADE	1407019	383	G-INS-M32-S68N-NNES-S	1424528	688
FOC-C-SCDU-GOF-SM-APC	1412474	379	FOC-POLISHINGFILM-AO-01.0	1407037	383	FOC-TOOL-DISPENSER	1406995	383	G-INS-M40-L68N-PNES-BK	1424484	686

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G-INS-M40-L68N-PNES-GY	1424479	686	G-INVEN-M12-M67N-PNES-BK	1424535	694	HC-ADV-B10-HHWH-1TTM25-MF-BK	1420908	603	HC-B 10-A-DT-PEL-M	1648403	549
G-INS-M40-L68N-PNES-LG	1424474	686	G-INVEN-M12-M67N-PNES-LG	1424532	694	HC-ADV-B10-HHWH-1TTM32-EMC-AL	1413402	603	HC-B 10-A-DT-PER-F	1648416	549
G-INS-M40-M68N-PNES-S	1411167	688	G-INVEN-M16-M67N-PNES-S	1424539	694	HC-ADV-B10-HHWH-1TTM32-MF-BK	1420909	603	HC-B 10-A-DT-PER-M	1648429	549
G-INS-M40-M68N-PNES-BK	1411137	686	G-INVEN-M16-M67N-PNES-BK	1424536	694	HC-ADV-B10-HHWH-BLANK-ELC-AL	1420052	603	HC-B 10-A-UT-PEL-F	1648030	551
G-INS-M40-M68N-PNES-GY	1411128	686	G-INVEN-M16-M67N-PNES-LG	1424533	694	HC-ADV-B10-HLWH-1STM20-EMC-AL	1413389	603	HC-B 10-A-UT-PEL-M	1648036	551
G-INS-M40-M68N-PNES-LG	1417656	686	G-INVEN-M20-M67N-PNES-S	1424540	694	HC-ADV-B10-HLWH-1STM20-MF-BK	1420910	603	HC-B 10-A-UT-PER-F	1648078	551
G-INS-M40-M68N-PNES-S	1424546	692	G-INVEN-M20-M67N-PNES-BK	1424537	694	HC-ADV-B10-HLWH-1STM25-EMC-AL	1413391	603	HC-B 10-A-UT-PER-M	1648084	551
G-INS-M40-S68N-PNES-S	1424529	688	G-INVEN-M20-M67N-PNES-LG	1424534	694	HC-ADV-B10-HLWH-1STM25-MF-BK	1420911	603	HC-B 10-ADP/1 DSUB 25	1775499	665
G-INS-M50-L68L-PNES-BK	1411138	686	GPE 13X 9 WH	0806932	480	HC-ADV-B10-HLWH-1TTM20-EMC-AL	1413388	603	HC-B 10-ADP/2 DSUB 25	1775509	665
G-INS-M50-L68L-PNES-GY	1424531	688				HC-ADV-B10-HLWH-1TTM20-MF-BK	1420912	603	HC-B 10-ANDOCK	1586125	663
G-INS-M50-L68L-PNES-LG	1417657	686				HC-ADV-B10-HLWH-1TTM25-EMC-AL	1413390	603	HC-B 10-AP-GY	1660371	664
G-INS-M50-L68N-PNES-S	1411168	688				HC-ADV-B10-HLWH-1TTM25-MF-BK	1420913	603	HC-B 10-EBUQ-2,5	1605569	543
G-INS-M50-M68N-PNES-S	1424530	688				HC-ADV-B10-HLWH-BLANK-ELC-AL	1420051	603	HC-B 10-ESTQ-2,5	1605624	543
G-INS-M63-E68N-PNES-S	1424531	688				HC-ADV-B16-HHWH-1TGM32-PL	1404232	616	HC-B 10-I-CT-F	1648225	543
G-INS-M63-L68L-PNES-BK	1411139	686				HC-ADV-B16-HHWH-1SGM40-PL	1404234	616	HC-B 10-I-CT-M	1648212	543
G-INS-M63-L68L-PNES-GY	1411130	686				HC-ADV-B16-HHWH-1STM25-EMC-AL	1414978	617	HC-B 10-I-UT-F	1648186	543
G-INS-M63-L68L-PNES-LG	1417658	686				HC-ADV-B16-HHWH-1STM25-MF-BK	1420914	617	HC-B 10-I-UT-M	1648173	543
G-INS-M63-L68N-PNES-S	1411129	686				HC-ADV-B16-HHWH-1STM32-EMC-AL	1413417	617	HC-B 10-SD-FLU/FS-AL	1584562	654
G-INS-PG11-M68N-PNES-BK	1424497	687				HC-ADV-B16-HHWH-1STM32-MF-BK	1420915	617	HC-B 10-SD-FQT/FS-AL	1647750	654
G-INS-PG11-M68N-PNES-LG	1424487	687				HC-ADV-B16-HHWH-1STM40-EMC-AL	1413419	617	HC-B 10-SD-FQU/FS-AL	1644575	655
G-INS-PG11-S68N-PNES-S	1411172	689				HC-ADV-B16-HHWH-1STM40-MF-BK	1420916	617	HC-B 10-SD-MLT/FS-AL	1584512	654
G-INS-PG11-S68N-PNES-GY	1411142	687				HC-ADV-B16-HHWH-1TGM40-PL	1404231	616	HC-B 10-SD-MQT/FS-AL	1584541	654
G-INS-PG13,5-M68N-PNES-BK	1424498	687				HC-ADV-B16-HHWH-1TGM40-PL	1404233	616	HC-B 10-TMS-SD-IP50	1690749	602
G-INS-PG13,5-M68N-PNES-LG	1424488	687				HC-ADV-B16-HHWH-1TTM25-EMC-AL	1414977	617	HC-B 10-TMS-SD-IP66	1411504	602
G-INS-PG13,5-S68N-PNES-S	1411173	689				HC-ADV-B16-HHWH-1TTM25-MF-BK	1420917	617	HC-B 16-A-DT-PEL-F	1648432	549
G-INS-PG13,5-S68N-PNES-GY	1411143	687				HC-ADV-B16-HHWH-1TTM32-EMC-AL	1413416	617	HC-B 16-A-DT-PEL-M	1648445	549
G-INS-PG16-M68N-PNES-BK	1424499	687				HC-ADV-B16-HHWH-1TTM32-MF-BK	1420918	617	HC-B 16-A-DT-PER-F	1648458	549
G-INS-PG16-M68N-PNES-LG	1424489	687				HC-ADV-B16-HHWH-1TTM40-EMC-AL	1413418	617	HC-B 16-A-DT-PER-M	1648461	549
G-INS-PG16-S68N-PNES-S	1411174	689				HC-ADV-B16-HHWH-1TTM40-MF-BK	1420919	617	HC-B 16-A-UT-PEL-F	1648042	551
G-INS-PG16-S68N-PNES-GY	1411144	687				HC-ADV-B16-HHWH-BLANK-ELC-AL	1420054	617	HC-B 16-A-UT-PEL-M	1648048	551
G-INS-PG21-M68N-PNES-S	1411175	689				HC-ADV-B16-HLWH-1STM25-EMC-AL	1414976	617	HC-B 16-A-UT-PER-F	1648090	551
G-INS-PG21-M68N-PNES-BK	1424500	687				HC-ADV-B16-HLWH-1STM25-MF-BK	1420920	617	HC-B 16-A-UT-PER-M	1648096	551
G-INS-PG21-M68N-PNES-GY	1411145	687				HC-ADV-B16-HLWH-1TTM25-EMC-AL	1414975	617	HC-B 16-ADP/1 DSUB 37	1775512	665
G-INS-PG21-M68N-PNES-LG	1424490	687				HC-ADV-B16-HLWH-1TTM25-MF-BK	1420921	617	HC-B 16-ADP/1 DSUB 50	1775538	665
G-INS-PG29-M68N-PNES-S	1411176	689				HC-ADV-B16-HLWH-BLANK-ELC-AL	1420053	617	HC-B 16-ADP/2 DSUB 37	1775525	665
G-INS-PG29-M68N-PNES-BK	1424501	687				HC-ADV-B24-HHWH-1SGM32-PL	1404237	630	HC-B 16-ADP/2 DSUB 50	1775541	665
G-INS-PG29-M68N-PNES-GY	1411146	687				HC-ADV-B24-HHWH-1SGM40-PL	1404239	630	HC-B 16-ANDOCK	1586138	663
G-INS-PG29-M68N-PNES-LG	1424491	687				HC-ADV-B24-HHWH-1STM25-EMC-AL	1414981	631	HC-B 16-AP-GY	1660384	664
G-INS-PG36-L68N-PNES-S	1411178	689				HC-ADV-B24-HHWH-1STM25-MF-BK	1420922	631	HC-B 16-APV-GY	1661121	664
G-INS-PG36-L68N-PNES-GY	1411147	687				HC-ADV-B24-HHWH-1STM32-EMC-AL	1413431	631	HC-B 16-EBUQ-2,5	1605572	545
G-INS-PG36-M68N-PNES-BK	1424502	687				HC-ADV-B24-HHWH-1STM32-MF-BK	1420923	631	HC-B 16-EBUQ-2,5-32	1605598	545
G-INS-PG36-M68N-PNES-LG	1424492	687				HC-ADV-B24-HHWH-1STM40-EMC-AL	1413433	631	HC-B 16-ESTQ-2,5	1605637	545
G-INS-PG42-L68N-PNES-S	1411179	689				HC-ADV-B24-HHWH-1STM40-MF-BK	1420924	631	HC-B 16-ESTQ-2,5-32	1605653	545
G-INS-PG42-L68N-PNES-GY	1411149	687				HC-ADV-B24-HHWH-1TGM32-PL	1404235	630	HC-B 16-I-CT-F	1648283	545
G-INS-PG42-M68N-PNES-BK	1424503	687				HC-ADV-B24-HHWH-1TGM40-PL	1404238	630	HC-B 16-I-CT-F-32	1584923	545
G-INS-PG42-M68N-PNES-LG	1424493	687				HC-ADV-B24-HHWH-1TTM25-EMC-AL	1414980	631	HC-B 16-I-CT-M	1648270	545
G-INS-PG48-L68N-PNES-S	1411181	689				HC-ADV-B24-HHWH-1TTM25-MF-BK	1420925	631	HC-B 16-I-CT-M-32	1584910	545
G-INS-PG48-L68N-PNES-GY	1411150	687				HC-ADV-B24-HHWH-1TTM32-EMC-AL	1413430	631	HC-B 16-I-UT-F	1648241	545
G-INS-PG48-M68N-PNES-BK	1424504	687				HC-ADV-B24-HHWH-1TTM32-MF-BK	1420926	631	HC-B 16-I-UT-F-32	1584884	545
G-INS-PG48-M68N-PNES-LG	1424494	687				HC-ADV-B24-HHWH-1TTM40-EMC-AL	1413432	631	HC-B 16-I-UT-M	1648238	545
G-INS-PG7-M68N-PNES-BK	1424495	687				HC-ADV-B24-HHWH-1TTM40-MF-BK	1420927	631	HC-B 16-I-UT-M-32	1584871	545
G-INS-PG7-M68N-PNES-LG	1424485	687				HC-ADV-B24-HHWH-BLANK-ELC-AL	1420056	617	HC-B 16-SD-FLU/FS-AL	1644588	655
G-INS-PG7-S68N-PNES-S	1411170	689				HC-ADV-B24-HLWH-1STM25-EMC-AL	1414983	631	HC-B 16-SD-FQT/FS-AL	1647763	654
G-INS-PG7-S68N-PNES-GY	1411140	687				HC-ADV-B24-HLWH-1STM25-MF-BK	1420928	631	HC-B 16-SD-FQU/FS-AL	1644591	655
G-INS-PG9-M68N-PNES-BK	1424496	687				HC-ADV-B24-HLWH-1TTM25-EMC-AL	1414982	631	HC-B 16-SD-MLT/FS-AL	1584525	654
G-INS-PG9-M68N-PNES-LG	1424486	687				HC-ADV-B24-HLWH-1TTM25-MF-BK	1420929	631	HC-B 16-SD-MQT/FS-AL	1584554	654
G-INS-PG9-S68N-PNES-S	1411171	689				HC-ADV-B24-HLWH-BLANK-ELC-AL	1420055	631	HC-B 16-TMS-SD-IP50	1690752	616
G-INS-PG9-S68N-PNES-GY	1411141	687				HC-B 6-A-DT-PEL-F	1648351	549	HC-B 16-TMS-SD-IP66	1411517	616
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G-INSEC-M16-S68L-NCRS-S	1077099	690				HC-B 6-A-DT-PER-F	1648377	549	HC-B 24-A-DT-PEL-M	1648487	549
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G-INSEC-M25-S68N-NCRS-S	1411190	690				HC-B 6-A-UT-PEL-F	1648018	551	HC-B 24-A-DT-PER-M	1648500	549
G-INSEC-M32-M68N-NCRS-S	1411191	690				HC-B 6-A-UT-PEL-M	1648024	551	HC-B 24-A-UT-PEL-F	1648054	551
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HC-B-GTRS-M20-PLRKB	1414651	659	HC-BB18-I-CT-F	1584729	555	HC-D 40-A-TWIN-PER-F	1580163	537	HC-EVO-B10-SHWD-2SSM20-PLRKB	1421356	608
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HC-B-TA-M32-ER-AL	1414258	661	HC-BBB 64-EBUC	1409914	557	HC-D 64-A-UT-PEL-F	1584295	537	HC-EVO-B16-BWD-PLRKB	1407648	622
HC-B-TA-M32-PLR-BK	1414245	659	HC-BBB 64-ESTC	1409901	557	HC-D 64-A-UT-PEL-M	1584282	537	HC-EVO-B16-BWS-PLRKB	1407646	618
HC-B-TA-M40-ER-AL	1414259	661	HC-BS-PG11	1674493	703	HC-D 64-A-UT-PER-F	1584321	537	HC-EVO-B16-BWSC-PLRKB	1407647	618
HC-B-TA-M40-PLR-BK	1414246	659	HC-BS-PG13	1674503	703	HC-D 64-A-UT-PER-M	1584318	537	HC-EVO-B16-CHWD-PLRKB	1407655	622
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HC-B-TA-NPT-1/1-ER-AL	1414266	661	HC-BS-PG21	1674529	703	HC-D 64-I-CT-M	1584431	535	HC-EVO-B16-HHFD-2B-PL-BK	1411496	622
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HC-EVO-B24-BWS-PLRBK	1407659	632	HC-K 8/24-EBUC	1636321	569	HC-M-BS-M25	1645859	702	HC-STA-B06-HHFS-BLANK-EL-AL	1419901	600
HC-EVO-B24-BWSC-PLRBK	1407660	632	HC-K 8/24-ESTC	1636318	569	HC-M-BS-M32	1645862	702	HC-STA-B06-HLFS-1STM20-EL-AL	1412570	600
HC-EVO-B24-CHWD-PLRBK	1407668	636	HC-K12/ 2-EBUC	1636347	569	HC-M-BS-M40	1645875	702	HC-STA-B06-HLFS-1STM25-EL-AL	1412571	600
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HC-EVO-B24-HHFD-PLBK	1407657	636	HC-M-01-AT-F-40	1417379	573	HC-M-DSUB-09-UT-M	1423723	587	HC-STA-B06-HLFS-1TTM25-EL-AL	1412575	600
HC-EVO-B24-HHFS-EL-AL	1411473	633	HC-M-01-AT-F-40-PE	1417380	573	HC-M-DSUB-09-2-CT-F	1079793	587	HC-STA-B06-HLFS-1TTP13-EL-AL	1412576	600
HC-EVO-B24-HHFS-PLBK	1407656	632	HC-M-01-AT-M-40	1417381	573	HC-M-DSUB-09-2-CT-M	1079796	587	HC-STA-B06-HLFS-1TTP16-EL-AL	1412577	600
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HC-EVO-B24-SHFD-2SSM25-PLRBK	1421462	640	HC-M-02-AT-F-10	1417387	573	HC-M-KV-T-M20	1646188	699	HC-STA-B06-SHWS-2SSM32-ELC-AL	1082577	599
HC-EVO-B24-SHFD-2SSM32-PLRBK	1421380	640	HC-M-02-AT-F-16	1417296	573	HC-M-KV-T-M25	1646191	699	HC-STA-B06-SHWS-2SSM40-ELC-AL	1082577	599
HC-EVO-B24-SHFD-2SSM40-PLRBK	1407666	640	HC-M-02-AT-F-35	1417390	573	HC-M-KV-T-M32	1646201	699	HC-STA-B06-SLWS-2SSM20-ELC-AL	1412821	599
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HC-EVO-B24-SHWS-2SSM40-PLRBK	1407663	636	HC-M-02-CT-M	1414360	575	HC-M-PN2-6,00-ST	1676750	593	HC-STA-B06-SLWS-2SSM16-ELC-AL	1416353	647
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HC-EVO-B24-SHWS-2SSM32-PLRBK	1421369	632	HC-M-02-EMC-F	1417376	583	HC-M-PN3-1,60-BU-V	1663543	593	HC-STA-B10-BFDC-ELC-AL	1411323	613
HC-EVO-B24-SHWS-2SSM40-PLRBK	1407664	632	HC-M-02-EMC-M	1417374	583	HC-M-PN3-1,60-ST	1663488	593	HC-STA-B10-BWD-ELC-AL	1411322	609
HC-EVO-B24PT-BWD-HH-M32-PLRBK	1407713	646	HC-M-02-PN-M-F	1417434	593	HC-M-PN3-3,00-BU	1663527	593	HC-STA-B10-BWS-ELC-AL	1411320	605
HC-EVO-B24PT-BWSC-HH-M32-PLRBK	1408794	646	HC-M-03-CT-F	1414359	575	HC-M-PN3-3,00-BU-V	1663556	593	HC-STA-B10-BWSC-ELC-AL	1411321	605
HC-EVO-D15-BWS-PLR-BK	1411336	526	HC-M-03-CT-M	1414358	575	HC-M-PN3-3,00-ST	1663491	593	HC-STA-B10-CHWD-1TTM20-ELC-AL	1412578	609
HC-EVO-D15-BWSC-PLR-BK	1411337	526	HC-M-03-PN-M-F	1417433	593	HC-M-PN3-4,00-BU	1663530	593	HC-STA-B10-CHWD-1TTM25-ELC-AL	1412579	609
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HC-EVO-D15-SLWS-2SSM20-PLR-BK	1421463	526	HC-M-04-BU-KOAX-50	1676802	589	HC-M-RJ45-08-GC-F/F	1419886	591	HC-STA-B10-CHWD-1TTP21-ELC-AL	1412582	609
HC-EVO-D15-SLWS-2SSM25-PLR-BK	1411341	526	HC-M-04-BU-KOAX-75	1686258	589	HC-M-RJ45-08-M	1419887	591	HC-STA-B10-CHWD-1TTP29-ELC-AL	1412583	609
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HC-EVO-D15-SLWSC-2SSM25-PLR-BK	1411343	526	HC-M-04-CT-M	1414362	575	HC-M-RJ45-AD-PC-M	1419888	591	HC-STA-B10-CHWS-1TTM25-ELC-AL	1412585	607
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HC-EVO-D25-BWSC-PLR-BK	1411345	530	HC-M-04-KT-M	1417371	589	HC-MOD-K-CP	1408562	656	HC-STA-B10-CHWS-1TTP16-ELC-AL	1412587	607
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HC-EVO-D25-SLWS-2SSM25-PLR-BK	1411348	530	HC-M-05-PT-M	1417372	577	HC-Q-1-RJ45-AD-PC-M	1077120	513	HC-STA-B10-HHFD-1STM25-EL-AL	1412592	610
HC-EVO-D25-SLWSC-2SSM20-PLR-BK	1421467	530	HC-M-05L-TPT-F	1423962	577	HC-Q-1-RJ45-AD-08-PC-M	1077119	513	HC-STA-B10-HHFD-1STM32-EL-AL	1412593	610
HC-EVO-D25-SLWSC-2SSM25-PLR-BK	1411349	530	HC-M-05L-TPT-M	1423961	577	HC-Q2-1-CT-F	1419895	511	HC-STA-B10-HHFD-1STP21-EL-AL	1412594	610
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HC-STA-B10-HLWD-1TTP25-EL-AL	1412638	614	HC-STA-B16-HLFS-1STP16-EL-AL	1412727	620	HC-STA-B24-HHWD-1TTP29-EL-AL	1412772	642	HC-STA-B48-BWSC-EMC-AL	1424864	645
HC-STA-B10-HLWD-1TTP16-EL-AL	1412639	614	HC-STA-B16-HLFS-1STP21-EL-AL	1412728	620	HC-STA-B24-HHWD-BLANK-EL-AL	1420047	642	HC-STA-B48-HHFS-1STM32-EM-AL	1424860	645
HC-STA-B10-HLWD-1TTP21-EL-AL	1412640	614	HC-STA-B16-HLFS-1TTPM25-EL-AL	1412729	620	HC-STA-B24-HLFD-1STM25-EL-AL	1412773	638	HC-STA-B48-HHFS-1STM40-EM-AL	1424861	645
HC-STA-B10-HLWD-BLANK-EL-AL	1420034	614	HC-STA-B16-HLFS-1TTPM32-EL-AL	1412730	620	HC-STA-B24-HLFD-1TTPM32-EL-AL	1412774	638	HC-STA-B48-HHFS-1TTPM32-EM-AL	1424862	645
HC-STA-B10-SHWD-2SSM25-ELC-AL	1082598	609	HC-STA-B16-HLFS-1TTP16-EL-AL	1412731	620	HC-STA-B24-HLFD-1STP16-EL-AL	1412775	638	HC-STA-B48-HHFS-1STP29-EM-AL	1424857	645
HC-STA-B10-SHWD-2SSM32-ELC-AL	1082599	609	HC-STA-B16-HLFS-1TTP21-EL-AL	1412732	620	HC-STA-B24-HLFD-1STP21-EL-AL	1412776	638	HC-STA-B48-HHFS-1STP36-EM-AL	1424858	645
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HC-STA-B10-SHWD-BLANK-EL-AL	1082578	605	HC-STA-B16-HLWD-1STM25-EL-AL	1412733	628	HC-STA-B24-HLFD-1TTPM32-EL-AL	1412779	638	HC-STA-B48-HHFS-1TTPM32-EM-AL	1424864	645
HC-STA-B10-SHWS-2SSM32-ELC-AL	1082579	605	HC-STA-B16-HLWD-1STM32-EL-AL	1412734	628	HC-STA-B24-HLFD-1TTP16-EL-AL	1412780	638	HC-STA-B48-HHFS-1TTPM40-EM-AL	1424855	645
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HC-STA-B10-SHWS-2SSM25-ELC-AL	1082582	605	HC-STA-B16-HLWD-1STP21-EL-AL	1412737	628	HC-STA-B24-HLFD-1TTP29-EL-AL	1412782	638	HC-STA-B48-HHFS-1TTP29-EM-AL	1424851	645
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HC-STA-B10-SHWS-2SSM40-ELC-AL	1082585	605	HC-STA-B16-HLWD-1TTPM32-EL-AL	1412739	628	HC-STA-B24-HLFS-1STM25-EL-AL	1412783	634	HC-STA-B48-HHFS-1TTP42-EM-AL	1424853	645
HC-STA-B10-SLFD-2SSM25-ELC-AL	1412830	613	HC-STA-B16-HLWD-1TTP16-EL-AL	1412740	628	HC-STA-B24-HLFS-1STM32-EL-AL	1412784	634	HC-STA-B48-SHWS-2SSM32-EMC-AL	1424867	645
HC-STA-B10-SLFD-2SSM25-ELC-AL	1412831	613	HC-STA-B16-HLWD-1TTP21-EL-AL	1412741	628	HC-STA-B24-HLFS-1STP16-EL-AL	1412785	634	HC-STA-B48-SHWS-2SSM40-EMC-AL	1424868	645
HC-STA-B10-SLFD-2SSP16-ELC-AL	1412832	613	HC-STA-B16-HLWD-BLANK-EL-AL	1420036	628	HC-STA-B24-HLFS-1STP21-EL-AL	1412786	634	HC-STA-B48-SHWS-2SSP29-EMC-AL	1424865	645
HC-STA-B10-SLWD-2SSM20-ELC-AL	1412835	609	HC-STA-B16-SHWD-2SSM25-ELC-AL	1082600	623	HC-STA-B24-HLFS-1TTPM25-EL-AL	1412788	634	HC-STA-B48-SHWS-2SSP36-EMC-AL	1424866	645
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HC-STA-B10-SLWD-2SSP16-ELC-AL	1412837	609	HC-STA-B16-SHWD-2SSM40-ELC-AL	1082602	623	HC-STA-B24-HLFS-1TTP16-EL-AL	1412790	634	HC-STA-B48-SHWS-2SSM40-EMC-AL	1424874	645
HC-STA-B10-SLWS-2SSM20-ELC-AL	1412839	605	HC-STA-B16-SHWS-2SSM25-ELC-AL	1082586	619	HC-STA-B24-HLFS-1TTP21-EL-AL	1412791	634	HC-STA-B48-SHWS-2SSP29-EMC-AL	1424869	645
HC-STA-B10-SLWS-2SSM25-ELC-AL	1412840	605	HC-STA-B16-SHWS-2SSM32-ELC-AL	1082587	619	HC-STA-B24-HLFS-1TTP29-EL-AL	1412792	634	HC-STA-B48-SHWS-2SSP36-EMC-AL	1424872	645
HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	605	HC-STA-B16-SHWS-2SSM32-ELC-AL	1082588	619	HC-STA-B24-HLFS-BLANK-EL-AL	1419937	634	HC-STA-B48-SHWS-2SSM32-EMC-AL	1419252	517
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HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	605	HC-STA-B16-SHWS-2SSM32-ELC-AL	1082590	619	HC-STA-B24-HLWD-1STM32-EL-AL	1412795	642	HC-STA-D07-BCLFS-PL-BK	1419271	514
HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	605	HC-STA-B16-SHWS-2SSM40-ELC-AL	1082591	619	HC-STA-B24-HLWD-1STP16-EL-AL	1412796	642	HC-STA-D07-BCLFS-PLR-BK	1419270	514
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HC-STA-B10-PT-BWD-LT-M25-ELCAL	1416346	647	HC-STA-B16-SLFD-2SSM32-ELC-AL	1412850	627	HC-STA-B24-HLWD-1TTPM25-EL-AL	1412799	642	HC-STA-D07-BWS-PL-BK	1419265	516
HC-STA-B16-BFDC-ELC-AL	1411328	627	HC-STA-B16-SLFD-2SSP16-ELC-AL	1412852	627	HC-STA-B24-HLWD-1TTPM32-EL-AL	1412800	642	HC-STA-D07-BWSCF-EL-AL	1419251	517
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HC-STA-B16-BWS-ELC-AL	1411324	619	HC-STA-B16-SLWD-2SSM25-ELC-AL	1412855	623	HC-STA-B24-HLWD-1TTP21-EL-AL	1412802	642	HC-STA-D07-BWSCM-EL-AL	1419250	517
HC-STA-B16-BWSC-ELC-AL	1411325	619	HC-STA-B16-SLWD-2SSM32-ELC-AL	1412856	623	HC-STA-B24-HLWD-1TTP29-EL-AL	1412803	642	HC-STA-D07-BWSCM-PL-BK	1419278	516
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HC-STA-B16-CHWD-1TTP29-ELC-AL	1412644	623	HC-STA-B16-SLWS-2SSP21-ELC-AL	1412863	619	HC-STA-B24-SHWD-2SSM40-ELC-AL	1082605	637	HC-STA-D07-CHWS-1TGM25-PL-BK	1419260	516
HC-STA-B16-CHWS-1TTPM25-ELC-AL	1412645	619	HC-STA-B16-SLWSC-2SSM25-ELC-AL	1412865	619	HC-STA-B24-SHWS-2SSM25-ELC-AL	1085185	635	HC-STA-D07-CHWS-1TTPM20-EL-AL	1419238	517
HC-STA-B16-CHWS-1TTPM32-ELC-AL	1412646	619	HC-STA-B16-SLWSC-2SSM32-ELC-AL	1412866	619	HC-STA-B24-SHWS-2SSM32-ELC-AL	1082592	633	HC-STA-D07-CHWS-1TTPM25-EL-AL	1419239	517
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HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	619	HC-STA-B16-PT-BWD-LT-M25-ELCAL	1416357	647	HC-STA-B24-SHWS-2SSM25-ELC-AL	1082595	633	HC-STA-D07-CHWSCF-1TGM20-PL-BK	1419261	516
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HC-STA-B16-HHFD-1STM40-EL-AL	1412650	624	HC-STA-B24-BWD-ELC-AL	1411331	637	HC-STA-B24-SLFD-2SSM25-ELC-AL	1412869	641	HC-STA-D07-CHWSCF-1TTPM25-EL-AL	1419244	517
HC-STA-B16-HHFD-1STM50-EL-AL	1082551	624	HC-STA-B24-BWS-ELC-AL	1411329	633	HC-STA-B24-SLFD-2SSM32-ELC-AL	1412870	641	HC-STA-D07-CHWSCF-1TTP11-EL-AL	1419245	517
HC-STA-B16-HHFD-1STP21-EL-AL	1412651	624	HC-STA-B24-BWSC-ELC-AL	1411330	633	HC-STA-B24-SLFD-2SSP21-ELC-AL	1412871	641	HC-STA-D07-CHWSCM-1TGM20-PL-BK	1419263	516
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HC-STA-B16-HHFD-1TTPM40-EL-AL	1412654	624	HC-STA-B24-CHWD-1TTP21-ELC-AL	1412744	637	HC-STA-B24-SLWD-2SSP21-ELC-AL	1412875	637	HC-STA-D07-CHWSCM-1TTPM25-EL-AL	1419247	517
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HC-STA-B16-HHFD-1TTP29-EL-AL	1412678	624	HC-STA-B24-CHWS-1TTPM40-ELC-AL	1412747	633	HC-STA-B24-SLWS-2SSP21-ELC-AL	1412879	633	HC-STA-D07-HCLWS-PLR-BK	1419274	514
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M23-09S1N8A8002	1629223	76	M23-5ES198A8L24	1628808	146	NBC-2,0-93E/FSD SCO	1407381	399	NBC-FSD/2,0-93B/R4RC SCO	1407545	397
M23-09S1N8A8002S	1629175	76	M23-5ES198A8L24S	1628798	146	NBC-2,0-94B/FS SCO	1407440	401	NBC-FSD/2,0-93E/R4AC SCO	1407385	399
M23-09S1N8A8003	1629222	76	M23-5ES198A8L25	1628807	146	NBC-5,0-93B/FSD SCO	1407530	397	NBC-FSD/2,0-93E/R4MC SCO	1407389	399
M23-09S1N8A8003S	1629174	76	M23-5ES198A8L25S	1628797	146	NBC-5,0-93E/FSD SCO	1407382	399	NBC-FSD/2,0-93E/R4QC SCO	1407397	399
M23-09S1N8A8004	1629221	76	M23-5ES198A8LDL	1628806	146	NBC-5,0-94B/FS SCO	1407441	401	NBC-FSD/2,0-93E/R4RC SCO	1407393	399
M23-09S1N8A8004S	1629173	76	M23-5ES198A8LDLS	1628796	146	NBC-1,0-94F/M12FRX	1080746	403	NBC-FSD/5,0-93B/R4AC SCO	1407534	397
M23-09S1N8A800DU	1629220	76	M23-5ES198AA500S	1628491	147	NBC-1,0-94F/M12FSX	1080728	403	NBC-FSD/5,0-93B/R4ACR SCO	1407538	397
M23-09S1N8A800DUS	1629172	76	M23-5ES198AA600S	1628489	147	NBC-10,0-93B/FSD SCO	1407531	397	NBC-FSD/5,0-93B/R4QC SCO	1407551	397
M23-12P1N8A8002	1629211	76	M23-7EP198A8022	1628878	146	NBC-10,0-93E/FSD SCO	1407383	399	NBC-FSD/5,0-93B/R4RC SCO	1407546	397
M23-12P1N8A8002S	1629163	76	M23-7EP198A8022S	1628869	146	NBC-10,0-94B/FS SCO	1407442	401	NBC-FSD/5,0-93E/R4AC SCO	1407386	399
M23-12P1N8A8003	1629210	76	M23-7EP198A8023	1628877	146	NBC-10,0-94F/M12FRX	1080750	403	NBC-FSD/5,0-93E/R4MC SCO	1407390	399
M23-12P1N8A8003S	1629162	76	M23-7EP198A8023S	1628870	146	NBC-10,0-94F/M12FSX	1080732	403	NBC-FSD/5,0-93E/R4QC SCO	1407398	399
M23-12P1N8A8004	1629209	76	M23-7EP198A8024	1628876	146	NBC-2,0-94F/M12FRX	1080747	403	NBC-FSD/5,0-93E/R4RC SCO	1407394	399
M23-12P1N8A8004S	1629161	76	M23-7EP198A8024S	1628868	146	NBC-2,0-94F/M12FSX	1080729	403	NBC-FSD/10,0-93B/R4AC SCO	1407535	397
M23-12P1N8A800DU	1629208	76	M23-7EP198A80DN	1628875	146	NBC-5,0-94F/M12FRX	1080748	403	NBC-FSD/10,0-93B/R4ACR SCO	1407539	397
M23-12P1N8A800DUS	1629160	76	M23-7EP198A80DNS	1628867	146	NBC-5,0-94F/M12FSX	1080731	403	NBC-FSD/10,0-93B/R4QC SCO	1407552	397
M23-12P1N8AA500S	1628498	77	M23-7EP198A8L22	1628861	146	NBC-937/...	1408540	392	NBC-FSD/10,0-93B/R4RC SCO	1407547	397
M23-12P1N8AA600S	1628494	77	M23-7EP198A8L22S	1628850	146	NBC-93B/...	1408537	392	NBC-FSD/10,0-93E/R4AC SCO	1407387	399
M23-12S1N8A8002	1629215	76	M23-7EP198A8L23	1628860	146	NBC-93C/...	1408538	392	NBC-FSD/10,0-93E/R4MC SCO	1407391	399
M23-12S1N8A8002S	1629167	76	M23-7EP198A8L23S	1628851	146	NBC-93E/...	1408534	393	NBC-FSD/10,0-93E/R4QC SCO	1407399	399
M23-12S1N8A8003	1629214	76	M23-7EP198A8L24	1628859	146	NBC-93R/...	1408539	392	NBC-FSD/10,0-93E/R4RC SCO	1407395	399
M23-12S1N8A8003S	1629166	76	M23-7EP198A8L24S	1628849	146	NBC-94B/...	1408535	393	NBC-M 8FS-R4AC/.....	1408714	394
M23-12S1N8A8004	1629213	76	M23-7EP198A8L25	1628858	146	NBC-94C/...	1408536	393	NBC-M 8FS/.....	1408716	394
M23-12S1N8A8004S	1629165	76	M23-7EP198A8L25S	1628848	146	NBC-FR SCO-IE/.....	1408657	401	NBC-M 8MS-M 8FS/.....	1408715	394
M23-12S1N8A800DU	1629212	76	M23-7EP198A8LDL	1628857	146	NBC-FR-R4AC SCO-IE/.....	1408655	401	NBC-M 8MS-M 8MS/.....	1408718	394
M23-12S1N8A800DUS	1629164	76	M23-7EP198A8LDLS	1628847	146	NBC-FR-R4MC SCO-IE/.....	1408653	401	NBC-M 8MS-R4AC/.....	1408717	394
M23-12S1N8AA500S	1628499	77	M23-7EP198AA500S	1628486	147	NBC-FR-R4QC SCO-IE/.....	1408651	401	NBC-M 8MS/1,0-93B	1407344	394
M23-12S1N8AA600S	1628495	77	M23-7EP198AA600S	1628484	147	NBC-FR-R4RC SCO-IE/.....	1408652	401	NBC-M 8MS/1,0-93B/M 8MS	1407348	394
M23-17P1N8A8002	1629203	76	M23-7ES198A8022	1628822	146	NBC-FRD SCO-PN/.....	1408615	397	NBC-M 8MS/1,0-93B/R4AC	1407352	394
M23-17P1N8A8002S	1629155	76	M23-7ES198A8022S	1628813	146	NBC-FRD SCO/.....	1408690	399	NBC-M 8MS/2,0-93B	1407345	394
M23-17P1N8A8003	1629202	76	M23-7ES198A8023	1628821	146	NBC-FRD-R4AC SCO-PN/.....	1408613	397	NBC-M 8MS/2,0-93B/M 8MS	1407349	394
M23-17P1N8A8003S	1629154	76	M23-7ES198A8023S	1628814	146	NBC-FRD-R4AC SCO/.....	1408689	399	NBC-M 8MS/2,0-93B/R4AC	1407353	394
M23-17P1N8A8004	1629201	76	M23-7ES198A8024	1628820	146	NBC-FRD-R4ACR SCO-PN/.....	1408612	397	NBC-M 8MS/5,0-93B	1407346	394
M23-17P1N8A8004S	1629153	76	M23-7ES198A8024S	1628812	146	NBC-FRD-R4MC SCO-IE/.....	1408688	399	NBC-M 8MS/5,0-93B/M 8MS	1407350	394
M23-17P1N8A800DU	1629200	76	M23-7ES198A80DN	1628819	146	NBC-FRD-R4QC SCO-PN/.....	1408609	397	NBC-M 8MS/5,0-93B/R4AC	1407354	394
M23-17P1N8A800DUS	1629152	76	M23-7ES198A80DNS	1628811	146	NBC-FRD-R4QC SCO/.....	1408686	399	NBC-M 8MS/.....	1408719	394
M23-17P1N8AA500S	1628496	77	M23-7ES198A8L22	1628805	146	NBC-FRD-R4RC SCO-PN/.....	1408610	397	NBC-M 8MS/10,0-93B	1407347	394
M23-17P1N8AA600S	1628492	77	M23-7ES198A8L22S	1628795	146	NBC-FRD-R4RC SCO-IE/.....	1408687	399	NBC-M 8MS/10,0-93B/M 8MS	1407351	394
M23-17S1N8A8002	1629207	76	M23-7ES198A8L23	1628804	146	NBC-FS SCO-IE/.....	1408665	401	NBC-M 8MS/10,0-93B/R4AC	1407355	394
M23-17S1N8A8002S	1629159	76	M23-7ES198A8L23S	1628794	146	NBC-FS-R4AC SCO-IE/.....	1408664	401	NBC-M12FSX/1,0-94F/R4AC	1080733	403
M23-17S1N8A8003	1629206	76	M23-7ES198A8L24	1628803	146	NBC-FS-R4MC SCO-IE/.....	1408662	401	NBC-M12FSX/1,0-94F/R4RC	1080738	403
M23-17S1N8A8003S	1629158	76	M23-7ES198A8L24S	1628793	146	NBC-FS-R4QC SCO-IE/.....	1408660	401	NBC-M12FSX/10,0-94F/R4AC	1080737	403
M23-17S1N8A8004	1629205	76	M23-7ES198A8L25	1628802	146	NBC-FS-R4RC SCO-IE/.....	1408661	401	NBC-M12FSX/10,0-94F/R4RC	1080741	403
M23-17S1N8A8004S	1629157	76	M23-7ES198A8L25S	1628792	146	NBC-FS/1,0-94B/R4AC SCO	1407443	401	NBC-M12FSX/2,0-94F/R4AC	1080734	403
M23-17S1N8A800DU	1629204	76	M23-7ES198A8LDL	1628801	146	NBC-FS/1,0-94B/R4MC SCO	1407451	401	NBC-M12FSX/2,0-94F/R4RC	1080739	403
M23-17S1N8A800DUS	1629156	76	M23-7ES198A8LDLS	1628791	146	NBC-FS/1,0-94B/R4QC SCO	1407459	401	NBC-M12FSX/5,0-94F/R4AC	1080736	403

Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page
NBC-M12MRX/1,0-94F/M12MRX	1080720	403	NBC-MS/ 1,0-94B SCO	1407404	401	NBC-MSD/ 5,0-93E SCO	1407358	399	NBC-R4AC-R4QC-PN4/.....	1411864	397
NBC-M12MRX/10,0-94F	1080719	403	NBC-MS/ 1,0-94B/FS SCO	1407463	401	NBC-MSD/ 5,0-93E/FSD SCO	1407402	399	NBC-R4AC-R4RC-IE4/.....	1411833	398
NBC-M12MRX/5,0-94F/M12MRX	1080723	403	NBC-MS/ 1,0-94B/MS SCO	1407434	401	NBC-MSD/ 5,0-93E/MSD SCO	1407378	399	NBC-R4AC-R4RC-IE8/.....	1411844	400
NBC-M12MRX/2,0-94F	1080717	403	NBC-MS/ 1,0-94B/R4AC SCO	1407414	401	NBC-MSD/ 5,0-93E/R4AC SCO	1407362	399	NBC-R4AC-R4RC-IE8A/.....	1411855	402
NBC-M12MRX/2,0-94F/M12MRX	1080721	403	NBC-MS/ 1,0-94B/R4QC SCO	1407430	401	NBC-MSD/ 5,0-93E/R4MC SCO	1407366	399	NBC-R4AC-R4RC-PN4/.....	1411863	396
NBC-M12MRX/5,0-94F	1080718	403	NBC-MS/ 1,0-94B/R4RC SCO	1407426	401	NBC-MSD/ 5,0-93E/R4QC SCO	1407374	399	NBC-R4AC/0,3-94Z/R4AC	1423032	386
NBC-M12MRX/5,0-94F/M12MRX	1080722	403	NBC-MS/ 2,0-94B SCO	1407405	401	NBC-MSD/ 5,0-93E/R4RC SCO	1407370	399	NBC-R4AC/0,5-94Z/R4AC	1403926	386
NBC-M12MSX/1,0-94F/M12FRX	1080751	403	NBC-MS/ 2,0-94B/FS SCO	1407464	401	NBC-MSD/10,0-93B SCO	1407498	397	NBC-R4AC/1,0-93B/R4AC	1408968	396
NBC-M12MSX/1,0-94F/M12FSX	1080742	403	NBC-MS/ 2,0-94B/MS SCO	1407435	401	NBC-MSD/10,0-93B/FSD SCO	1407556	397	NBC-R4AC/1,0-93E/R4AC	1408933	398
NBC-M12MSX/1,0-94F/M12MRX	1080724	403	NBC-MS/ 2,0-94B/R4AC SCO	1407415	401	NBC-MSD/10,0-93B/MSD SCO	1407527	397	NBC-R4AC/1,0-94B/R4AC	1408950	400
NBC-M12MSX/10,0-94F/M12FRX	1080754	403	NBC-MS/ 2,0-94B/R4MC SCO	1407423	401	NBC-MSD/10,0-93B/R4AC SCO	1407502	397	NBC-R4AC/1,0-94Z/R4AC	1403927	386
NBC-M12MSX/10,0-94F/M12FSX	1080745	403	NBC-MS/ 2,0-94B/R4QC SCO	1407431	401	NBC-MSD/10,0-93B/R4ACR SCO	1407511	397	NBC-R4AC/1,75-94Z/R4AC	1423433	386
NBC-M12MSX/10,0-94F/M12MRX	1080727	403	NBC-MS/ 2,0-94B/R4RC SCO	1407427	401	NBC-MSD/10,0-93B/R4QC SCO	1407523	397	NBC-R4AC/10,0-93B/R4AC	1408971	396
NBC-M12MSX/2,0-94F/M12FRX	1080752	403	NBC-MS/ 5,0-94B SCO	1407406	401	NBC-MSD/10,0-93B/R4RC SCO	1407519	397	NBC-R4AC/10,0-93E/R4AC	1408936	398
NBC-M12MSX/2,0-94F/M12FSX	1080743	403	NBC-MS/ 5,0-94B/FS SCO	1407465	401	NBC-MSD/10,0-93E SCO	1407359	399	NBC-R4AC/10,0-94B/R4AC	1408953	400
NBC-M12MSX/2,0-94F/M12MRX	1080725	403	NBC-MS/ 5,0-94B/MS SCO	1407436	401	NBC-MSD/10,0-93E/FSD SCO	1407403	399	NBC-R4AC/10,0-94Z/R4AC	1403934	386
NBC-M12MSX/5,0-94F/M12FRX	1080753	403	NBC-MS/ 5,0-94B/R4AC SCO	1407416	401	NBC-MSD/10,0-93E/MSD SCO	1407379	399	NBC-R4AC/10G-R4AC/10G-94F/10,0	1408367	402
NBC-M12MSX/5,0-94F/M12FSX	1080744	403	NBC-MS/ 5,0-94B/R4MC SCO	1407424	401	NBC-MSD/10,0-93E/R4AC SCO	1407363	399	NBC-R4AC/10G-R4AC/10G-94F/2,0	1408360	402
NBC-M12MSX/5,0-94F/M12MRX	1080726	403	NBC-MS/ 5,0-94B/R4QC SCO	1407432	401	NBC-MSD/10,0-93E/R4MC SCO	1407367	399	NBC-R4AC/15,0-94Z/R4AC	1410797	386
NBC-M8MRD/1,0-93C	1080526	395	NBC-MS/ 5,0-94B/R4RC SCO	1407428	401	NBC-MSD/10,0-93E/R4QC SCO	1407375	399	NBC-R4AC/2,0-93B/R4AC	1408969	396
NBC-M8MRD/1,0-93C/M8MRD	1080532	395	NBC-MS/10,0-94B SCO	1407407	401	NBC-MSD/10,0-93E/R4RC SCO	1407371	399	NBC-R4AC/2,0-93E/R4AC	1408934	398
NBC-M8MRD/1,0-93C/R4AC	1080531	395	NBC-MS/10,0-94B/FS SCO	1407466	401	NBC-MSX SCO-10G/.....	1408648	403	NBC-R4AC/2,0-94B/R4AC	1408951	400
NBC-M8MRD/10,0-93C	1080531	395	NBC-MS/10,0-94B/MS SCO	1407438	401	NBC-MSX-MSX SCO-10G/.....	1408644	403	NBC-R4AC/2,0-94Z/R4AC	1403929	386
NBC-M8MRD/10,0-93C/M8MRD	1080537	395	NBC-MS/10,0-94B/R4AC SCO	1407417	401	NBC-MSX-R4AC SCO-10G/.....	1408647	403	NBC-R4AC/20,0-94Z/R4AC	1423033	386
NBC-M8MRD/10,0-93C/R4AC	1080546	395	NBC-MS/10,0-94B/R4MC SCO	1407425	401	NBC-MSX-R4QC SCO-10G/.....	1408645	403	NBC-R4AC/3,0-94Z/R4AC	1403930	386
NBC-M8MRD/2,0-93C	1080528	395	NBC-MS/10,0-94B/R4RC SCO	1407433	401	NBC-MSX-R4RC SCO-10G/.....	1408646	403	NBC-R4AC/5,0-93B/R4AC	1408970	396
NBC-M8MRD/2,0-93C/M8MRD	1080535	395	NBC-MS/10,0-94B/R4RC SCO	1407429	401	NBC-MSX/ 1,0-94F SCO	1407467	403	NBC-R4AC/5,0-93E/R4AC	1408935	398
NBC-M8MRD/2,0-93C/R4AC	1080544	395	NBC-MSD SCO-PN/.....	1408640	397	NBC-MSX/ 1,0-94F/MSX SCO	1407483	403	NBC-R4AC/5,0-94B/R4AC	1408952	400
NBC-M8MRD/5,0-93C	1080530	395	NBC-MSD SCO/.....	1408713	399	NBC-MSX/ 1,0-94F/R4AC SCO	1407471	403	NBC-R4AC/5,0-94Z/R4AC	1403933	386
NBC-M8MRD/5,0-93C/M8MRD	1080536	395	NBC-MSD-FRD SCO-PN/.....	1408608	397	NBC-MSX/ 1,0-94F/R4QC SCO	1407479	403	NBC-R4AC/10,3-94G/R4AC1-BU	1413158	387
NBC-M8MRD/5,0-93C/R4AC	1080545	395	NBC-MSD-FRD SCO/.....	1408684	399	NBC-MSX/ 1,0-94F/R4RC SCO	1407475	403	NBC-R4AC/10,3-94G/R4AC1-RD	1421138	387
NBC-M8MSD/1,0-93C	1423703	395	NBC-MSD-FSD SCO-PN/.....	1408617	397	NBC-MSX/ 2,0-94F SCO	1407468	403	NBC-R4AC/10,3-94G/R4AC1-YE	1421168	387
NBC-M8MSD/1,0-93C/M8MSD	1423707	395	NBC-MSD-FSD SCO/.....	1408692	399	NBC-MSX/ 2,0-94F/MSX SCO	1407484	403	NBC-R4AC/10,5-94G/R4AC1-BU	1413159	387
NBC-M8MSD/1,0-93C/R4AC	1423711	395	NBC-MSD-MRD SCO-PN/.....	1408625	397	NBC-MSX/ 2,0-94F/R4AC SCO	1407472	403	NBC-R4AC/10,5-94G/R4AC1-RD	1421139	387
NBC-M8MSD/2,0-93C	1423704	395	NBC-MSD-MRD SCO/.....	1408700	399	NBC-MSX/ 2,0-94F/R4QC SCO	1407480	403	NBC-R4AC/10,5-94G/R4AC1-YE	1421169	387
NBC-M8MSD/2,0-93C/M8MSD	1423708	395	NBC-MSD-MSD SCO-PN/.....	1408634	397	NBC-MSX/ 2,0-94F/R4RC SCO	1407476	403	NBC-R4AC/11,0-94G/R4AC1-BU	1413160	387
NBC-M8MSD/2,0-93C/R4AC	1423712	395	NBC-MSD-MSD SCO/.....	1408706	399	NBC-MSX/ 2,0-94S SCO RAIL	1415599	404	NBC-R4AC/11,0-94G/R4AC1-RD	1421140	387
NBC-M8MSD/5,0-93C	1423705	395	NBC-MSD-R4AC SCO-PN/.....	1408639	397	NBC-MSX/ 2,0-94S/MSX SCO RAIL	1415595	404	NBC-R4AC/11,0-94G/R4AC1-YE	1421170	387
NBC-M8MSD/5,0-93C/M8MSD	1423709	395	NBC-MSD-R4AC SCO/.....	1408712	399	NBC-MSX/ 5,0-94F SCO	1407469	403	NBC-R4AC/11,0-94G/R4AC1-BU	1413164	387
NBC-M8MSD/5,0-93C/R4AC	1423713	395	NBC-MSD-R4ACR SCO-PN/.....	1408638	397	NBC-MSX/ 5,0-94F/MSX SCO	1407485	403	NBC-R4AC/11,0-94G/R4AC1-RD	1421145	387
NBC-M8MSD/1,0-93C/M8MRD	1080538	395	NBC-MSD-R4MC SCO/.....	1408710	399	NBC-MSX/ 5,0-94F/R4AC SCO	1407473	403	NBC-R4AC/11,0-94G/R4AC1-YE	1421174	387
NBC-M8MSD/10,0-93C	1423706	395	NBC-MSD-R4QC SCO-PN/.....	1408635	397	NBC-MSX/ 5,0-94F/R4QC SCO	1407481	403	NBC-R4AC/115,0-94G/R4AC1-BU	1413165	387
NBC-M8MSD/10,0-93C/M8MRD	1080542	395	NBC-MSD-R4QC SCO/.....	1408707	399	NBC-MSX/ 5,0-94F/R4RC SCO	1407477	403	NBC-R4AC/115,0-94G/R4AC1-RD	1421146	387
NBC-M8MSD/10,0-93C/M8MSD	1423710	395	NBC-MSD-R4RC SCO-PN/.....	1408636	397	NBC-MSX/ 5,0-94S SCO RAIL	1415600	404	NBC-R4AC/115,0-94G/R4AC1-YE	1421175	387
NBC-M8MSD/10,0-93C/R4AC	1423714	395	NBC-MSD-R4RC SCO/.....	1408709	399	NBC-MSX/ 5,0-94S/MSX SCO RAIL	1415598	404	NBC-R4AC/12,0-94G/R4AC1-BU	1413161	387
NBC-M8MSD/2,0-93C/M8MRD	1080539	395	NBC-MSD/ 1,0-93B SCO	1407495	397	NBC-MSX/ 5,0-94F SCO	1407470	403	NBC-R4AC/12,0-94G/R4AC1-RD	1421141	387
NBC-M8MSD/5,0-93C/M8MRD	1080540	395	NBC-MSD/ 1,0-93B/FSD SCO	1407553	397	NBC-MSX/ 5,0-94F/MSX SCO	1407486	403	NBC-R4AC/12,0-94G/R4AC1-YE	1421171	387
NBC-MR SCO-IE/.....	1408675	401	NBC-MSD/ 1,0-93B/MSD SCO	1407524	397	NBC-MSX/10,0-94F/R4AC SCO	1407474	403	NBC-R4AC/120,0-94G/R4AC1-BU	1413166	387
NBC-MR-FR SCO-IE/.....	1408649	401	NBC-MSD/ 1,0-93B/R4AC SCO	1407499	397	NBC-MSX/10,0-94F/R4QC SCO	1407482	403	NBC-R4AC/120,0-94G/R4AC1-RD	1421147	387
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			QPD C 3PE1,5 1X8-13 BK	1414697	475	QPD T 3PE1,5 3X8-13 BK	1414710	473	QPD W3PE2,5 M25 DT BK	1423985	486
			QPD C 3PE1,5 2X4-9 BK	1414696	475	QPD T 4PE 2X6-11 BK	1405403	482	QPD W3PE2,5 M25 FC BK	1423986	485
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PROT-M 8 MS-PA-CHAIN	1430860	55	QPD C 4PE6,0 1X9-14 BK	1410415	491	QPD T 4PE6,0 3X9-14 BK	1411414	490	RC-12P2000	1597862	78
PROT-M 8 MS-PA-CHAIN-EYE	1441095	55	QPD C 4PE6,0 2X12-20 BK	1410412	491	QPD T3PE2,5 2X6-10 BK	1424047	482	RC-12S2000	1599600	78
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PROT-M12 FS-M-CHAIN	1430491	55	QPD H 2PE1,5 4X4-9 BK	1414719	472	QPD W 2PE1,5 4-9 M20 FC BK	1414686	478	RC-15P2100	1623780	105
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PROT-M12 SH	1503302	54	QPD H 3PE1,5 4X8-13 BK	1414716	472	QPD W 2PE1,5 M20 0,5 BK	1414690	477	RC-22P2000	1603321	78
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PSM-LWL-HCS-RUGGED-200/230	2799885	412	QPD N 2PE1,5 4-9 BK	1415099	472	QPD W 4PE1,5 5-10 M25 FC BK	1414732	478	RC-Z2104	1604260	182
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RCK-TWGM/BL 16+3/10,0PUR SH	1511828	314	SAC-5,0/0,15-116/2XB1-1L-Z	1458402	243	SAC-17P-3,0-PUR/FR SCO	1430828	212	SAC-2P-M12MSB/2,0-910/M12FSB	1507379	429
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REDUC-K-KV-M32/M20 BK	1410725	700	SAC-5,0/0,2-116/2XB-1L-Z	1458266	243	SAC-17P-3,0-PVC/FR SCO	1555392	213	SAC-2P-M12MSB/5,0-910/M12FSB	1507382	429
REDUC-K-KV-M32/M25 BK	1410712	700	SAC-5,0/0,2-116/2XB1-1L-Z	1458444	243	SAC-17P-3,0-PVC/FS SCO	1555350	213	SAC-2P-M12MSB/10,0-910	1507269	429
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REDUC-K-KV-M40/M32 BK	1410738	700	SAC-10,0/0,1-116/2XB-1L-Z	1458198	243	SAC-17P-5,0-35T/FS SH SCO	1430307	215	SAC-2P-M12MSB/15,0-910	1507272	429
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REDUC-M-KV-M25/M20	1647624	700	SAC-10,0/0,15-116/2XA-1L-Z	1458059	243	SAC-17P-5,0-PUR/FS SCO	1430792	212	SAC-2P-M12MSB/910/...	1538047	429
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SAC BIT M12-W14	1212513	57	SAC-12P-MR/5,0-PVC SCO	1554830	213	SAC-2P-5,0-PUR/DTFS	1410726	244	SAC-3P-1,5-PUR/M12FS-2L	1694185	188
SAC BIT M8-D10	1208461	306	SAC-12P-MR/10,0-35T SH SCO	1430116	214	SAC-2P-5,0-PUR/DTFS-1L	1410730	245	SAC-3P-1,5-PVC/A	1415920	239
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SAC-3P-3,0-PUR/A-1L-R-ES 4A	1401131	235	SAC-3P-5,0-PUR/M 8SIFR	1519891	186	SAC-3P-10,0-PVC/B-1L-V	1415928	231	SAC-3P-M 8MR/1,5-PUR/M 8FR	1682087	188
SAC-3P-3,0-PUR/A-1L-V	1443116	230	SAC-3P-5,0-PUR/M 8SIFS	1519875	186	SAC-3P-10,0-PVC/B-1L-Z	1400610	229	SAC-3P-M 8MR/1,5-PUR/M12FR-2L	1682485	188
SAC-3P-3,0-PUR/A-1L-V 230V	1400694	232	SAC-3P-5,0-PUR/M12FR	1694525	188	SAC-3P-10,0-PVC/BI-1L-V	1415934	231	SAC-3P-M 8MR/1,5-PVC/M 8FR	1415893	190
SAC-3P-3,0-PUR/A-1L-Z	1434992	228	SAC-3P-5,0-PUR/M12FR B	1668218	188	SAC-3P-10,0-PVC/BI-1L-Z	1400607	229	SAC-3P-M 8MR/3,0-PUR SH	1521672	193
SAC-3P-3,0-PUR/B-1L-R-ES	1401295	234	SAC-3P-5,0-PUR/M12FR SH	1682838	193	SAC-3P-10,0-PVC/C-1L-V	1415938	231	SAC-3P-M 8MR/3,0-PUR/M 8FR	1682090	188
SAC-3P-3,0-PUR/B-1L-V	1443158	230	SAC-3P-5,0-PUR/M12FS	1694415	188	SAC-3P-10,0-PVC/C-1L-Z	1439531	229	SAC-3P-M 8MR/0,3-PUR/M12FR-2L	1682498	188
SAC-3P-3,0-PUR/B-1L-Z	1435399	228	SAC-3P-5,0-PUR/M12FR-2L B	1668276	188	SAC-3P-10,0-PVC/CI-1L-V	1415944	231	SAC-3P-M 8MR/3,0-PVC/M 8FR	1415894	190
SAC-3P-3,0-PUR/BI-1L-R-ES	1401350	234	SAC-3P-5,0-PUR/M12FS	1683510	188	SAC-3P-10,0-PVC/CI-1L-Z	1400605	229	SAC-3P-M 8MR/5,0-PUR SH	1521685	193
SAC-3P-3,0-PUR/BI-1L-V	1443190	230	SAC-3P-5,0-PUR/M12FS B	1668098	188	SAC-3P-10,0-PVC/M 8FR	1403773	190	SAC-3P-M 8MR/.../...	1697551	188
SAC-3P-3,0-PUR/BI-1L-Z	1435247	228	SAC-3P-5,0-PUR/M12FS SH	1682809	193	SAC-3P-10,0-PVC/M 8FR-2L	1415876	190	SAC-3P-M 8MR/0,3-PUR/M 8FR-2L	1682100	188
SAC-3P-3,0-PUR/C-1L-R-ES	1401435	234	SAC-3P-5,0-PUR/M12FS-2L	1694787	188	SAC-3P-10,0-PVC/M 8FS	1506532	190	SAC-3P-M 8MR/0,3-PUR/M 8FS	1682029	188
SAC-3P-3,0-PUR/C-1L-V	1443239	230	SAC-3P-5,0-PVC/A	1402977	239	SAC-3P-10,0-PVC/M12FR	1453821	190	SAC-3P-M 8MR/0,3-PUR/M12FR	1682427	188
SAC-3P-3,0-PUR/C-1L-Z	1435548	228	SAC-3P-5,0-PVC/A-1L-R	1415918	237	SAC-3P-10,0-PVC/M12FR-2L	1414575	190	SAC-3P-M 8MR/0,3-PUR/M12FS	1682388	188
SAC-3P-3,0-PUR/CI-1L-R-ES	1401542	234	SAC-3P-5,0-PVC/A-1L-Z	1415910	231	SAC-3P-10,0-PVC/M12FRS PE	1411651	288	SAC-3P-M 8MR/0,3-PVC/M 8FR-2L	1415901	190
SAC-3P-3,0-PUR/CI-1L-V	1443271	230	SAC-3P-5,0-PVC/A-1L-Z	1439502	229	SAC-3P-10,0-PVC/M12FS	1403486	190	SAC-3P-M 8MR/0,3-PVC/M 8FS	1415881	190
SAC-3P-3,0-PUR/CI-1L-Z	1435690	228	SAC-3P-5,0-PVC/B-1L-V	1415927	231	SAC-3P-10,0-PVC/M12FS-2L	1414565	190	SAC-3P-M 8MR/0,6-PUR/M 8FR-2L	1682113	188
SAC-3P-3,0-PUR/DTFS	1414996	244	SAC-3P-5,0-PVC/B-1L-Z	1415924	229	SAC-3P-10,0-PVC/M12FSS PE	1411647	288	SAC-3P-M 8MR/0,6-PUR/M 8FS	1682032	188
SAC-3P-3,0-PUR/M 8FR	1669741	188	SAC-3P-5,0-PVC/BI-1L-V	1415933	231	SAC-3P-100,0-PVC/0,5	1457432	304	SAC-3P-M 8MR/0,6-PUR/M12FR	1682430	188
SAC-3P-3,0-PUR/M 8FR SH	1521779	193	SAC-3P-5,0-PVC/BI-1L-Z	1415930	229	SAC-3P-100,0-PUR/0,25	1501689	302	SAC-3P-M 8MR/0,6-PUR/M12FS	1682391	188
SAC-3P-3,0-PUR/M 8FR-2L	1671072	188	SAC-3P-5,0-PVC/C-1L-V	1415937	231	SAC-3P-100,0-PUR/0,34	1501650	302	SAC-3P-M 8MR/0,6-PVC/M 8FR-2L	1415902	190
SAC-3P-3,0-PUR/M 8FS	1669725	188	SAC-3P-5,0-PVC/C-1L-Z	1439528	229	SAC-3P-100,0-PUR/0,5	1457393	304	SAC-3P-M 8MR/0,6-PVC/M 8FS	1415882	190
SAC-3P-3,0-PUR/M 8FS SH	1521724	193	SAC-3P-5,0-PVC/CI-1L-V	1415943	231	SAC-3P-100,0-PUR/SH-0,25	1526525	303	SAC-3P-M 8MR/1,5-PUR	1681693	188
SAC-3P-3,0-PUR/M12FR	1694512	188	SAC-3P-5,0-PVC/CI-1L-Z	1415940	229	SAC-3P-100,0-PUR/SH-0,34	1501702	303	SAC-3P-M 8MR/1,5-PUR/M 8FR-2L	1682126	188
SAC-3P-3,0-PUR/M12FR B	1668205	188	SAC-3P-5,0-PVC/M 8FR	1403253	190	SAC-3P-100,0-PVC/0,25	1501854	302	SAC-3P-M 8MR/1,5-PUR/M 8FS	1682045	188
SAC-3P-3,0-PUR/M12FR SH	1682825	193	SAC-3P-5,0-PVC/M 8FR-2L	1508174	190	SAC-3P-100,0-PVC/0,34	1501825	302	SAC-3P-M 8MR/1,5-PUR/M12FR	1682443	188
SAC-3P-3,0-PUR/M12FR-2L	1694402	188	SAC-3P-5,0-PVC/M 8FS	1510748	190	SAC-3P-100,0-PVC/SH-0,34	1550656	303	SAC-3P-M 8MR/1,5-PUR/M12FS	1682401	188
SAC-3P-3,0-PUR/M12FR-2L B	1668263	188	SAC-3P-5,0-PVC/M12FR	1579051	190	SAC-3P-15,0-961/M12FR VA	1419090	430	SAC-3P-M 8MR/1,5-PVC	1415865	190
SAC-3P-3,0-PUR/M12FS	1694499	188	SAC-3P-5,0-PVC/M12FR-2L	1505326	190	SAC-3P-15,0-961/M12FS VA	1419085	430	SAC-3P-M 8MR/1,5-PUR/M 8FR-2L	1415903	190
SAC-3P-3,0-PUR/M12FS B	1668085	188	SAC-3P-5,0-PVC/M12FRS PE	1411650	288	SAC-3P-20,0-961/M12FR VA	1419091	430	SAC-3P-M 8MR/1,5-PVC/M 8FS	1415883	190
SAC-3P-3,0-PUR/M12FS SH	1682799	193	SAC-3P-5,0-PVC/M12FS	1400505	190	SAC-3P-20,0-961/M12FS VA	1419086	430	SAC-3P-M 8MR/10,0-PUR	1694114	188
SAC-3P-3,0-PUR/M12FS-2L	1694198	188	SAC-3P-5,0-PVC/M12FS-2L	1508459	190	SAC-3P-3,0-PUR/A-1L-R	1400588	236	SAC-3P-M 8MR/10,0-PUR SH	1521698	193
SAC-3P-3,0-PVC/A	1415921	239	SAC-3P-5,0-PVC/M12FSS PE	1411646	288	SAC-3P-3,0-PVC/A-1L-R	1415917	237	SAC-3P-M 8MR/10,0-PVC	1415869	190
SAC-3P-3,0-PVC/A-1L-V	1415909	231	SAC-3P-1,5-PUR/A-1L-R	1400589	236	SAC-3P-5,0-PUR/A-1L-V 230V	1400648	232	SAC-3P-M 8MR/3,0-PUR	1681703	188
SAC-3P-3,0-PVC/A-1L-V 230V	1415913	233	SAC-3P-1,5-PVC/A-1L-R	1415916	237	SAC-3P-5,0-PUR/C	1400814	238	SAC-3P-M 8MR/3,0-PUR/M 8FR-2L	1682139	188
SAC-3P-3,0-PVC/A-1L-Z	1415905	229	SAC-3P-10,0-800/M12FR	1454299	192	SAC-3P-5,0-PVC/A-1L-V 230V	1415914	233	SAC-3P-M 8MR/3,0-PUR/M 8FS	1682058	188
SAC-3P-3,0-PVC/B-1L-V	1415926	231	SAC-3P-10,0-800/M12FR-2L	1454341	192	SAC-3P-A-1L-R/.../...	1417832	236	SAC-3P-M 8MR/3,0-PUR/M12FR	1682456	188
SAC-3P-3,0-PVC/B-1L-Z	1415923	229	SAC-3P-10,0-800/M12FS	1456705	192	SAC-3P-A-1L-V/.../...	1400876	230	SAC-3P-M 8MR/3,0-PUR/M12FS	1682414	188
SAC-3P-3,0-PVC/BI-1L-V	1415932	231	SAC-3P-10,0-961/M12FR VA	1419089	430	SAC-3P-A-1L-Z/.../...	1435027	228	SAC-3P-M 8MR/3,0-PVC	1415866	190
SAC-3P-3,0-PVC/BI-1L-Z	1400609	229	SAC-3P-10,0-961/M12FS VA	1419084	430	SAC-3P-A/.../...	1400897	238	SAC-3P-M 8MR/3,0-PVC/M 8FR-2L	1415904	190
SAC-3P-3,0-PVC/C-1L-V	1415936	231	SAC-3P-10,0-PUR/A	1400732	238	SAC-3P-B-1L-V/.../...	1400882	230	SAC-3P-M 8MR/3,0-PVC/M 8FS	1415884	190
SAC-3P-3,0-PVC/C-1L-Z	1439515	229	SAC-3P-10,0-PUR/A-1L-R	1400799	236	SAC-3P-B-1L-Z/.../...	1435425	228	SAC-3P-M 8MR/5,0-PUR	1681716	188
SAC-3P-3,0-PVC/CI-1L-V	1415942	231	SAC-3P-10,0-PUR/A-1L-R-ES	1413118	234	SAC-3P-B/.../...	1400909	238	SAC-3P-M 8MR/5,0-PVC	1415867	190
SAC-3P-3,0-PVC/CI-1L-Z	1415939	229	SAC-3P-10,0-PUR/A-1L-R-ES 4A	1401168	235	SAC-3P-BI-1L-V/.../...	1400879	230	SAC-3P-M 8MR/5,0-PVC	1521656	193
SAC-3P-3,0-PVC/M 8FR	1446320	190	SAC-3P-10,0-PUR/A-1L-V	1443132	230	SAC-3P-BI-1L-Z/.../...	1435276	228	SAC-3P-M 8MR/5,0-PUR SH/.../...	1552065	193
SAC-3P-3,0-PVC/M 8FR-2L	1415875	190	SAC-3P-10,0-PUR/A-1L-V 230V	1402986	232	SAC-3P-BI/.../...	1400902	238	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697658	188
SAC-3P-3,0-PVC/M 8FS	1415871	190	SAC-3P-10,0-PUR/A-1L-Z	1435014	228	SAC-3P-C-1L-V/.../...	1400894	230	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697645	188
SAC-3P-3,0-PVC/M12FR	1414553	190	SAC-3P-10,0-PUR/B-1L-R-ES	1401339	234	SAC-3P-C-1L-Z/.../...	1435726	228	SAC-3P-M 8MR/5,0-PUR SH/.../...	1552052	193
SAC-3P-3,0-PVC/M12FR-2L	1414573	190	SAC-3P-10,0-PUR/B-1L-V	1443174	230	SAC-3P-C/.../...	1400921	238	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697632	188
SAC-3P-3,0-PVC/M12FS	1414452	190	SAC-3P-10,0-PUR/B-1L-Z	1435412	228	SAC-3P-CI-1L-V/.../...	1400891	230	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697713	188
SAC-3P-3,0-PVC/M12FS-2L	1414561	190	SAC-3P-10,0-PUR/BI	1438862	238	SAC-3P-CI-1L-Z/.../...	1435577	228	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697700	188
SAC-3P-3,0-800/M12FR	1454273	192	SAC-3P-10,0-PUR/BI-1L-R-ES	1401359	234	SAC-3P-CI/.../...	1400918	238	SAC-3P-M 8MR/5,0-PUR SH/.../...	1519749	254
SAC-3P-3,0-800/M12FR-2L	1454325	192	SAC-3P-10,0-PUR/BI-1L-V	1443213	230	SAC-3P-DTMS/0,3-PUR/DTFS	1415003	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1514197	188
SAC-3P-5,0-800/M12FS	1456695	192	SAC-3P-10,0-PUR/BI-1L-Z	1435263	228	SAC-3P-DTMS/0,6-PUR/DTFS	1415004	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1697690	188
SAC-3P-5,0-961/M12FR VA	1419088	430	SAC-3P-10,0-PUR/C	1400641	238	SAC-3P-DTMS/1,5-PUR	1414999	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1681907	188
SAC-3P-5,0-961/M12FS VA	1419083	430	SAC-3P-10,0-PUR/C-1L-R-ES	1401465	234	SAC-3P-DTMS/1,5-PUR/DTFS	1415005	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1456310	193
SAC-3P-5,0-PUR/A	1402984	238	SAC-3P-10,0-PUR/C-1L-V	1443255	230	SAC-3P-DTMS/3,0-PUR	1415000	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1693351	188
SAC-3P-5,0-PUR/A-1L-R	1400798	236	SAC-3P-10,0-PUR/CI-1L-Z	1435564	228	SAC-3P-DTMS/3,0-PUR/DTFS	1415006	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1415877	190
SAC-3P-5,0-PUR/A-1L-R-ES	1413116	234	SAC-3P-10,0-PUR/CI-1L-R-ES	1401617	234	SAC-3P-DTMS/5,0-PUR	1415001	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1681910	188
SAC-3P-5,0-PUR/A-1L-R-ES 4A	1401136	235	SAC-3P-10,0-PUR/CI-1L-V	1443297	230	SAC-3P-DTMS/10,0-PUR	1415002	244	SAC-3P-M 8MR/5,0-PUR SH/.../...	1456323	193
SAC-3P-5,0-PUR/A-1L-V	1443129	230	SAC-3P-10,0-PUR/CI-1L-Z	1435713	228	SAC-3P-M 8FR SH/.../...	1521805	193	SAC-3P-M 8MR/5,0-PUR SH/.../...	1693364	188
SAC-3P-5,0-PUR/A-1L-Z	1435001	228	SAC-3P-10,0-PUR/DTFS	1414998	244	SAC-3P-M 8FR-2L/.../...	1697616	188	SAC-3P-M 8MR/5,0-PUR SH/.../...	1415878	190
SAC-3P-5,0-PUR/BI-1L-R-ES	1401338	234	SAC-3P-10,0-PUR/M 8FR	1694169	188	SAC-3P-M 8FR/.../...	1697603	188	SAC-3P-M 8MR/5,0-PUR SH/.../...	1521614	193
SAC-3P-5,0-PUR/BI-1L-V	1443161	230	SAC-3P-10,0-PUR/M 8FR SH	1521795	193	SAC-3P-M 8FS SH/.../...	1521753	193	SAC-3P-M 8MR/5,0-PUR SH/.../...	1681923	188
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SAC-3P-M 8MS/0,3-PUR/M 8FR	1681949	188	SAC-3P-M12MR/0,3-PVC/M 8FR	1415538	190	SAC-3P-M12MS/0,6-PUR/M12FR SH	1500936	193	SAC-3P-M12MS/20,0-961/M12FR VA	1419125	430
SAC-3P-M 8MS/0,3-PUR/M 8FR-2L	1681981	188	SAC-3P-M12MR/0,3-PVC/M 8FS	1415534	190	SAC-3P-M12MS/0,6-PUR/M12FR-2L	1694567	188	SAC-3P-M12MS/20,0-961/M12FS VA	1419109	430
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SAC-3P-M 8MS/0,3-PVC/M 8FR	1415886	190	SAC-3P-M12MR/0,6-PUR/M12FR B	1668645	188	SAC-3P-M12MS/0,6-PVC/M12FR-2L	1415522	190	SAC-3P-M12MS/3,0-PUR/M 8FR-2L	1694910	188
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SAC-3P-M 8MS/0,6-PUR/M 8FR-2L	1681994	188	SAC-3P-M12MR/0,6-PVC/M 8FS	1415535	190	SAC-3P-M12MS/1,5-800	1456734	192	SAC-3P-M12MS/3,0-PUR/M12FS	1681538	188
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SAC-3P-M 8MS/0,6-PVC/M 8FR-2L	1415897	190	SAC-3P-M12MR/1,5-PUR/M12FR B	1668658	188	SAC-3P-M12MS/1,5-PUR SH	1682650	193	SAC-3P-M12MS/3,0-PVC/M 8FS	1415529	190
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SAC-3P-M 8MS/3,0-PVC/M 8FR-2L	1415899	190	SAC-3P-M12MR/3,0-PUR/M 8FR	1668946	188	SAC-3P-M12MS/3,0-PUR/M12FR-2L	1694583	188	SAC-3P-M12Y/2X0,3-PUR/M12FS B	1671412	250
SAC-3P-M 8MS/5,0-PUR	1681680	188	SAC-3P-M12MR/3,0-PUR/M 8FS	1668904	188	SAC-3P-M12MS/3,0-PUR/M12FS SH	1500839	193	SAC-3P-M12Y/2X0,3-PUR/M 8FS	1671331	250
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SAC-3P-MR/0,6-PUR/C-1L-Z SCO	1435632	228	SAC-4P-1,5-PUR/M 8FR	1681871	194	SAC-4P-5,0-PUR/M12FR-3L	1668302	194	SAC-4P-DTMS/3,0-PUR/DTFS	1415025	244
SAC-3P-MR/0,6-PUR/A-1L-Z SCO	1434947	228	SAC-4P-1,5-PUR/M 8FR SH	1521960	199	SAC-4P-5,0-PUR/M12FRL	1425079	296	SAC-4P-DTMS/5,0-PUR	1415014	244
SAC-3P-MR/0,6-PUR/B-1L-Z SCO	1435344	228	SAC-4P-1,5-PUR/M 8FS	1681842	194	SAC-4P-5,0-PUR/M12FRS PE	1408853	289	SAC-4P-DTMS/10,0-PUR	1415015	244
SAC-3P-MR/0,6-PUR/BI-1L-Z SCO	1435195	228	SAC-4P-1,5-PUR/M 8FS SH	1521915	199	SAC-4P-5,0-PUR/M12FRS PE SH	1424102	289	SAC-4P-M 8FR SH/.....	1522008	199
SAC-3P-MR/0,6-PUR/C-1L-Z SCO	1435496	228	SAC-4P-1,5-PUR/M12FR	1668221	194	SAC-4P-5,0-PUR/M12FR-3L	1408829	290	SAC-4P-M 8FR-2L/.....	1517673	194
SAC-3P-MR/0,6-PUR/CI-1L-Z SCO	1435645	228	SAC-4P-1,5-PUR/M12FR SH	1682906	199	SAC-4P-5,0-PUR/M12FRT SH	1424118	290	SAC-4P-M 8FR/.....	1697784	199
SAC-3P-MR/1,5-PUR/A-1L-Z SCO	1434950	228	SAC-4P-1,5-PUR/M12FR-3L	1668289	194	SAC-4P-5,0-PUR/M12FSS	1668124	194	SAC-4P-M 8FS SH/.....	1521957	199
SAC-3P-MR/1,5-PUR/B-1L-Z SCO	1435357	228	SAC-4P-1,5-PUR/M12FRL	1425077	296	SAC-4P-5,0-PUR/M12FS SH	1682867	199	SAC-4P-M 8FS/.....	1697771	194
SAC-3P-MR/1,5-PUR/BI-1L-Z SCO	1435205	228	SAC-4P-1,5-PUR/M12FRS PE SH	1424100	289	SAC-4P-5,0-PUR/M12FS-2L	1694826	194	SAC-4P-M 8MR SH/.....	1521902	199
SAC-3P-MR/1,5-PUR/CI-1L-Z SCO	1435056	228	SAC-4P-1,5-PUR/M12FRT SH	1424116	290	SAC-4P-5,0-PUR/M12FSL	1425075	296	SAC-4P-M 8MR-M 8FR SH/.....	1552120	194
SAC-3P-MR/1,5-PUR/CI-1L-Z SCO	1435658	228	SAC-4P-1,5-PUR/M12FS	1668108	194	SAC-4P-5,0-PUR/M12FSS PE	1408845	289	SAC-4P-M 8MR-M 8FR/.....	1697823	199
SAC-3P-MR/3,0-PUR/A-1L-Z SCO	1434963	228	SAC-4P-1,5-PUR/M12FS SH	1682841	199	SAC-4P-5,0-PUR/M12FSS PE SH	1424098	289	SAC-4P-M 8MR-M 8FS/.....	1697810	194
SAC-3P-MR/3,0-PUR/B-1L-Z SCO	1435360	228	SAC-4P-1,5-PUR/M12FS-2L	1694800	194	SAC-4P-5,0-PUR/M12FST	1408825	290	SAC-4P-M 8MR-M12FR/.....	1697836	194
SAC-3P-MR/3,0-PUR/BI-1L-Z SCO	1435218	228	SAC-4P-1,5-PUR/M12FSL	1425073	296	SAC-4P-5,0-PVC/M 8FR	1403254	196	SAC-4P-M 8MR/1,5-PUR SH	1521863	199
SAC-3P-MR/3,0-PUR/CI-1L-Z SCO	1435519	228	SAC-4P-1,5-PUR/M12FSS PE SH	1424096	289	SAC-4P-5,0-PVC/M 8FS	1403252	196	SAC-4P-M 8MR/3,0-PUR SH	1521876	199
SAC-3P-MR/3,0-PUR/CI-1L-Z SCO	1435661	228	SAC-4P-1,5-PVC/M 8FR	1415552	196	SAC-4P-5,0-PVC/M12FR	1693539	196	SAC-4P-M 8MR/5,0-PUR SH	1521889	199
SAC-3P-MR/A-1L-Z SCO	1458538	256	SAC-4P-1,5-PVC/M 8FS	1415550	196	SAC-4P-5,0-PVC/M12FR-3L	1404961	196	SAC-4P-M 8MR/.....	1697768	194
SAC-3P-MR/B-1L-Z SCO	1458554	257	SAC-4P-1,5-PVC/M12FR	1415606	196	SAC-4P-5,0-PVC/M12FRL	1425099	297	SAC-4P-M 8MR/0,3-PUR/M 8FR	1682265	194
SAC-3P-MR/BI-1L-Z SCO	1458570	257	SAC-4P-1,5-PVC/M12FR-3L	1415609	196	SAC-4P-5,0-PVC/M12FS	1404408	196	SAC-4P-M 8MR/0,3-PUR/M 8FS	1682223	194
SAC-3P-MS-A SCO/.....	1400895	238	SAC-4P-1,5-PVC/M12FRL	1425097	297	SAC-4P-5,0-PVC/M12FS-2L	1415602	196	SAC-4P-M 8MR/0,3-PVC/M 8FR	1415580	196
SAC-3P-MS-A-1L-R SCO/.....	1417833	236	SAC-4P-1,5-PVC/M12FS	1544976	196	SAC-4P-5,0-PVC/M12FSL	1425095	297	SAC-4P-M 8MR/0,3-PVC/M 8FS	1415576	196
SAC-3P-MS-A-1L-V SCO/.....	1400874	230	SAC-4P-1,5-PVC/M12FS-2L	1415596	196	SAC-4P-1,5-PUR/M12FST SH	1424112	290	SAC-4P-M 8MR/0,6-PUR/M 8FR	1682278	194
SAC-3P-MS-A-1L-Z SCO/.....	1434921	228	SAC-4P-1,5-PVC/M12FSL	1425093	297	SAC-4P-10,0-105/M12FRL	1425040	296	SAC-4P-M 8MR/0,6-PUR/M 8FS	1682236	194
SAC-3P-MS-B SCO/.....	1400903	238	SAC-4P-2,0-110/M12FRT	1089981	291	SAC-4P-10,0-105/M12FSL	1425036	296	SAC-4P-M 8MR/0,6-PVC/M 8FR	1415581	196
SAC-3P-MS-B-1L-V SCO/.....	1400880	230	SAC-4P-2,0-110/M12FST	1089971	291	SAC-4P-10,0-110/M12FRL	1425060	297	SAC-4P-M 8MR/0,6-PVC/M 8FS	1415577	196
SAC-3P-MS-B-1L-Z SCO/.....	1435328	228	SAC-4P-2,0-186/M12FS	1509487	440	SAC-4P-10,0-110/M12FRT	1089987	291	SAC-4P-M 8MR/1,5-PUR	1681813	194
SAC-3P-MS-BI SCO/.....	1400900	238	SAC-4P-2,0-960/M12FS VA	1431212	435	SAC-4P-10,0-110/M12FSL	1425056	297	SAC-4P-M 8MR/1,5-PUR/M 8FR	1682281	194
SAC-3P-MS-BI-1L-V SCO/.....	1400877	230	SAC-4P-2,0-PUR/M12FRS PE	1408852	289	SAC-4P-10,0-110/M12FST	1089973	291	SAC-4P-M 8MR/1,5-PUR/M 8FS	1682249	194
SAC-3P-MS-BI-1L-Z SCO/.....	1435179	228	SAC-4P-2,0-PUR/M12FRT	1408828	290	SAC-4P-10,0-186/M12FS	1509500	440	SAC-4P-M 8MR/1,5-PVC	1415546	196
SAC-3P-MS-C SCO/.....	1400919	238	SAC-4P-2,0-PUR/M12FSS PE	1408844	289	SAC-4P-10,0-800/M12FR	1456983	198	SAC-4P-M 8MR/1,5-PVC/M 8FR	1415582	196
SAC-3P-MS-C-1L-V SCO/.....	1400892	230	SAC-4P-2,0-PUR/M12FST	1408824	290	SAC-4P-10,0-800/M12FR-3L	1567364	198	SAC-4P-M 8MR/1,5-PVC/M 8FS	1415578	196
SAC-3P-MS-C-1L-Z SCO/.....	1435629	228	SAC-4P-3,0-105/M12FRL	1425038	296	SAC-4P-10,0-800/M12FS	1567335	198	SAC-4P-M 8MR/10,0-PUR	1694156	194
SAC-3P-MS-CI SCO/.....	1400916	238	SAC-4P-3,0-105/M12FSL	1425034	296	SAC-4P-10,0-960/M12FS VA	1431238	435	SAC-4P-M 8MR/10,0-PUR SH	1521892	199
SAC-3P-MS-CI-1L-V SCO/.....	1400889	230	SAC-4P-3,0-110/M12FRL	1425058	297	SAC-4P-10,0-PUR/DTFS	1415011	244	SAC-4P-M 8MR/10,0-PVC	1415549	196
SAC-3P-MS-CI-1L-Z SCO/.....	1435470	228	SAC-4P-3,0-110/M12FSL	1425054	297	SAC-4P-10,0-PUR/M 8FR	1694172	194	SAC-4P-M 8MR/3,0-PUR	1681826	194
SAC-3P-MS/0,3-PUR/A-1L-Z SCO	1434882	228	SAC-4P-3,0-800/M12FR	1456967	198	SAC-4P-10,0-PUR/M 8FR SH	1521999	199	SAC-4P-M 8MR/3,0-PUR/M 8FR	1682294	194
SAC-3P-MS/0,3-PUR/B-1L-Z SCO	1435289	228	SAC-4P-3,0-800/M12FR-3L	1457005	198	SAC-4P-10,0-PUR/M 8FS	1683484	194	SAC-4P-M 8MR/3,0-PUR/M 8FS	1682252	194
SAC-3P-MS/0,3-PUR/BI-1L-Z SCO	1435137	228	SAC-4P-3,0-800/M12FS	1456941	198	SAC-4P-10,0-PUR/M 8FS SH	1521944	199	SAC-4P-M 8MR/3,0-PVC	1415547	196
SAC-3P-MS/0,3-PUR/CI-1L-Z SCO	1435438	228	SAC-4P-3,0-PUR/DTFS	1415008	244	SAC-4P-10,0-PUR/M12FR	1681389	194	SAC-4P-M 8MR/3,0-PVC/M 8FR	1415583	196
SAC-3P-MS/0,3-PUR/CI-1L-Z SCO	1435580	228	SAC-4P-3,0-PUR/M 8FR	1681884	194	SAC-4P-10,0-PUR/M12FR SH	1500729	199	SAC-4P-M 8MR/3,0-PVC/M 8FS	1415579	196
SAC-3P-MS/0,6-PUR/A-1L-Z SCO	1434895	228	SAC-4P-3,0-PUR/M 8FR SH	1521973	199	SAC-4P-10,0-PUR/M12FR-3L	1681020	194	SAC-4P-M 8MR/5,0-PUR	1681839	194
SAC-3P-MS/0,6-PUR/B-1L-Z SCO	1435292	228	SAC-4P-3,0-PUR/M 8FS	1681855	194	SAC-4P-10,0-PUR/M12FRL	1425080	296	SAC-4P-M 8MR/5,0-PVC	1415548	196
SAC-3P-MS/0,6-PUR/BI-1L-Z SCO	1435140	228	SAC-4P-3,0-PUR/M 8FS SH	1521928	199	SAC-4P-10,0-PUR/M12FRS PE	1408854	289	SAC-4P-M 8MR/5,0-PUR SH	1521850	199
SAC-3P-MS/0,6-PUR/C-1L-Z SCO	1435441	228	SAC-4P-3,0-PUR/M12FR	1668234	194	SAC-4P-10,0-PUR/M12FRS PE SH	1424103	289	SAC-4P-M 8MS-M 8FR SH/.....	1552104	199
SAC-3P-MS/0,6-PUR/CI-1L-Z SCO	1435593	228	SAC-4P-3,0-PUR/M12FR SH	1682919	199	SAC-4P-10,0-PUR/M12FST	1408830	290	SAC-4P-M 8MS-M 8FR/.....	1697807	194
SAC-3P-MS/1,5-PUR/A-1L-Z SCO	1434905	228	SAC-4P-3,0-PUR/M12FR-3L	1668292	194	SAC-4P-10,0-PUR/M12FRT SH	1424128	290	SAC-4P-M 8MS-M 8FS SH/.....	1552094	199
SAC-3P-MS/1,5-PUR/B-1L-Z SCO	1435302	228	SAC-4P-3,0-PUR/M12FRL	1425078	296	SAC-4P-10,0-PUR/M12FS	1683002	194	SAC-4P-M 8MS-M 8FS/.....	1697797	194
SAC-3P-MS/1,5-PUR/BI-1L-Z SCO	1435153	228	SAC-4P-3,0-PUR/M12FRS PE SH	1424101	289	SAC-4P-10,0-PUR/M12FS SH	1500716	199	SAC-4P-M 8MS-M12FR/.....	1511718	194
SAC-3P-MS/1,5-PUR/CI-1L-Z SCO	1435454	228	SAC-4P-3,0-PUR/M12FRT SH	1424117	290	SAC-4P-10,0-PUR/M12FS-2L	1694839	194	SAC-4P-M 8MS-M12FS	1519736	254
SAC-3P-MS/1,5-PUR/CI-1L-Z SCO	1435603	228	SAC-4P-3,0-PUR/M12FS	1668111	194	SAC-4P-10,0-PUR/M12FSL	1425076	296	SAC-4P-M 8MS-M12FS/.....	1506697	194
SAC-3P-MS/3,0-PUR/A-1L-Z SCO	1434918	228	SAC-4P-3,0-PUR/M12FS SH	1682854	199	SAC-4P-10,0-PUR/M12FSS PE	1408846	289	SAC-4P-M 8MS/0,3-PUR/M 8FSSH	1574580	199
SAC-3P-MS/3,0-PUR/B-1L-Z SCO	1435315	228	SAC-4P-3,0-PUR/M12FS-2L	1694813	194	SAC-4P-10,0-PUR/M12FSS PE SH	1424099	289	SAC-4P-M 8MS/0,6-PUR/M 8FSSH	1455722	199
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SAC-4P-M 8MS/0,3-PVC/M 8FR	1415562	196	SAC-4P-M12MR/10,0-PVC	1415594	196	SAC-4P-M12MS/0,3-PUR/M12FS	1668357	194	SAC-4P-M12MS/3,0-PUR/M12FR-3L	1668548	194
SAC-4P-M 8MS/0,3-PVC/M 8FS	1415556	196	SAC-4P-M12MR/3,0-PUR	1668179	194	SAC-4P-M12MS/0,3-PUR/M12FS SH	1500842	199	SAC-4P-M12MS/3,0-PVC/M 8FS	1415674	196
SAC-4P-M 8MS/0,6-PUR/M 8FR	1682197	194	SAC-4P-M12MR/3,0-PUR/M 8FR	1671580	194	SAC-4P-M12MS/0,3-PVC/M12FR	1415617	196	SAC-4P-M12MS/3,0-PVC/M12FR	1415619	196
SAC-4P-M 8MS/0,6-PUR/M 8FS	1682155	194	SAC-4P-M12MR/3,0-PUR/M12FR	1668742	194	SAC-4P-M12MS/0,3-PVC/M12FS	1415611	196	SAC-4P-M12MS/3,0-PVC/M12FR-3L	1415625	196
SAC-4P-M 8MS/0,6-PVC/M 8FR	1415572	196	SAC-4P-M12MR/3,0-PUR/M12FR-3L	1668784	194	SAC-4P-M12MS/0,5-186/M12FS	1509539	440	SAC-4P-M12MSL/1,5-105	1425025	296
SAC-4P-M 8MS/1,5-PUR	1415557	196	SAC-4P-M12MR/3,0-PUR/M12FS	1668629	194	SAC-4P-M12MS/0,5-960/M12FS VA	1431267	435	SAC-4P-M12MSL/1,5-110	1425045	297
SAC-4P-M 8MS/1,5-PUR	1681787	194	SAC-4P-M12MR/3,0-PVC	1415592	196	SAC-4P-M12MS/0,6-800/M12FR	1567225	198	SAC-4P-M12MSL/1,5-PUR	1425065	296
SAC-4P-M 8MS/1,5-PUR/M 8FR	1682207	194	SAC-4P-M12MR/3,0-PVC/M 8FR	1415670	196	SAC-4P-M12MS/0,6-800/M12FS	1457063	194	SAC-4P-M12MSL/1,5-PVC	1425085	297
SAC-4P-M 8MS/1,5-PUR/M 8FS	1682168	194	SAC-4P-M12MR/3,0-PVC/M12FR	1415645	196	SAC-4P-M12MS/0,6-PUR/M12FR	1668483	198	SAC-4P-M12MSL/3,0-105	1425026	296
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SAC-4P-M 8MS/1,5-PVC/M 8FR	1415573	196	SAC-4P-M12MR/3,0-PVC/M12FS	1415636	196	SAC-4P-M12MS/0,6-PUR/M12FS	1668360	194	SAC-4P-M12MSL/3,0-PUR	1425066	296
SAC-4P-M 8MS/1,5-PVC/M 8FS	1415558	196	SAC-4P-M12MR/5,0-PUR	1668182	194	SAC-4P-M12MS/0,6-PUR/M12FS SH	1500855	199	SAC-4P-M12MSL/3,0-PVC	1425086	297
SAC-4P-M 8MS/10,0-PUR	1694143	194	SAC-4P-M12MR/5,0-PVC	1415593	196	SAC-4P-M12MS/0,6-PVC/M12FR	1454817	196	SAC-4P-M12MSL/5,0-105	1425027	296
SAC-4P-M 8MS/10,0-PUR SH	1521847	199	SAC-4P-M12MRL/1,5-105	1425029	296	SAC-4P-M12MS/0,6-PVC/M12FS	1415612	196	SAC-4P-M12MSL/5,0-110	1425047	297
SAC-4P-M 8MS/10,0-PVC	1415545	196	SAC-4P-M12MRL/1,5-110	1425049	297	SAC-4P-M12MS/1,0-186/M12FS	1509542	440	SAC-4P-M12MSL/5,0-PUR	1425067	296
SAC-4P-M 8MS/3,0-PUR	1681790	194	SAC-4P-M12MRL/1,5-PUR	1425069	296	SAC-4P-M12MS/1,0-960/M12FS VA	1431270	435	SAC-4P-M12MSL/5,0-PVC	1425087	297
SAC-4P-M 8MS/3,0-PUR/M 8FR	1682210	194	SAC-4P-M12MRL/1,5-PVC	1425089	297	SAC-4P-M12MS/1,5-800 VA	1457018	198	SAC-4P-M12MSL/6,105/FSL	1425041	296
SAC-4P-M 8MS/3,0-PUR/M 8FS	1682171	194	SAC-4P-M12MRL/3,0-105	1425030	296	SAC-4P-M12MS/1,5-800/M12FR	1567238	198	SAC-4P-M12MSL/3,0-110/FSL	1425061	297
SAC-4P-M 8MS/3,0-PVC	1415543	196	SAC-4P-M12MRL/3,0-110	1425050	297	SAC-4P-M12MS/1,5-800/M12FS	1567270	198	SAC-4P-M12MSL/0,3-PUR/FSL	1425081	296
SAC-4P-M 8MS/3,0-PVC/M 8FR	1415574	196	SAC-4P-M12MRL/3,0-PUR	1425070	296	SAC-4P-M12MS/1,5-PUR	1668043	194	SAC-4P-M12MSL/3,0-PVC/FSL	1425101	297
SAC-4P-M 8MS/3,0-PVC/M 8FS	1415560	196	SAC-4P-M12MRL/3,0-PVC	1425090	297	SAC-4P-M12MS/1,5-PUR SH	1682715	199	SAC-4P-M12MSL/10,0-105/FSL	1425042	296
SAC-4P-M 8MS/5,0-PUR	1681800	194	SAC-4P-M12MRL/5,0-105	1425031	296	SAC-4P-M12MS/1,5-PUR/M12FR SH	1500981	199	SAC-4P-M12MSL/0,6-110/FSL	1425062	297
SAC-4P-M 8MS/5,0-PVC	1415544	196	SAC-4P-M12MRL/5,0-110	1425051	297	SAC-4P-M12MS/1,5-PUR/M12FS	1668373	194	SAC-4P-M12MSL/0,6-PUR/FSL	1425082	296
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SAC-5P-2,0-920/M 8FS	1575770	432	SAC-5P-10,0-510/M12FSL FE	1424620	295	SAC-5P-M12FS/920/...	1538128	433	SAC-5P-M12MS/0,6-802/M12FR	1454516	203
SAC-5P-2,0-920/M12FS	1507476	433	SAC-5P-10,0-802/M12FR	1457209	203	SAC-5P-M12FSB/900/...	1538005	428	SAC-5P-M12MS/0,6-802/M12FR-3L	1454464	203
SAC-5P-2,0-923/FR CAN SCO	1419034	431	SAC-5P-10,0-802/M12FR-3L	1454366	203	SAC-5P-M12MR SH/...	1697519	204	SAC-5P-M12MS/0,6-802/M12FS	1454561	203
SAC-5P-2,0-923/FS CAN SCO	1419081	431	SAC-5P-10,0-802/M12FS	1454448	203	SAC-5P-M12MR/1,5-802	1536159	204	SAC-5P-M12MS/0,6-PUR/M12FR SH	1501029	204
SAC-5P-3,0-115/M 8FRB	1404476	200	SAC-5P-10,0-900/M12FSB	1507133	428	SAC-5P-M12MR-M12FR-3L/...	1552159	201	SAC-5P-M12MS/0,6-PUR/M12FS SH	1500897	204
SAC-5P-3,0-115/M 8FSB	1404471	200	SAC-5P-10,0-920/M 8FS	1575796	432	SAC-5P-M12MR-M12FR/...	1529506	201	SAC-5P-M12MS/1,0-920/M12FS	1507544	433
SAC-5P-3,0-280/M12FRL FE	1414786	294	SAC-5P-10,0-920/M12FS	1507492	433	SAC-5P-M12MR-M12FR/920/...	1431128	433	SAC-5P-M12MS/1,5-802	1457225	203
SAC-5P-3,0-280/M12FSL FE	1414790	294	SAC-5P-10,0-923/FR CAN SCO	1419036	431	SAC-5P-M12MR-M12FS SH/...	1536146	204	SAC-5P-M12MS/1,5-802/M12FR	1454532	203
SAC-5P-3,0-290/M12FRL FE	1424606	294	SAC-5P-10,0-923/FS CAN SCO	1419031	431	SAC-5P-M12MR-M12FS/...	1508734	201	SAC-5P-M12MS/1,5-802/M12FR-3L	1454480	203
SAC-5P-3,0-290/M12FSL FE	1424602	294	SAC-5P-10,0-PUR/AD-2L	1435111	240	SAC-5P-M12MR-M12FS/920/...	1431115	433	SAC-5P-M12MS/1,5-802/M12FS	1454587	203
SAC-5P-3,0-500/M12FRL FE	1414794	295	SAC-5P-10,0-PUR/M12FR	1694541	201	SAC-5P-M12MR/1,5-802	1457322	203	SAC-5P-M12MS/1,5-PUR SH	1682728	204
SAC-5P-3,0-500/M12FSL FE	1414798	295	SAC-5P-10,0-PUR/M12FR SH	1500761	204	SAC-5P-M12MR/1,5-PUR SH	1682757	204	SAC-5P-M12MS/1,5-PUR/M12FR SH	1501045	204
SAC-5P-3,0-510/M12FRL FE	1424622	295	SAC-5P-10,0-PUR/M12FR-3L	1694431	201	SAC-5P-M12MR/3,0-802	1457335	203	SAC-5P-M12MS/1,5-PUR/M12FS SH	1500907	204
SAC-5P-3,0-510/M12FSL FE	1424618	295	SAC-5P-10,0-PUR/M12FRK PE	1414817	292	SAC-5P-M12MR/3,0-PUR SH	1682760	204	SAC-5P-M12MS/2,0-920	1507421	433
SAC-5P-3,0-802/M12FR	1457186	203	SAC-5P-10,0-PUR/M12FRK PE SH	1414818	292	SAC-5P-M12MR/5,0-802	1457348	203	SAC-5P-M12MS/2,0-920/M12FS	1507557	433
SAC-5P-3,0-802/M12FR-3L	1457212	203	SAC-5P-10,0-PUR/M12FS	1683374	201	SAC-5P-M12MR/5,0-PUR SH	1682773	204	SAC-5P-M12MS/3,0-802	1457238	203
SAC-5P-3,0-802/M12FS	1457160	203	SAC-5P-10,0-PUR/M12FS SH	1500758	204	SAC-5P-M12MR/...	1697108	201	SAC-5P-M12MS/3,0-802/M12FR	1457296	203
SAC-5P-3,0-PUR/AD-2L	1435098	240	SAC-5P-10,0-PUR/M12FSK PE	1414821	292	SAC-5P-M12MR/1,5-PUR	1697996	201	SAC-5P-M12MS/3,0-802/M12FR-3L	1457319	203
SAC-5P-3,0-PUR/M12FR	1669864	201	SAC-5P-10,0-PUR/M12FSK PE SH	1414822	292	SAC-5P-M12MR/1,5-PVC	1415679	202	SAC-5P-M12MS/3,0-802/M12FS	1457270	203
SAC-5P-3,0-PUR/M12FR SH	1682977	204	SAC-5P-10,0-PVC/AD-2L	1438671	241	SAC-5P-M12MR/10,0-802	1457351	203	SAC-5P-M12MS/3,0-PUR SH	1682744	204
SAC-5P-3,0-PUR/M12FR-3L	1669893	201	SAC-5P-10,0-PVC/M12FR	1415689	202	SAC-5P-M12MR/10,0-PUR	1694460	201	SAC-5P-M12MS/3,0-PUR/M12FR SH	1501058	204
SAC-5P-3,0-PUR/M12FRK PE	1414784	292	SAC-5P-10,0-PVC/M12FR-3L	1415694	202	SAC-5P-M12MR/10,0-PUR SH	1500745	204	SAC-5P-M12MS/3,0-PUR/M12FS SH	1500910	204
SAC-5P-3,0-PUR/M12FRK PE SH	1414785	292	SAC-5P-10,0-PVC/M12FRK PE	1414825	293	SAC-5P-M12MR/10,0-PVC	1415682	202	SAC-5P-M12MS/3,0-802	1457241	203
SAC-5P-3,0-PUR/M12FS	1669835	201	SAC-5P-10,0-PVC/M12FRK PE SH	1414826	293	SAC-5P-M12MR/3,0-PUR	1669806	201	SAC-5P-M12MS/5,0-920	1507434	433
SAC-5P-3,0-PUR/M12FS SH	1682948	204	SAC-5P-10,0-PVC/M12FS	1415685	202	SAC-5P-M12MR/3,0-PVC	1415680	202	SAC-5P-M12MS/5,0-920/M12FS	1507560	433
SAC-5P-3,0-PUR/M12FSK PE	1414788	292	SAC-5P-10,0-PVC/M12FSK PE	1414829	293	SAC-5P-M12MR/3,0-PUR	1669891	201	SAC-5P-M12MS/5,0-PUR SH	1682731	204
SAC-5P-3,0-PUR/M12FSK PE SH	1414789	292	SAC-5P-10,0-PVC/M12FSK PE SH	1414830	293	SAC-5P-M12MR/5,0-PVC	1415681	202	SAC-5P-M12MS/...	1697098	201
SAC-5P-3,0-PVC/AD-2L	1415946	241	SAC-5P-100,0-534/0,75	1457445	304	SAC-5P-M12MR/920/...	1431089	433	SAC-5P-M12MS/0,3-PUR/M12FR	1681622	201
SAC-5P-3,0-PVC/M12FR	1415687	202	SAC-5P-100,0-PUR/0,34	1501676	302	SAC-5P-M12MRB-M12FRB/900/...	1431018	428	SAC-5P-M12MS/0,3-PUR/M12FR-3L	1694635	201
SAC-5P-3,0-PVC/M12FR-3L	1415691	202	SAC-5P-100,0-PUR/0,5	1457403	304	SAC-5P-M12MRB-M12FSB/900/...	1431005	428	SAC-5P-M12MS/0,3-PUR/M12FR	1681583	201
SAC-5P-3,0-PVC/M12FRK PE	1414792	293	SAC-5P-100,0-PUR/SH/0,34	1501728	303	SAC-5P-M12MRB/900/...	1430970	428	SAC-5P-M12MS/0,3-PVC/M12FR	1415699	202
SAC-5P-3,0-PVC/M12FRK PE SH	1414793	293	SAC-5P-100,0-PVC/0,34	1501841	302	SAC-5P-M12MRK/1,5-PUR PE	1414833	292	SAC-5P-M12MS/0,3-PVC/M12FR-3L	1415703	202
SAC-5P-3,0-PVC/M12FS	1415684	202	SAC-5P-100,0-PVC/SH/0,34	1505672	303	SAC-5P-M12MRK/1,5-PUR PE SH	1414834	292	SAC-5P-M12MS/0,3-PVC/M12FS	1415695	202
SAC-5P-3,0-PVC/M12FSK PE	1414796	293	SAC-5P-15,0-900/M12FSB	1507146	428	SAC-5P-M12MRK/3,0-PVC PE	1414835	293	SAC-5P-M12MS/0,6-PUR/M12FR	1681635	201
SAC-5P-3,0-PVC/M12FSK PE SH	1414797	293	SAC-5P-15,0-920/M 8FS	1575806	432	SAC-5P-M12MRK/1,5-PVC PE SH	1414				

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SAC-5P-M12MS/1,5-PVC/M12FR	1415701	202	SAC-5P-M12MSL/3,0-290/FSL FE	1425020	294	SAC-5PY-M2X10,0-920	1436107	434	SAC-6P-M 8MR/ 3,0-PUR SH	1522354	206
SAC-5P-M12MS/1,5-PVC/M12FR-3L	1415705	202	SAC-5P-M12MSL/3,0-500/FSL FE	1425016	295	SAC-5PY-M2X15,0-920	1436110	434	SAC-6P-M 8MR/ 5,0-PUR	1522163	205
SAC-5P-M12MS/1,5-PVC/M12FS	1415697	202	SAC-5P-M12MSL/3,0-510/FSL FE	1425024	295	SAC-5PY-M2XFP VP SH	1419920	253	SAC-6P-M 8MR/ 5,0-PUR SH	1522367	206
SAC-5P-M12MS/10,0-802	1457254	203	SAC-5P-M12T/2XM12 VP	1541186	253	SAC-5PY-MF-M VP SH	1438079	253	SAC-6P-M 8MR/.....	1522189	205
SAC-5P-M12MS/10,0-920	1507447	433	SAC-5P-M12Y/2XM12FS VP	1683468	253	SAC-6P- 1,5-PUR/DTFS	1415026	244	SAC-6P-M 8MR/10,0-PUR	1522176	205
SAC-5P-M12MS/10,0-920/M12FS	1507573	433	SAC-5P-M12Y/2XM12FS VP S21	1514029	253	SAC-6P- 1,5-PUR/M 8FR	1522244	205	SAC-6P-M 8MR/10,0-PUR SH	1522370	206
SAC-5P-M12MS/10,0-PUR	1683361	201	SAC-5P-MR/ 0,3-923/FR CAN SCO	1419073	431	SAC-6P- 1,5-PUR/M 8FR SH	1522448	206	SAC-6P-M 8MS SH/.....	1522368	206
SAC-5P-M12MS/10,0-PUR SH	1500732	204	SAC-5P-MR/ 0,3-923/FS CAN SCO	1419057	431	SAC-6P- 1,5-PUR/M 8FS	1522192	205	SAC-6P-M 8MS-M 8FR SH/.....	1552023	206
SAC-5P-M12MS/10,0-PVC	1415678	202	SAC-5P-MR/ 0,5-923/FR CAN SCO	1419074	431	SAC-6P- 1,5-PUR/M 8FS SH	1522396	206	SAC-6P-M 8MS-M 8FR/.....	1551930	205
SAC-5P-M12MS/15,0-920	1507450	433	SAC-5P-MR/ 0,5-923/FS CAN SCO	1419058	431	SAC-6P- 1,5-PUR/M12FRM PE	1414899	298	SAC-6P-M 8MS-M 8FS SH/.....	1552010	206
SAC-5P-M12MS/15,0-920/M12FS	1507586	433	SAC-5P-MR/ 1,0-923/FR CAN SCO	1419075	431	SAC-6P- 1,5-PUR/M12FRM PE SH	1414900	298	SAC-6P-M 8MS-M 8FS/.....	1551927	205
SAC-5P-M12MS/3,0-PUR	1669770	201	SAC-5P-MR/ 1,0-923/FS CAN SCO	1419059	431	SAC-6P- 1,5-PUR/M12FSM PE	1414901	298	SAC-6P-M 8MS/ 1,5-PUR	1522095	205
SAC-5P-M12MS/3,0-PUR/M12FR	1681651	201	SAC-5P-MR/ 2,0-923 CAN SCO	1419044	431	SAC-6P- 1,5-PUR/M12FSM PE SH	1414902	298	SAC-6P-M 8MS/ 1,5-PUR SH	1522299	206
SAC-5P-M12MS/3,0-PUR/M12FS	1681619	201	SAC-5P-MR/ 2,0-923/FR CAN SCO	1419076	431	SAC-6P- 1,5-PVC/M12FRM PE	1414903	299	SAC-6P-M 8MS/ 3,0-PUR	1522105	205
SAC-5P-M12MS/3,0-PVC	1415676	202	SAC-5P-MR/ 2,0-923/FS CAN SCO	1419060	431	SAC-6P- 1,5-PVC/M12FRM PE SH	1414904	299	SAC-6P-M 8MS/ 3,0-PUR SH	1522309	206
SAC-5P-M12MS/3,0-PVC/M12FR	1415702	202	SAC-5P-MR/ 5,0-923 CAN SCO	1419045	431	SAC-6P- 1,5-PVC/M12FSM PE	1414905	299	SAC-6P-M 8MS/ 5,0-PUR	1522118	205
SAC-5P-M12MS/3,0-PVC/M12FR-3L	1415706	202	SAC-5P-MR/ 5,0-923/FR CAN SCO	1419077	431	SAC-6P- 1,5-PVC/M12FSM PE SH	1414906	299	SAC-6P-M 8MS/ 5,0-PUR SH	1522312	206
SAC-5P-M12MS/3,0-PVC/M12FS	1430996	428	SAC-5P-MR/ 5,0-923/FS CAN SCO	1419061	431	SAC-6P- 3,0-PUR/DTFS	1515027	244	SAC-6P-M 8MS/ 5,0-PUR	1522134	205
SAC-5P-M12MS/5,0-PUR	1669783	201	SAC-5P-MR/10,0-923 CAN SCO	1419046	431	SAC-6P- 3,0-PUR/M 8FR	1522257	205	SAC-6P-M 8MS/10,0-PUR	1522121	205
SAC-5P-M12MS/5,0-PVC	1415677	202	SAC-5P-MR/10,0-923/FR CAN SCO	1419078	431	SAC-6P- 3,0-PUR/M 8FR SH	1522451	206	SAC-6P-M 8MS/10,0-PUR SH	1522325	206
SAC-5P-M12MS/920/...	1538102	423	SAC-5P-MR/10,0-923/FS CAN SCO	1419062	431	SAC-6P- 3,0-PUR/M 8FS	1522202	205	SAC-6P-M12FR-PURMC/	1520987	311
SAC-5P-M12MSB/1,0-900/M12FS	1430996	428	SAC-5P-MR/15,0-923 CAN SCO	1419047	431	SAC-6P- 3,0-PUR/M 8FS SH	1522406	206	SAC-6P-M12MRM/ 1,5-PUR PE	1414932	298
SAC-5P-M12MSB/1,0-900/M12FSB	1538021	428	SAC-5P-MR/15,0-923/FR CAN SCO	1419079	431	SAC-6P- 3,0-PUR/M12FRM PE	1414907	298	SAC-6P-M12MRM/ 1,5-PUR PE SH	1414933	298
SAC-5P-M12MSB/0,3-900/M12FSB	1507162	428	SAC-5P-MR/15,0-923/FS CAN SCO	1419063	431	SAC-6P- 3,0-PUR/M12FRM PE SH	1414908	298	SAC-6P-M12MRM/ 1,5-PVC PE	1414934	299
SAC-5P-M12MSB/0,5-900/M12FSB	1507175	428	SAC-5P-MR/20,0-923 CAN SCO	1419048	431	SAC-6P- 3,0-PUR/M12FSM PE	1414910	298	SAC-6P-M12MRM/ 1,5-PVC PE SH	1414935	299
SAC-5P-M12MSB/1,0-900/M12FSB	1507188	428	SAC-5P-MR/20,0-923/FR CAN SCO	1419080	431	SAC-6P- 3,0-PUR/M12FSM PE SH	1414911	298	SAC-6P-M12MRM/ 3,0-PUR	1414936	298
SAC-5P-M12MSB/2,0-900	1507065	428	SAC-5P-MR/20,0-923/FS CAN SCO	1419064	431	SAC-6P- 3,0-PVC/M12FRM PE	1414912	299	SAC-6P-M12MRM/ 3,0-PUR PE SH	1414937	298
SAC-5P-M12MSB/2,0-900/M12FSB	1507191	428	SAC-5P-MR/AD-2L SCO	1458606	256	SAC-6P- 3,0-PVC/M12FRM PE SH	1414913	299	SAC-6P-M12MRM/ 3,0-PVC PE	1414939	299
SAC-5P-M12MSB/5,0-900	1507078	428	SAC-5P-MS-AD-2L SCO/.....	1435072	240	SAC-6P- 3,0-PVC/M12FSM PE	1414914	299	SAC-6P-M12MRM/ 3,0-PVC PE SH	1414940	299
SAC-5P-M12MSB/5,0-900/M12FSB	1507201	428	SAC-5P-MS/ 0,3-923/FR CAN SCO	1419065	431	SAC-6P- 3,0-PVC/M12FSM PE SH	1414915	299	SAC-6P-M12MRM/ 5,0-PUR PE	1414941	298
SAC-5P-M12MSB/10,0-900	1507081	428	SAC-5P-MS/ 0,3-923/FS CAN SCO	1419049	431	SAC-6P- 3,0-PUR/DTFS	1415028	244	SAC-6P-M12MRM/ 5,0-PUR PE SH	1414942	298
SAC-5P-M12MSB/10,0-900/M12FSB	1507214	428	SAC-5P-MS/ 0,3-PUR/AD-2L SCO	1435030	240	SAC-6P- 5,0-PUR/M 8FR	1522260	205	SAC-6P-M12MRM/ 5,0-PVC PE	1414943	299
SAC-5P-M12MSB/15,0-900	1507094	428	SAC-5P-MS/ 0,5-923/FR CAN SCO	1419066	431	SAC-6P- 5,0-PUR/M 8FR SH	1522464	206	SAC-6P-M12MRM/ 5,0-PVC PE SH	1414944	299
SAC-5P-M12MSB/15,0-900/M12FSB	1507227	428	SAC-5P-MS/ 0,5-923/FS CAN SCO	1419050	431	SAC-6P- 5,0-PUR/M 8FS	1522215	205	SAC-6P-M12MRM/10,0-PUR PE	1414945	298
SAC-5P-M12MSB/900/...	1537983	428	SAC-5P-MS/ 0,6-PUR/AD-2L SCO	1435043	240	SAC-6P- 5,0-PUR/M 8FS SH	1522419	206	SAC-6P-M12MRM/10,0-PUR PE SH	1414946	299
SAC-5P-M12MSK/ 1,5-PUR PE	1414866	292	SAC-5P-MS/ 1,0-923/FR CAN SCO	1419067	431	SAC-6P- 5,0-PUR/M12FRM PE	1414916	298	SAC-6P-M12MRM/10,0-PVC PE	1414947	299
SAC-5P-M12MSK/ 1,5-PUR PE SH	1414867	292	SAC-5P-MS/ 1,0-923/FS CAN SCO	1419051	431	SAC-6P- 5,0-PUR/M12FRM PE SH	1414917	298	SAC-6P-M12MRM/10,0-PVC PE SH	1414948	299
SAC-5P-M12MSK/ 1,5-PVC PE	1414868	293	SAC-5P-MS/ 1,5-PUR/AD-2L SCO	1435056	240	SAC-6P- 5,0-PUR/M12FSM PE	1414918	298	SAC-6P-M12MSM/ 1,5-PUR PE	1414949	298
SAC-5P-M12MSK/ 1,5-PVC PE SH	1414869	293	SAC-5P-MS/ 2,0-923 CAN SCO	1419039	431	SAC-6P- 5,0-PUR/M12FSM PE SH	1414919	298	SAC-6P-M12MSM/ 1,5-PUR PE SH	1414950	298
SAC-5P-M12MSK/ 3,0-PUR PE	1414870	292	SAC-5P-MS/ 2,0-923/FR CAN SCO	1419068	431	SAC-6P- 5,0-PUR/MC/M12FR	1407820	311	SAC-6P-M12MSM/ 1,5-PVC PE	1414951	299
SAC-5P-M12MSK/ 3,0-PUR PE SH	1414871	292	SAC-5P-MS/ 2,0-923/FS CAN SCO	1419052	431	SAC-6P- 5,0-PVC/M12FRM PE	1414920	299	SAC-6P-M12MSM/ 1,5-PVC PE SH	1414952	299
SAC-5P-M12MSK/ 3,0-PVC PE	1414872	293	SAC-5P-MS/ 3,0-PUR/AD-2L SCO	1435069	240	SAC-6P- 5,0-PVC/M12FRM PE SH	1414921	299	SAC-6P-M12MSM/ 3,0-PUR PE	1414953	298
SAC-5P-M12MSK/ 3,0-PVC PE SH	1414874	293	SAC-5P-MS/ 5,0-923 CAN SCO	1419040	431	SAC-6P- 5,0-PVC/M12FSM PE	1414922	299	SAC-6P-M12MSM/ 3,0-PUR PE SH	1414954	298
SAC-5P-M12MSK/ 5,0-PUR PE	1414875	292	SAC-5P-MS/ 5,0-923/FR CAN SCO	1419069	431	SAC-6P- 5,0-PVC/M12FSM PE SH	1414923	299	SAC-6P-M12MSM/ 3,0-PVC PE	1414955	299
SAC-5P-M12MSK/ 5,0-PUR PE SH	1414876	292	SAC-5P-MS/ 5,0-923/FS CAN SCO	1419053	431	SAC-6P-10,0-PUR/DTFS	1415029	244	SAC-6P-M12MSM/ 3,0-PVC PE SH	1414956	299
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SAC-8P-M12MR/ 3,0-PUR SH	1522820	211	SAC-MS/0,1-116/2XB-1L-Z SCO	1458282	259	SACB-4/ 4-L- 5,0PUR SCO	1517084	264	SACB-6Q/4P- 5,0PUR	1683688	267
SAC-8P-M12MR/ 3,0-PVC	1415721	209	SAC-MS/0,1-116/2XB-1L-Z SCO	1458460	259	SACB-4/ 4-L- 5,0PUR SCO P	1452576	262	SACB-6Q/4P-10,0PUR	1683691	267
SAC-8P-M12MR/ 5,0-PUR	1522561	208	SAC-MS/0,15-116/2XA-1L-Z SCO	1458114	258	SACB-4/ 4-L-10,0PUR SCO	1517097	264	SACB-6Q/4P-L- 5,0PUR	1695252	267
SAC-8P-M12MR/ 5,0-PUR SH	1522833	211	SAC-MS/0,15-116/2XB-1L-Z SCO	1458295	259	SACB-4/ 4-L-10,0PUR SCO P	1452589	262	SACB-6Q/4P-L-10,0PUR	1695265	267
SAC-8P-M12MR/ 5,0-PVC	1415722	209	SAC-MS/0,15-116/2XB-1L-Z SCO	1458473	259	SACB-4/ 4-L-C GG SCO	1516726	265	SACB-6Q/4P-L-SC	1662942	267
SAC-8P-M12MR/...	1522587	208	SAC-MS/0,2-116/2XA-1L-Z SCO	1458127	258	SACB-4/ 4-L-C GG SCO P	1452864	263	SACB-6Q/4P-L-SC NPN	1680869	267
SAC-8P-M12MR/10,0-PUR	1522574	208	SAC-MS/0,2-116/2XB-1L-Z SCO	1458305	259	SACB-4/ 4-L-C NPN SCO	1537077	264	SACB-6Q/4P-SC	1683646	267
SAC-8P-M12MR/10,0-PUR SH	1522846	211	SAC-MS/0,2-116/2XB-1L-Z SCO	1458486	259	SACB-4/ 4-L-C SCO	1516784	264	SACB-8/ 8- 5,0PUR SCO	1517042	264
SAC-8P-M12MR/10,0-PVC	1415723	209	SACB- 4/3-C QO-0,34	1548354	266	SACB-4/ 4-L-C SCO P	1452806	263	SACB-8/ 8- 5,0PUR SCO P	1452518	262
SAC-8P-M12MS SH/...	1522804	211	SACB- 4/3-L- 5,0PUR QO-0,34	1548448	266	SACB-4/ 4-L-SC SCO P	1452987	262	SACB-8/ 8-10,0PUR SCO	1517055	264
SAC-8P-M12MS-M12FR SH/...	1523052	211	SACB- 4/3-L- 5,0PUR-M8	1516014	260	SACB-4/ 4-SC SCO P	1452929	262	SACB-8/ 8-L-10,0PUR SCO P	1452521	262
SAC-8P-M12MS-M12FR/...	1522765	208	SACB- 4/3-L-10,0PUR QO-0,34	1548451	266	SACB-4/ 8- 5,0HPUR SCO	1517204	264	SACB-8/ 8-C SCO	1516881	264
SAC-8P-M12MS-M12FS SH/...	1523007	211	SACB- 4/3-L-10,0PUR-M8	1516027	260	SACB-4/ 8- 5,0PUR SCO	1516988	264	SACB-8/ 8-C SCO P	1452783	263
SAC-8P-M12MS-M12FS/...	1522710	208	SACB- 4/3-L-C QO-0,34	1548325	266	SACB-4/ 8- 5,0PUR SCO P	1452424	262	SACB-8/ 8-L- 5,0PUR SCO	1517165	264
SAC-8P-M12MS/ 0,3-PUR/M12FR	1522723	208	SACB- 4/3-L-C-M8	1503412	261	SACB-4/ 8-L- 5,0HPUR SCO	1517217	264	SACB-8/ 8-L- 5,0PUR SCO P	1452699	262
SAC-8P-M12MS/ 0,3-PUR/M12FR SH	1523010	211	SACB- 4/3-L-C-M8 GG	1516250	261	SACB-4/ 8-L-10,0PUR SCO	1516991	264	SACB-8/ 8-L- 5,0PUR SCO P NPN	1405737	262
SAC-8P-M12MS/ 0,3-PUR/M12FS	1522671	208	SACB- 4/3-L-M12-M8	1516234	260	SACB-4/ 8-C SCO	1516852	264	SACB-8/ 8-L-10,0PUR SCO	1517178	264
SAC-8P-M12MS/ 0,3-PUR/M12FS SH	1522969	211	SACB- 4/3-L-M16-M8	1516182	261	SACB-4/ 8-C SCO P	1452754	263	SACB-8/ 8-L-10,0PUR SCO P	1452709	262
SAC-8P-M12MS/ 0,3-PVC/M12FR	1415745	209	SACB- 4/3-L-								

Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page
SACB-8/ 8-L-SC SCO P	1453025	262	SACC-5P-DSI-M12MS/FS-M16	1551671	53	SACC-DSI-M12MST-4P-M16XL/0,5	1411604	283	SACC-E-M12MSL-4FE-M16XL/0,2 GR	1425582	286
SACB-8/ 8-SC SCO P	1452961	262	SACC-5P-DSI-M12MSB/FSB-M16	1551684	53	SACC-DSI-M8FS-3CON-M10/0,5	1456080	34	SACC-E-M12MSL4CONM16XL/0,2-1,5	1425631	286
SACB-8/16- 5,0HPUR SCO	1517246	264	SACC-8P-DSI-M12MS/FS-M16	1551697	53	SACC-DSI-M8FS-4CON-M10/0,5	1456093	34	SACC-E-M12MSL4FEM16XL/0,2GR-1,5	14125627	285
SACB-8/16- 5,0PUR SCO	1517068	264	SACC-CC-2QO SH PB	1420426	423	SACC-DSI-M8FS-6CON-M10/0,5	1456103	34	SACC-E-M12MSM-5PE-M16XL/0,2	1415300	287
SACB-8/16- 5,0PUR SCO P	1452547	262	SACC-CC-4QO SH ETH	1414415	343	SACC-DSI-M8FS-8CON-M10/0,5	1424229	34	SACC-E-M12MSS-3P-M16/0,5 PE	1411655	281
SACB-8/16-10,0HPUR SCO	1517259	264	SACC-CC-4QO SH PN	1414416	343	SACC-DSI-M8MS-8CON-M8/0,5	1424230	34	SACC-E-M12MSS-4CON-M16/0,5 PE	1424139	282
SACB-8/16-10,0PUR SCO	1517071	264	SACC-CC-4QO-0,75 SH	1414418	21	SACC-DSI-MS-12CON-M12/0,5 SCO	1437122	47	SACC-E-M12MSS-4P-M16XL/0,5 PE	1411607	283
SACB-8/16-10,0PUR SCO P	1452550	262	SACC-CC-5QO-0,75 SH	1414417	21	SACC-DSI-MS-12CON-PG9/0,5 SCO	1430459	46	SACC-E-M12MST-4CON-M16/0,5	1424140	282
SACB-8/16-C SCO	1516894	264	SACC-CC-8QO SH ETH	1414412	342	SACC-DSI-MS-17CON-M12/0,5 SCO	1437135	47	SACC-E-M12MST-4P-M16XL/0,5	1411608	283
SACB-8/16-C SCO P	1452796	263	SACC-CC-8QO-0,5 SH	1414612	21	SACC-DSI-MS-17CON-PG9/0,5 SCO	1430475	46	SACC-E-M5FS-3CON-M5/0,5	1530605	32
SACB-8/16-L- 5,0HPUR SCO	1517301	264	SACC-DSI-FS-12CON-PG9/0,5 SCO	1430446	46	SACC-DSI-MS-4CON-M12/0,5 SCO	1551875	47	SACC-E-M5FS-4CON-M5/0,5	1530618	32
SACB-8/16-L- 5,0PUR SCO	1517181	264	SACC-DSI-FS-17CON-PG9/0,5 SCO	1430462	46	SACC-DSI-MS-4CON-PG9/0,5 SCO	1556618	46	SACC-E-M5MS-3CON-M5/0,5	1530582	32
SACB-8/16-L- 5,0PUR SCO P	1452725	262	SACC-DSI-FS-4CON-PG9/0,5 SCO	1556621	46	SACC-DSI-MS-5CON-M12/0,5 SCO	1551888	47	SACC-E-M5MS-4CON-M5/0,5	1530595	32
SACB-8/16-L- 5,0PUR SCO P NPN	1405739	262	SACC-DSI-FS-5CON-M16/0,5 PP	1027666	48	SACC-DSI-MS-5CON-PG 9/0,5 SCO	1542703	46	SACC-E-M8FS-5CON-M10/0,5 DN	1424233	33
SACB-8/16-L-10,0HPUR SCO	1517314	264	SACC-DSI-FS-5CON-PG 9/0,5 SCO	1542729	46	SACC-DSI-MS-8CON-M12/0,5 SCO	1551914	47	SACC-E-M8FS-8CON-M10/0,5	1424231	33
SACB-8/16-L-10,0PUR SCO	1517194	264	SACC-DSI-FS-8CON-PG 9/0,5 SCO	1542732	46	SACC-DSI-MS-8CON-PG 9/0,5 SCO	1542716	46	SACC-E-M8MS-5CON-M10/0,5 DN	1424234	33
SACB-8/16-L-10,0PUR SCO P	1452738	262	SACC-DSI-FSB-5CON-PG9/ 0,5 SCO	1543676	46	SACC-DSI-MSB-5CON-M12/0,5 SCO	1551891	47	SACC-E-M8MS-8CON-M10/0,5	1424232	33
SACB-8/16-L-10,0PUR SCO P NPN	1405740	262	SACC-DSI-FSD-4CON-M16/0,5 PP	1027670	48	SACC-DSI-MSB-5CON-PG9/ 0,5 SCO	1543663	46	SACC-E-M8MS-8CON-M16/0,5 SCO	1556265	37
SACB-8/16-L-C GG SCO	1516771	265	SACC-DSI-FSD-4CON-PG9/0,5 SCO	1551529	46	SACC-DSI-MSD-4CON-M12/0,5 SCO	1551901	47	SACC-E-MS-17CON-M16/0,5 SCO	1556304	37
SACB-8/16-L-C GG SCO P	1452916	263	SACC-DSI-M 8FS-3CON-M12/0,5	1453449	34	SACC-DSI-MSD-4CON-PG9/0,5 SCO	1551532	46	SACC-E-MS-4CON-M16/0,5 SCO	1523450	37
SACB-8/16-L-C NPN SCO	1537129	264	SACC-DSI-M 8FS-4CON-M12/0,5	1453452	34	SACC-E-FS-12CON-M16/0,5 SCO	1556252	37	SACC-E-MS-5CON-M16/0,5 SCO	1520055	37
SACB-8/16-L-C SCO	1516836	264	SACC-DSI-M 8FS-6CON-M16/0,5	1453465	34	SACC-E-FS-17CON-M16/0,5 SCO	1556294	37	SACC-E-MS-8CON-M16/0,5 SCO	1523492	37
SACB-8/16-L-C SCO OTB	1437232	265	SACC-DSI-M 8MS-3CON-M 8/0,5	1453478	34	SACC-E-FS-4CON-M16/0,5 SCO	1523434	37	SACC-E-MSB-5CON-M16/0,5 SCO	1520013	37
SACB-8/16-L-C SCO P	1452851	263	SACC-DSI-M 8MS-4CON-M 8/0,5	1453481	34	SACC-E-FS-5CON-M16/0,5 PP	1027683	36	SACC-E-MSD-4CON-M16/0,5 SCO	1551558	37
SACB-8/16-L-PT SCO P	1412060	262	SACC-DSI-M 8MS-6CON-M 8/0,5	1453494	34	SACC-E-FS-5CON-M16/0,5 SCO	1520039	37	SACC-E-MU-M 5	1535901	32
SACB-8/16-L-SC SCO P	1453038	262	SACC-DSI-M12FS-12CON-M16/0,5	1419713	49	SACC-E-FS-8CON-M16/0,5 SCO	1523476	37	SACC-E-MU-M 8	1504071	33
SACB-8/16-SC SCO P	1452974	262	SACC-DSI-M12FS-12P-M16XL/0,5	1411589	50	SACC-E-FSB-5CON-M16/0,5 SCO	1520000	37	SACC-E-MU-M16	1504097	37
SACB-8/16-L-PUR SCO FLK14/MCV3P	1547928	265	SACC-DSI-M12FS-17CON-M16/0,5	1419739	49	SACC-E-FSD-4CON-M16/0,5 PP	1027686	36	SACC-E-MU-PG9	1504084	35
SACB-8Q/4P- 5,0PUR	1683701	267	SACC-DSI-M12FS-17P-M16XL/0,5	1411590	50	SACC-E-FSD-4CON-M16/0,5 SCO	1535202	37	SACC-EC-FS-4CON-M16/0,5 SCO	1523447	38
SACB-8Q/4P-10,0PUR	1683714	267	SACC-DSI-M12FS-4CON-M16/0,5	1419632	49	SACC-E-M 8FS-3CON-M8/0,5	1500350	33	SACC-EC-FS-5CON-M16/0,5 SCO	1520042	38
SACB-8Q/4P-L- 5,0PUR	1685281	267	SACC-DSI-M12FS-4P-M16XL/0,5	1411584	50	SACC-E-M 8FS-4CON-M8/0,5	1500363	33	SACC-EC-FS-8CON-M16/0,5 SCO	1523489	38
SACB-8Q/4P-L-10,0PUR	1685294	267	SACC-DSI-M12FS-5CON-M16/0,5	1419658	49	SACC-E-M 8FS-6CON-M 8/0,5	1542677	33	SACC-EC-FSB-5CON-M16/0,5 SCO	1519998	38
SACB-8Q/4P-L-SC	1662955	267	SACC-DSI-M12FS-5CON-PG9/0,5 P	1436356	52	SACC-E-M 8MS-3CON-M8/0,5	1500334	33	SACC-EC-FSD-4CON-M16/0,5 SCO	1535215	38
SACB-8Q/4P-L-SC NPN	1680872	267	SACC-DSI-M12FS-5P-M16XL/0,5	1411586	50	SACC-E-M 8MS-4CON-M8/0,5	1500347	33	SACC-EC-M12FS-4CON-PG9/0,5	1693791	35
SACB-8Q/4P-SC	1683659	267	SACC-DSI-M12FS-8CON-M16/0,5	1419690	49	SACC-E-M 8MS-6CON-M 8/0,5	1542664	33	SACC-EC-M12FS-5CON-PG9/0,5	1671108	35
SACB-8X0,5/3X1,0-5,0 PUR SH	1401240	305	SACC-DSI-M12FS-8CON-PG9/0,5 P	1436369	52	SACC-E-M12FS-12P-M16XL/0,5	1411574	39	SACC-EC-M12FS-8CON-PG9/0,5	1513761	35
SACB-8X0,5/3X1,0-5,0-5,0 HPUR	1401690	305	SACC-DSI-M12FS-8P-M16XL/0,5	1411588	50	SACC-E-M12FS-17P-M16XL/0,5	1411576	39	SACC-EC-M12FSB-5CON-PG9/0,5	1515044	35
SACB-C-H180-8/16 SCO	1516713	265	SACC-DSI-M12FSB-5CON-M16/0,5	1419674	49	SACC-E-M12FS-4CON-M20/0,5	1408436	40	SACC-EC-M12MS-4CON-PG9/0,5	1693775	35
SACB-C-H180 8/4 QO-0,34	1560235	315	SACC-DSI-M12FSB-5P-M16XL/0,5	1411587	50	SACC-E-M12FS-4CON-PG9/0,5	1693788	35	SACC-EC-M12MS-5CON-PG9/0,5	1671124	35
SACB-C-H180-8/16- 5,0PUR-M8	1516292	261	SACC-DSI-M12FSD-4CON-M16/0,5	1419616	49	SACC-E-M12FS-4CON-PG9/0,5 FFVA	1431429	424	SACC-EC-M12MS-8CON-PG9/0,5	1513787	35
SACB-C-H180- 4/3-10,0PUR-M8	1516302	261	SACC-DSI-M12FSD-4P-M16XL/0,5	1411585	50	SACC-E-M12FS-4P-M16XL/0,5	1411568	39	SACC-EC-M12MSB-5CON-PG9/0,5	1515057	35
SACB-C-H180- 4/3-M8	1521229	261	SACC-DSI-M12FSK-4PE-M16XL/0,2	1415294	284	SACC-E-M12FS-5CON-M20/0,5	1408454	40	SACC-EC-MS-4CON-M16/0,5 SCO	1523463	38
SACB-C-H180- 6/3- 5,0PUR-M8	1516315	261	SACC-DSI-M12FSK-4PE-M16/0,2-1,5	1425638	284	SACC-E-M12FS-5CON-PG9/0,5	1671098	35	SACC-EC-MS-5CON-M16/0,5 SCO	1520068	38
SACB-C-H180- 6/3-10,0PUR-M8	1516328	261	SACC-DSI-M12FSL-4CON-M16XL/0,2	1425589	285	SACC-E-M12FS-5P-M16XL/0,5	1411571	39	SACC-EC-MS-8CON-M16/0,5 SCO	1523502	38
SACB-C-H180- 6/3-M8	1521216	261	SACC-DSI-M12FSL-4FE-M16XL/0,2	1415299	286	SACC-E-M12FS-8CON-M20/0,5	1408453	40	SACC-EC-MSB-5CON-M16/0,5 SCO	1520026	38
SACB-C-H180- 8/3- 5,0PUR-M8	1516331	261	SACC-DSI-M12FSL4CONM16/0,2-1,5	1425634	285	SACC-E-M12FS-8CON-PG9/0,5	1513758	35	SACC-EC-MSD-4CON-M16/0,5 SCO	1552266	38
SACB-C-H180- 8/3-10,0PUR-M8	1516344	261	SACC-DSI-M12FSL4FE-M16XL/0,2GR	1425585	286	SACC-E-M12FS-8P-M16XL/0,5	1411573	39	SACC-FS-12PCON SCO	1559631	26
SACB-C-H180- 8/3-M8	1516425	261	SACC-DSI-M12FSL4FEM16/0,2GR-1,5	1425630	286	SACC-E-M12FSB-5P-M16XL/0,5	1411572	39	SACC-FS-17PCON SCO	1559644	26
SACB-C-H180-10/3- 5,0PUR-M8	1516357	261	SACC-DSI-M12FSM-5PE-M16XL/0,2	1415303	287	SACC-E-M12FSD-4P-M16XL/0,5	1411569	39	SACC-FS-4QO SH PBPA SCO	1413934	423
SACB-C-H180-10/3-10,0PUR-M8	1516360	261	SACC-DSI-M12FSS-3P-M16/0,5 PE	1411652	281	SACC-E-M12FSK-4PE-M16XL/0,2	1415292	284	SACC-FS-4QO-0,75 SH SCO	1413994	21
SACB-C-H180-10/3-M8	1516412	261	SACC-DSI-M12FSS-4CON-M16/0,5 PE	1424133	282	SACC-E-M12FSK-4PE-M16XL/0,2-1,5	1425636	284	SACC-FS-5QO SH DN SCO	1422760	423
SACB-C-H180-4/ 4- 5,0PUR SCO	1516353	265	SACC-DSI-M12FSS-4P-M16XL/0,5PE	1411598	283	SACC-E-M12FSL-4CON-M16XL/0,2	1425587	285	SACC-FS-5QO-0,75 SH SCO	1413992	21
SACB-C-H180-4/ 4- 5,0PUR SCO P	1453054	263	SACC-DSI-M12FST-4CON-M16/0,5	1424134	282	SACC-E-M12FSL-4FE-M16XL/0,2	1415296	286	SACC-FS-8QO SH ETH SCO	1421680	343
SACB-C-H180-4/ 4-10,0PUR SCO	1516548	265	SACC-DSI-M12FST-4P-M16XL/0,5	1411599	283	SACC-E-M12FSL-4FE-M16XL/0,2 GR	1425583	286	SACC-FS-8QO-0,5 SH SCO	1414611	21
SACB-C-H180-4/ 8- 5,0PUR SCO	1516593	265	SACC-DSI-M12MS-12CON-M16/0,5	1419700	49	SACC-E-M12FSL4CONM16XL/0,2-1,5	1425632	285	SACC-FSB-2QO SH PB SCO	1413932	423
SACB-C-H180-4/ 8- 5,0PUR SCO P	1453083	263	SACC-DSI-M12MS-12P-M16XL/0,5	1411596	50	SACC-E-M12FSL4FEM16XL/0,2GR-1,5	1425628	286	SACC-FSD-4QO SH ETH SCO	1411069	343
SACB-C-H180-4/ 8-10,0PUR SCO	1516603	265	SACC-DSI-M12MS-17CON-M16/0,5	1419726	49	SACC-E-M12FSM-5PE-M16XL/0,2	1415301	287	SACC-FSD-4QO SH PN SCO	1411071	343
SACB-C-H180-4/ 8-10,0PUR SCO P	1453096	263	SACC-DSI-M12MS-17P-M16XL/0,5	1411597	50	SACC-E-M12FSS-3P-M16/0,5 PE	1411654	281	SACC-FSX-8QO SH ETH SCO	1414586	342
SACB-C-H180-6/ 6- 5,0PUR SCO	1516551	265	SACC-DSI-M12MS-4CON-M16/0,5	1419629	49	SACC-E-M12FSS-4CON-M16/0,5 PE	1424137	282	SACC-M 8-SET/2,2-3,5	1436945	17
SACB-C-H180-6/ 6- 5,0PUR SCO P	1453119	263	SACC-DSI-M12MS-4P-M16XL/0,5	1411591	50	SACC-E-M12FSS-4P-M16XL/0,5 PE	1411605	283	SACC-M 8FR-3CON-M	1529399	18
SACB-C-H180-6/ 6-10,0PUR SCO	1516564	265	SACC-DSI-M12MS-5CON-M16/0,5	1419645	49	SACC-E-M12FST-4CON-M16/0,5	1424138	282	SACC-M 8FR-3CON-M-SW	1407582	17
SACB-C-H180-6/ 6-10,0PUR SCO P	1453122	263	SACC-DSI-M12MS-5P-M16XL/0,5	1411593	50	SACC-E-M12FST-4P-M16XL/0,5	1411606	283	SACC-M 8FR-3CON-SH	1436479	18
SACB-C-H180-6/12- 5,0PUR SCO	1516616	265	SACC-DSI-M12MS-8CON-M16/0,5	1419687	49	SACC-E-M12MS-12P-M16XL/0,5	1411582	39	SACC-M 8FR-4CON-M	1513444	18
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SACCBP-FS-5CON-M16/2,0-PUR SCO	1419331	51	SACCEC-M12MSB-2CON-M16/0,5-910	1525555	426	SB-8ESSD8A8L32S	1623686	126	SF-5ES1N8A8LB2S	1618199	154
SACCBP-FS-5CON-PG9/0,5-920SCO	1437520	427	SACCEC-M12MSB-2CON-M16/1,0-910	1525568	426	SB-8ESSD8A8L33S	1623687	126	SF-5ES1N8A8LB3	1605546	154
SACCBP-FS-5CON-PG9/1,0-920SCO	1437533	427	SACCEC-M12MSB-2CON-M16/2,0-910	1519561	426	SB-8ESSD8A8L34S	1623688	126	SF-5ES1N8A8LB3S	1618200	154
SACCBP-FS-5CON-PG9/2,0-920SCO	1437546	427	SACCEC-M12MSB-2CON-M16/5,0-910	1525571	426	SB-8ESSD8A9L32S	1623704	127	SF-5ES1N8A8LB4	1605548	154
SACCBP-FS-5CON-PG9/5,0-920SCO	1437559	427	SACCEC-M12MSB-5CON-M16/0,5-900	1529629	425	SB-8ESSD8A9L33S	1623705	127	SF-5ES1N8A8LB4S	1618201	154
SACCBP-FS-8CON-M16/1,0-PUR SCO	1419357	51	SACCEC-M12MSB-5CON-M16/1,0-900	1530223	425	SB-8ESSD8A9L34S	1623706	127	SF-5ES1N8A8LDL	1605549	154
SACCBP-FS-8CON-M16/2,0-PUR SCO	1419344	51	SACCEC-M12MSB-5CON-M16/2,0-900	1529726	425	SB-8ESSD8AA700S	1623720	128	SF-5ES1N8A8LDLS	1618202	154
SACCBP-FSB-2CON-PG9/0,5-910SCO	1437449	426	SACCEC-M12MSB-5CON-M16/5,0-900	1529739	425	SB-8ESSD8AWT00S	1623726	128	SF-5ES1N8AY000	1607082	157
SACCBP-FSB-2CON-PG9/1,0-910SCO	1437452	426	SB-10KP001	1623607	129	SB-Z0001	1623827	182	SF-5ES1N8AYW00	1607405	157
SACCBP-FSB-2CON-PG9/2,0-910SCO	1437465	426	SB-10KP002	1623611	129	SB-Z0002	1623828	182	SF-6AP2000	1605554	113
SACCBP-FSB-2CON-PG9/5,0-910SCO	1437478	426	SB-10KP003	1623612	129	SB-Z0016	1624515	177	SF-6AS2000	1605557	113
SACCBP-FSB-5CON-PG9/0,5-900SCO	1437601	425	SB-10KP004	1623613	129	SB-Z0026	1624618	177	SF-6CP2000	1605559	113
SACCBP-FSB-5CON-PG9/1,0-900SCO	1437614	425	SB-10KS001	1623603	129	SC-Z2319	1605456	182	SF-6CS2000	1605562	113
SACCBP-FSB-5CON-PG9/2,0-900SCO	1437627	425	SB-10KS002	1623604	129	SC-Z2320	1605457	182	SF-7EE1N8AS000	1605567	159
SACCBP-FSB-5CON-PG9/5,0-900SCO	1437630	425	SB-10KS003	1623605	129	SEALING PLUG 10X16 RD	1400284	480	SF-7EP1N8A90A1	1605568	155
SACCBP-FSD-4CON-PG9/1,0-933SCO	1437779	397	SB-10KS004	1623606	129	SEALING PLUG 12X22 RD	1400260	707	SF-7EP1N8A90A2	1605570	155
SACCBP-FSD-4CON-PG9/2,0-933SCO	1437782	397	SB-36KP002	1623383	129	SEALING PLUG 13X22 RD	1400265	707	SF-7EP1N8A90A3	1605571	155
SACCBP-FSD-4CON-PG9/5,0-933SCO	1437795	397	SB-36KP003	1623384	129	SEALING PLUG 14X22 RD	1400270	480	SF-7EP1N8A90DU	1605575	155
SACCBP-M12FS-5CON-M16/0,5-920	1534465	427	SB-36KP004	1623385	129	SEALING PLUG 17X17 RD	1421861	707	SF-7EP1N8A9LB1	1605578	155
SACCBP-M12FS-5CON-M16/1,0-920	1534478	427	SB-36KP005	1623386	129	SEALING PLUG 20X22 RD	1421862	707	SF-7EP1N8A9LB2	1605580	155
SACCBP-M12FS-5CON-M16/2,0-920	1534481	427	SB-36KS002	1623378	129	SEALING PLUG 25X30 RD	1421863	707	SF-7EP1N8A9LB3	1605581	155
SACCBP-M12FS-5CON-M16/5,0-920	1534494	427	SB-36KS003	1623379	129	SEALING PLUG 28X30 RD	1421864	707	SF-7EP1N8A9LB4	1605582	155
SACCBP-M12FSB-2CON-M16/0,5-910	1534384	426	SB-36KS004	1623380	129	SEALING PLUG 35X35 RD	1421865	707	SF-7EP1N8A9LDL	1605583	155
SACCBP-M12FSB-2CON-M16/1,0-910	1534397	426	SB-36KS005	1623381	129	SEALING PLUG 3X12 RD	1400238	707	SF-7EP1N8AA500	1620660	156
SACCBP-M12FSB-2CON-M16/2,0-910	1534407	426	SB-8EPCAB8A8L32S	1623332	126	SEALING PLUG 48X35 RD	1425357	707	SF-7EP1N8AA600	1620662	156
SACCBP-M12FSB-5CON-M16/0,5-910	1534410	426	SB-8EPCAB8A8L33S	1623333	126	SEALING PLUG 5X12 RD	1400253	707	SF-7EP1N8AC0A1	1607048	158
SACCBP-M12FSB-5CON-M16/0,5-900	1534546	425	SB-8EPCAB8A8L34S	1623334	126	SEALING PLUG 6X16 RD	1400254	707	SF-7EP1N8AC0A2	1607049	158
SACCBP-M12FSB-5CON-M16/1,0-900	1534559	425	SB-8EPCAB8A8L32S	1623356	127	SEALING PLUG 7X16 RD	1400255	480	SF-7EP1N8AC0A3	1607050	158
SACCBP-M12FSB-5CON-M16/2,0-900	1534562	425	SB-8EPCAB8A9L33S	1623357	127	SEALING PLUG 8X16 RD	1400257	707	SF-7EP1N8AC0DU	1607051	158
SACCBP-M12FSB-5CON-M16/5,0-900	1534575	425	SB-8EPCAB8A9L34S	1623358	127	SEALING PLUG 9X16 RD	1400259	707	SF-7EP1N8ACLB1	1607052	158
SACCBP-M12MS-5CON-M16/0,5-920	1534423	427	SB-8EPCAB8AA700S	1623368	128	SF-08KP010	1621574	121	SF-7EP1N8ACLB2	1607053	158
SACCBP-M12MS-5CON-M16/1,0-920	1534436	427	SB-8EPCAB8AWT00S	1623374	128	SF-08KP020	1621575	121	SF-7EP1N8ACLB3	1607054	158
SACCBP-M12MS-5CON-M16/2,0-920	1534449	427	SB-8EPCD8A8L32S	1623692	126	SF-08KS010	1621571	121	SF-7EP1N8ACLB4	1607055	158
SACCBP-M12MS-5CON-M16/5,0-920	1534452	427	SB-8EPCD8A8L33S	1623693	126	SF-08KS020	1621573	121	SF-7EP1N8ACLDL	1607056	158
SACCBP-M12MSB-2CON-M16/0,5-910	1534342	426	SB-8EPCD8A8L34S	1623694	126	SF-10KP004	1607355	113	SF-7EP1N8AWA00	1605589	156
SACCBP-M12MSB-2CON-M16/1,0-910	1534355	426	SB-8EPCD8A9L32S	1623710	127	SF-10KS004	1607356	113	SF-7EP1N8AWA00	1620620	156
SACCBP-M12MSB-2CON-M16/2,0-910	1534368	426	SB-8EPCD8A9L33S	1623711	127	SF-20KP004	1607376	160	SF-7ES1N8A80A1	1605595	154
SACCBP-M12MSB-2CON-M16/5,0-910	1534371	426	SB-8EPCD8A9L34S	1623712	127	SF-20KP011	1050147	148	SF-7ES1N8A80A1S	1618204	154
SACCBP-M12MSB-5CON-M16/0,5-900	1534504	425	SB-8EPCD8AA700S	1623722	128	SF-20KP012	1050205	148	SF-7ES1N8A80A2	1605596	154
SACCBP-M12MSB-5CON-M16/1,0-900	1534517	425	SB-8EPCD8AWT00S	1623728	128	SF-20KP013	1050210	148	SF-7ES1N8A80A2S	1618205	154
SACCBP-M12MSB-5CON-M16/2,0-900	1534520	425	SB-8EPSA8A8L32S	1623335	126	SF-20KP021	1621579	121	SF-7ES1N8A80A3	1605597	154
SACCBP-M12MSB-5CON-M16/5,0-900	1534533	425	SB-8EPSA8A8L33S	1623336	126	SF-20KP022	1621580	121	SF-7ES1N8A80A3S	1618206	154
SACCBP-MS-12CON-M16/1,0-PVCSO	1442227	51	SB-8EPSA8A8L34S	1623337	126	SF-20KP023	1621581	121	SF-7ES1N8A80DU	1605602	154
SACCBP-MS-12CON-M16/2,0-PVCSO	1442230	51	SB-8EPSA8A9L32S	1623359	127	SF-20KS021	1621576	121	SF-7ES1N8A80DUS	1618207	154
SACCBP-MS-17CON-M16/1,0-PVCSO	1442308	51	SB-8EPSA8A9L33S	1623360	127	SF-20KS022	1621577	121	SF-7ES1N8A8LB1	1605605	154
SACCBP-MS-17CON-M16/2,0-PVCSO	1442311	51	SB-8EPSA8A9L34S	1623361	127	SF-20KS023	1621578	121	SF-7ES1N8A8LB1S	1618208	154
SACCBP-MS-4CON-M16/1,0-PUR SCO	1419399	51	SB-8EPSA8AA700S	1623369	128	SF-5EE1N8AS000	1605492	159	SF-7ES1N8A8LB2	1605607	154
SACCBP-MS-4CON-M16/2,0-PUR SCO	1419386	51	SB-8EPSA8AWT00S	1623375	128	SF-5EP1N8A90A1	1605494	155	SF-7ES1N8A8LB2S	1618209	154
SACCBP-MS-5CON-M16/1,0-PUR SCO	1419409	51	SB-8EPSD8A8L32S	1623695	126	SF-5EP1N8A90A2	1605496	155	SF-7ES1N8A8LB3	1605610	154
SACCBP-MS-5CON-M16/2,0-PUR SCO	1419412	51	SB-8EPSD8A8L33S	1623696	126	SF-5EP1N8A90A3	1605498	155	SF-7ES1N8A8LB3S	1618210	154
SACCBP-MS-5CON-PG9/0,5-920SCO	1437562	427	SB-8EPSD8A8L34S	1623697	126	SF-5EP1N8A90DU	1605499	155	SF-7ES1N8A8LB4	1605614	154
SACCBP-MS-5CON-PG9/1,0-920SCO	1437575	427	SB-8EPSD8A9L32S	1623713	127	SF-5EP1N8A9LB1	1605505	155	SF-7ES1N8A8LB4S	1618211	154
SACCBP-MS-5CON-PG9/2,0-920SCO	1437588	427	SB-8EPSD8A9L33S	1623714	127	SF-5EP1N8A9LB2	1605507	155	SF-7ES1N8A8LDL	1605617	154
SACCBP-MS-5CON-PG9/5,0-920SCO	1437591	427	SB-8EPSD8A9L34S	1623715	127	SF-5EP1N8A9LB3	1605508	155	SF-7ES1N8A8LDLS	1618212	154
SACCBP-MS-8CON-M16/1,0-PUR SCO	1419435	51	SB-8EPSD8AA700S	1623723	128	SF-5EP1N8A9LB4	1605509	155	SF-7ES1N8AY000	1605622	157
SACCBP-MS-8CON-M16/2,0-PUR SCO	1419438	51	SB-8EPSD8AWT00S	1623729	128	SF-5EP1N8A9LDL	1605510	155	SF-7ES1N8AYW00	1607429	157
SACCBP-MSB-2CON-PG9/0,5-910SCO	1437481	426	SB-8ESCA8A8L32S	1623324	126	SF-5EP1N8AA500	1620657	156	SF-7MP2000	1605626	160
SACCBP-MSB-2CON-PG9/1,0-910SCO	1437494	426	SB-8ESCA8A8L33S	1623327	126	SF-5EP1N8AA600	1620661	156	SF-7MS2000	1605628	160
SACCBP-MSB-2CON-PG9/2,0-910SCO	1437504	426	SB-8ESCA8A8L34S	1623328	126	SF-5EP1N8AC0A1	1605516	158	SF-7NS2000	1605631	160
SACCBP-MSB-2CON-PG9/5,0-910SCO	1437517	426	SB-8ESCA8A9L32S	1623339	127	SF-5EP1N8AC0A2	1607037	158	SF-7PP2000	1605634	160
SACCBP-MSB-5CON-PG9/0,5-900SCO	1437643	425	SB-8ESCA8A9L33S	1623341	127	SF-5EP1N8AC0A3	1607038	158	SF-7PS2000	1605636	160
SACCBP-MSB-5CON-PG9/1,0-900SCO	1437656	425	SB-8ESCA8A9L34S	1623342	127	SF-5EP1N8AC0DU	1605517	158	SF-7QP2000	1605639	160
SACCBP-MSB-5CON-PG9/2,0-900SCO	1437669	425	SB-8ESCA8AA700S	1623365	128	SF-5EP1N8ACLB1	1607039	158	SF-7QS2000	1605643	160
SACCBP-MSB-5CON-PG9/5,0-900SCO	1437672	425	SB-8ESCA8AWT00S	1623371	128	SF-5EP1N8ACLB2	1607040	158	SF-7RP2000	1605646	160
SACCEC-M12FS-5CON-M16/0,5-920	1525678	427	SB-8ESCD8A8L32S	1623683	126	SF-5EP1N8ACLB3	1607041	158	SF-BIT-HEX 3-50	1212647	685
SACCEC-M12FS-5CON-M16/1,0-920	1525681	427	SB-8ESCD8A8L33S	1623684	126	SF-5EP1N8ACLB4	1607042	158	SF-M BH	1212070	685
SACCEC-M12FS-5CON-M16/2,0-920	1525694	427	SB-8ESCD8A8L34S	1623685	126	SF-5EP1N8ACLDL	1605518	158	SF-Z0019	1607449	181
SACCEC-M12FS-5CON-M16/5,0-920	1525704	427	SB-8ESCD8A9L32S	1623701	127	SF-5EP1N8AWA00	1605520	156	SF-Z0025	1607452	177
SACCEC-M12FSB-2CON-M16/0,5-910	1525597	426	SB-8ESCD8A9L33S	1623702	127	SF-5EP1S8AWA00	1620619	156	SF-Z0026	1607454	177
SACCEC-M12FSB-2CON-M16/1,0-910	1525607	426	SB-8ESCD8A9L34S	1623703	127	SF-5ES1N8A80A1	1605524	154	SF-Z0027	1607455	176
SACCEC-M12FSB-2CON-M16/2,0-910	1519574	426	SB-8ESCD8AA700S	1623719	128	SF-5ES1N8A80A1S	1618194	154	SF-Z0028	1607456	176
SACCEC-M12FSB-2CON-M16/5,0-910	1525610	426	SB-8ESCD8AWT00S	1623725	128	SF-5ES1N8A80A2	1605526	154	SF-Z0042	1613666	177
SACCEC-M12FSB-5CON-M16/0,5-900	1529742	425	SB-8ESSA8A8L32S	1623329	126	SF-5ES1N8A80A2S	1618195	154	SF-Z0054	1615585	177
SACCEC-M12FSB-5CON-M16/1,0-900	1529755	425	SB-8ESSA8A8L33S	1623330	126	SF-5ES1N8A80A3	1605529	154	SF-Z0064	1620585	180
SACCEC-M12FSB-5CON-M16/2,0-900	1529768	425	SB-8ESSA8A8L34S	1623331	126	SF-5ES1N8A80A3S	1618196	154	SF-Z0065	1620586	180
SACCEC-M12FSB-5CON-M16/5,0-900	1529771	425	SB-8ESSA8A9L32S	1623344	127	SF-5ES1N8A80DU	1605532	154	SF-Z0066	1620587	180
SACCEC-M12MS-5CON-M16/0,5-920	1525623	427	SB-8ESSA8A9L33S	1623345	127	SF-5ES1N8A80DUS	1618197	154	SH-8EPC58A		

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SH-8EPC58A8LB3	1622009	118	SI-FP-R1A-D1A	1404496	709	SM-7ES1N8A8L32S	1613434	166	ST-10KP010	1618255	70
SH-8EPC58A8LB3S	1621531	118	SI-FP-R1A-D1B-U1A/0,7	1404504	710	SM-7ES1N8A8L33S	1613435	166	ST-10KP020	1618256	70
SH-8EPC58A8LB4	1622008	118	SI-FP-R1A-D1E	1404500	709	SM-7ES1N8A8L34S	1613436	166	ST-10KP035	1618458	70
SH-8EPC58A8LB4S	1621530	118	SI-FP-R1A-U1A	1404499	711	SM-7ES1N8A8S22	1613528	166	ST-10KS010	1618239	70
SH-8EPC58A8LDL	1622007	118	SI-FP-R1A-U1A-D1A	1404497	710	SM-7ES1N8A8S23	1613529	166	ST-10KS020	1618251	70
SH-8EPC58A8LDLS	1621529	118	SI-FP-R1A-U1A/0,7	1404512	710	SM-7ES1N8A8S24	1613530	166	ST-10KS035	1618464	70
SH-8EPC58A9LB1S	1621553	119	SI-M1A	1404493	708	SM-7ES1N8AY000	1605865	167	ST-17P1N8A6100S	1613540	69
SH-8EPC58A9LB2S	1621552	119	SI-M1B	1404494	708	SM-7ES1N8AY000S	1613534	167	ST-17P1N8A8003	1607624	66
SH-8EPC58A9LB3S	1621551	119	SI-RND-R1A	1425186	720	SM-7ES1N8AYW00	1607543	167	ST-17P1N8A8003S	1607625	66
SH-8EPC58A9LB4S	1621550	119	SI-RND-U1A	1425185	720	SM-7ES1N8AYW00S	1613535	167	ST-17P1N8A8004	1607626	66
SH-8EPC58A9LDLS	1621549	119	SL-16KP010	1607909	175	SM-Z0001	1605866	181	ST-17P1N8A8004S	1607627	66
SH-8EPC58AAC00S	1621561	120	SL-16KS010	1607956	175	SM-Z0003	1607935	179	ST-17P1N8A8005	1624528	66
SH-8EPC58AAD00S	1621565	120	SL-1CKP010	1607911	175	SM-Z0004	1607937	179	ST-17P1N8A8005S	1624529	66
SH-8EPC58AH000S	1627205	120	SL-1CKP020	1607912	175	SM-Z0012	1614349	176	ST-17P1N8A8K02S	1618682	64
SH-8EPC58AWA00S	1621569	119	SL-1CKP030	1607913	175	SM-Z0025	1620558	180	ST-17P1N8A8K03S	1618683	64
SH-8EPS48A8LB1	1622016	118	SL-1CKP040	1607914	175	SM-Z0026	1620559	180	ST-17P1N8A8K04S	1618684	64
SH-8EPS48A8LB1S	1621538	118	SL-1CKP050	1607915	175	SM-Z0027	1620560	180	ST-17P1N8A9003S	1607630	67
SH-8EPS48A8LB2	1622015	118	SL-1CKS010	1607916	175	SM-Z0028	1620627	180	ST-17P1N8A9004S	1607631	67
SH-8EPS48A8LB2S	1621537	118	SL-1CKS020	1607917	175	SM-Z0029	1620628	180	ST-17P1N8A9005S	1624530	67
SH-8EPS48A8LB3	1622014	118	SL-1CKS030	1607918	175	SM-Z0030	1620629	180	ST-17P1N8A9K02S	1613497	64
SH-8EPS48A8LB3S	1621536	118	SL-1CKS040	1607919	175	SM-Z0031	1624199	181	ST-17P1N8A9K03S	1613896	64
SH-8EPS48A8LB4	1622013	118	SL-1CKS050	1607920	175	SM-Z0077	1627218	182	ST-17P1N8A9K04S	1614532	64
SH-8EPS48A8LB4S	1621535	118	SL-5EP1N8A9001	1607499	174	ST-06KP010	1607577	70	ST-17P1N8AA400S	1620441	68
SH-8EPS48A8LDL	1622012	118	SL-5EP1N8A9002	1607500	174	ST-06KP020	1607578	70	ST-17P1N8AA500S	1620458	68
SH-8EPS48A8LDLS	1621534	118	SL-5EPWN8AWA00	1615686	174	ST-06KP030	1607579	70	ST-17P1N8ACK02S	1617863	65
SH-8EPS48A9LB1S	1621558	119	SL-5ES1N8A8001	1607501	174	ST-06KS010	1607580	70	ST-17P1N8ACK03S	1617872	65
SH-8EPS48A9LB2S	1621557	119	SL-5ES1N8A8002	1607503	174	ST-06KS020	1607581	70	ST-17P1N8ACK04S	1617873	65
SH-8EPS48A9LB3S	1621556	119	SL-7EP1N8A9001	1607505	174	ST-06KS030	1607582	70	ST-17P1N8AH100S	1613541	69
SH-8EPS48A9LB4S	1621555	119	SL-7EP1N8A9002	1607506	174	ST-08P1N8A6100S	1618584	69	ST-17P1N8AW400S	1607634	65
SH-8EPS48A9LDLS	1621554	119	SL-7EPWN8AWA00	1615687	174	ST-08P1N8A8003	1618995	66	ST-17P1N8AW500S	1619225	67
SH-8EPS48AA00S	1621562	120	SL-7ES1N8A8001	1607507	174	ST-08P1N8A8003S	1618996	66	ST-17P1N8AWK00S	1619202	67
SH-8EPS48AA00S	1621566	120	SL-7ES1N8A8002	1607508	174	ST-08P1N8A8004	1618996	66	ST-17P1N8AWQ00S	1607636	65
SH-8EPS48AH000S	1627206	120	SL-Z0005	1607926	181	ST-08P1N8A8004S	1619000	66	ST-17S1N8A6100S	1613542	69
SH-8EPS48AWA00S	1621570	119	SL-Z0007	1613484	178	ST-08P1N8A8005	1618997	66	ST-17S1N8A8003	1607641	66
SH-8ESC58A8LB1	1622001	118	SL-Z0008	1613485	178	ST-08P1N8A8005S	1619001	66	ST-17S1N8A8003S	1607642	66
SH-8ESC58A8LB1S	1621523	118	SL-Z0010	1613487	178	ST-08P1N8A8K02S	1618641	64	ST-17S1N8A8004	1607643	66
SH-8ESC58A8LB2	1622000	118	SL-Z0011	1613488	178	ST-08P1N8A8K03S	1618648	64	ST-17S1N8A8004S	1607644	66
SH-8ESC58A8LB2S	1621522	118	SL-Z0012	1613489	178	ST-08P1N8A8K04S	1618649	64	ST-17S1N8A8005	1624531	66
SH-8ESC58A8LB3	1621999	118	SL-Z0013	1613490	178	ST-08P1N8A9003S	1619011	67	ST-17S1N8A8005S	1624532	66
SH-8ESC58A8LB3S	1621521	118	SL-Z0014	1613491	178	ST-08P1N8A9004S	1619012	67	ST-17S1N8A8K02S	1613288	64
SH-8ESC58A8LB4	1621998	118	SL-Z0015	1613492	178	ST-08P1N8A9005S	1619013	67	ST-17S1N8A8K03S	1613324	64
SH-8ESC58A8LB4S	1621520	118	SL-Z0016	1614348	176	ST-08P1N8A9K02S	1617799	64	ST-17S1N8A8K04S	1613325	64
SH-8ESC58A8LDL	1621997	118	SM-20KP005	1605736	169	ST-08P1N8A9K03S	1617813	64	ST-17S1N8A9003S	1607647	67
SH-8ESC58A8LDLS	1621517	118	SM-20KP006	1605738	169	ST-08P1N8A9K04S	1617830	64	ST-17S1N8A9004S	1607649	67
SH-8ESC58A9LB1S	1621543	119	SM-20KP007	1605739	169	ST-08P1N8AA400S	1620439	68	ST-17S1N8A9005S	1624533	67
SH-8ESC58A9LB2S	1621542	119	SM-20KP008	1605741	169	ST-08P1N8AA500S	1620456	68	ST-17S1N8A9K02S	1618756	64
SH-8ESC58A9LB3S	1621541	119	SM-36KP001	1605743	169	ST-08P1N8ACK02S	1617925	65	ST-17S1N8A9K03S	1618757	64
SH-8ESC58A9LB4S	1621540	119	SM-36KP003	1605745	169	ST-08P1N8ACK03S	1617929	65	ST-17S1N8A9K04S	1618758	64
SH-8ESC58A9LDLS	1621539	119	SM-36KP004	1605747	169	ST-08P1N8ACK04S	1617932	65	ST-17S1N8AA400S	1620442	68
SH-8ESC58AAC00S	1621559	120	SM-36KP005	1605749	169	ST-08P1N8AH100S	1619034	69	ST-17S1N8AA500S	1620457	68
SH-8ESC58AAD00S	1621563	120	SM-36KP006	1605750	169	ST-08P1N8AW400S	1619037	65	ST-17S1N8ACK02S	1618834	65
SH-8ESC58AH000S	1624344	120	SM-36KP007	1605752	169	ST-08P1N8AW500S	1619219	67	ST-17S1N8ACK03S	1618835	65
SH-8ESC58AWA00S	1621567	119	SM-36KP008	1605754	169	ST-08P1N8AWK00S	1619196	67	ST-17S1N8ACK04S	1618836	65
SH-8ESS48A8LB1	1622006	118	SM-36KP009	1607057	169	ST-08P1N8AWQ00S	1613286	65	ST-17S1N8AH100S	1613543	69
SH-8ESS48A8LB1S	1621528	118	SM-36KP016	1623970	169	ST-08S1N8A6100S	1619036	69	ST-17S1N8AW400S	1607653	65
SH-8ESS48A8LB2	1622005	118	SM-36KS001	1605756	169	ST-08S1N8A8003	1619003	66	ST-17S1N8AW500S	1619226	67
SH-8ESS48A8LB2S	1621527	118	SM-36KS002	1605758	169	ST-08S1N8A8003S	1619007	66	ST-17S1N8AWK00S	1619206	67
SH-8ESS48A8LB3	1622004	118	SM-36KS003	1605760	169	ST-08S1N8A8004	1619004	66	ST-17S1N8AWQ00S	1607654	65
SH-8ESS48A8LB3S	1621526	118	SM-36KS004	1605762	169	ST-08S1N8A8004S	1619008	66	ST-20KP010	1607655	140
SH-8ESS48A8LB4	1622003	118	SM-36KS016	1623972	169	ST-08S1N8A8005	1619005	66	ST-20KP020	1607656	140
SH-8ESS48A8LB4S	1621525	118	SM-5EP1N8A9L32S	1613425	166	ST-08S1N8A8005S	1619009	66	ST-20KS010	1607657	140
SH-8ESS48A8LDL	1622002	118	SM-5EP1N8A9L33S	1613426	166	ST-08S1N8A8K02S	1613370	64	ST-20KS020	1607658	140
SH-8ESS48A8LDLS	1621524	118	SM-5EP1N8A9L34S	1613427	166	ST-08S1N8A8K03S	1613371	64	ST-3EP1N8A6100S	1613544	139
SH-8ESS48A9LB1S	1621548	119	SM-5EPWN8AA700	1620663	168	ST-08S1N8A8K04S	1613372	64	ST-3EP1N8A8003	1607663	136
SH-8ESS48A9LB2S	1621547	119	SM-5EPWN8AWT00	1613517	166	ST-08S1N8A9003S	1619015	67	ST-3EP1N8A8003S	1607665	136
SH-8ESS48A9LB3S	1621546	119	SM-5ES1N8A8L32S	1613428	166	ST-08S1N8A9004S	1619016	67	ST-3EP1N8A8004	1607666	136
SH-8ESS48A9LB4S	1621545	119	SM-5ES1N8A8L33S	1613429	166	ST-08S1N8A9005S	1619017	67	ST-3EP1N8A8004S	1607667	136
SH-8ESS48A9LDLS	1621544	119	SM-5ES1N8A8L34S	1613430	166	ST-08S1N8A9K02S	1618724	64	ST-3EP1N8A8005	1624534	136
SH-8ESS48AAC00S	1621560	120	SM-5ES1N8A8S22	1613518	166	ST-08S1N8A9K03S	1618725	64	ST-3EP1N8A8005S	1624535	136
SH-8ESS48AA00S	1621564	120	SM-5ES1N8A8S23	1613519	166	ST-08S1N8A9K04S	1618726	64	ST-3EP1N8A8K02S	1618602	134
SH-8ESS48AH000S	1627204	120	SM-5ES1N8A8S24	1613520	166	ST-08S1N8AA400S	1620440	68	ST-3EP1N8A8K03S	1618574	134
SH-8ESS48AWA00S	1621568	119	SM-5ES1N8AY000	1605823	167	ST-08S1N8AA500S	1620455	68	ST-3EP1N8A8K04S	1618575	134
SH-Z2007	1627226	182	SM-5ES1N8AY000S	1613524	167	ST-08S1N8ACK02S	1618801	65	ST-3EP1N8A9003S	1607670	137
SH-Z2300	1622141	182	SM-5ES1N8AYW00	1607532	167	ST-08S1N8ACK03S	1618802	65	ST-3EP1N8A9004S	1607671	137
SH-Z2301	1622140	182	SM-5ES1N8AYW00S	1613525	167	ST-08S1N8ACK04S	1618805	65	ST-3EP1N8A9005S	1624536	137
SH-Z2302	1622139	182	SM-7EP1N8A9L32S	1613431	166	ST-08S1N8AH100S	1619035	69	ST-3EP1N8A9K02S	1620614	134
SH-Z2303	1622138	182	SM-7EP1N8A9L33S	1613432	166	ST-08S1N8AW400S	1619038	65	ST-3EP1N8A9K03S	1618406	134
SH-Z2304	1622137	181	SM-7EP1N8A9L34S	1613433	166	ST-08S1N8AW500S	1619220	67	ST-3EP1N8A9K04S	1618690	134
SI-FP-2R1A-U1A	1404506	711	SM-7EPWN8AA700	1620664	168	ST-08S1N8AWK00S	1619197	67	ST-3EP1N8AA400S	1620427	138
SI-FP-D1A	1404501	709	SM-7EPWN8AWT00	1613527	166	ST-08S1N8AWQ00S	1619039	65	ST-3EP1N8AA500S	1620444	138

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ST-3EP1N8ACK03S	1618407	135	ST-5ES1N8AH100S	1613551	139	ST-7EP1N8AW500S	1619217	137	ST-8ES1N8AWQ00S	1613631	135
ST-3EP1N8ACK04S	1618760	135	ST-5EP1N8AW400S	1607727	135	ST-7EP1N8AWK00S	1619194	137	ST-E2015151	1613631	69
ST-3EP1N8AH100S	1613545	139	ST-5ES1N8AW500S	1619214	137	ST-7EP1N8AWQ00S	1607747	135	ST-Z0001	1607770	179
ST-3EP1N8AW400S	1607674	135	ST-5ES1N8AWK00S	1619191	137	ST-7ES1N8A6100S	1613592	139	ST-Z0002	1607771	179
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ST-3EP1N8AWK00S	1619186	137	ST-6EP1N8A6100S	1613553	139	ST-7ES1N8A8003S	1607756	136	ST-Z0004	1607773	179
ST-3EP1N8AWQ00S	1607675	135	ST-6EP1N8A8003	1613558	136	ST-7ES1N8A8004	1607758	136	ST-Z0005	1607775	179
ST-3ES1N8A6100S	1613546	139	ST-6EP1N8A8003S	1613559	136	ST-7ES1N8A8004S	1607759	136	ST-Z0006	1607776	181
ST-3ES1N8A8003	1607682	136	ST-6EP1N8A8004	1613560	136	ST-7ES1N8A8005	1624555	136	ST-Z0007	1607777	181
ST-3ES1N8A8003S	1607683	136	ST-6EP1N8A8004S	1613561	136	ST-7ES1N8A8005S	1624556	136	ST-Z0012	1613667	176
ST-3ES1N8A8004	1607684	136	ST-6EP1N8A8005	1624546	136	ST-7ES1N8A8K02S	1618633	134	ST-Z0013	1616068	182
ST-3ES1N8A8004S	1607685	136	ST-6EP1N8A8005S	1624547	136	ST-7ES1N8A8K03S	1618634	134	ST-Z0014	1616069	182
ST-3ES1N8A8005	1624537	136	ST-6EP1N8A8K02S	1618622	134	ST-7ES1N8A8K04S	1618635	134	ST-Z0016	1617993	180
ST-3ES1N8A8005S	1624538	136	ST-6EP1N8A8K03S	1618623	134	ST-7ES1N8A9003S	1607764	137	ST-Z0017	1618049	180
ST-3ES1N8A8K02S	1618312	134	ST-6EP1N8A8K04S	1618624	134	ST-7ES1N8A9004S	1607765	137	ST-Z0018	1618050	180
ST-3ES1N8A8K03S	1618408	134	ST-6EP1N8A9003S	1613564	137	ST-7ES1N8A9005S	1624557	137	ST-Z0019	1620621	180
ST-3ES1N8A8K04S	1618603	134	ST-6EP1N8A9004S	1613565	137	ST-7ES1N8A9K02S	1618716	134	ST-Z0020	1620622	180
ST-3ES1N8A9003S	1607688	137	ST-6EP1N8A9005S	1624548	137	ST-7ES1N8A9K03S	1618717	134	ST-Z0021	1620623	180
ST-3ES1N8A9004S	1607689	137	ST-6EP1N8A9K02S	1618704	134	ST-7ES1N8A9K04S	1618718	134	ST-Z0023	1621049	181
ST-3ES1N8A9005S	1624539	137	ST-6EP1N8A9K03S	1618705	134	ST-7ES1N8AA400S	1620436	138	ST-Z0024	1621904	181
ST-3ES1N8A9K02S	1618695	134	ST-6EP1N8A9K04S	1618706	134	ST-7ES1N8AA500S	1620451	138	ST-Z0077	1627217	182
ST-3ES1N8A9K03S	1618694	134	ST-6EP1N8AA400S	1620433	138	ST-7ES1N8ACK02S	1618787	135	SZK PZ1 VDE	1206450	313
ST-3ES1N8A9K04S	1618693	134	ST-6EP1N8AA500S	1620450	138	ST-7ES1N8ACK03S	1618786	135	SZK PZ2 VDE	1206463	310
ST-3ES1N8AA400S	1620448	138	ST-6EP1N8ACK02S	1618776	135	ST-7ES1N8ACK04S	1618785	135	SZS 0,4X2,0	1205202	312
ST-3ES1N8AA500S	1620423	138	ST-6EP1N8ACK03S	1618777	135	ST-7ES1N8AH100S	1613593	139			
ST-3ES1N8ACK02S	1618762	135	ST-6EP1N8ACK04S	1618778	135	ST-7ES1N8AW400S	1607768	135			
ST-3ES1N8ACK03S	1618763	135	ST-6EP1N8AH100S	1613568	139	ST-7ES1N8AW500S	1619218	137			
ST-3ES1N8ACK04S	1618764	135	ST-6EP1N8AW400S	1613569	135	ST-7ES1N8AWK00S	1619195	137			
ST-3ES1N8AH100S	1613547	139	ST-6EP1N8AW500S	1619215	137	ST-7ES1N8AWQ00S	1607769	135			
ST-3ES1N8AW400S	1607692	135	ST-6EP1N8AWK00S	1619192	137	ST-8EP1N8A6100S	1613595	139			
ST-3ES1N8AW500S	1619212	137	ST-6EP1N8AWQ00S	1613570	135	ST-8EP1N8A8003	1613600	136			
ST-3ES1N8AWK00S	1619189	137	ST-6ES1N8A6100S	1613572	139	ST-8EP1N8A8003S	1613601	136	TF-SCRJ-POF KONF SET	1405246	384
ST-3ES1N8AWQ00S	1607694	135	ST-6ES1N8A8003	1613577	136	ST-8EP1N8A8004	1613602	136	TMT 5 R	0816430	373
ST-5EP1N8A6100S	1613548	139	ST-6ES1N8A8003S	1613578	136	ST-8EP1N8A8004S	1613603	136	TS2 02 SAC	1208487	306
ST-5EP1N8A8003	1607699	136	ST-6ES1N8A8004	1613579	136	ST-8EP1N8A8005	1624636	136	TS4 04 SAC	1208429	57
ST-5EP1N8A8003S	1607700	136	ST-6ES1N8A8004S	1613580	136	ST-8EP1N8A8005S	1624637	136	TS4 08 SAC	1212597	57
ST-5EP1N8A8004	1607701	136	ST-6ES1N8A8005	1624549	136	ST-8EP1N8A8K02S	1618681	134	TS4 20 SAC	1212020	315
ST-5EP1N8A8004S	1607702	136	ST-6ES1N8A8005S	1624550	136	ST-8EP1N8A8K03S	1618680	134	TS4 25 SAC	1212315	310
ST-5EP1N8A8005	1624540	136	ST-6ES1N8A8K02S	1618632	134	ST-8EP1N8A8K04S	1618679	134	TS4-M 1,2NM	1212224	57
ST-5EP1N8A8005S	1624541	136	ST-6ES1N8A8K03S	1618631	134	ST-8EP1N8A9003S	1613606	137	TS4-M 3NM	1212225	57
ST-5EP1N8A8K02S	1618614	134	ST-6ES1N8A8K04S	1618630	134	ST-8EP1N8A9004S	1613607	137	TS4-M 6NM	1212226	57
ST-5EP1N8A8K03S	1618615	134	ST-6ES1N8A9003S	1613583	137	ST-8EP1N8A9005S	1624653	137	TS4-M SAC-BIT ADAPTER	1212600	57
ST-5EP1N8A8K04S	1618616	134	ST-6ES1N8A9004S	1613584	137	ST-8EP1N8A9K02S	1618740	134			
ST-5EP1N8A9003S	1607706	137	ST-6ES1N8A9005S	1624551	137	ST-8EP1N8A9K03S	1618741	134			
ST-5EP1N8A9004S	1607707	137	ST-6ES1N8A9K02S	1618708	134	ST-8EP1N8A9K04S	1618742	134			
ST-5EP1N8A9005S	1624542	137	ST-6ES1N8A9K03S	1618709	134	ST-8EP1N8AA400S	1620437	138			
ST-5EP1N8A9K02S	1618703	134	ST-6ES1N8A9K04S	1618710	134	ST-8EP1N8AA500S	1620454	138			
ST-5EP1N8A9K03S	1618702	134	ST-6ES1N8AA400S	1620434	138	ST-8EP1N8ACK02S	1618818	135	UC-EM (17,5X9)	0827490	312
ST-5EP1N8A9K04S	1618701	134	ST-6ES1N8AA500S	1620449	138	ST-8EP1N8ACK03S	1618819	135	UC-EM (17,5X9) CUS	0828238	312
ST-5EP1N8AA400S	1620431	138	ST-6ES1N8ACK02S	1618780	135	ST-8EP1N8ACK04S	1618820	135	UC-EM (17,5X9) YE	0827494	312
ST-5EP1N8AA500S	1620448	138	ST-6ES1N8ACK03S	1618781	135	ST-8EP1N8AH100S	1613610	139	UC-EM (17,5X9) YE CUS	0828239	312
ST-5EP1N8ACK02S	1618767	135	ST-6ES1N8ACK04S	1618782	135	ST-8EP1N8AW400S	1613611	135	UC-TMF 5	0818153	373
ST-5EP1N8ACK03S	1618768	135	ST-6ES1N8AH100S	1613587	139	ST-8EP1N8AW500S	1620462	137	UC-TMF 8	0818137	714
ST-5EP1N8ACK04S	1618769	135	ST-6ES1N8AW400S	1613588	135	ST-8EP1N8AWK00S	1620460	137	UC-TMF 16	0819262	714
ST-5EP1N8AH100S	1613549	139	ST-6ES1N8AW500S	1619216	137	ST-8EP1N8AWQ00S	1613612	135	UC-TMF 16 YE	0819259	314
ST-5EP1N8AW400S	1607710	135	ST-6ES1N8AWK00S	1619193	137	ST-8ES1N8A6100S	1613614	139	UCT-EM (7X10)	0830765	301
ST-5EP1N8AW500S	1619213	137	ST-6ES1N8AWQ00S	1613589	135	ST-8ES1N8A8003	1613619	139	UNIFOX MT-CK 1.6/2.5	1089092	669
ST-5EP1N8AWK00S	1619190	137	ST-7EP1N8A6100S	1613590	139	ST-8ES1N8A8003S	1613620	136	UNIFOX RT-CK 1.6	1072069	670
ST-5EP1N8AWQ00S	1607711	135	ST-7EP1N8A8003	1607735	136	ST-8ES1N8A8004	1613621	136	UNIFOX RT-CK 2.5	1072067	670
ST-5ES1N8A6100S	1613550	139	ST-7EP1N8A8003S	1607736	136	ST-8ES1N8A8004S	1613622	136	UNIFOX RT-CK 4.0	1072064	670
ST-5ES1N8A8003	1607717	136	ST-7EP1N8A8004	1607737	136	ST-8ES1N8A8005	1624638	136	UNIFOX-WP	1212365	659
ST-5ES1N8A8003S	1607718	136	ST-7EP1N8A8004S	1607738	136	ST-8ES1N8A8005S	1624639	136	USS 4	1203149	708
ST-5ES1N8A8004	1607719	136	ST-7EP1N8A8005	1624552	136	ST-8ES1N8A8K02S	1618674	134			
ST-5ES1N8A8004S	1607720	136	ST-7EP1N8A8005S	1624553	136	ST-8ES1N8A8K03S	1618675	134			
ST-5ES1N8A8005	1624543	136	ST-7EP1N8A8K02S	1618640	134	ST-8ES1N8A8K04S	1618676	134			
ST-5ES1N8A8005S	1624544	136	ST-7EP1N8A8K03S	1618639	134	ST-8ES1N8A9003S	1613625	137			
ST-5ES1N8A8K02S	1618621	134	ST-7EP1N8A8K04S	1618638	134	ST-8ES1N8A9004S	1613626	137			
ST-5ES1N8A8K03S	1618620	134	ST-7EP1N8A9003S	1607741	137	ST-8ES1N8A9005S	1624654	137	VS-04-2X2X26C7/7-67A/67B/2,0	1653870	452
ST-5ES1N8A8K04S	1618619	134	ST-7EP1N8A9004S	1607742	137	ST-8ES1N8A9K02S	1618748	134	VS-04-2X2X26C7/7-67A/67B/5,0	1653883	452
ST-5ES1N8A9003S	1607723	137	ST-7EP1N8A9005S	1624554	137	ST-8ES1N8A9K03S	1618749	134	VS-04-2X2X26C7/7-67A/OE/1,0	1655742	452
ST-5ES1N8A9004S	1607724	137	ST-7EP1N8A9K02S	1618712	134	ST-8ES1N8A9K04S	1618750	134	VS-04-2X2X26C7/7-67A/OE/2,0	1655755	452
ST-5ES1N8A9005S	1624545	137	ST-7EP1N8A9K03S	1618713	134	ST-8ES1N8AA400S	1620438	138	VS-04-2X2X26C7/7-67A/OE/5,0	1655768	452
ST-5ES1N8A9K02S	1618696	134	ST-7EP1N8A9K04S	1618714	134	ST-8ES1N8AA500S	1620453	138	VS-04-2X2X26C7/7-67A/SDB/2,0	1653896	452
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