

# Sensor/Actuator Cabling and Industrial Connectors

2015/2016

# 4





# Sensor/actuator cabling and industrial connectors



## 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



## Marking systems, tools, and mounting material

- Marking and labeling
- Tools
- Installation and mounting material



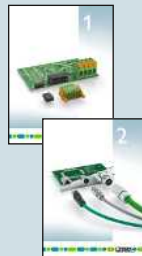
## Control technology, I/O systems, and automation infrastructure

- Lighting and signaling
- Fieldbus components and systems
- Functional Safety
- HMIs and industrial PCs
- I/O systems
- Industrial Ethernet
- Industrial communication technology
- Software
- Controllers
- Wireless data communication



## Surge protection and power supplies

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



## PCB connection technology and electronics housing 2013/14

- PCB terminal blocks and PCB connectors
- Electronics housing

## Connection technology for field devices 2013/14

- Connectors
- Cables and lines

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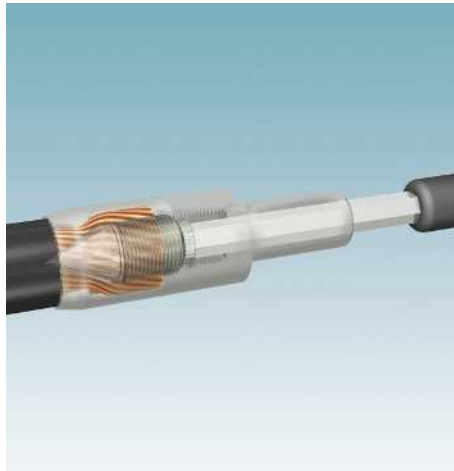
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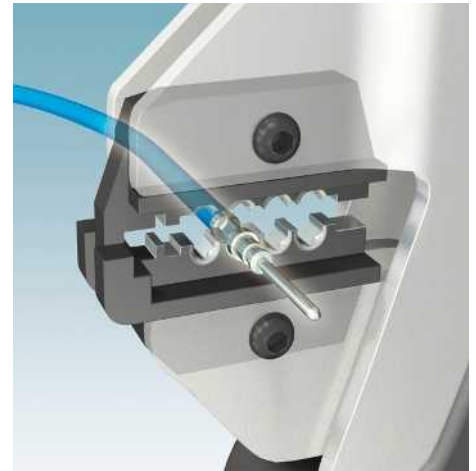
### Screw connection

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 tighten the terminal screw again. All kinds of copper cables can be clamped without pretreatment, thereby making gas-tight and reliable contact. The wire protector, which protects the individual litz wires from damage, is located between the screw and the conductor. It 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 wires may also be clamped under one screw. The current-carrying parts of the screw connections are made of high-grade, strain-crack, and corrosion-proof copper alloys.



### Axial screw connection

With this method, the wire end to be contacted is guided into the connection area of the pin or socket contact. A cone-shaped prong (part of the contact) is then screwed into the stranded wire from the front. The strands of the wire are radially pressed 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 prong is pressed in using a hexagon key which is applied to the front of the contact. This connection technology combines the advantages of screw and crimp connection. It requires very little space, is easy to execute, and only requires a standard Allen key.



### Crimp connection

The crimp connection impresses with its small space requirements and its cost-effective creation in series production. For a reliable connection, it is essential that the conductor cross section, the crimp contact, and the crimping tool are compatible. Furthermore, the crimping process must be monitored during large-scale production as the crimping tools are subject to a certain degree of wear.

Crimp connections can be established with the aid of crimping pliers or crimp machines through specific deformation of the crimping ranges of the contact. The requirements for crimp connections are defined in DIN EN 60352-2. Proof of the quality of a crimp connection can be seen in the tensile strength of the connection and crack-free deformation of the crimp contact. Crimping must 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.





### Spring connection

The spring connection contains a steel spring which pushes the stripped conductor against a busbar. The terminal point is opened with a standard screwdriver. After the conductor has been inserted into the clamping space, the screwdriver is removed and the conductor automatically makes contact. The contact force is independent of the user and a vibration-proof, gas-tight connection with long-term stability is established. The front connection provides an additional advantage. The conductor and screwdriver come in parallel from the same direction and are always within the user's field of vision. Contact inserts can thereby also be connected or re-wired even when mounted. All kinds of copper cables can be clamped without pretreatment, thereby making gas-tight and reliable contact. Splicing protection can also be implemented in the form of a ferrule.



### Push-in connection

Stranded conductors with ferrules or solid 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 and thereby provides the required pressure force against the current bar for a gas-tight, vibration and shock-proof connection. With the aid of the orange pusher, the terminal block can be opened manually so that conductors with smaller cross sections can also be securely connected. To release the conductor, the orange pusher features a confusion-free and defined operating element. The conductive metals are made from high-grade copper alloys. All metal parts of the connection are made of corrosion-resistant materials.



### QUICKON fast connection for single wires

The QUICKON connection is equipped with an IDC insulation displacement contact. The term "IDC" stands for Insulation Displacement Connection. With this connection method, a non-stripped 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 a gas-tight contact is made between the wire and the contact. This can save at least 60% of connection time.

The connection force is independent of the user and completely reliable provided the permitted conductor cross sections and connection conditions are observed. Solid and stranded 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 modular terminal blocks to CEE plug-in equipment from 0.14 to 6.0 mm<sup>2</sup>.

## Product range overview

### Connectors



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Sensor/actuator cabling



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## Product range overview



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## Product range overview

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# Connectors

PLUSCON circular is the range of circular connectors for use in industrial automation. The sizes available range from M5, M8, and M12 through M17 and M23 to M40 and M58 connectors. The latter are used exclusively to transmit electrical power up to 150 A at 630 V per contact feed-through. The complete range covers the entire scope of circular connectors for industrial applications.

## Sensor/actuator connectors

Safe and efficient assembly is of utmost importance in field wiring. You can choose from all connection technologies, enabling you to precisely adapt to the relevant application or requirements in the field. The connectors for assembly are available in various versions, unshielded and EMC-compliant.

## Sensor/actuator device connectors

A comprehensive range of device connectors and panel feed-throughs has emerged as a result of the various requirements for device connection technology in industrial environments. Customer-specific developments enable optimum adaptation to individual device concepts.

## 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. The circular connector range is rounded off with a complete portfolio of plastic molded connectors.

## Sensor/actuator connectors

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# Connectors

## M8 sensor/actuator connectors

### M8, solder connection



Unshielded,  
3-, 4-pos.



Shielded,  
3-, 4-pos.

ERC

#### Technical data

	3-pos.	4-pos.
General data		
M8 circular connector according to:	IEC 61076-2-104	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Solder connection	
Cable diameter	3.5 mm ... 5 mm	
Connection cross section [mm <sup>2</sup> ]	0.08 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / Au	
Contact carrier material	PA	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-40 ... 85 [°C]	

ERC

#### Technical data

	3-pos.	4-pos.
General data		
M8 circular connector according to:	IEC 61076-2-104	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Solder connection	
Cable diameter	3.5 mm ... 5 mm	
Connection cross section [mm <sup>2</sup> ]	0.08 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / Au	
Contact carrier material	PA	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-40 ... 85 [°C]	

#### Ordering data

Description	Order No.		Pcs. / Pkt.	
	3-pos.	4-pos.	3-pos.	4-pos.
<b>Connectors</b>				
Socket, angled	1529399	1513444	1	1
Plug, angled	1699902	1554209	1	1
Socket, straight	1681172	1681185	1	1
Plug, straight	1681156	1681169	1	1

#### Ordering data

Description	Order No.		Pcs. / Pkt.	
	3-pos.	4-pos.	3-pos.	4-pos.
<b>Connectors</b>				
Socket, angled	1436479	1436482	1	1
Plug, angled	1436453	1436466	1	1
Socket, straight	1506927	1506930	1	1
Plug, straight	1506901	1506914	1	1

#### Accessories

Pressure screw and seal, for cable diameters:	Order No.	Pcs. / Pkt.
2.5 mm ... 3.5 mm	SACC-M 8-SET/2,2-3,5	1436945 5

#### Accessories

Pressure screw and seal, for cable diameters:	Order No.	Pcs. / Pkt.
2.5 mm ... 3.5 mm	SACC-M 8-SET/2,2-3,5	1436945 5

**M8, insulation displacement connection**



0.08 mm<sup>2</sup> - 0.25 mm<sup>2</sup>,  
3-, 4-pos.



0.25 mm<sup>2</sup> - 0.5 mm<sup>2</sup>,  
3-, 4-pos.



	Technical data	
	3-pos.	4-pos.
General data	IEC 61076-2-104	
M8 circular connector according to:	3	
Pollution degree	IP65/IP67	
Degree of protection	Insulation displacement connection	
Connection method	2.5 mm ... 5 mm ±0.2 mm	
Cable diameter		
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU GF	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-25 ... 80 [°C]	



	Technical data	
	3-pos.	4-pos.
General data	IEC 61076-2-104	
M8 circular connector according to:	3	
Pollution degree	IP65/IP67	
Degree of protection	Insulation displacement connection	
Connection method	2.5 mm ... 5 mm ±0.2 mm	
Cable diameter		
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU GF	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-25 ... 80	

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	3-pos.		4-pos.	
<b>Connectors</b>				
Socket, straight	1441040	1	1441053	1
Plug, straight	1441008	1	1441011	1

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	3-pos.		4-pos.	
<b>Connectors</b>				
Socket, straight	1441066	1	1441079	1
Plug, straight	1441024	1	1441037	1

# Connectors

## M8 sensor/actuator connectors

### M8, screw connection



Unshielded,  
3-, 4-pos.



Shielded,  
3-, 4-pos.

ERC

#### Technical data

	3-pos.	4-pos.
General data		
M8 circular connector according to:	IEC 61076-2-104	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Screw connection	
Cable diameter	3.5 mm ... 5 mm	
Connection cross section [mm <sup>2</sup> ]	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / Au	
Contact carrier material	PA	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-40 ... 85 [°C]	

#### Ordering data

Description	3-pos.		4-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>				
Socket, straight	1506888	1	1506891	1
Plug, straight	1501252	1	1501265	1
Socket, angled	1407582	1	1407584	1
Plug, angled	1407583	1	1407585	1

#### Accessories

Pressure screw and seal, for cable diameters:		
2.5 mm ... 3.5 mm	SACC-M 8-SET/2,2-3,5	1436945 5

ERC

#### Technical data

	3-pos.	4-pos.
General data		
M8 circular connector according to:	IEC 61076-2-104	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Screw connection	
Cable diameter	3.5 mm ... 5.5 mm	
Connection cross section [mm <sup>2</sup> ]	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	
Electrical data		
Rated voltage	60 V	30 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / Au	
Contact carrier material	PA	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-40 ... 85 [°C]	

#### Ordering data

Description	3-pos.		4-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>				
Socket, straight	1542907	1	1542910	1
Plug, straight	1542884	1	1542897	1

#### Accessories

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



**M12, solder and Piercecon®  
connection**

**Solder connection,  
12-pos.**

**Piercecon® connection,  
12, 17-pos.**

ERIC

	Technical data	
	Unshielded	Shielded
General data		
M12 circular connector according to:	IEC 61076-2-101	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Solder connection	
Cable diameter	6 mm ... 8 mm	
Connection cross section [mm <sup>2</sup> ]	0.08 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	
Electrical data		
Rated voltage	30 V	
Rated current	1 A	
Insulation resistance	> 10 GΩ	
Material data		
Material contact/contact surface	CuZn / Au	
Contact carrier material	PA	
Inflammability class according to UL 94	HB	
Temperature data		
Plug/socket	-40 ... 85	

ERIC

	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Piercecon® fast connection	
Cable diameter	5.4 mm ... 8.2 mm	
Connection cross section [mm <sup>2</sup> ]	0.14 mm <sup>2</sup>	
Electrical data		
Rated voltage	30 V	
Rated current	1.5 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / Ni/Au	
Contact carrier material	PA	
Inflammability class according to UL 94	V0	
Temperature data		
Plug/socket	-25 ... 85	

Description	Coding	Ordering data			
		Unshielded		shielded	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>					
Socket, straight	A - standard	1404420	1	1404411	1
Plug, straight	A - standard	1404419	1	1404410	1
Socket, angled	A - standard	1404423	1	1404413	1
Plug, angled	A - standard	1404421	1	1404412	1

Description	Coding	Ordering data			
		12-pos.		17-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>					
Socket, straight	A - standard	1559631	1	1559644	1
Plug, straight	A - standard	1559592	1	1559602	1

## M12 sensor/actuator connectors

### M12, insulation displacement connection

new

**Notes:**

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 319



unshielded,  
4-pos.



shielded, 0.14 mm<sup>2</sup> ... 0.75 mm<sup>2</sup>,  
4, 5-pos.



	Technical data		Technical data		Technical data		Technical data		
	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>	0.34 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	4-pos.	5-pos.	4-pos.	5-pos.	4-pos.	5-pos.	
General data	IEC 61076-2-101		IEC 61076-2-101		IEC 61076-2-101		IEC 61076-2-101		
M12 circular connector according to:	3		3		3		3		
Pollution degree	IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67		
Degree of protection	Insulation displacement connection		Insulation displacement connection		Insulation displacement connection		Insulation displacement connection		
Connection method	3.5 mm ... 6 mm	4 mm ... 8 mm	5 mm ... 9.7 mm		5 mm ... 9.7 mm		5 mm ... 9.7 mm		
Cable diameter	125 V		250 V AC/DC		250 V AC/DC		60 V AC/DC		
Electrical data	4 A		4 A		4 A		4 A		
Rated voltage	≥ 100 MΩ		≥ 100 MΩ		≥ 100 MΩ		≥ 100 MΩ		
Rated current	CuSn / Ni/Au		CuSn / Ni/Au		CuSn / Ni/Au		CuSn / Ni/Au		
Insulation resistance	TPU		TPU		TPU		TPU		
Material data	V0		V0		V0		V0		
Material contact/contact surface	-25 ... 80		-40 ... 85		-40 ... 85		-40 ... 85		
Contact carrier material									
Inflammability class according to UL 94									
Temperature data									
Plug/socket	[°C]		[°C]		[°C]		[°C]		
	Ordering data				Ordering data				
Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>	0.34 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	4-pos.	5-pos.	4-pos.	5-pos.		
<b>Connector, with plastic knurl</b>									
Socket, straight	A - standard	1641701	1	1641756	1				
Plug, straight	A - standard	1641714	1	1641769	1				
<b>Connector, with metal knurl, SPEEDCON</b>									
Socket, straight	A - standard	1521588	1	1521601	1	1413994	1	1413992	1
Plug, straight	A - standard	1521575	1	1521591	1	1413993	1	1413991	1
<b>Connector, with metal knurl</b>									
Socket, straight	A - standard	1641688	1	1641772	1				
Plug, straight	A - standard	1641691	1	1641785	1				
<b>Connector, with stainless steel knurl</b>									
Socket, straight	A - standard	1440766	1	1440782	1				
Plug, straight	A - standard	1440753	1	1440779	1				
<b>Cable connector, shielded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10.0 mm</b>						1414418	1	1414417	1

## M12, spring connection

## Notes:

M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 319



Unshielded,  
4-, 5-pos.



Shielded,  
4-, 5-pos.



	Technical data	
	4-pos.	5-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	
Pollution degree	3	
Degree of protection	IP65/IP67	
Connection method	Spring connection	
Cable diameter	4 mm ... 8 mm	
Connection cross section [mm <sup>2</sup> ]	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	
Electrical data		
Rated voltage	250 V	60 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU	
Inflammability class according to UL 94	V0	
Temperature data		
Plug/socket	-40 ... 85 [°C]	



	Technical data	
	4-pos.	5-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	
Pollution degree	3	
Degree of protection	IP65/IP67	
Connection method	Spring connection	
Cable diameter	4 mm ... 8 mm	
Connection cross section [mm <sup>2</sup> ]	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	
Electrical data		
Rated voltage	60 V DC	
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuSn / Ni/Au	
Contact carrier material	TPU	
Inflammability class according to UL 94	V0	
Temperature data		
Plug/socket	-40 ... 85	

Description	Coding	Ordering data			
		4-pos.		5-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connector</b> , terminal marking: standard color coding and numbering					
Socket, angled	A - standard	1432622	1	1432596	1
Plug, angled	A - standard	1432606	1	1432570	1
Socket, straight	A - standard	1432619	1	1432583	1
Plug, straight	A - standard	1432635	1	1432567	1

Description	Coding	Ordering data			
		4-pos.		5-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connector</b> , terminal marking: standard color coding and numbering					
Socket, angled	A - standard	1432758	1	1432677	1
Plug, angled	A - standard	1432732	1	1432651	1
Socket, straight	A - standard	1432745	1	1432664	1
Plug, straight	A - standard	1432729	1	1432648	1

# Connectors

## M12 sensor/actuator connectors

### M12, screw connection

**Notes:**  
M12 connectors for assembly for networks and fieldbuses can be found in the data connectors and cables section from page 319



Plastic knurl,  
4, 5-pos.



Metal knurl, SPEEDCON,  
4, 5-pos.



Technical data	
4-pos.	5-pos.
General data	
M12 circular connector according to:	
Pollution degree	
Degree of protection	
Connection method	
Connection cross section [mm <sup>2</sup> ]	
Electrical data	
Rated voltage	250 V
Rated current	4 A
Insulation resistance	≥ 100 MΩ
Material data	
Material contact/contact surface	
Contact carrier material	
Inflammability class according to UL 94	
Temperature data	
Plug/socket	[°C]

Technical data	
4-pos.	5-pos.
IEC 61076-2-101	
3	
IP67	
Screw connection	
0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	
250 V	60 V
4 A	
≥ 100 MΩ	
CuZn / CuSnZn	
PA	
HB	
-40 ... 85	

Technical data	
4-pos.	5-pos.
IEC 61076-2-101	
3	
IP67	
Screw connection	
0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	
250 V	60 V
4 A	
≥ 100 MΩ	
CuZn / CuSnZn	
PA	
HB	
-40 ... 85	

Description	Coding
<b>Connector, cable diameter: 4 mm ... 6 mm</b>	
Socket, angled	A - standard
Plug, angled	A - standard
Socket, straight	A - standard
Plug, straight	A - standard
<b>Connector, cable diameter: 6 mm ... 8 mm</b>	
Socket, angled	A - standard
Plug, angled	A - standard
Socket, straight	A - standard
Plug, straight	A - standard
<b>Connector, cable diameter: 8 mm ... 10 mm</b>	
Socket, straight	A - standard
Plug, straight	A - standard
<b>Power connector, cable diameter: 8 mm ... 10 mm, rated current: up to 8 A (5th pos. max. 2 A) with 1.5 mm<sup>2</sup> wires/litz wires</b>	
Socket, angled	A - standard
Plug, angled	A - standard
Socket, straight	A - standard
Plug, straight	A - standard

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos.		5-pos.			
1681130	1	1662308	1		
1681091	1	1662269	1		
1681114	1	1662298	1		
1681088	1	1662256	1		
		1500790	1		
		1513431	1		
		1500787	1		
		1500774	1		

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos.		5-pos.			
1543058	1	1543061	1		
1542981	1	1542994	1		
1543029	1	1543032	1		
1542952	1	1542965	1		
		1543414	1		
		1543003	1		
		1543045	1		
		1542978	1		

Accessories	
<b>Pressure screw and seal, for cable diameters:</b>	
2.5 mm ... 3.5 mm	

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

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



Metal knurl,  
4, 5, 8-pos.



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



Stainless steel knurl,  
4, 5-pos.



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

Technical data		
4-pos.	5-pos.	
IEC 61076-2-101		
3		
IP67		
Screw connection		
0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>		
250 V	60 V	
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 <sup>2</sup> ... 0.75 mm <sup>2</sup>		
250 V	60 V	
4 A		
≥ 100 MΩ		
CuZn / Au		
PA		
V0		
-40 ... 85		

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos.		5-pos.		8-pos.	
1681143	1	1662984	1		
1681101	1	1663129	1		
1681127	1	1662968	1		
1662528	1	1663116	1		
		1681499	1		
		1681473	1		
1696439	1	1681486	1	1513347	1
1523230	1	1681460	1	1513334	1

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos.		5-pos.			
1430381	1	1559000	1		
1556870	1	1456466	1		
		1556812	1		
		1561742	1		
		1556838	1		
		1556825	1		

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos.		5-pos.			
1553284	1	1553297	1		
1553200	1	1553213	1		
1553242	1	1553255	1		
1553161	1	1553187	1		
		1553307	1		
1553226	1	1553239	1		
1553268	1	1553271	1		
1553174	1	1553190	1		

		1410665	1		
		1410666	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

Accessories		

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

# Connectors

## M12 sensor/actuator connectors

### M12, screw connection, shielded



Cast zinc housing,  
4, 5, 8-pos.



Stainless steel housing,  
5-pos.



	Technical data						Technical data							
	4-pos.		5-pos.		8-pos.		5-pos.							
General data														
M12 circular connector according to:	IEC 61076-2-101						IEC 61076-2-101							
Pollution degree	3						3							
Degree of protection	IP67						IP65/IP67/IP69K							
Connection method	Screw connection						Screw connection							
Connection cross section [mm <sup>2</sup> ]	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>		0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>		0.25 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>		0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>							
Electrical data														
Rated voltage	60 V DC				30 V		60 V DC							
Rated current	4 A				2 A		4 A							
Insulation resistance	≥ 100 MΩ						≥ 100 MΩ							
Material data														
Material contact/contact surface	CuZn / Au						CuZn / Au							
Contact carrier material	PA						PA							
Inflammability class according to UL 94	HB						V0							
Temperature data														
Plug/socket	[°C]		-40 ... 85		-40 ... 85		-40 ... 85							
			Ordering data						Ordering data					
Description	Coding	4-pos.		5-pos.		8-pos.		5-pos.						
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	
<b>Connector, cable diameter: 4 mm ... 6 mm</b>														
Plug, angled	A - standard	1694279	1	1693429	1									
Socket, straight	A - standard	1694295	1	1694305	1									
Plug, straight	A - standard	1693830	1	1693416	1									
<b>Connector, cable diameter: 6 mm ... 8 mm</b>														
Socket, angled	A - standard			1430433	1									
Plug, angled	A - standard			1694282	1									
Socket, straight	A - standard	1515170	1	1694318	1	1511860	1							
Plug, straight	A - standard	1501540	1	1694266	1	1511857	1							
<b>Connector, cable diameter: 6 mm ... 8.5 mm</b>														
Socket, straight	A - standard			1508365	1									
Plug, straight	A - standard			1508352	1									
<b>Connector, cable diameter: 3 mm ... 5.5 mm</b>														
Socket, straight	A - standard							1440038	1					
Plug, straight	A - standard							1440012	1					
<b>Connector, cable diameter: 5.5 mm ... 8.6 mm</b>														
Socket, straight	A - standard							1440041	1					
Plug, straight	A - standard							1440025	1					



## M12, DUO connector, screw connection

**Notes:**

SPEEDCON and plastic knurls without key areas.


**Metal knurl,  
4-, 5-pos.**

**Plastic and stainless steel knurl,  
5-pos.**

**Technical data**

	Technical data	
	4-pos.	5-pos.
General data	IEC 61076-2-101	
M12 circular connector according to:	3	
Pollution degree	IP67	
Degree of protection	Screw connection	
Connection method	2x 2.1 mm ... 3 mm	
Cable diameter	(when using the seal for small outer cable diameters)	
	2x 4 mm ... 5.2 mm	
Cable diameter	(when using the seal for large outer cable diameters)	
	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	
Connection cross section [mm <sup>2</sup> ]		
Electrical data		
Rated voltage	250 V	60 V
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / CuSnZn	
Contact carrier material	PA	
Inflammability class according to UL 94	V0	
Temperature data		
Plug/socket	-40 ... 85 [°C]	


**Technical data**

	Technical data	
	Plastic knurl	Stainless steel knurl
General data	IEC 61076-2-101	
M12 circular connector according to:	3	
Pollution degree	IP67	
Degree of protection	Screw connection	
Connection method	2x 2.1 mm ... 3 mm	
Cable diameter	(when using the seal for small outer cable diameters)	
	2x 4 mm ... 5.2 mm	
Cable diameter	(when using the seal for large outer cable diameters)	
	0.25 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	
Connection cross section [mm <sup>2</sup> ]		
Electrical data		
Rated voltage	60 V	
Rated current	4 A	
Insulation resistance	≥ 100 MΩ	
Material data		
Material contact/contact surface	CuZn / CuSnZn	CuZn / Au
Contact carrier material	PA	
Inflammability class according to UL 94	V0	
Temperature data		
Plug/socket	-40 ... 85	

**Ordering data**

Description	Coding	Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connector, with metal knurl, for connecting two cables</b>		<b>4-pos.</b>		<b>5-pos.</b>	
Plug, straight	A - standard	1507052	1	1662748	1
<b>Connector, with metal knurl, SPEEDCON, for connecting two cables</b>					
Plug, straight	A - standard			1543016	1
<b>Connector, with plastic knurl, for connecting two cables</b>					
Socket, straight	A - standard				
Plug, straight	A - standard				
Plug, angled	A - standard				
<b>Connector, with stainless steel knurl, for connecting two cables</b>					
Socket, straight	A - standard				
Plug, straight	A - standard				

**Ordering data**

Description	Coding	Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connector, with plastic knurl, for connecting two cables</b>		<b>Plastic knurl</b>		<b>Stainless steel knurl</b>	
Socket, straight	A - standard	1694596	1		
Plug, straight	A - standard	1662285	1		
Plug, angled	A - standard	1531044	1		
<b>Connector, with stainless steel knurl, for connecting two cables</b>					
Socket, straight	A - standard			1403372	1
Plug, straight	A - standard			1403371	1





# Connectors

## Valve connectors

### Valve connectors, type A, screw connection

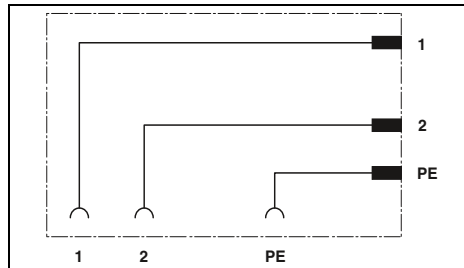


Without protective circuit

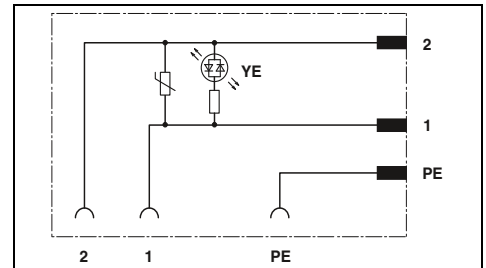


Protective circuit: varistor

ERC



ERC



#### Technical data

General data	
Valve connector according to:	EN 175301-803
Pollution degree	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
Inflammability class according to UL 94	HB
Temperature data	
Valve connectors	[-25 ... 60] [°C]

#### Technical data

General data	
Valve connector according to:	EN 175301-803
Pollution degree	3
Degree of protection	IP65
Connection method	Screw connection
Electrical data	
Rated current	1.5 A
Insulation resistance	> 2 GΩ
Material data	
Material contact valve connector	CuZn
Material contact surface valve connector	CuSn
Inflammability class according to UL 94	HB
Temperature data	
Valve connectors	[-25 ... 60] [°C]

#### Ordering data

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

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>Valve connector</b> , with protective circuit, rated voltage:			
24 V	<b>SACC-VB-3CON-M16/A-1L-SV 24V</b>	<b>1452149</b>	1
110 V	<b>SACC-VB-3CON-M16/A-1L-SV 110V</b>	<b>1452152</b>	1
230 V	<b>SACC-VB-3CON-M16/A-1L-SV 230V</b>	<b>1452165</b>	1



Protective circuit: varistor and rectifier

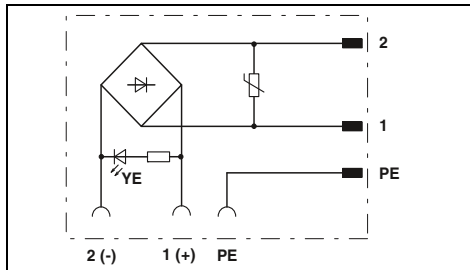


Pressure switch



Protective circuit: Z diode

ERC



Technical data

EN 175301-803  
3  
IP65  
Screw connection

1.5 A  
> 2 GΩ

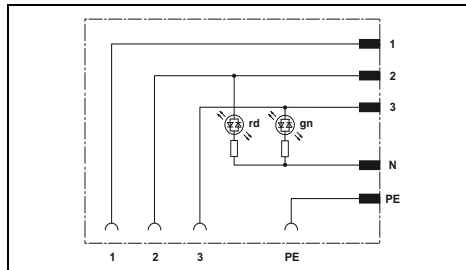
CuZn  
CuSn  
HB

-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

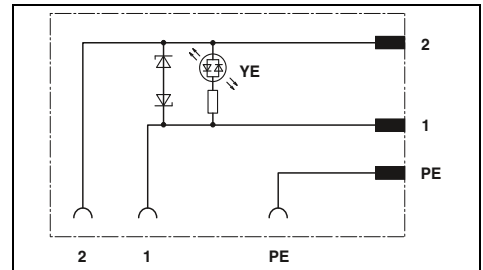
CuZn  
CuSn  
HB

-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

# Connectors

## Valve connectors

### Valve connectors, types B and BI, screw connection

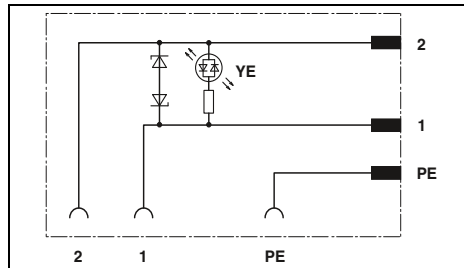


Protective circuit: Z diode

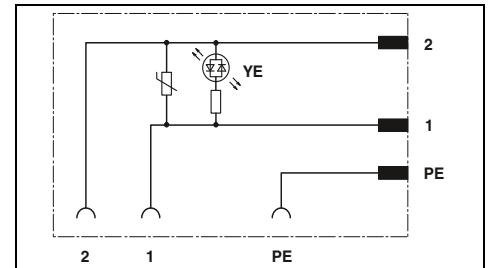


Protective circuit: varistor

ERC



ERC



#### Technical data

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

#### Technical data

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

General data	
Valve connector according to:	
Pollution degree	
Degree of protection	
Connection method	
Electrical data	
Rated voltage	
Rated current	
Insulation resistance	
Material data	
Material contact surface valve connector	
Material housing valve connector	
Inflammability class according to UL 94	
Temperature data	
Valve connectors	[°C]

#### Ordering data

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

#### 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

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

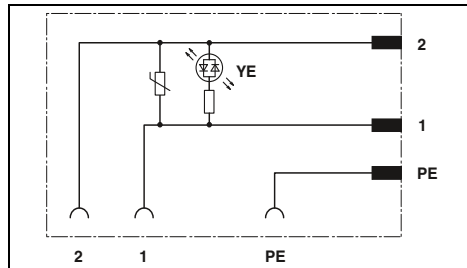


Valve connectors, type C and CI, screw connection



Protective circuit: varistor

ERC



Technical data

	Type C	Type CI
General data		
Valve connector according to:	EN 175301-803	-
Pollution degree		3
Degree of protection		IP65
Connection method		Screw connection
Electrical data		
Rated current		1.5 A
Insulation resistance		> 2 GΩ
Material data		
Material contact valve connector		CuZn
Material contact surface valve connector		CuSn
Inflammability class according to UL 94		HB
Temperature data		
Valve connectors [°C]		-25 ... 60

Ordering data

Description	Type C		Type CI	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Valve plug, with protective circuit, yellow LED, rated voltage:				
24 V	1452262	1	1452291	1
110 V	1452275	1	1452301	1
230 V	1452288	1	1452314	1

# Connectors

## M5 sensor/actuator device connectors, front mounting

### M5, with 0.5 m long litz wires

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



M5, 3, 5-pos.

ERC

#### Technical data

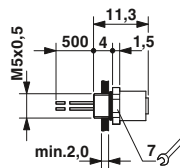
	3-pos.	4-pos.
<b>General data</b>		
M5 circular connector according to:	IEC 61076-2-105	IEC 61076-2-105
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
<b>Electrical data</b>		
Rated voltage	60 V	60 V
Rated current	1 A	1 A
<b>Material data</b>		
Material contact/contact surface	CuSn / Au	CuSn / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	HB	HB
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket	-25 ... 85 [°C]	-25 ... 85

#### Ordering data

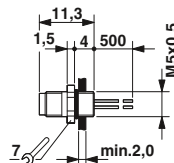
Description	Coding	3-pos.		4-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>					
Socket	A - standard	1530605	1	1530618	1
Plug	A - standard	1530582	1	1530595	1

#### Accessories

<b>Flat nut, with:</b> M5 thread	SACC-E-MU-M 5	1535901	100
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Dimensions: socket



Dimensions: plug

M8 sensor/actuator device connectors, front mounting

M8, with 0.5 m long litz wires



M8, 3, 4, 5-pos.



M8, 6, 8-pos.

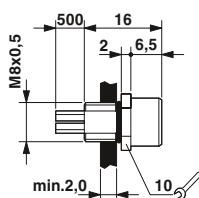


	Technical data		
	3-pos.	4-pos.	5-pos.
General data			
M8 circular connector according to:	IEC 61076-2-104	IEC 61076-2-104	IEC 61076-2-104
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	60 V	30 V	30 V
Rated current	4 A	4 A	3 A
Material data			
Material contact/contact surface	Cu alloy / Au	Cu alloy / Au	Cu alloy / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class according to UL 94	HB	HB	HB
Cable type	TPE litz wire	TPE litz wire	PVC litz wire
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85

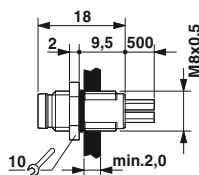
	Technical data	
	6-pos.	8-pos.
General data		
M8 circular connector according to:	IEC 61076-2-104	IEC 61076-2-104
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	2 A	1.5 A
Material data		
Material contact/contact surface	Cu alloy / Au	Cu alloy / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	HB	HB
Cable type	TPE litz wire	PVC litz wire
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85

Description	Coding	Ordering data					
		3-pos.		4-pos.		5-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Socket	A - standard	1500350	1	1500363	1		
Plug	A - standard	1500334	1	1500347	1		
Socket	B - inverse					1424233	1
Plug	B - inverse					1424234	1
<b>Flat nut, with:</b>							
M8 thread		1504071	100	1504071	100		

Description	Coding	Ordering data			
		6-pos.		8-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Socket	A - standard	1542677	1	1424231	1
Plug	A - standard	1542664	1	1424232	1
Socket	B - inverse				
Plug	B - inverse				
<b>Flat nut, with:</b>					
M8 thread		1504071	100		



Dimensions: socket, 3, 4, 6-pos.



Dimensions: plug, 3, 4, 6-pos.

# Connectors

## M8 sensor/actuator device connectors, rear mounting

### M8, with 0.5 m long litz wires



3-, 4-pos.



6, 8-pos.

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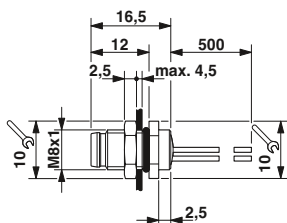
	Technical data			
	3-pos.		4-pos.	
General data				
M8 circular connector according to:	IEC 61076-2-104		IEC 61076-2-104	
Pollution degree	3		3	
Degree of protection	IP67		IP67	
Connection method	Individual wires		Individual wires	
Electrical data				
Rated voltage	60 V		30 V	
Rated current	4 A		4 A	
Material data				
Material contact/contact surface	Cu alloy / Au		Cu alloy / Au	
Contact carrier material	PUR / PA66		PUR / PA66	
Inflammability class according to UL 94	HB		HB	
Cable type	TPE litz wire		TPE litz wire	
Temperature data				
Plug/socket	-25 ... 85		-25 ... 85	

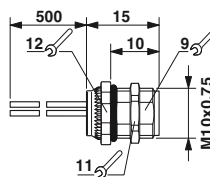
	Technical data			
	6-pos.		8-pos.	
General data				
M8 circular connector according to:	IEC 61076-2-104		IEC 61076-2-104	
Pollution degree	3		3	
Degree of protection	IP67		IP67	
Connection method	Individual wires		Individual wires	
Electrical data				
Rated voltage	30 V		30 V	
Rated current	2 A		1.5 A	
Material data				
Material contact/contact surface	Cu alloy / Au		Cu alloy / Au	
Contact carrier material	PUR / PA66		PUR / PA66	
Inflammability class according to UL 94	HB		HB	
Cable type	TPE litz wire		PVC litz wire	
Temperature data				
Plug/socket	-25 ... 85		-25 ... 85	

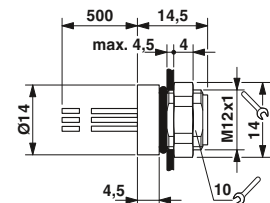
	Coding	Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Description		3-pos.		4-pos.	
<b>Device connector, M8 fastening thread</b>					
Plug	A - standard	1453478	1	1453481	1
<b>Device connector, M10 fastening thread</b>					
Socket	A - standard	1456080	1	1456093	1
<b>Device connector, M12 fastening thread</b>					
Socket	A - standard	1453449	1	1453452	1



Dimensions: connector, M8 fastening thread



Dimensions: socket, M10 fastening thread



Dimensions: socket, M12 fastening thread

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 according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	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 / NiAu	CuZn / NiAu	CuZn / NiAu
Contact carrier material	PA66	PA66	PA66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85

Description	Coding	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Socket	A - standard	1693788	1	1671098	1	1513758	1
Plug	A - standard	1693762	1	1671111	1	1513774	1
Socket	B - inverse						
Plug	B - inverse						

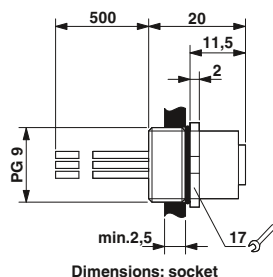
Accessories		
Flat nut, with: Pg9 thread	SACC-E-MU-PG9	1504084 100



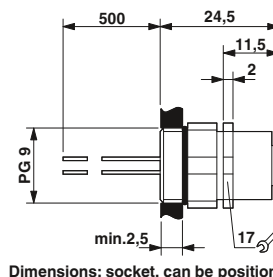
	Technical data		
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	250 V	60 V	30 V
Rated current	4 A	4 A	2 A
Material data			
Material contact/contact surface	CuZn / NiAu	CuZn / NiAu	CuZn / NiAu
Contact carrier material	PA66	PA66	PA66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85

Description	Coding	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Socket	A - standard	1693791	1	1671108	1	1513761	1
Plug	A - standard	1693775	1	1671124	1	1513787	1
Socket	B - inverse			1515044	1		
Plug	B - inverse			1515057	1		

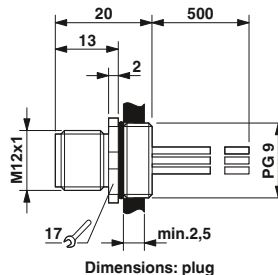
Accessories		
Flat nut, with: Pg9 thread	SACC-E-MU-PG9	1504084 100



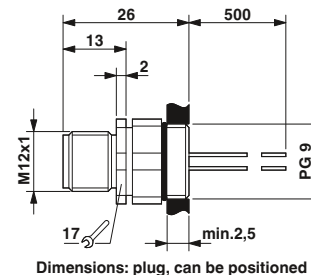
Dimensions: socket



Dimensions: socket, can be positioned



Dimensions: plug



Dimensions: plug, can be positioned

# Connectors

## M12 sensor/actuator device connectors, front mounting

### 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 according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	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 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket [°C]	-25 ... 85	-25 ... 85	-25 ... 85



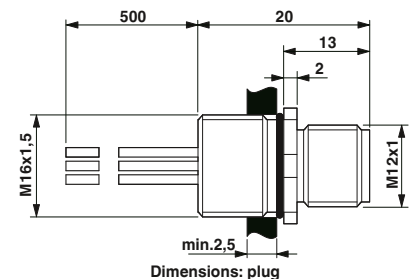
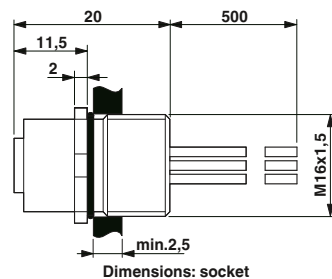
	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3
Degree of protection	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	1.5 A	1.5 A
Material data		
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket [°C]	-25 ... 85	-25 ... 85

Description	Coding	Ordering data					
		4-pos.		5-pos.		8-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Socket	A - standard	1523434	1	1520039	1	1523476	1
Plug	A - standard	1523450	1	1520055	1	1523492	1
Socket	D - data	1535202	1				
Plug	D - data	1551558	1				
Socket	B - inverse			1520000	1		
Plug	B - inverse			1520013	1		

Description	Coding	Ordering data					
		12-pos.		17-pos.			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Socket	A - standard	1556252	1	1556294	1		
Plug	A - standard	1556265	1	1556304	1		

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

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



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.



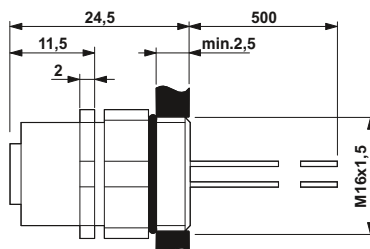
Technical data		
	4-pos.	5-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	250 V	60 V
Rated current	4 A	4 A
Material data		
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85



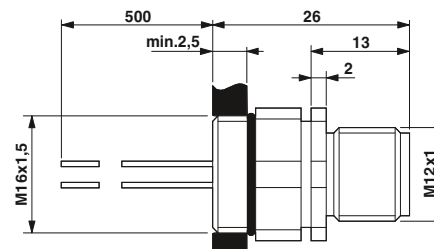
Technical data		
	8-pos.	
General data		
M12 circular connector according to:	IEC 61076-2-101	
Pollution degree	3	
Degree of protection	IP67	
Connection method	Individual wires	
Electrical data		
Rated voltage	30 V	
Rated current	2 A	
Material data		
Material contact/contact surface	CuZn / Ni/Au	
Contact carrier material	PA 66	
Inflammability class according to UL 94	V0	
Cable type	TPE litz wire	
Temperature data		
Plug/socket	-25 ... 85	

		Ordering data			
Description	Coding	4-pos.		5-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>					
Socket	A - standard	1523447	1	1520042	1
Plug	A - standard	1523463	1	1520068	1
Socket	D - data	1535215	1		
Plug	D - data	1552256	1		
Socket	B - inverse			1519998	1
Plug	B - inverse			1520026	1

		Ordering data			
Description	Coding	8-pos.			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Socket		1523489	1		
Plug		1523502	1		



Dimensions: socket, can be positioned



Dimensions: plug, can be positioned

# Connectors

## M12 sensor/actuator device connectors, front mounting

### M12 XL device connector, M16 fastening thread, with 0.5 m long litz wires

- Tightening limitation
- Wrench size 19

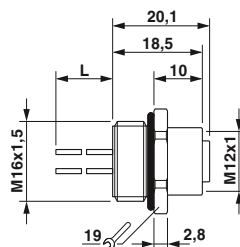


4-, 5-, 8-pos.

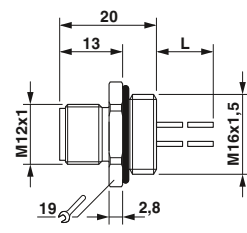


12-, 17-pos.

	Technical data			Technical data			
	4-pos.	5-pos.	8-pos.	12-pos.	17-pos.		
General data							
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101		
Pollution degree	3	3	3	3	3		
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67		
Connection method	Individual wires	Individual wires	Individual wires	Individual wires	Individual wires		
Electrical data							
Rated voltage	250 V	60 V	30 V	30 V	30 V		
Rated current	4 A	4 A	2 A	1.5 A	1.5 A		
Material data							
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au		
Contact carrier material	PA 66	PA 66	PA 66	PA 66	PA 66		
Inflammability class according to UL 94	V0	V0	V0	V0	V0		
Cable type	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire		
Temperature data							
Plug/socket	[-25 ... 85 °C]			[-25 ... 85 °C]			
<b>Ordering data</b>							
Description	Coding	Ordering data			Ordering data		
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		4-pos.	5-pos.	8-pos.	12-pos.	17-pos.	
<b>Device connectors</b>							
Socket	A - standard	1411568	1	1411571	1	1411573	1
Plug	A - standard	1411577	1	1411579	1	1411581	1
Socket	D - data	1411569	1				
Plug	D - data	1411578	1				
Socket	B - inverse			1411572	1		
Plug	B - inverse			1411580	1		
<b>Accessories</b>							
Flat nut, with:		SACC-E-MU-M16		1504097	100		
M16 thread						SACC-E-MU-M16 1504097 100	



Dimensions: socket



Dimensions: plug



### M20 fastening thread, with 0.5 m long litz wires

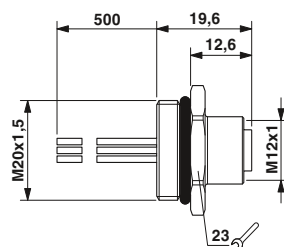
– Housing material: brass, nickel-plated



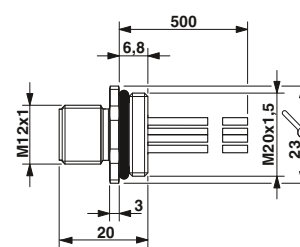
4-, 5-, 8-pos.



		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 according to:		3		3		3	
Pollution degree		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 66		PA 66		PA 66	
Contact carrier material		V0		V0		V0	
Inflammability class according to UL 94		TPE litz wire		TPE litz wire		TPE litz wire	
Cable type		-25 ... 85		-25 ... 85		-25 ... 85	
Temperature data							
Plug/socket		[°C]					
		Ordering data					
Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		4-pos.		5-pos.		8-pos.	
<b>Device connectors</b>							
Socket	A - standard	1408436	1	1408454	1	1408453	1
Plug	A - standard	1408451	1	1408446	1	1408442	1



Dimensions: socket



Dimensions: plug

# 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



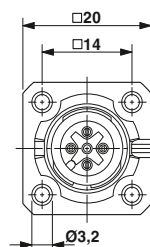
4-, 5-, 8-pos.



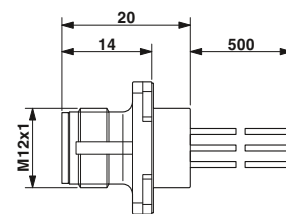
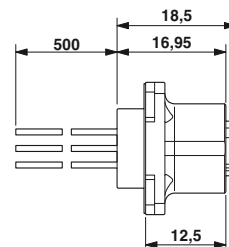
12-, 17-pos.



	Technical data			Technical data			
	4-pos.	5-pos.	8-pos.	12-pos.	17-pos.		
General data							
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101		
Pollution degree	3	3	3	3	3		
Degree of protection	IP67	IP67	IP67	IP67	IP67		
Connection method	Individual wires	Individual wires	Individual wires	Individual wires	Individual wires		
Electrical data							
Rated voltage	250 V	60 V	30 V	30 V	30 V		
Rated current	4 A	4 A	2 A	1.5 A	1.5 A		
Material data							
Material contact/contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au		
Contact carrier material	PA 66	PA 66	PA 66	PA 66	PA 66		
Inflammability class according to UL 94	V0	V0	V0	V0	V0		
Cable type	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire		
Temperature data							
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85	[°C]	
		Ordering data			Ordering data		
Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		4-pos.		5-pos.		8-pos.	
		12-pos.		17-pos.			
<b>Device connectors</b>							
Socket	A - standard	1419797	1	1441655	1	1441697	1
Plug	A - standard	1419784	1	1441642	1	1441684	1
Socket	D - data	1441639	1				
Plug	D - data	1441626	1				
Socket	B - inverse			1441671	1		
Plug	B - inverse			1441668	1		



Dimensions: socket



Dimensions: plug

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.



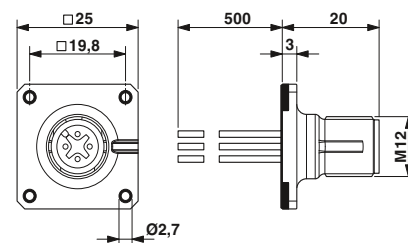
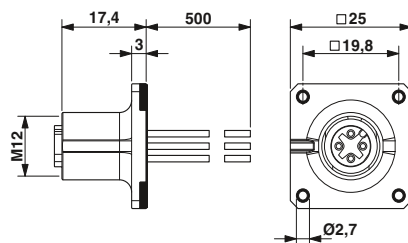
	Technical data		
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	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 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85



	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	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 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85

Description	Coding	Ordering data					
		4-pos.		5-pos.		8-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connectors							
Socket	A - standard	1420003	1	1440986	1	1441574	1
Plug	A - standard	1419991	1	1440973	1	1441561	1
Socket	D - data	1440960	1				
Plug	D - data	1440957	1				
Socket	B - inverse			1441558	1		
Plug	B - inverse			1440999	1		

Description	Coding	Ordering data			
		12-pos.		17-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connectors					
Socket	A - standard	1441590	1	1441613	1
Plug	A - standard	1441587	1	1441600	1



# 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 according to:	IEC 61076-2-101		
Pollution degree	-		
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		
Inflammability class according to UL 94	-		
Cable type	-		
Temperature data			
Plug/socket	[°C]	-25 ... 85	

### Ordering data

Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		4-pos.	5-pos.	8-pos.			
Square flange housing, with O-ring		1419959	10				
Assembled contact carrier and insulating body, with 0.5 m litz wires and crimp contacts							
Plug	A - standard						
Plug	D - data						
Plug	B - inverse						

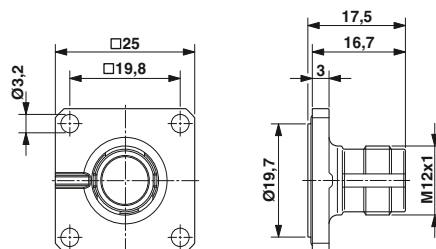
ERC

### Technical data

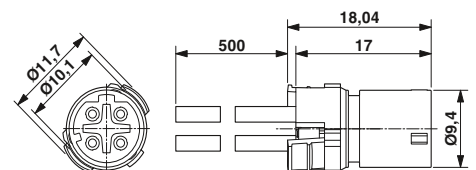
4-pos.	5-pos.	8-pos.
IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
3	3	3
IP67	IP67	IP67
Crimp contacts	Crimp contacts	Crimp contacts
250 V	60 V	30 V
4 A	4 A	2 A
CuZn / Au	CuZn / Au	CuZn / Au
PA 66	PA 66	PA 66
-	-	-
V0	V0	V0
TPE litz wire	TPE litz wire	TPE litz wire
-25 ... 85	-25 ... 85	-25 ... 85

### 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		



M12 square flange housing



M12 contact carrier, with litz wires

M12 sensor/actuator device connectors, front mounting

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 according to:	IEC 61076-2-101
Pollution degree	-
Degree of protection	-
Connection method	-
Electrical data	
Rated voltage	-
Rated current	-
Material data	
Contact carrier material	-
Cable gland material	Zinc die-cast, nickel-plated
Inflammability class according to UL 94	
Temperature data	-
Plug/socket	[°C] -25 ... 85

Ordering data

Description	Coding	Order No.	Pcs. / Pkt.
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Square flange housing, with O-ring

1419959	10
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Contact carriers and insulating bodies

Plug	A - standard
Plug	D - data
Plug	B - inverse

Crimp contacts, for 4- and 5-pos. contact carriers, contact material: CuZn, surface: gold-plated, connection cross section: 0.08 mm<sup>2</sup> ... 0.34 mm<sup>2</sup>

Contact Ø: 1.0 mm

Crimp contacts, for 8-pos. contact carriers, contact material: CuZn, surface: gold-plated, connection cross section: 0.08 mm<sup>2</sup> ... 0.34 mm<sup>2</sup>

Contact Ø: 0.8 mm

Accessories

Crimping pliers	
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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 66	PA 66	PA 66
-	-	-
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.

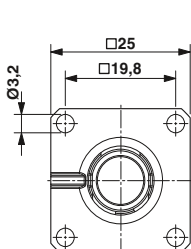
1440931	10	1419988	10	1440928	10
1440944	10	1440915	10		

1452356 100 1452356 100

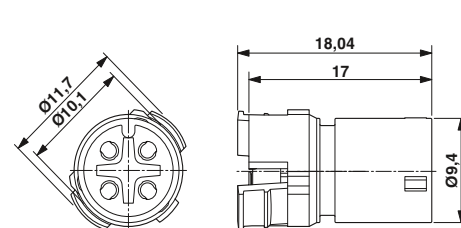
1452372 100

Accessories

CRIMPFOX-TC MP	1212510	1
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M12 square flange housing



M12 contact carrier

# Connectors

## M12 sensor/actuator device connectors, rear mounting

Pg9 fastening thread, with 0.5 m long litz wires



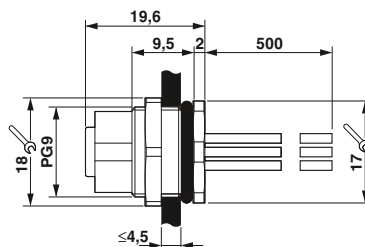
4-, 5-, 8-pos.



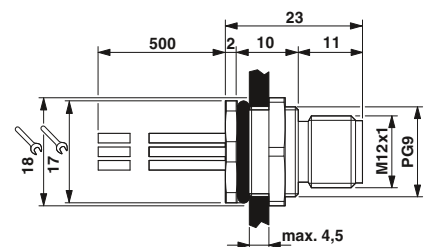
12-, 17-pos.



	Technical data			Technical data							
	4-pos.	5-pos.	8-pos.	12-pos.	17-pos.						
General data											
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101						
Pollution degree	3	3	3	3	3						
Degree of protection	IP67	IP67	IP67	IP67	IP67						
Connection method	Individual wires	Individual wires	Individual wires	Individual wires	Individual wires						
Electrical data											
Rated voltage	250 V	60 V	30 V	30 V	30 V						
Rated current	4 A	4 A	2 A	1.5 A	1.5 A						
Material data											
Material contact/contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au						
Contact carrier material	PA 66	PA 66	PA 66	PA 66	PA 66						
Inflammability class according to UL 94	V0	V0	V0	V0	V0						
Cable type	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire						
Temperature data											
Plug/socket	[-25 ... 85]			[-25 ... 85]							
<b>Ordering data</b>											
Description	Coding	Ordering data			Ordering data						
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.				
		4-pos.	5-pos.	8-pos.	12-pos.	17-pos.					
<b>Device connectors</b>											
Socket	A - standard	1556621	1	1542729	1	1542732	1	1430446	1	1430462	1
Plug	A - standard	1556618	1	1542703	1	1542716	1	1430459	1	1430475	1
Socket	D - data	1551529	1								
Plug	D - data	1551532	1								
Socket	B - inverse			1543676	1						
Plug	B - inverse			1543663	1						



Dimensions: socket



Dimensions: plug

M12 sensor/actuator device connectors, rear mounting

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 according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	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 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85



Technical data

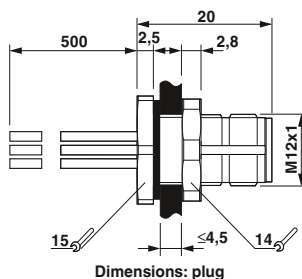
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	1.5 A	1.5 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85

Ordering data

Description	Coding	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Plug	A - standard	1551875	1	1551888	1	1551914	1
Plug	D - data	1551901	1				
Plug	B - inverse			1551891	1		

Ordering data

Description	Coding	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connectors</b>							
Plug	A - standard	1437122	1	1437135	1		
Plug	D - data						
Plug	B - inverse						



# Connectors

## M12 sensor/actuator device connectors, rear mounting

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



4-, 5-, 8-pos.



12-, 17-pos.



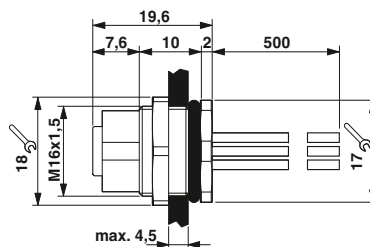
	Technical data		
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3	3
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
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 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Plug/socket	-25 ... 85 [°C]	-25 ... 85	-25 ... 85



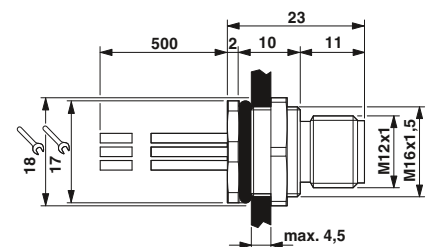
	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3
Degree of protection	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	1.5 A	1.5 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	TPE litz wire	TPE litz wire
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85

Description	Coding	Ordering data									
		4-pos.		5-pos.		8-pos.					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.				
<b>Device connectors</b>											
Socket	A - standard	1419632	1	1419658	1	1419690	1	1419713	1	1419739	1
Plug	A - standard	1419629	1	1419645	1	1419687	1	1419700	1	1419726	1
Socket	D - data	1419616	1								
Plug	D - data	1419603	1								
Socket	B - inverse			1419674	1						
Plug	B - inverse			1419661	1						

Description	Coding	Ordering data									
		12-pos.		17-pos.		Order No.					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.				
<b>Device connectors</b>											
Socket	A - standard	1419632	1	1419658	1	1419690	1	1419713	1	1419739	1
Plug	A - standard	1419629	1	1419645	1	1419687	1	1419700	1	1419726	1
Socket	D - data	1419616	1								
Plug	D - data	1419603	1								
Socket	B - inverse			1419674	1						
Plug	B - inverse			1419661	1						



Dimensions: socket



Dimensions: plug





# Connectors

## M12 sensor/actuator device connectors, rear mounting

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



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



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

ERC

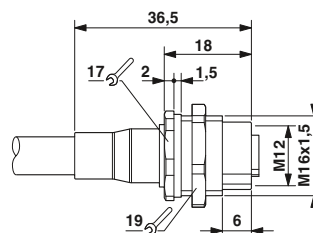
	Technical data		
	4-pos.	5-pos.	8-pos.
General data			
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection method	Individual wires	Individual wires	Individual wires
Electrical data			
Rated voltage	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 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0
Cable type	PUR halogen-free, black	PUR halogen-free, black	PUR halogen-free, black
Temperature data			
Plug/socket	-25 ... 85	-25 ... 85	-25 ... 85

ERC

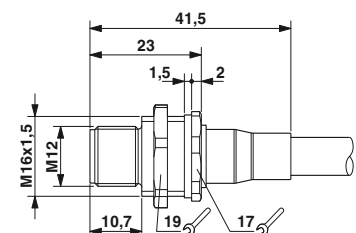
	Technical data	
	12-pos.	17-pos.
General data		
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	30 V	30 V
Rated current	1.5 A	1.5 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Cable type	PVC black	PVC black
Temperature data		
Plug/socket	-25 ... 85	-25 ... 85

Description	Cable length	Ordering data									
		4-pos.		5-pos.		8-pos.					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.				
<b>Device connector, A-coded</b>											
Socket	1 m	1419302	1	1419328	1	1419357	1	1442188	1	1442269	1
Plug	1 m	1419399	1	1419409	1	1419425	1	1442227	1	1442308	1
Socket	2 m	1419315	1	1419331	1	1419344	1	1442191	1	1442272	1
Plug	2 m	1419386	1	1419412	1	1419438	1	1442230	1	1442311	1

Description	Cable length	Ordering data									
		12-pos.		17-pos.							
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.				
<b>Device connector, A-coded</b>											
Socket	1 m	1419302	1	1419328	1	1419357	1	1442188	1	1442269	1
Plug	1 m	1419399	1	1419409	1	1419425	1	1442227	1	1442308	1
Socket	2 m	1419315	1	1419331	1	1419344	1	1442191	1	1442272	1
Plug	2 m	1419386	1	1419412	1	1419438	1	1442230	1	1442311	1



Dimensions: socket



Dimensions: plug

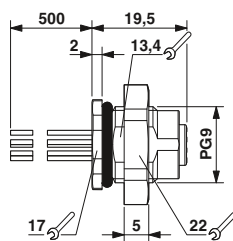
Pg9 fastening thread, plastic, with 0.5 m long litz wires



5-, 8-pos.

ERC

		Technical data			
		5-pos.	8-pos.		
General data					
M12 circular connector according to:		IEC 61076-2-101	IEC 61076-2-101		
Pollution degree		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 66	PA 66		
Inflammability class according to UL 94		HB	HB		
Temperature data					
Plug/socket [°C]		-25 ... 85	-25 ... 85		
		Ordering data			
Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		5-pos.		8-pos.	
Device connectors					
Socket	A - standard	1436356	1	1436369	1



Dimensions: socket

# Connectors

## M12 sensor/actuator device connectors, rear mounting

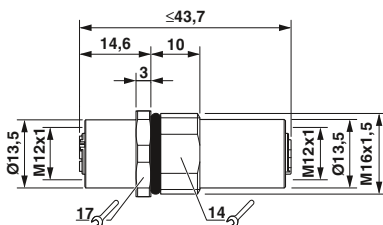
### Control cabinet feed-through



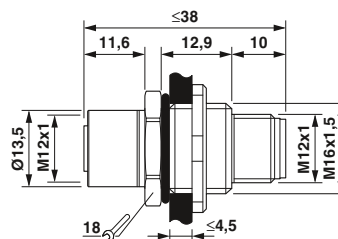
4-, 5-, 8-pos.

ERC

		Technical data					
		4-pos.	5-pos.	8-pos.			
General data							
M12 circular connector according to:		IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101			
Pollution degree		3	3	3			
Degree of protection		IP67	IP67	IP67			
Electrical data							
Rated voltage		250 V	60 V	30 V			
Rated current		4 A	4 A	2 A			
Material data							
Contact material		CuZn	CuZn	CuZn			
Contact surface material		Au	Au	Au			
Contact carrier material		PA 66	PA 66	PA 66			
Inflammability class according to UL 94		HB	HB	HB			
Temperature data							
Plug/socket [°C]		-25 ... 85	-25 ... 85	-25 ... 85			
		Ordering data					
Description	Coding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Control cabinet feed-through, M16 fastening thread</b>							
Pin to socket	A - standard	<b>1551671</b>	1	<b>1551697</b>	1		
Pin to socket	B - inverse	<b>1551684</b>	1				
Socket to socket	D - data	<b>1424326</b>	1				



Control cabinet feed-through, socket to socket on both sides



Control cabinet feed-through, socket to pin on both sides

**Pg13.5 fastening thread, with 0.5 m long litz wires**

**Notes:**

Flat nut recommended for housing wall thicknesses < 2.5 mm.



3-, 4-pos.



5-pos.



**Technical data**

General data		
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	250 V	250 V
Rated current	12 A	9 A
Surge voltage category	II	II
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PUR	PUR
Inflammability class according to UL 94	HB	HB
Cable type	PVC litz wire	PVC litz wire
Temperature data		
Plug/socket	-40 ... 85	-40 ... 85

**Ordering data**

Description	Coding				
<b>Device connectors</b>					
Socket	A - standard	1521407	1	1521423	1
Plug	A - standard	1521410	1	1521436	1

**Accessories**

Flat nut, with: Pg13.5 thread		SACC-E-MU-PG13,5	1539143	100
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**Technical data**

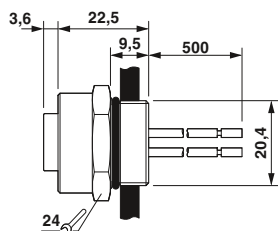
General data		
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	250 V	250 V
Rated current	9 A	9 A
Surge voltage category	II	II
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PUR	PUR
Inflammability class according to UL 94	HB	HB
Cable type	PVC litz wire	PVC litz wire
Temperature data		
Plug/socket	-40 ... 85	-40 ... 85

**Ordering data**

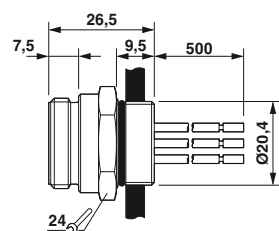
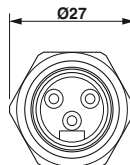
Description	Coding				
<b>Device connectors</b>					
Socket	A - standard	1521449	1		
Plug	A - standard	1521452	1		

**Accessories**

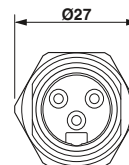
Flat nut, with: Pg13.5 thread		SACC-E-MU-PG13,5	1539143	100
----------------------------------	--	------------------	---------	-----



Dimensions: socket



Dimensions: plug



# Connectors

## 7/8" sensor/actuator device connectors, rear mounting

### 7/8", with 1.0 m long litz wires



3-, 4-, 5-position



3-, 4-, 5-position



#### Technical data

General data
Pollution degree
Degree of protection
Connection method
Electrical data
Rated voltage
Rated current
Surge voltage category
Material data
Contact material
Contact surface material
Contact carrier material
Inflammability class according to UL 94
Temperature data
Plug/socket

	3-pos.	4-pos.	5-pos.
3	3	3	
IP67	IP67	IP67	
Individual wires	Individual wires	Individual wires	
250 V	250 V	250 V	
12 A	9 A	9 A	
II	II	II	
CuZn	CuZn	CuZn	
Au	Au	Au	
PUR	PUR	PUR	
HB	HB	HB	
-40 ... 85	-40 ... 85	-40 ... 85	

#### Ordering data

Description
Device connector, M26 fastening thread
Socket
Device connector, 7/8" fastening thread
Plug

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1453782	1	1453795	1	1453805	1

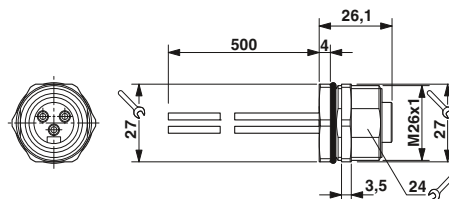


#### Technical data

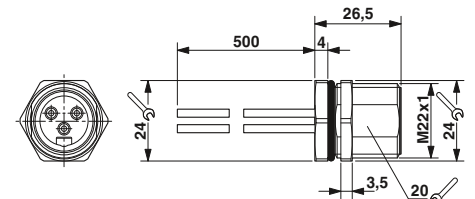
	3-pos.	4-pos.	5-pos.
3	3	3	
IP67	IP67	IP67	
Individual wires	Individual wires	Individual wires	
250 V	250 V	250 V	
12 A	9 A	9 A	
II	II	II	
CuZn	CuZn	CuZn	
Au	Au	Au	
PUR	PUR	PUR	
HB	HB	HB	
-40 ... 85	-40 ... 85	-40 ... 85	

#### Ordering data

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1453753	1	1453766	1	1453799	1



Dimensions: socket



Dimensions: plug



### Sealing elements

During transport or in the field, unoccupied plug-in connections must be protected or closed. The screw plugs, sealing caps and closing caps made of plastic or metal are suitable for this purpose. These achieve the IP65/IP67 as well as IP69K degrees of protection.



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>M5 screw plug</b> for unused M5 sockets of sensor/actuator cables, boxes, and device connectors	① PROT-M5	1533288	10
<b>M8 screw plug</b> for unused M8 sockets of sensor/actuator cables, boxes, and device connectors	② PROT-M8	1682540	5
<b>M12 screw plug</b> for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	③ PROT-M12	1680539	5
<b>M12 screw plug with SPEEDCON quick locking</b> for unused M12 sockets of sensor/actuator cables, boxes, and device connectors	④ PROT-MS SCO	1553129	5
<b>M12 sealing cap</b> for unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	⑤ PROT-M12 FS	1560251	5
<b>Screw plug M12, made of metal</b> for unused M12 sockets of shielded sensor/actuator cables, boxes, and device connectors	⑥ PROT-M12 SH	1503302	5
<b>Metal M12 sealing cap</b> 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	⑧ PROT-M12 MS-M	1414148	10
<b>M12 screw plug made of stainless steel</b> for unused M12 sockets of sensor/actuator cables, boxes, and device connectors in the food and outdoor range	⑧ PROT-M12 FB	1555538	5
<b>Closing cap</b> for Pg9/ Pg11, to close unoccupied connections	⑨ Q-PROT 9/11	1670235	10
<b>M16 locking screw</b> 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 pin versions. It is used in harsh industrial environments or for EMC applications.



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

# Connectors

## Accessories

### Accessories for device connectors

Special fixing nuts are available for 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.

Flat seals can be used as an alternative option between the housing wall and the device connector. Flat seals are to be preferred for thin walls, as the housing cutouts do not have to be chamfered.



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>EMC hexagonal nut</b> with fine tooting, for all device connectors with: ①			
M12 fastening thread	<b>SACC-M12-KD-NUT-SH</b>	<a href="#">1440151</a>	10
<b>EMC hexagonal nut</b> with fine tooting, for all device connectors with: ②			
M16 fastening thread	<b>SACC-M16-KD-NUT-SH</b>	<a href="#">1440164</a>	10
Pg9 fastening thread	<b>SACC-PG9-KD-NUT-SH</b>	<a href="#">1440177</a>	10
<b>Flat gasket</b> for all device connectors with: ③			
M16 fastening thread	<b>SACC-M16-SEAL CLM</b>	<a href="#">1430394</a>	10
Pg9 fastening thread	<b>SACC-PG9-SEAL CLM</b>	<a href="#">1556320</a>	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 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 stainless steel knurl is also made from stainless steel. This prevents the connector knurls from being contaminated by corrosive materials.

For greater flexibility, screwdrivers with adjustable torque are also available. When used in conjunction with the adapter insert, they can also be used to accommodate the available plug attachments.



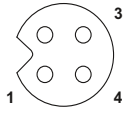
Description	
<b>Torque screwdriver</b> With a preset torque of 0.8 Nm and a 4 mm hexagonal drive	①
<b>Nut</b> For assembling 7/8" connectors, with 4 mm hexagonal drive	②
<b>Torque screwdriver</b> With preset torque of 0.4 Nm and 4 mm hexagonal drive	③
<b>Nut</b> For mounting M12 connectors with hexagonal stainless steel knurl, wrench size 14, with 4 mm hexagonal drive	④
<b>Torque screwdriver</b> , accuracy according to standard EN ISO 6789 Adjustable from 0.3 - 1.2 Nm Adjustable from 1.2 - 3 Nm Adjustable from 3 - 6 Nm	⑤
<b>Adapter insert</b> For torque screwdrivers with adjustable torque, for accommodating plug attachments with 4 mm hexagonal drive	⑥

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

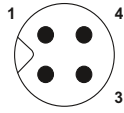
# Connectors

## Pin assignments

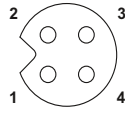
### M5 device connectors



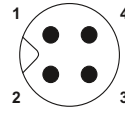
Socket, 3-pos.



Pin, 3-pos.



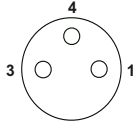
Socket, 4-pos.



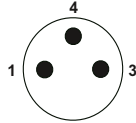
Pin, 4-pos.

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

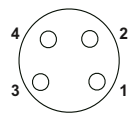
### M8 device connectors



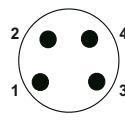
Socket, 3-pos.



Pin, 3-pos.

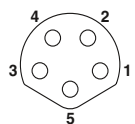


Socket, 4-pos.

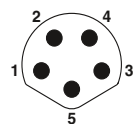


Pin, 4-pos.

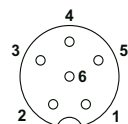
Pin	3-pos., A-coded		4-pos., A-coded	
1	BN		BN	
2	-		WH	
3	BU		BU	
4	BK		BK	



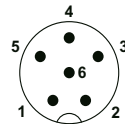
Socket, 5-pos., B-coded



Pin, 5-pos., B-coded

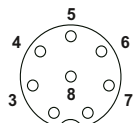


Socket, 6-pos.

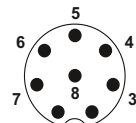


Pin, 6-pos.

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	



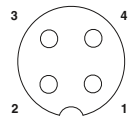
Socket, 8-pos.



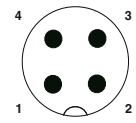
Pin, 8-pos.

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

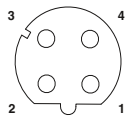
### M12 device connectors



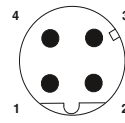
Socket, 4-pos., A-coded



Pin, 4-pos., A-coded

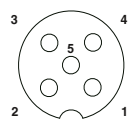


Socket, 4-pos., D-coded

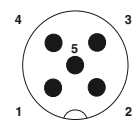


Pin, 4-pos., D-coded

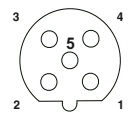
Pin	4-pos., A-coded		4-pos., D-coded	
1	BN		YE	
2	WH		WH	
3	BU		OG	
4	BK		BU	



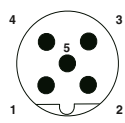
Socket, 5-pos., A-coded



Pin, 5-pos., A-coded

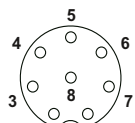


Socket, 5-pos., B-coded

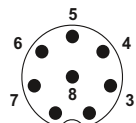


Pin, 5-pos., B-coded

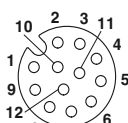
Pin	5-pos., A-coded		5-pos., B-coded	
1	BN		BN	
2	WH		WH	
3	BU		BU	
4	BK		BK	
5	GY		GY	



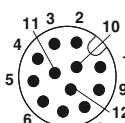
Socket, 8-pos.



Pin, 8-pos.



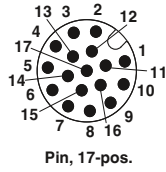
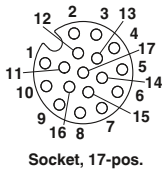
Socket, 12-pos.



Pin, 12-pos.

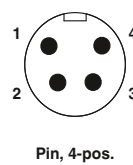
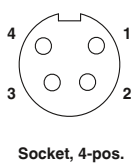
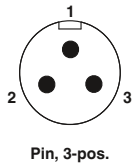
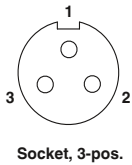
Pin	8-pos.		12-pos.	
1	WH		BN	
2	BN		BU	
3	GN		WH	
4	YE		GN	
5	GY		PK	
6	PK		YE	
7	BU		BK	
8	RD		GY	
9	-		RD	
10	-		VT	
11	-		GYPK	
12	-		RDBU	

### M12 device connectors

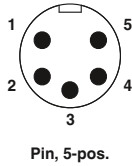
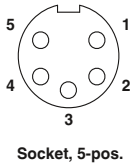


Pin	17-pos.	Pin	17-pos.
1	BN	9	RD
2	BU	10	VT
3	WH	11	GYPK
4	GN	12	RDBU
5	PK	13	WHGN
6	YE	14	BNGN
7	BK	15	WHYE
8	GY	16	YEEN
		17	WHGY

### 7/8" device connectors



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



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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for a cable outside diameter of 3.5 - 11 mm, shielded (M17 Compact) 5 - 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
Mech. insertion/withdrawal cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data			
<b>Number of positions</b>		<b>8</b>	<b>17</b>
Contacts		8	17
Contact Ø	[mm]	1	0.6
Litz wire cross section, crimp contacts Turned	[mm <sup>2</sup> ]	0.06 ... 1.0	0.06 ... 0.5
Litz wire cross section, C-HC crimp contacts Punched-rolled	[mm <sup>2</sup> ]	0.06 ... 0.56	-
Nominal current per contact at 25°C <sup>1)</sup>		9.0	3.6
<b>Specifications according to DIN EN 61984:2009</b>			
Rated voltage	[V AC/DC]	60	60
Test/surge voltage	[kV AC]	1.5	1.5
Surge voltage category		III	III
Pollution degree <sup>2)</sup>		3	3
Installation height	[m]	Up to 3000	Up to 3000
Cable clamping area <sup>3)</sup>	Max. Ø [mm]	12.5	12.5

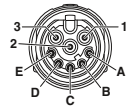
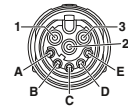
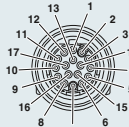

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

<sup>2)</sup> 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, the connector must be sealed using a protective cap ≥ IP54.

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



**Contact chamber numbering**  
(view of plug-in side)

Number of positions	Pin	Socket
<p><b>8-pos.</b> Crimp</p>	 <p>Diagram showing 8 contact positions in a circular arrangement. The positions are numbered 1 through 8. The positions are also labeled with letters: 1 (A), 2 (E), 3 (D), 4 (C), 5 (B), 6 (A), 7 (E), 8 (D).</p>	 <p>Diagram showing 8 contact positions in a circular arrangement. The positions are numbered 1 through 8. The positions are also labeled with letters: 1 (A), 2 (E), 3 (D), 4 (C), 5 (B), 6 (A), 7 (E), 8 (D).</p>
<p><b>17-pos.</b> Crimp</p>	 <p>Diagram showing 17 contact positions in a circular arrangement. The positions are numbered 1 through 17. The positions are also labeled with letters: 1 (A), 2 (E), 3 (D), 4 (C), 5 (B), 6 (A), 7 (E), 8 (D), 9 (C), 10 (B), 11 (A), 12 (E), 13 (D), 14 (C), 15 (B), 16 (A), 17 (E).</p>	 <p>Diagram showing 17 contact positions in a circular arrangement. The positions are numbered 1 through 17. The positions are also labeled with letters: 1 (A), 2 (E), 3 (D), 4 (C), 5 (B), 6 (A), 7 (E), 8 (D), 9 (C), 10 (B), 11 (A), 12 (E), 13 (D), 14 (C), 15 (B), 16 (A), 17 (E).</p>

**Note:**

The connectors can be fitted with pin or socket contacts according to the application.

For safety reasons, only socket contacts may be used in the live part of the connector.

# Connectors

## M17 - signal connectors

### Selection guide

M17 signal connectors, 8 and 17-pos., crimp ranges: 0.06 mm<sup>2</sup> to 1.0 mm<sup>2</sup>

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

The connectors are supplied fully assembled and are complemented by the respective crimp contacts.

Each housing type can be fitted with pin or socket contacts.

Connectors with knurled nuts can be equipped with 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

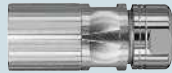
SPEEDCON fast locking system, M17 Compact, see page 62.



M17, see page 66.



M17 x 1 standard interlocking, M17, see page 67.



Square mounting flange for M17 cable and coupler connectors for wall mounting, see page 162.



Shielded

#### Coupler connectors/panel feed-through

Coupler connector M17 Compact, see page 63.



M17, see page 68.



Panel feed-through M17 Compact, see page 64.



Shielded

#### Device connectors

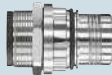
Straight, M17 Compact, see page 65.



Straight, M17, see page 69.



Straight, with central fastening thread, front mounting, M17, see page 71.



Straight, with central fastening thread, rear mounting, M17, see page 71.



Shielded

Angled, rotatable, M17, see page 70.



## Crimp contacts

## Socket contacts

Turned, see page 73.



Punched-rolled, taped, see page 72.



All housings can be fitted with pin or socket crimp contacts

## Pin contacts

Turned, see page 73.



Punched-rolled, taped, see page 72.



## Tools/accessories

## Crimping tools

Crimping pliers for punched-rolled C-HC crimp contacts, see page 158.



Crimping pliers with digital display for turned crimp contacts, see page 159.



## Tools/accessories

Unlocking tool for device connectors with contact carriers for snapping in from the device side, see page 162.



Color rings for individually marking the connectors, see page 164.

**Note:**

For reasons of safety, only socket contacts may be used in the live part of the plug.

# Connectors

## M17 - signal connectors

### M17 Compact cable connector

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

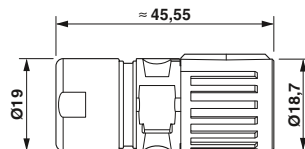


Cable connector,  
socket assembly



Cable connector,  
pin assembly

Description		Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	Cable clamping area	8-pos.		17-pos.		8-pos.		17-pos.	
<b>Cable connector, with contact carrier, without contacts</b>									
	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			
<b>Crimp contacts</b>		For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



### M17 Compact coupler connector

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

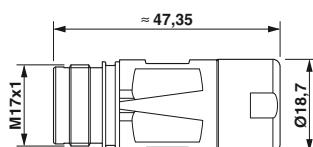


Coupler connector, socket assembly



Coupler connector, pin assembly

Description	Cable clamping area	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.	
<b>Coupler connector, with contact carrier, without contacts</b>									
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			
<b>Crimp contacts</b>		For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



# Connectors

## M17 - signal connectors

### M17 Compact panel feed-through

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

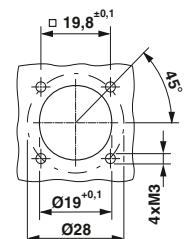
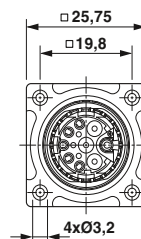
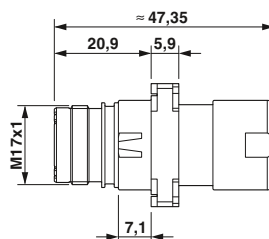


Panel feed-through, socket assembly



Panel feed-through, pin assembly

Description		Ordering data		Ordering data		Ordering data		Ordering data	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Cable clamping area		8-pos.		17-pos.		8-pos.		17-pos.	
<b>Panel feed-through, with contact carrier, without contacts</b>									
	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			
<b>Crimp contacts</b>		For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



Installation dimensions

**M17 Compact device connector, front mounting**

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

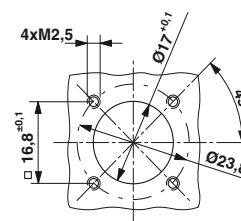
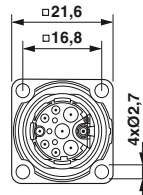
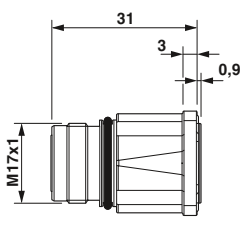


Device connector, straight, socket assembly



Device connector, straight, pin assembly

Description	Ordering data				Ordering data				
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	
Device connector, with contact carrier, without contacts, contact insert <b>for support</b> on the device									
		<b>8-pos.</b>		<b>17-pos.</b>		<b>8-pos.</b>		<b>17-pos.</b>	
Device connector, with contact carrier, without contacts, contact insert <b>can be snapped in</b>									
	<b>1619039</b>	1	<b>1607654</b>	1	<b>1613286</b>	1	<b>1607636</b>	1	
	<b>1619038</b>	1	<b>1607653</b>	1	<b>1619037</b>	1	<b>1607634</b>	1	
		Accessories				Accessories			
Crimp contacts	For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards				
Color rings, 50 pcs. in set (to be ordered separately)	See page 164				See page 164				



Installation dimensions



# Connectors

## M17 - signal connectors

### Cable connector, SPEEDCON fast locking system

– Individual marking of connectors with color rings

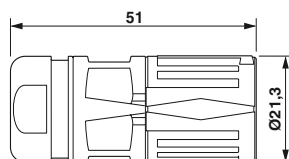


Cable connector, socket assembly



Cable connector, pin assembly

Description	Cable clamping area	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.	
<b>Cable connector, with contact carrier, without contacts</b>									
	5 mm ... 8 mm	1619007	1	1607642	1	1618999	1	1607625	1
	8 mm ... 10 mm	1619008	1	1607644	1	1619000	1	1607627	1
	10 mm ... 12.5 mm	1619009	1	1624532	1	1619001	1	1624529	1
		Accessories				Accessories			
<b>Crimp contacts</b>		For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



**Cable connector,  
M17 standard interlocking**

- Standard knurled nuts compatible with mating plugs with SPEEDCON or M17 standard external thread
- Individual marking of connectors with color rings

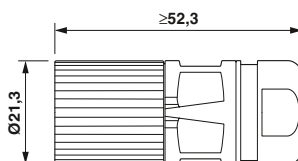


Cable connector,  
socket assembly



Cable connector,  
pin assembly

Description	Cable clamping area	Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, without contacts</b>		<b>8-pos.</b>		<b>17-pos.</b>		<b>8-pos.</b>		<b>17-pos.</b>	
	5 mm ... 8 mm	1619003	1	1607641	1	1618995	1	1607624	1
	8 mm ... 10 mm	1619004	1	1607643	1	1618996	1	1607626	1
	10 mm ... 12.5 mm	1619005	1	1624531	1	1618997	1	1624528	1
		Accessories				Accessories			
<b>Crimp contacts</b>		For socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



# Connectors

## M17 - signal connectors

### Coupling connector

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

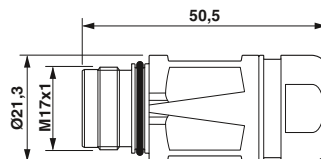


Coupler connector, socket assembly



Coupler connector, pin assembly

Description		Ordering data		Ordering data		Ordering data		Ordering data	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Cable clamping area		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 socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



**Device connector, straight, front mounting**

- Compatible with mating plugs 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, socket assembly



Device connector, straight, pin assembly

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

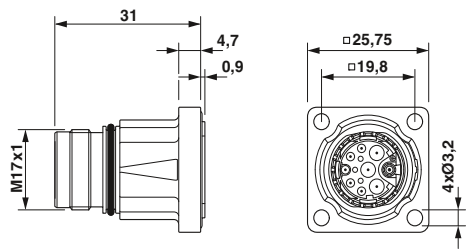
Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	8-pos.		17-pos.

Description			
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, contact insert <b>for support</b> on the device			
Flange dimensions: 25.75 mm x 25.75 mm	1619197	1	1619206
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, contact insert <b>can be snapped in</b>			
Flange dimensions: 25.75 mm x 25.75 mm	1619220	1	1619226

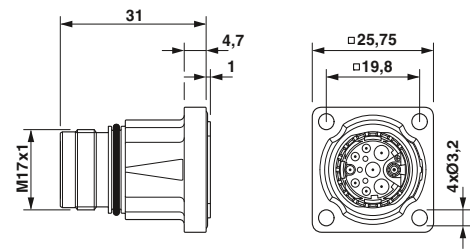
Accessories	
For socket contacts, see page 72 onwards See page 164	

Accessories	
For pin contacts, see page 72 onwards See page 164	

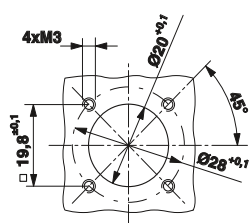
<b>Crimp contacts</b>
Color rings, 50 pcs. in set (to be ordered separately)



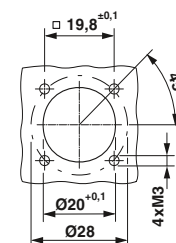
Contact insert for support on the device



Contact insert can be snapped in



Installation dimensions



Installation dimensions

# Connectors

## M17 - signal connectors

### Device connector, angled, rotatable, front mounting

- Compatible with mating plugs 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/M3 attachment

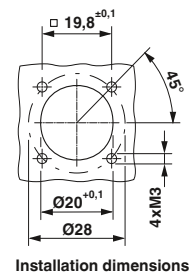
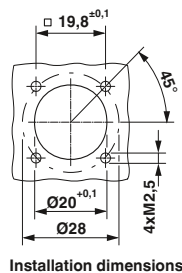
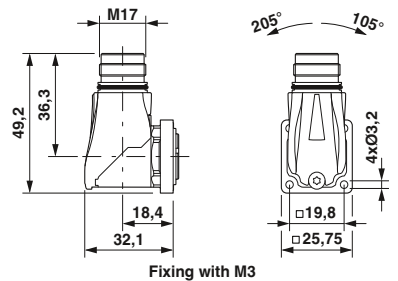
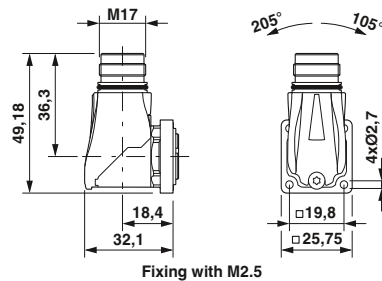


Device connector, angled, rotatable, for socket contacts



Device connector, angled, rotatable, for pin contacts

Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
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 socket contacts, see page 72 onwards				For pin contacts, see page 72 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 164				See page 164			



**Device connector, central fastening thread, front/rear mounting**

- Compatible with mating plugs 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, socket assembly



Device connector, central fixing, pin assembly

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

1619036	1	1613542	1
1619035	1	1613543	1

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

1618584	1	1613540	1
1619034	1	1613541	1

Accessories			
Type	Order No.	Pcs. / Pkt.	
ST-E2015151	1613831	10	
RC-13041	1600417	10	

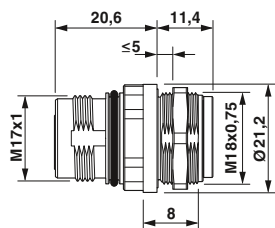
For socket contacts, see page 72 onwards  
See page 164

Accessories			
Type	Order No.	Pcs. / Pkt.	
ST-E2015151	1613831	10	
RC-13041	1600417	10	

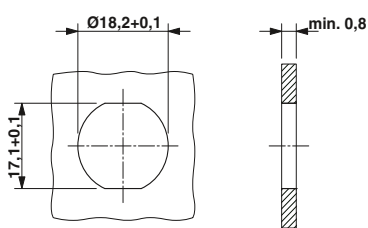
For pin contacts, see page 72 onwards  
See page 164

Description
Device connector, <b>front mounting</b> , M18 x 0.75 fastening thread, with contact carrier, without contacts
Device connector, <b>rear mounting</b> , M20 x 1.5 fastening thread, with contact carrier, without contacts

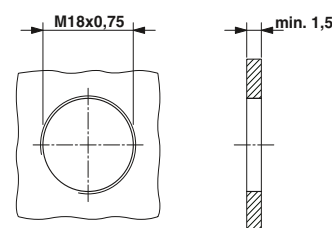
Description
<b>Locking nut</b> , for mounting bore holes and polarization
M18 x 0.75
M20 x 1.5
<b>Crimp contacts</b>
Color rings, 50 pcs. in set (to be ordered separately)



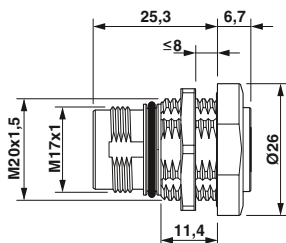
Front mounting, M18 x 0.75, order locking nut separately



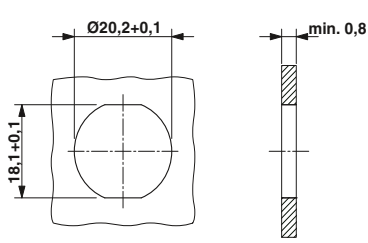
Installation dimensions: mounting with anti-rotation protection and locking nut



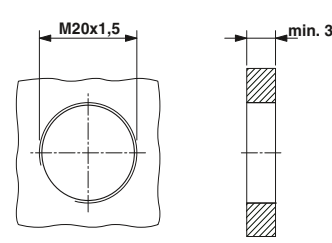
Installation dimensions: mounting with thread



Rear mounting, M20 x 1.5, order locking nut separately



Installation dimensions: mounting with anti-rotation protection and locking nut



Installation dimensions: mounting with thread

# Connectors

## M17 - signal connectors

### Crimp contacts, punched-rolled

C-HC® are punched-rolled contacts. They are designed for high insertion/withdrawal cycles.

The contacts are available taped on rolls for manual or automatic processing.

**Note:** depending on the litz wire used, the connection cross sections (crimp ranges) may deviate from the listed values. For reasons of safety, only socket contacts may be used in the live part of the connector.



C-HC socket contacts



C-HC pin contacts

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Crimp contacts, C-HC punched-rolled, Ø 1.0 mm, 2500 pcs./roll</b>							
	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	SF-10KS320	1607031	1	SF-10KP320	1615961	1
	0.2 mm <sup>2</sup> ... 0.56 mm <sup>2</sup>	SF-10KS350	1607032	1	SF-10KP350	1615963	1
<b>Crimp contact C-HC punched-rolled, Ø 1.0 mm, 10,000 pcs./roll</b>							
	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	SF-10KS330	1607358	1	SF-10KP330	1615962	1
	0.2 mm <sup>2</sup> ... 0.56 mm <sup>2</sup>	SF-10KS360	1607361	1	SF-10KP360	1615964	1
		Accessories			Accessories		
Crimping tools		Order separately, see page 158			Order separately, see page 158		

## Crimp contacts, turned

M17 signal connectors are fitted with

contacts with  $\varnothing$  1.0 mm or  $\varnothing$  0.6 mm depending on the number of positions.

– 8-pos. versions: contacts with  $\varnothing$  1.0 mm

– 17-pos. versions: contacts with  $\varnothing$  0.6 mm

**Note:**

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



Crimp contacts, socket



Crimp contacts, pin

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Contact socket <math>\varnothing</math> 0.6 mm</b>	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	ST-06KS010	1607580	100			
	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>	ST-06KS020	1607581	100			
	0.34 mm <sup>2</sup> ... 0.50 mm <sup>2</sup>	ST-06KS030	1607582	100			
<b>Contacts, <math>\varnothing</math> 1.0 mm</b>	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	ST-10KS010	1618239	100			
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	ST-10KS020	1618251	100			
	0.5 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>	ST-10KS030	1618254	100			
<b>Contact pin <math>\varnothing</math> 0.6 mm</b>	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>				ST-06KP010	1607577	100
	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>				ST-06KP020	1607578	100
	0.34 mm <sup>2</sup> ... 0.50 mm <sup>2</sup>				ST-06KP030	1607579	100
<b>Contacts, <math>\varnothing</math> 1.0 mm</b>	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>				ST-10KP010	1618255	100
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>				ST-10KP020	1618256	100
	0.5 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>				ST-10KP030	1618261	100
		Accessories			Accessories		
Crimping tools		Order separately, see page 159			Order separately, see page 159		

**Notes:**

Every connector housing type can be equipped with pin or socket contacts.

For reasons pertaining to safety, only socket contacts may be used in the live part of the connector.



### 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)
Contact connection method:	Solder cup, crimp, solder-in 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 a cable outside diameter of 3 - 14.5 mm, shielded
Type of locking:	M23 SPEEDCON fast locking system, cable connector with M23 x 1 coarse-pitch thread as an option
Mech. insertion/withdrawal 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	16	17	19 (16+3)	
Contacts	6	7	8	+ 1	12	12	17	16	+ 3
Contact Ø [mm]	2	2	1	2	1	1	1	1	1.5
<b>Litz wire cross section</b>									
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	16 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	16 x 0.56	17 x 0.56	16 x 1.0 + 3 x 1.0	
Nominal current per contact at 25°C <sup>1)</sup>	20	20	8	20	8	8	8	8	10
<b>Specifications according to DIN EN 61984:2009</b>									
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	
Surge voltage category	II	II	II		II	II	II	II	
Pollution degree <sup>2)</sup>	3	3	3		3	3	3	3	
Installation height [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 <sup>3)</sup> Max. Ø [mm]	14.5	14.5	14.5		14.5	14.5	14.5	14.5	

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

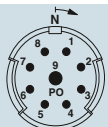
<sup>2)</sup> The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of pollution, the connector must be sealed using a protective cap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

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

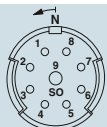
**Note:**  
Unlike plug-in devices, connectors may only be inserted or removed when disconnected from the power.

**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)

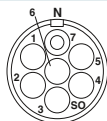
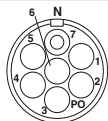
**Number of positions**

**Pin**

**Socket**

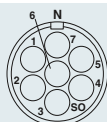
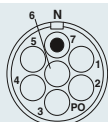
**6-pos.**

Solder/crimp/solder-in



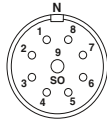
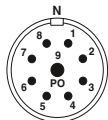
**7-pos.**

Solder/crimp/solder-in



**9-pos. (8+1)**

Solder/crimp/solder-in



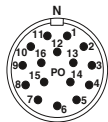
**12-pos.**

Solder/crimp/solder-in



**16-pos.**

Solder/crimp/solder-in



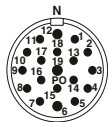
**17-pos.**

Solder/crimp/solder-in



**19-pos. (16+3)**

Solder/crimp



**Note:**

The connectors can be fitted with pin or socket contacts according to the application.

For safety reasons, only socket contacts may be used in the live part of the connector.

# Connectors

## M23 - signal connectors

### 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.

Each housing type can be fitted with pin or socket contacts. The product chart provides an overview of the available components.

### Connector type

#### Cable connectors

SPEEDCON fast locking system, see page 78.

M23 x 1 standard interlocking, see page 79.

Shielded



#### Coupler connectors

See page 80.

Shielded



#### Device connectors

Front mounting, Pg13.5 fastening thread, see page 81.

Front mounting, M20 fastening thread, see [phoenixcontact.net/products](http://phoenixcontact.net/products)

Shielded



Front mounting, flange dimensions: 25 mm x 25 mm, see page 83.

Front mounting, solder-in connection, flange dimensions: 25 mm x 25 mm, see [phoenixcontact.net/products](http://phoenixcontact.net/products)



Front mounting, angled, rotatable, flange dimensions: 26 mm x 26 mm, see page 84.



Rear mounting, central fastening nut, see page 85.



## For crimp connection:

## Socket contacts

Turned, see page 86.



Rolled, taped,  
see page 86.

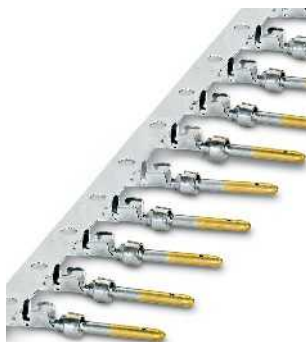


## Pin contacts

Turned, see page 86.



Rolled, taped,  
see page 86.

**Note:**

For safety reasons, only socket contacts may be used in the live part of the connector.

## Tools/accessories

## Crimping tools

Crimping pliers for rolled crimp contacts,  
see page 156.



Crimping pliers with digital display for turned crimp contacts,  
see page 156.



## Tools/accessories

Unlocking tool for device connectors for releasing the contact carriers from the plug-in side,  
see page 162.



Color rings for individually marking the connectors,  
see page 164.



All housings can be fitted with pin or socket crimp contacts

# Connectors

## M23 - signal connectors

### Cable connector, SPEEDCON fast locking system

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

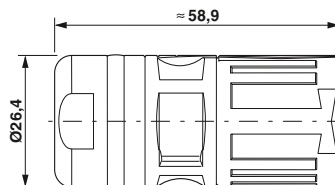


6, 7, 8+1-pos.



12, 17, 16+3-pos.

Description	Cable clamping area	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, with socket contacts, solder connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619605	1	1619601	1	1619597	1
	4 mm ... 6 mm	1619579	1	1619575	1	1619571	1
	6 mm ... 10 mm	1619534	1	1619530	1	1619526	1
	10 mm ... 14.5 mm	1619508	1	1619504	1	1619500	1
<b>Cable connector, with contact carrier, with pin contacts, solder connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619604	1	1619600	1	1619596	1
	4 mm ... 6 mm	1619578	1	1619574	1	1619570	1
	6 mm ... 10 mm	1619533	1	1619529	1	1619525	1
	10 mm ... 14.5 mm	1619507	1	1619503	1	1619499	1
<b>Cable connector, with contact carrier, without contacts, for socket assembly, crimp connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619603	1	1619599	1	1619595	1
	4 mm ... 6 mm	1619577	1	1619573	1	1619569	1
	6 mm ... 10 mm	1619532	1	1619528	1	1619524	1
	10 mm ... 14.5 mm	1619506	1	1619502	1	1619498	1
<b>Cable connector, with contact carrier, without contacts, for pin assembly, crimp connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619602	1	1619598	1	1619594	1
	4 mm ... 6 mm	1619576	1	1619572	1	1619568	1
	6 mm ... 10 mm	1619531	1	1619527	1	1619523	1
	10 mm ... 14.5 mm	1619505	1	1619501	1	1619497	1
		Accessories					
For crimp connection: crimp contacts		Order separately, see page 86 onwards					
Color rings, 50 pcs. in set (to be ordered separately)		See page 164					



**Cable connector, M23 standard interlocking**

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

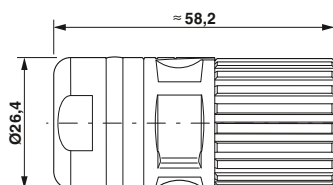


6, 7, 8+1-pos.



12, 17, 16+3-pos.

Description	Cable clamping area	Ordering data			Ordering data		
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, with socket contacts, solder connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619776	1	1619772	1	1619768	1
	4 mm ... 6 mm	1619750	1	1619746	1	1619742	1
	6 mm ... 10 mm	1619724	1	1619720	1	1619716	1
	10 mm ... 14.5 mm	1619659	1	1619655	1	1619651	1
<b>Cable connector, with contact carrier, with pin contacts, solder connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619775	1	1619771	1	1619767	1
	4 mm ... 6 mm	1619749	1	1619745	1	1619741	1
	6 mm ... 10 mm	1619723	1	1619719	1	1619715	1
	10 mm ... 14.5 mm	1619658	1	1619654	1	1619650	1
<b>Cable connector, with contact carrier, without contacts, for socket assembly, crimp connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619774	1	1619770	1	1619766	1
	4 mm ... 6 mm	1619748	1	1619744	1	1619740	1
	6 mm ... 10 mm	1619722	1	1619718	1	1619714	1
	10 mm ... 14.5 mm	1619657	1	1619653	1	1619649	1
<b>Cable connector, with contact carrier, without contacts, for pin assembly, crimp connection</b>							
Universal gasket	3 mm ... 14.5 mm	1619773	1	1619769	1	1619765	1
	4 mm ... 6 mm	1619747	1	1619743	1	1619739	1
	6 mm ... 10 mm	1619721	1	1619717	1	1619711	1
	10 mm ... 14.5 mm	1619656	1	1619652	1	1619648	1
		Accessories			Accessories		
For crimp connection: crimp contacts		Order separately, see page 86 onwards			Order separately, see page 86 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 164			See page 164		



# Connectors

## M23 - signal connectors

### Coupling connector

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

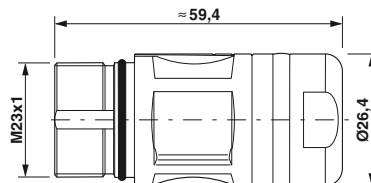


6, 7, 8+1-pos.



12, 17, 16+3-pos.

Description	Cable clamping area	Ordering data											
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.						
		6-pos.		7-pos.		8+1-pos.		Ordering data					
		12-pos.		17-pos.		16+3-pos.							
<b>Coupler connector, with contact carrier, with socket contacts, solder connection</b>													
Universal gasket	3 mm ... 14.5 mm	1620172	1	1620168	1	1620164	1	1620160	1	1620151	1	1620147	1
	4 mm ... 6 mm	1620145	1	1620141	1	1620137	1	1620133	1	1620125	1	1620121	1
	6 mm ... 10 mm	1620119	1	1620115	1	1620079	1	1620075	1	1620052	1	1620048	1
	10 mm ... 14.5 mm	1620046	1	1620042	1	1620036	1	1620032	1	1620024	1	1620020	1
<b>Coupler connector, with contact carrier, with pin contacts, solder connection</b>													
Universal gasket	3 mm ... 14.5 mm	1620171	1	1620167	1	1620163	1	1620159	1	1620150	1	1620146	1
	4 mm ... 6 mm	1620144	1	1620140	1	1620136	1	1620132	1	1620124	1	1620120	1
	6 mm ... 10 mm	1620118	1	1620114	1	1620078	1	1620074	1	1620051	1	1620047	1
	10 mm ... 14.5 mm	1620045	1	1620041	1	1620035	1	1620031	1	1620023	1	1620019	1
<b>Coupler connector, with contact carrier, without contacts, for socket assembly, crimp connection</b>													
Universal gasket	3 mm ... 14.5 mm	1620170	1	1620166	1	1620162	1	1620158	1	1620149	1		
	4 mm ... 6 mm	1620143	1	1620139	1	1620135	1	1620131	1	1620123	1		
	6 mm ... 10 mm	1620117	1	1620081	1	1620077	1	1620073	1	1620050	1		
	10 mm ... 14.5 mm	1620044	1	1620038	1	1620034	1	1620030	1	1620022	1		
<b>Coupler connector, with contact carrier, without contacts, for pin assembly, crimp connection</b>													
Universal gasket	3 mm ... 14.5 mm	1620169	1	1620165	1	1620161	1	1620157	1	1620148	1		
	4 mm ... 6 mm	1620142	1	1620138	1	1620134	1	1620130	1	1620122	1		
	6 mm ... 10 mm	1620116	1	1620080	1	1620076	1	1620072	1	1620049	1		
	10 mm ... 14.5 mm	1620043	1	1620037	1	1620033	1	1620029	1	1620021	1		
		<b>Accessories</b>						<b>Accessories</b>					
<b>For crimp connection: crimp contacts</b>		Order separately, see page 86 onwards						Order separately, see page 86 onwards					
Color rings, 50 pcs. in set (to be ordered separately)		See page 164						See page 164					







# Connectors

## M23 - signal connectors

### Device connector, front mounting

#### - M20 fastening thread

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

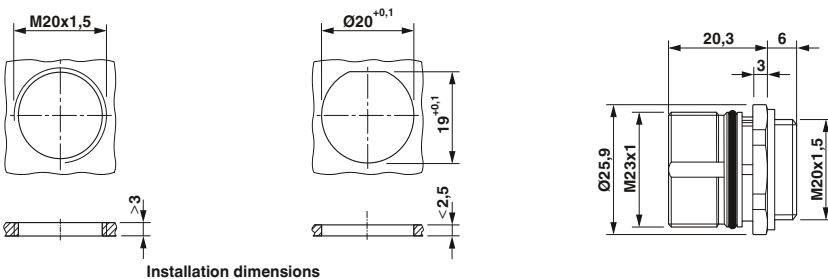


6, 7, 8+1-pos.



12, 17, 16+3-pos.

Description	Ordering data			Ordering data		
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, with contact carrier, with <b>socket contacts</b> , solder connection, M20 central fastening thread, axial seal	6-pos.		7-pos.		8+1-pos.	
Device connector, with contact carrier, with <b>pin contacts</b> , solder connection, M20 central fastening thread, axial seal						
Device connector, with contact carrier, <b>without contacts</b> , for socket assembly, crimp connection, M20 central fastening thread, axial seal						
Device connector, with contact carrier, <b>without contacts</b> , for pin assembly, crimp connection, M20 central fastening thread, axial seal						
	1619877	1	1619873	1	1619869	1
	1619876	1	1619872	1	1619868	1
	1619875	1	1619871	1	1619867	1
	1619874	1	1619870	1	1619866	1
	1619865	1	1619857	1	1619853	1
	1619864	1	1619856	1	1619852	1
	1619863	1	1619855	1		
	1619862	1	1619854	1		
Accessories						
Description	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 86 onwards			Order separately, see page 86 onwards		
Color rings, 50 pcs. in set (to be ordered separately)	See page 164			See page 164		



**Device connector, front mounting**

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

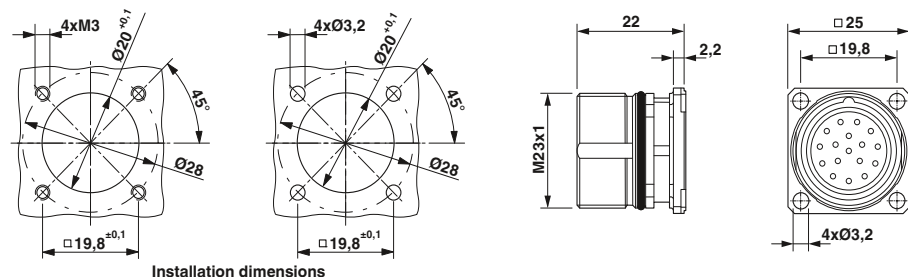


6, 7, 8+1-pos.



12, 17, 16+3-pos.

Description	Ordering data			Ordering data		
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, with contact carrier, with <b>socket contacts</b> , solder connection, flat gasket	6-pos.		7-pos.		12-pos.	
Device connector, with contact carrier, with <b>pin contacts</b> , solder connection, flat gasket					17-pos.	
Device connector, with contact carrier, <b>without</b> contacts, for <b>socket assembly</b> , crimp connection, flat gasket						16+3-pos.
Device connector, with contact carrier, <b>without</b> contacts, for <b>pin assembly</b> , crimp connection, flat gasket						
For crimp connection: crimp contacts Color rings, 50 pcs. in set (to be ordered separately)	Order separately, see page 86 onwards See page 164			Order separately, see page 86 onwards See page 164		



# Connectors

## M23 - signal connectors

**Device connector, angled, rotatable, front mounting**

- Compatible with mating plugs with SPEEDCON or M23 standard knurled nuts
- **Flange dimensions: 26 mm x 26 mm**



8+1, 12, 17-pos.

### Ordering data

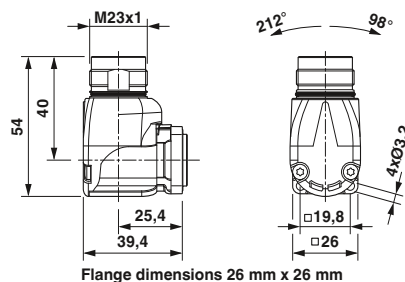
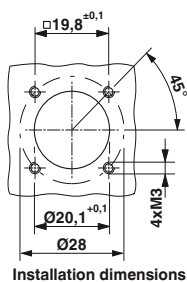
Description
Device connector, with contact carrier, with pin contacts, solder connection, central fixing nut, axial seal
Device connector, with contact carrier, without contacts, for pin assembly, crimp connection, central fixing nut, axial seal

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

Order separately, see page 86 onwards
See page 164



**Device connector,  
rear mounting**

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



6, 7, 8+1-pos.

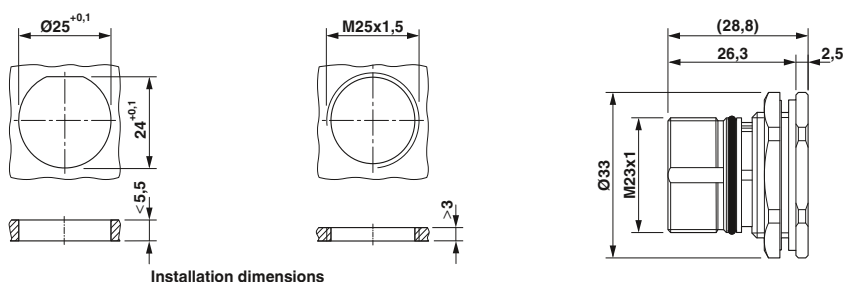


12, 17, 16+3-pos.

Description	Ordering data			Ordering data		
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, with contact carrier, with socket contacts, solder connection, central fixing nut, axial seal	6-pos.		7-pos.		12-pos.	
Device connector, with contact carrier, with pin contacts, solder connection, central fixing nut, axial seal					17-pos.	
Device connector, with contact carrier, without contacts, for socket assembly, crimp connection, central fixing nut, axial seal						16+3-pos.
Device connector, with contact carrier, without contacts, for pin assembly, crimp connection, central fixing nut, axial seal						
<b>Accessories</b>						
For crimp connection: crimp contacts	Order separately, see page 86 onwards			Order separately, see page 86 onwards		
Color rings, 50 pcs. in set (to be ordered separately)	See page 164			See page 164		

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1619851	1	1619847	1	1619843	1
1619850	1	1619846	1	1619842	1
1619849	1	1619845	1	1619841	1
1619848	1	1619844	1	1619791	1

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1619790	1	1619782	1	1619778	1
1619789	1	1619781	1	1619777	1
1619788	1	1619780	1		
1619787	1	1619779	1		



# Connectors

## M23 - signal connectors

### Crimp contacts

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



Rolled crimp contacts



Turned crimp contacts

		Ordering data			Ordering data		
Description	Contacts / connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Crimp contacts for contact carriers,</b> 6-pos., 6 x Ø2.0 mm	Pin Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Socket Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
	Pin Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Socket Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
<b>Crimp contacts for contact carriers,</b> 7-pos., 7 x Ø2.0 mm	Pin Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Socket Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
	Pin Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Socket Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
<b>Crimp contacts for contact carriers,</b> 9-pos. (8+1), 8 x Ø1.0 mm, 1 x Ø2.0 mm	Pin Ø1.0 mm / 0.14 ... 0.56				RC-12P2000	1597862	100
	Socket Ø1.0 mm / 0.14 ... 0.56				RC-12S2000	1599600	100
	Pin Ø 2.0 mm / 1.5 ... 2.5				RC-5AP2000	1603505	50
	Socket Ø 2.0 mm / 1.5 ... 2.5				RC-5AS2000	1603509	50
	Pin Ø 2.0 mm / 1.0 ... 1.5				RC-5CP2000	1603513	50
	Socket Ø 2.0 mm / 1.0 ... 1.5				RC-5CS2000	1603517	50
<b>Crimp contacts for contact carriers,</b> 12-pos., 12 x Ø1.0 mm	Pin Ø1.0 mm / 0.22 ... 0.56	RC-22P2000	1603321	100			
	Socket Ø1.0 mm / 0.22 ... 0.56	RC-22S2000	1603327	100			
	Pin Ø1.0 mm / 0.14 ... 0.56				RC-12P2000	1597862	100
	Socket Ø1.0 mm / 0.14 ... 0.56				RC-12S2000	1599600	100
<b>Crimp contacts for contact carriers,</b> 16-pos., 16 x Ø1.0 mm	Pin Ø1.0 mm / 0.22 ... 0.56	RC-22P2000	1603321	100			
	Socket Ø1.0 mm / 0.22 ... 0.56	RC-22S2000	1603327	100			
	Pin Ø1.0 mm / 0.14 ... 0.56				RC-12P2000	1597862	100
	Socket Ø1.0 mm / 0.14 ... 0.56				RC-12S2000	1599600	100
		<b>Accessories</b>			<b>Accessories</b>		
<b>Crimping tools</b>		See page 156			See page 156		



### 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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for a cable outside diameter of 3 ... 14.5 mm, shielded
Type of locking:	M23 SPEEDCON screw locking, cable connector with M23 x 1 coarse-pitch thread as an option
Mech. insertion/withdrawal cycles:	Standard: 100, punched-rolled C-HC crimp contacts: up to 500
Protection class:	IP67 when locked

Electrical data			
<b>Number of positions</b>		<b>12</b>	<b>17</b>
Contacts		12	17
Contact Ø	[mm]	1	1
Litz wire cross section, crimp contacts turned	[mm <sup>2</sup> ]	0.08 ... 1.0	0.08 ... 1.0
Litz wire cross section, C-HC crimp contacts punched-rolled	[mm <sup>2</sup> ]	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 <sup>1)</sup>	[A]	8	8
<b>Specifications according to DIN EN 61984:2009</b>			
Rated voltage	[V AC/DC]	150	100
Test/surge voltage	[kV]	2.5	1.5
Surge voltage category		III	III
Pollution degree <sup>2)</sup>		3	3
Installation height	[m]	Up to 3000	Up to 3000
Cable clamping area <sup>3)</sup>	Max. Ø [mm]	14.5	14.5

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

<sup>2)</sup> 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, the connector must be sealed using a protective cap ≥ IP54.

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

**Note:**  
Unlike plug-in devices, connectors may only be inserted or removed when disconnected from the power.

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	Pin	Socket	Pin	Socket
12-pos. N-coding Crimp				
17-pos. N-coding Crimp				

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

The connectors can be fitted with pin or socket contacts according to the application.

For safety reasons, only socket contacts may be used in the live part of the connector.



# Connectors

## M23 - feedback connectors

### Selection guide

M23 signal connectors  
12/17-pos., N-coding, up to 8 A/150 V,  
crimp ranges up to 1 mm<sup>2</sup>

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

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

Each housing type can be fitted with pin or socket contacts.

The connectors can be supplied with clockwise or counter-clockwise 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 92.

M23 x 1 standard interlocking, see page 93.

Shielded



Square mounting flange for cable and coupler connectors for wall mounting, see page 162.

#### Coupler connectors

See page 94.

Shielded



Square mounting flange for cable and coupler connectors for wall mounting, see page 162.

#### Device connectors

Straight, 4-hole mounting  
Ø 3.2,  
see page 96.



Contact carrier for snapping in from the device side,  
straight, 4-hole mounting  
Ø 3.2, see page 96.



Shielded

Angled, rotatable,  
flange dimensions: 26 mm x 26 mm,  
see page 97.



Angled, rotatable,  
flange dimensions: 28 mm x 28 mm,  
see page 97.



## Crimp contacts

## Socket contacts

Turned, see page 99.



Punched-rolled, taped,  
see page 98.



All housings can be fitted with pin or socket crimp contacts

## Pin contacts

Turned, see page 99.



Punched-rolled, taped,  
see page 98.



## Tools/accessories

## Crimping tools

Crimping pliers for punched-rolled  
C-HC crimp contacts,  
see page 158.



Crimping pliers with digital display for turned  
crimp contacts,  
see page 159.



## Tools/accessories

Unlocking tool for device connectors with contact  
carriers for snapping in from the device side,  
see page 162.



Color rings for individually marking the connectors,  
see page 164.

**Note:**

For safety reasons, only socket contacts may  
be used in the live part of the connector.

# Connectors

## M23 - feedback connectors

### Cable connector, SPEEDCON fast locking system

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

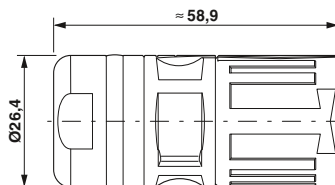


Cable connector, socket assembly



Cable connector, pin assembly

Description	Cable clamping area	Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, without contacts, standard direction of rotation</b>									
Universal gasket	3 mm ... 14.5 mm	<b>1619472</b>	1	<b>1619470</b>	1	<b>1619471</b>	1	<b>1619469</b>	1
	4 mm ... 6 mm	<b>1619466</b>	1	<b>1619464</b>	1	<b>1619465</b>	1	<b>1619463</b>	1
	6 mm ... 10 mm	<b>1619460</b>	1	<b>1619458</b>	1	<b>1619459</b>	1	<b>1619457</b>	1
	10 mm ... 14.5 mm	<b>1619454</b>	1	<b>1619452</b>	1	<b>1619453</b>	1	<b>1619451</b>	1
<b>Cable connector, with contact carrier, without contacts, reverse direction of rotation</b>									
Universal gasket	3 mm ... 14.5 mm	<b>1619474</b>	1			<b>1619473</b>	1		
	4 mm ... 6 mm	<b>1619468</b>	1			<b>1619467</b>	1		
	6 mm ... 10 mm	<b>1619462</b>	1			<b>1619461</b>	1		
	10 mm ... 14.5 mm	<b>1619456</b>	1			<b>1619455</b>	1		
		Accessories				Accessories			
<b>Crimp contacts</b>		For socket contacts, see page 98 onwards				For pin contacts, see page 98 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



**Cable connector,  
M23 standard interlocking**

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

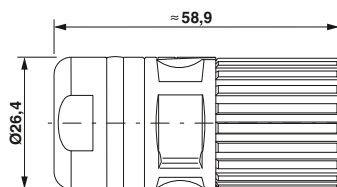


Cable connector,  
socket assembly



Cable connector,  
pin assembly

Description	Cable clamping area	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.	
<b>Cable connector housing, with contact carrier, without contacts, standard direction of rotation</b>									
Universal gasket	3 mm ... 14.5 mm	1619631	1	1619629	1	1619630	1	1619628	1
	4 mm ... 6 mm	1619625	1	1619623	1	1619624	1	1619619	1
	6 mm ... 10 mm	1619616	1	1619614	1	1619615	1	1619613	1
	10 mm ... 14.5 mm	1619610	1	1619608	1	1619609	1	1619607	1
<b>Cable connector housing, with contact carrier, without contacts, reverse direction of rotation</b>									
Universal gasket	3 mm ... 14.5 mm	1619633	1			1619632	1		
	4 mm ... 6 mm	1619627	1			1619626	1		
	6 mm ... 10 mm	1619618	1			1619617	1		
	10 mm ... 14.5 mm	1619612	1			1619611	1		
		Accessories				Accessories			
<b>Crimp contacts</b>		For socket contacts, see page 98 onwards				For pin contacts, see page 98 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



# Connectors

## M23 - feedback connectors

### Coupling connector

- Compatible with mating plugs with SPEEDCON or M23 standard knurled nuts
- 12 or 17-pos. versions
- Individual marking of connectors with color rings

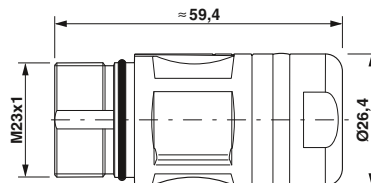


Coupler connector, socket assembly



Coupler connector, pin assembly

Description		Ordering data		Ordering data		Ordering data		Ordering data	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Cable clamping area		12-pos.		17-pos.		12-pos.		17-pos.	
<b>Coupler connector housing, with contact carrier, without contacts, standard direction of rotation</b>									
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
<b>Coupler connector housing, with contact carrier, without contacts, reverse direction of rotation</b>									
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			
<b>Crimp contacts</b>		For socket contacts, see page 98 onwards				For pin contacts, see page 98 onwards			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			





# Connectors

## M23 - feedback connectors

### Device connector, straight, front mounting

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

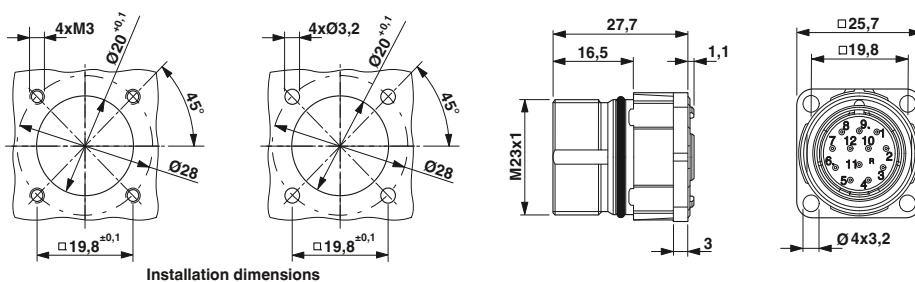


Device connector, straight, socket assembly



Device connector, straight, pin assembly

Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connector, straight, with contact carrier, without contacts, 4-hole fastening with Ø 3.2 mm</b>								
Standard direction of rotation	1607283	1	1607892	1	1607236	1	1607860	1
Reverse direction of rotation	1607307	1			1607260	1		
<b>Device connector, straight, with contact carrier, without contacts, 4-hole fastening with Ø 3.2 mm, contact insert can be snapped in</b>								
Standard direction of rotation	1607830	1	1607893	1	1607804	1	1607863	1
Reverse direction of rotation	1607844	1			1607817	1		
Accessories				Accessories				
<b>Crimp contacts</b>	For socket contacts, see page 98 onwards				For pin contacts, see page 98 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 164				See page 164			



**Device connector, angled, rotatable, front mounting**

- Compatible with mating plugs with SPEEDCON or M23 standard knurled nuts
- **Flange dimensions:**  
26 mm x 26 mm or 28 mm x 28 mm

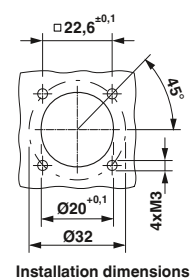
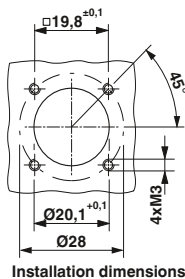
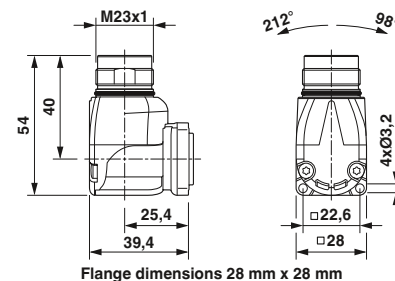
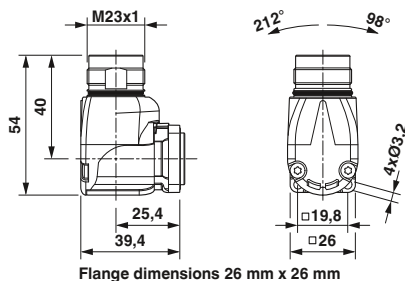


Device connector, angled, rotatable, for socket contacts



Device connector, angled, rotatable, for pin contacts

Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connector, angled, rotatable, with contact carrier, without contacts, flange dimensions: 26 mm x 26 mm</b>	12-pos.		17-pos.		12-pos.		17-pos.	
Standard direction of rotation	1607280	1	1607345	1	1607233	16	1607328	1
Reverse direction of rotation	1607304	1			1607257	1		
<b>Device connector, angled, rotatable, with contact carrier, without contacts, flange dimensions: 28 mm x 28 mm</b>								
Standard direction of rotation	1607827	1	1607887	1	1607802	1	1607852	1
Reverse direction of rotation	1607842	1			1607814	1		
	Accessories				Accessories			
<b>Crimp contacts</b>	For socket contacts, see page 98 onwards				For pin contacts, see page 98 onwards			
Color rings, 50 pcs. in set (to be ordered separately)	See page 164				See page 164			





# Connectors

## M23 - feedback connectors

### Crimp contacts, punched-rolled

C-HC® are punched-rolled contacts. They are designed for high insertion/withdrawal cycles.

The contacts are available taped on rolls for manual or automatic processing.

**Note:** depending on the litz wire used, the connection cross sections (crimp ranges) may deviate from the listed values. For reasons of safety, only socket contacts may be used in the live part of the connector.



C-HC socket contacts



C-HC pin contacts

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Crimp contacts, C-HC punched-rolled, Ø 1.0 mm, 2500 pcs./roll</b>							
	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	SF-10KS320	1607031	1	SF-10KP320	1615961	1
	0.2 mm <sup>2</sup> ... 0.56 mm <sup>2</sup>	SF-10KS350	1607032	1	SF-10KP350	1615963	1
<b>Crimp contact C-HC punched-rolled, Ø 1.0 mm, 10,000 pcs./roll</b>							
	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	SF-10KS330	1607358	1	SF-10KP330	1615962	1
	0.2 mm <sup>2</sup> ... 0.56 mm <sup>2</sup>	SF-10KS360	1607361	1	SF-10KP360	1615964	1
		Accessories			Accessories		
Crimping tools		Order separately, see page 158 onwards			Order separately, see page 158 onwards		

## Crimp contacts, turned

M23 feedback connectors are fitted with 12 or 17 SF series signal contacts with  $\varnothing$  1 mm depending on the number of positions.

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

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



Crimp contacts socket



Crimp contacts pin

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact socket $\varnothing$ 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 pin $\varnothing$ 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 159			Order separately, see page 159		

## Notes:

Every connector housing type can be equipped with pin or socket contacts.

For reasons pertaining to safety, only socket contacts may be used in the live part of the connector.

### 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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 130°C
Cable entry:	Cable and coupler connectors for an outer cable diameter of 7.5 - 18 mm, shielded
Type of locking:	M23 SPEEDCON screw locking
Mech. insertion/withdrawal cycles:	Default: 100
Protection class:	IP67 when locked

#### Electrical data

Number of positions		13 (4+4+4+PE), CAT5				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	
<b>Litz wire cross sections</b>														
Cable and coupler connectors:														
	Max. cable Ø of 18 mm	[mm <sup>2</sup> ]	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 <sup>2</sup> ]	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 <sup>1)</sup>			3.6	8	30	-	8	30	-					
<b>Specifications according to DIN EN 61984:2009</b>														
Rated voltage	[V AC/DC]	50	50	630/850	-	50	630/850	-						
Test/surge voltage	[kV AC]	1.5	1.5	6	-	1.5	6	-						
Surge voltage category		III						III						
Pollution degree <sup>2)</sup>		3						3						
Installation height		[m]	Up to 3000						Up to 3000					
Cable clamping area <sup>3)</sup>		Max. Ø [mm]	18						18					

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

<sup>2)</sup> 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, the connector must be sealed using a protective cap ≥ IP54.

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

Contact chamber numbering (view of plug-in side)				
Number of positions	Pin		Socket	
13-pos., CAT5 (4 + 4 + 4 + PE) Crimp				
13-pos. (8 + 4 + PE) Crimp				

# Connectors

## M23 - hybrid connectors

### Selection guide

M23 hybrid connectors up to 30 A/630 V AC/850 V DC, crimp ranges up to 4 mm<sup>2</sup>

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

The connectors are supplied pre-assembled and are complemented by the respective crimp contacts.

The product chart provides an overview of the available components.

### Connector type

#### Cable connectors

SPEEDCON fast locking system, see page 104.

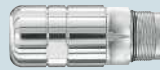
M23 x 1 standard interlocking, see page 105.



Shielded

#### Coupler connectors

See page 106.



Shielded

#### Device connectors

Straight, see page 107.



Angled, rotatable, flange dimensions: 26 mm x 26 mm, see page 108.



Angled, rotatable, flange dimensions: 28 mm x 28 mm, see page 108.



Shielded

## Crimp contacts

## Socket contacts

Turned, see page 109.



## Tools/accessories

Crimping pliers with digital display for turned crimp contacts, see page 159.



All housings can be fitted with pin or socket crimp contacts

## Pin contacts

Turned, see page 109.



## Accessories

Color rings for individually marking the connectors, see page 164.

**Note:**

For reasons of safety, only socket contacts may be used in the live part of the connector.

# Connectors

## M23 - hybrid connectors

### M23 cable connector, hybrid, SPEEDCON fast locking system

- 4 x power + PE, 4 x signal, 4 x data
- 4 x power + PE, 8 x signal

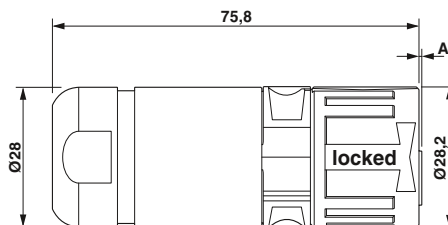


Cable connector, socket assembly



Cable connector, pin assembly

Description	Cable clamping area	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	
<b>Cable connector</b> , with contact carrier, <b>without</b> contacts, crimp connection									
Universal gasket	7.5 mm ... 18 mm	1621517	1	1621524	1	1621529	1	1621534	1
	7.5 mm ... 9 mm	1621520	1	1621525	1	1621530	1	1621535	1
	9 mm ... 12 mm	1621521	1	1621526	1	1621531	1	1621536	1
	12 mm ... 15 mm	1621522	1	1621527	1	1621532	1	1621537	1
	15 mm ... 18 mm	1621523	1	1621528	1	1621533	1	1621538	1
		Accessories				Accessories			
Crimp contacts		See page 109				See page 109			
Color rings, 50 pcs. in set (to be ordered separately)		See Catalog 2, page 367				See Catalog 2, page 367			



Pin version: dimension A = 0.2 mm, socket version: dimension A = 0 mm

**M23 cable connector, hybrid, standard interlocking**

- 4 x power + PE, 4 x signal, 4 x data
- 4 x power + PE, 8 x signal

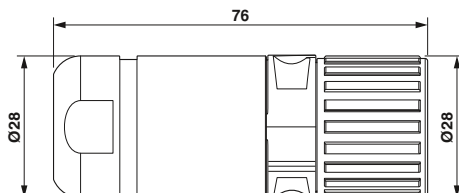


**Cable connector, socket assembly**



**Cable connector, pin 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 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
<b>Cable connector, with contact carrier, without contacts, crimp connection</b>									
Universal gasket	7.5 mm ... 18 mm	1621997	1	1622002	1	1622007	1	1622012	1
	7.5 mm ... 9 mm	1621998	1	1622003	1	1622008	1	1622013	1
	9 mm ... 12 mm	1621999	1	1622004	1	1622009	1	1622014	1
	12 mm ... 15 mm	1622000	1	1622005	1	1622010	1	1622015	1
	15 mm ... 18 mm	1622001	1	1622006	1	1622011	1	1622016	1
		Accessories				Accessories			
<b>Crimp contacts</b>		See page 109				See page 109			
<b>Color rings, 50 pcs. in set (to be ordered separately)</b>		See Catalog 2, page 367				See Catalog 2, page 367			





# Connectors

## M23 - hybrid connectors

### M23 coupler connector, hybrid

- 4 x power + PE, 4 x signal, 4 x data
- 4 x power + PE, 8 x signal

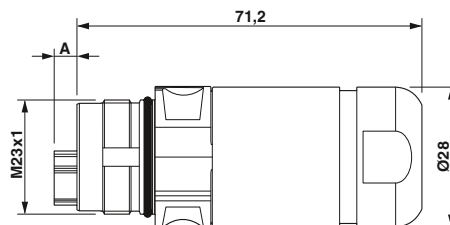


Coupler connector,  
socket assembly



Coupler connector,  
pin assembly

Description	Cable clamping area	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	
<b>Coupler connector, with contact carrier, without contacts, crimp connection</b>									
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			
Crimp contacts		See page 109				See page 109			
Color rings, 50 pcs. in set (to be ordered separately)		See Catalog 2, page 367				See Catalog 2, page 367			



Pin version: dimension A = 4.7 mm, socket version:  
dimension A = 0 mm

**M23 device connector, hybrid, straight**

- 4 x power + PE, 4 x signal, 4 x data
- 4 x power + PE, 8 x signal

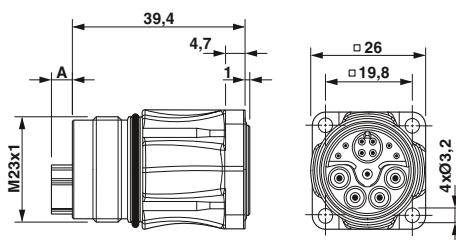


Device connector, straight, socket assembly

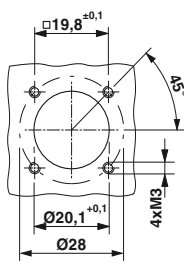


Device connector, straight, pin assembly

Description	Ordering data				Ordering data				
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	
Device connector, with contact carrier, without contacts	4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal		
Flange dimensions: 26 mm x 26 mm	1621567	1	1621568	1	1621569	1	1621570	1	
Crimp contacts		Accessories				Accessories			
Color rings, 50 pcs. in set (to be ordered separately)		See page 109 See Catalog 2, page 367				See page 109 See Catalog 2, page 367			



Pin version: dimension A = 4.75 mm, socket version: dimension A = 0 mm



Installation dimensions

# Connectors

## M23 - hybrid connectors

### M23 device connector, hybrid, angled, rotatable

- 4 x power + PE, 4 x signal, 4 x data
- 4 x power + PE, 8 x signal
- Housing can be freely rotated by 310°

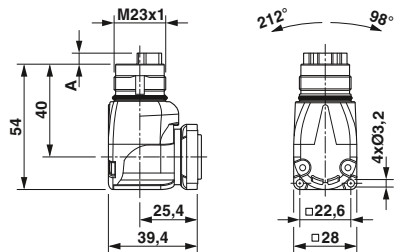


Device connector, angled, rotatable, socket assembly

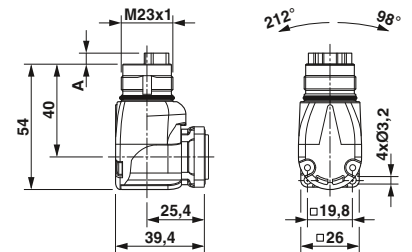


Device connector, angled, rotatable, pin assembly

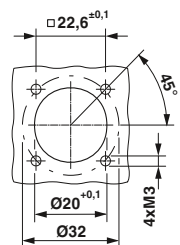
Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Device connector</b> , with contact carrier, <b>without</b> contacts	4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Flange dimensions: 26 mm x 26 mm	1621563	1	1621564	1	1621565	1	1621566	1
<b>Device connector</b> , with contact carrier, <b>without</b> contacts	4 x signal + CAT5		8 x signal		4 x signal + CAT5		8 x signal	
Flange dimensions: 28 mm x 28 mm	1621559	1	1621560	1	1621561	1	1621562	1
	Accessories				Accessories			
<b>Crimp contacts</b>	See page 109				See page 109			
<b>Color rings, 50 pcs. in set (to be ordered separately)</b>	See Catalog 2, page 367				See Catalog 2, page 367			



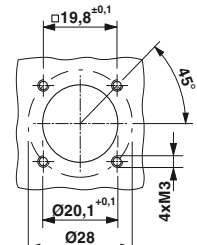
Pin version: dimension A = 4.7 mm, socket version: dimension A = 0 mm



Pin version: dimension A = 4.7 mm, socket version: dimension A = 0 mm



Installation dimensions



Installation dimensions

## Crimp contacts



Crimp contacts, socket



Crimp contacts, pin

Description	Connection cross section [mm <sup>2</sup> ]	Ordering data			Ordering data		
		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contacts, Ø 0.8 mm	0.08 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	SF-08KS010	1621571	100	SF-08KP010	1621574	100
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	SF-08KS020	1621573	100	SF-08KP020	1621575	100
Contacts, Ø 1.0 mm	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	ST-10KS010	1618239	100	ST-10KP010	1618255	100
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	ST-10KS020	1618251	100	ST-10KP020	1618256	100
	0.5 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>	ST-10KS030	1618254	100	ST-10KP030	1618261	100
Contacts, Ø 2.0 mm	0.25 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>	SF-20KS021	1621576	50	SF-20KP021	1621579	50
	1.0 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	SF-20KS022	1621577	50	SF-20KP022	1621580	50
	2.5 mm <sup>2</sup> ... 4.0 mm <sup>2</sup>	SF-20KS023	1621578	50	SF-20KP023	1621581	50

### 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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for a cable outside diameter of 3.5 - 11 mm, shielded (M17 Compact) 5 - 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
Mech. insertion/withdrawal 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		1
Litz wire cross section, crimp contacts Turned	[mm <sup>2</sup> ]	0.25 ... 2.5	0.06 ... 1.0	0.06 ... 1.0	0.06 ... 1.0	0.06 ... 0.5		0.06 ... 1.0		0.06 ... 1.0
Litz wire cross section, C-HC crimp contacts Punched-rolled	[mm <sup>2</sup> ]	–	0.08 ... 0.56	0.06 ... 0.56	0.06 ... 0.56	–		–		–
Nominal current per contact at 25°C <sup>1)</sup>		20 (25) <sup>2)</sup>	14	14	14	3.6		14		–
<b>Specifications according to DIN EN 61984:2009</b>										
Rated voltage	[V AC/DC]	630	630	630	630	60		630		–
Test/surge voltage	[kV AC]	6	6	6	6	1.5		6		–
Surge voltage category		III	III	III	III			III		
Pollution degree <sup>3)</sup>		3	3	3	3			3		
Installation height	[m]	Up to 3000	Up to 3000	Up to 3000	Up to 3000			Up to 3000		
Cable clamping area <sup>4)</sup>	Max. Ø [mm]	12.5	12.5	12.5	12.5			12.5		



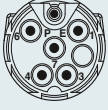
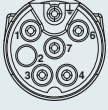


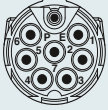



<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

<sup>2)</sup> 25 A in the case of assignment with 3 x 2.5 mm<sup>2</sup>

<sup>3)</sup> 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, the connector must be sealed using a protective cap ≥ IP54.

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

**Contact chamber numbering**  
(view of plug-in side)

Number of positions	Pin	Socket
<p><b>4-pos. (3+PE)</b> Crimp</p>		
<p><b>6-pos. (5+PE)</b> (contact chambers 2+5 closed) Crimp</p>		
<p><b>7-pos. (6+PE)</b> Crimp</p>		
<p><b>8-pos. (7+PE)</b> Crimp</p>		
<p><b>9-pos. (5+3+PE)</b> Crimp</p>		

\* with grounding spring  
**PE leading**

\* with grounding spring  
**PE leading**

**Note:**

The connectors can be fitted with pin or socket contacts according to the application.

For safety reasons, only socket contacts may be used in the live part of the connector.

# Connectors

## M17 - power connectors

### Selection guide

M17 power connectors, 4/6/7/8/9-pos., up to 20 A/630 V, crimp ranges: 0.06 mm<sup>2</sup> to 2.5 mm<sup>2</sup>

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

The connectors are supplied fully assembled and are complemented by the respective crimp contacts.

Each housing type can be fitted with pin or socket contacts.

Cable connectors can be equipped with 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

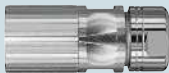
SPEEDCON fast locking system, M17 Compact, see page 114.



M17, see page 118.



M17 x 1 standard interlocking, M17, see page 119.



Square mounting flange for cable and coupler connectors for wall mounting, see page 162.



Shielded

#### Coupler connectors/panel feed-through

Coupler connector M17 Compact, see page 115.



M17, see page 120.



Panel feed-through M17 Compact, see page 116.



Shielded

#### Device connectors

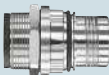
Straight, M17 Compact, see page 117.



Straight, M17, see page 121.



Straight, with central fastening thread, front mounting, M17, see page 123.



Straight, with central fastening thread, rear mounting, M17, see page 123.



Shielded

Angled, rotatable, M17, see page 122.



## Crimp contacts

## Socket contacts

Turned, see page 125.



Punched-rolled, taped,  
see page 124.



All housings can be fitted with pin or socket crimp contacts

## Pin contacts

Turned, see page 125.



Punched-rolled, taped,  
see page 124.



## Tools/accessories

## Crimping tools

Crimping pliers for punched-rolled  
C-HC crimp contacts,  
see page 158.



Crimping pliers with digital display for turned  
crimp contacts,  
see page 159.



## Tools/accessories

Unlocking tool for device connectors with contact  
carriers for snapping in from the device side,  
see page 162.



Color rings for individually marking the connectors,  
see page 164.

**Note:**

For reasons of safety, only socket contacts  
may be used in the live part of the connector.



# Connectors

## M17 - power connectors

### M17 Compact cable connector

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

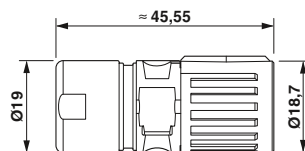


3+PE, 5+PE, 6+PE-pos.



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

Description		Cable clamping area		Ordering data							
		3+PE-pos.	5+PE-pos.	6+PE-pos.	7+PE-pos.	5+3+PE-pos.	Order No.	Pcs. / Pkt.			
Cable connector, with contact carrier, without contacts, for socket assembly	3.5 mm ... 5.5 mm	1618312	1	1618621	1	1618632	1	1618633	1	1618674	1
	5 mm ... 9.2 mm	1618408	1	1618620	1	1618631	1	1618634	1	1618675	1
	9 mm ... 11.2 mm	1618603	1	1618619	1	1618630	1	1618635	1	1618676	1
Cable connector, with contact carrier, without contacts, for pin assembly	3.5 mm ... 5.5 mm	1618602	1	1618614	1	1618622	1	1618640	1	1618681	1
	5 mm ... 9.2 mm	1618574	1	1618615	1	1618623	1	1618639	1	1618680	1
	9 mm ... 11.2 mm	1618575	1	1618616	1	1618624	1	1618638	1	1618679	1
				Accessories							
Crimp contacts				Order separately, see page 124 onwards							
Color rings, 50 pcs. in set (to be ordered separately)				See page 164							



**M17 Compact coupler connector**

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

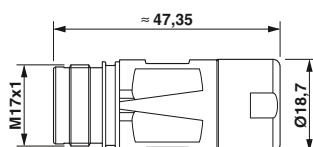


3+PE, 5+PE, 6+PE-pos.



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.
<b>Coupler connector</b> , with contact carrier, <b>without</b> contacts, for <b>socket assembly</b>	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
<b>Coupler connector</b> , with contact carrier, <b>without</b> contacts, for <b>pin assembly</b>	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 124 onwards			Order separately, see page 124 onwards		
Color rings, 50 pcs. in set (to be ordered separately)		See page 164			See page 164		



# Connectors

## M17 - power connectors

### M17 Compact panel feed-through

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

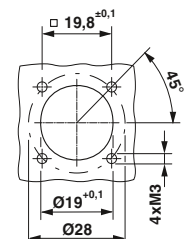
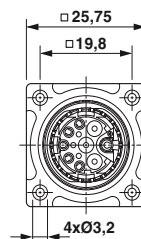
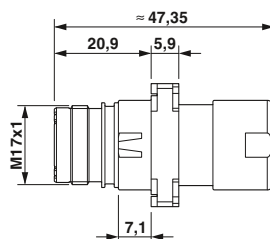


3+PE, 5+PE, 6+PE-pos.



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

Description		Cable clamping area		Ordering data							
		3+PE-pos.	5+PE-pos.	6+PE-pos.	7+PE-pos.	5+3+PE-pos.	Order No.	Pcs. / Pkt.			
Panel feed-through, with contact carrier, <b>without</b> contacts, for <b>socket assembly</b>	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
	9 mm ... 11 mm	1618764	1	1618774	1	1618782	1	1618785	1	1618823	1
Panel feed-through, with contact carrier, <b>without</b> contacts, for <b>pin assembly</b>	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							
Crimp contacts				Order separately, see page 124 onwards							
Color rings, 50 pcs. in set (to be ordered separately)				See page 164							



Installation dimensions

**M17 Compact device connector, front mounting**

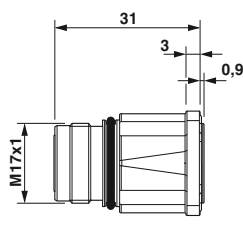
- Compatible with mating plugs with SPEEDCON or M17 standard knurled nuts
- Individual marking of connectors with color rings
- **Flange dimensions: 21.6 mm x 21.6 mm**



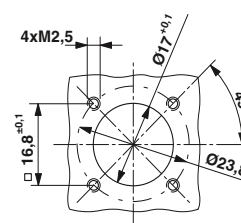
3+PE, 5+PE, 6+PE-pos.

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

Description	Ordering data			Ordering data		
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, with contact carrier, without contacts, for socket assembly						
Contact insert for support on the device						
Device connector, with contact carrier, without contacts, for pin assembly						
Contact insert for support on the device						
Device connector, with contact carrier, without contacts, for socket assembly						
Contact insert can be snapped in						
Device connector, with contact carrier, without contacts, for pin assembly						
Contact insert can be snapped in						
	Accessories			Accessories		
Crimp contacts	Order separately, see page 124 onwards			Order separately, see page 124 onwards		
Color rings, 50 pcs. in set (to be ordered separately)	See page 164			See page 164		



Flange dimensions 21.6 mm x 21.6 mm



Installation dimensions



**Cable connector, M17 standard interlocking**

- Standard knurled nuts compatible with mating plugs with SPEEDCON or M17 standard external thread
- 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					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, without contacts, for socket assembly</b>	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	1624534	1	1624549	1
<b>Cable connector, with contact carrier, without contacts, for pin assembly</b>	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

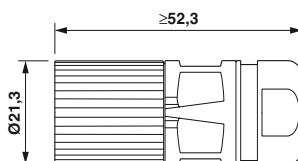
Description	Cable clamping area	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector, with contact carrier, without contacts, for socket assembly</b>	5 mm ... 8 mm	1607755	1	1613619	1		
	8 mm ... 10 mm	1607758	1	1613621	1		
	10 mm ... 12.5 mm	1624555	1	1624638	1		
<b>Cable connector, with contact carrier, without contacts, for pin assembly</b>	5 mm ... 8 mm	1607735	1	1613600	1		
	8 mm ... 10 mm	1607737	1	1613602	1		
	10 mm ... 12.5 mm	1624552	1	1624636	1		

Accessories	
Crimp contacts	Order separately, see page 124 onwards
Color rings, 50 pcs. in set (to be ordered separately)	See page 164

Accessories	
Crimp contacts	Order separately, see page 124 onwards
Color rings, 50 pcs. in set (to be ordered separately)	See page 164



# Connectors

## M17 - power connectors

### Coupling connector

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

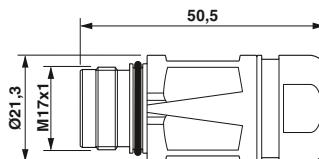


3+PE, 5+PE, 6+PE-pos.



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

Description	Cable clamping area	Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Coupler connector</b> , with contact carrier, <b>without</b> contacts, for <b>socket assembly</b>	5 mm ... 8 mm	1607688	1	1607723	1	1613583	1
	8 mm ... 10 mm	1607689	1	1607724	1	1613584	1
	10 mm ... 12.5 mm	1624539	1	1624545	1	1624551	1
<b>Coupler connector</b> , with contact carrier, <b>without</b> contacts, for <b>pin assembly</b>	5 mm ... 8 mm	1607670	1	1607706	1	1613564	1
	8 mm ... 10 mm	1607671	1	1607707	1	1613565	1
	10 mm ... 12.5 mm	1624536	1	1624542	1	1624548	1
		Accessories					
Crimp contacts		Order separately, see page 124 onwards					
Color rings, 50 pcs. in set (to be ordered separately)		See page 164					



**Device connector, straight, front mounting**

- Compatible with mating plugs 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.

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

Description
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, for <b>socket assembly</b> Contact insert for support on the device
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, for <b>pin assembly</b> Contact insert for support on the device
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, for <b>socket assembly</b> Contact insert can be snapped in
<b>Device connector</b> , with contact carrier, <b>without</b> contacts, for <b>pin assembly</b> Contact insert can be snapped in

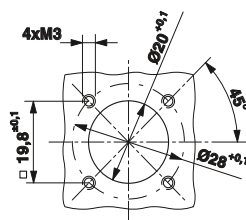
3+PE-pos.	1619189	1	1619191	1	1619193	1
5+PE-pos.	1619186	1	1619190	1	1619192	1
6+PE-pos.	1619212	1	1619214	1	1619216	1
	1619209	1	1619213	1	1619215	1

7+PE-pos.	1619195	1	1620459	1		
5+3+PE-pos.	1619194	1	1620460	1		
	1619218	1	1620461	1		
	1619217	1	1620462	1		

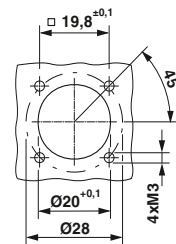
Accessories
Order separately, see page 124 onwards See page 164

Accessories
Order separately, see page 124 onwards See page 164

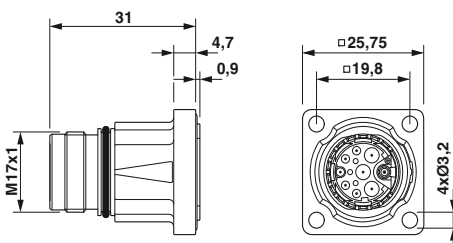
<b>Crimp contacts</b> Color rings, 50 pcs. in set (to be ordered separately)
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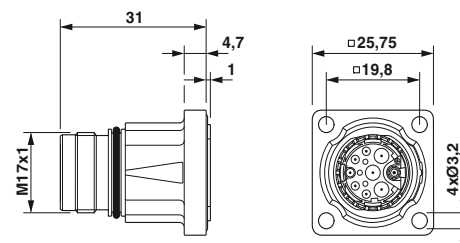
Installation dimensions



Installation dimensions



Contact insert for support on the device



Contact insert can be snapped in



# Connectors

## M17 - power connectors

### Device connector, angled, rotatable, front mounting

- Compatible with mating plugs 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/M3 attachment
- **Flange dimensions:**  
25.7 mm x 25.7 mm

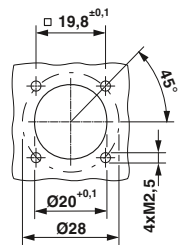


3+PE, 5+PE, 6+PE-pos.

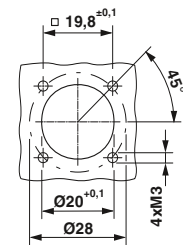


7+PE, 5+3+PE-pos.

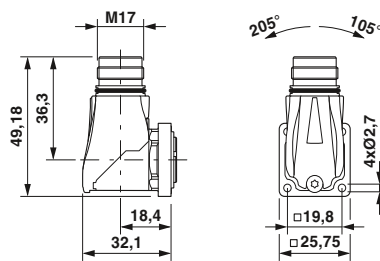
Description	Ordering data			Ordering data		
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, angled, rotatable, with contact carrier, without contacts, for socket contacts						
Fixing with M2.5	1620428	1	1620432	1	1620434	1
Device connector, angled, rotatable, with contact carrier, without contacts, for pin contacts						
Fixing with M2.5	1620427	1	1620431	1	1620433	1
Device connector, angled, rotatable, with contact carrier, without contacts, for socket contacts						
Fixing with M3	1620443	1	1620447	1	1620449	1
Device connector, angled, rotatable, with contact carrier, without contacts, for pin contacts						
Fixing with M3	1620444	1	1620448	1	1620450	1
	Accessories			Accessories		
Crimp contacts	Order separately, see page 124 onwards			Order separately, see page 124 onwards		
Color rings, 50 pcs. in set (to be ordered separately)	See page 164			See page 164		



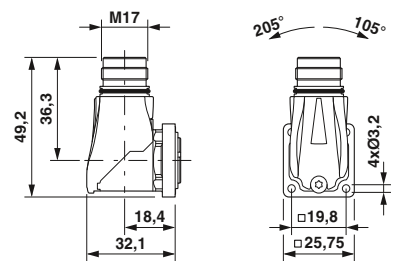
Installation dimensions



Installation dimensions



Fixing with M2.5



Fixing with M3

**Device connector, central fastening thread, front/rear mounting**

- Compatible with mating plugs 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.

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

Description
Device connector, <b>front mounting</b> , M18 x 0.75 fastening thread, with contact carrier, without contacts, <b>for socket assembly</b>
Device connector, <b>front mounting</b> , M18 x 0.75 fastening thread, with contact carrier, without contacts, <b>for pin contacts</b>
Device connector, <b>rear mounting</b> , M20 x 1.5 fastening thread, with contact carrier, without contacts, <b>for socket contacts</b>
Device connector, <b>rear mounting</b> , M20 x 1.5 fastening thread, with contact carrier, without contacts, <b>for pin contacts</b>

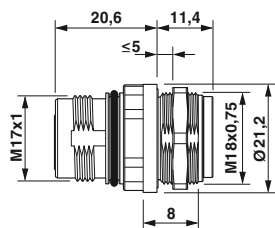
1613546	1	1613550	1	1613572	1
1613544	1	1613548	1	1613553	1
1613547	1	1613551	1	1613587	1
1613545	1	1613549	1	1613568	1

1613592	1	1613614	1
1613590	1	1613595	1
1613593	1	1613629	1
1613591	1	1613610	1

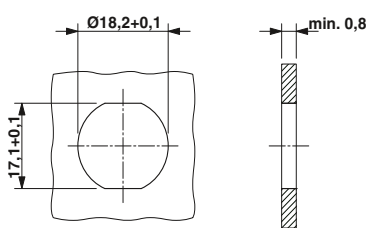
Accessories			
Type	Order No.	Pcs. / Pkt.	
ST-E2015151	1613831	10	
RC-13041	1600417	10	
Order separately, see page 124 onwards See page 164			

Accessories			
Type	Order No.	Pcs. / Pkt.	
ST-E2015151	1613831	10	
RC-13041	1600417	10	
Order separately, see page 124 onwards See page 164			

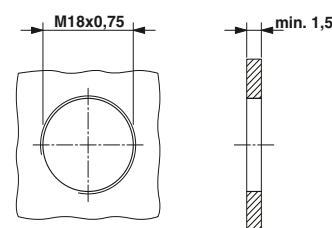
Description
<b>Locking nut</b> , for mounting bore holes and polarization
M18 x 0.75
M20 x 1.5
<b>Crimp contacts</b>
<b>Color rings</b> , 50 pcs. in set (to be ordered separately)



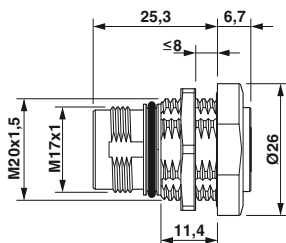
Front mounting, M18 x 0.75, order locking nut separately



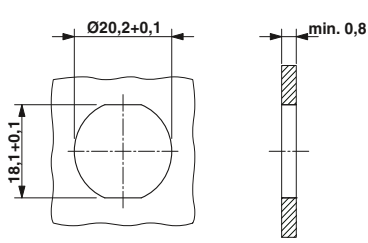
Installation dimensions: mounting with anti-rotation protection and locking nut



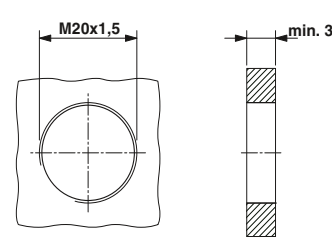
Installation dimensions: mounting with thread



Rear mounting, M20 x 1.5, order locking nut separately



Installation dimensions: mounting with anti-rotation protection and locking nut



Installation dimensions: mounting with thread

# Connectors

## M17 - power connectors

### Crimp contacts, punched-rolled

C-HC® are punched-rolled contacts. They are designed for high insertion/withdrawal cycles.

The contacts are available taped on rolls for manual or automatic processing.

**Note:** depending on the litz wire used, the connection cross sections (crimp ranges) may deviate from the listed values. For reasons of safety, only socket contacts may be used in the live part of the connector.



C-HC socket contacts



C-HC pin contacts

Description	Connection cross section [mm²]
<b>Crimp contacts, C-HC punched-rolled, Ø 1.0 mm, 2500 pcs./roll</b>	
	0.06 mm² ... 0.25 mm²
	0.2 mm² ... 0.56 mm²
<b>Crimp contact C-HC punched-rolled, Ø 1.0 mm, 10,000 pcs./roll</b>	
	0.06 mm² ... 0.25 mm²
	0.2 mm² ... 0.56 mm²

Crimping tools

Ordering data		
Type	Order No.	Pcs. / Pkt.
SF-10KS320	1607031	1
SF-10KS350	1607032	1
SF-10KS330	1607358	1
SF-10KS360	1607361	1

**Accessories**  
Order separately, see page 158 onwards

Ordering data		
Type	Order No.	Pcs. / Pkt.
SF-10KP320	1615961	1
SF-10KP350	1615963	1
SF-10KP330	1615962	1
SF-10KP360	1615964	1

**Accessories**  
Order separately, see page 158 onwards

#### 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

## Crimp contacts, turned

M17 power connectors are fitted with contacts with  $\varnothing$  2 mm,  $\varnothing$  1 mm or  $\varnothing$  0.6 mm depending on the number of positions (see table below).

**Note:** depending on the litz wire used, the connection cross sections (crimp ranges) may deviate from the listed values. For reasons of safety, only socket contacts may be used in the live part of the connector.



Crimp contacts socket



Crimp contacts pin

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact socket $\varnothing$ 2.0 mm	0.25 ... 1.0	ST-20KS010	1607657	50			
	1.0 ... 2.5	ST-20KS020	1607658	50			
Contacts, $\varnothing$ 1.0 mm	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	ST-10KS010	1618239	100			
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>	ST-10KS020	1618251	100			
	0.5 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>	ST-10KS030	1618254	100			
Contact socket $\varnothing$ 0.6 mm	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>	ST-06KS010	1607580	100			
	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>	ST-06KS020	1607581	100			
	0.34 mm <sup>2</sup> ... 0.50 mm <sup>2</sup>	ST-06KS030	1607582	100			
Contact pin $\varnothing$ 2.0 mm	0.25 ... 1.0				ST-20KP010	1607655	50
	1.0 ... 2.5				ST-20KP020	1607656	50
Contacts, $\varnothing$ 1.0 mm	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>				ST-10KP010	1618255	100
	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>				ST-10KP020	1618256	100
	0.5 mm <sup>2</sup> ... 1.0 mm <sup>2</sup>				ST-10KP030	1618261	100
Contact pin $\varnothing$ 0.6 mm	0.06 mm <sup>2</sup> ... 0.25 mm <sup>2</sup>				ST-06KP010	1607577	100
	0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>				ST-06KP020	1607578	100
	0.34 mm <sup>2</sup> ... 0.50 mm <sup>2</sup>				ST-06KP030	1607579	100
		Accessories			Accessories		
Crimping tools		Order separately, see page 159			Order separately, see page 159		

## Contact diameter

Number of positions	Number of contacts	Contact $\varnothing$ [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:	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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable and coupler connectors for cable outside diameter of 7.5 - 18 mm, shielded
Type of locking:	M23 SPEEDCON screw locking, cable connector M23 x 1 coarse-pitch thread as an option
Mech. insertion/withdrawal cycles:	Standard: 100
Protection class:	IP67 in the locked state

#### 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	[mm <sup>2</sup> ]	0.25 ... 2.5	0.06 ... 1.0		0.25 ... 2.5		0.25 ... 2.5
Long version, cable Ø max. 18 mm	[mm <sup>2</sup> ]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Device connectors	[mm <sup>2</sup> ]	0.25 ... 4.0	0.06 ... 1.0		0.25 ... 4.0		0.25 ... 4.0
Nominal current per contact at 25°C <sup>1)</sup>		30	9		30		-
<b>Specifications according to DIN EN 61984:2009</b>							
Rated voltage	[V AC/DC]	630 <sup>2)</sup>	250		630 <sup>2)</sup>		-
Test/surge voltage	[kV AC]	6	4		6		-
Surge voltage category		III			III		
Pollution degree <sup>3)</sup>		3			3		
Installation height	[m]	Up to 3000			Up to 3000		
Cable clamping area <sup>4)</sup>	Max. Ø [mm]	18			18		

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

<sup>2)</sup> 400 V when fitted with punched-rolled C-HC contacts

<sup>3)</sup> 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, the connector must be sealed using a protective cap ≥ IP54.

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

Contact chamber numbering (view of plug-in side)				
Number of positions	Pin		Socket	
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

# Connectors

## M23 - power connectors

### Selection guide

M23 power connectors up to  
30 A/630 V, crimp ranges up to 4 mm<sup>2</sup>

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

The connectors are supplied fully assembled and are complemented by the respective crimp contacts.

The product chart provides an overview of the available components.

### Connector type

#### Cable connectors

Short,  
SPEEDCON fast locking system,  
see page 130.

M23 x 1 standard interlocking,  
see page 130.



Long,  
SPEEDCON fast locking system,  
see page 130.

M23 x 1 standard interlocking,  
see page 130.



Shielded

#### Device connectors with knurled nut

Straight,  
see page 133.



Angled,  
see page 133.

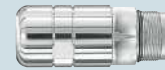


#### Coupler connectors

Short,  
see page 131.



Long,  
see page 131.

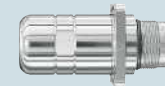


Shielded

With mounting flange  
Short, see page 134.



With mounting flange  
Long, see page 134.



#### Device connectors

Straight,  
see page 132.



Angled, rotatable,  
flange dimensions: 26 mm x 26 mm,  
see page 132.



Angled, rotatable,  
flange dimensions: 28 mm x 28 mm  
see page 132.



Shielded

#### Panel feed-through

External socket - internal pin,  
see page 135.



Panel feed-throughs are supplied fully wired

## Crimp contacts

## Tools/accessories

Socket contacts

## Socket contacts

Turned, see page 136.



Crimping pliers with digital display for turned crimp contacts, see page 159.



Pin contacts

## Pin contacts

Turned, see page 136.



## Accessories

Color rings for individually marking the connectors, see page 164.



Pin contacts

**Note:**

For reasons of safety, only socket contacts may be used in the live part of the connector.



# Connectors

## M23 - power connectors

### Cable connector, long and short design

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

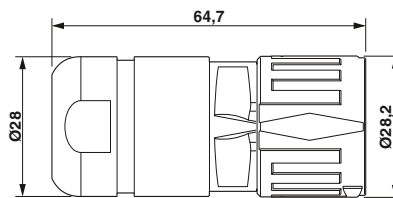


Cable connector, SPEEDCON

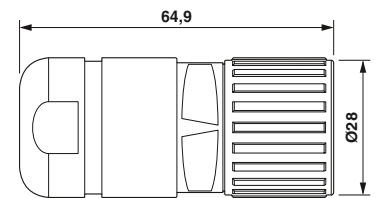


Cable connector, M23 standard interlocking

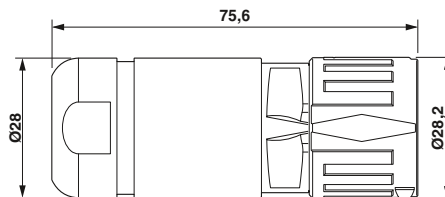
Description	Cable clamping area	Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
		5+PE-pos.		4+3+PE-pos.		5+PE-pos.		4+3+PE-pos.	
<b>Cable connector, short, with contact carrier, without contacts, for cable Ø 7.5 mm to 14 mm, connection cross section up to 2.5 mm<sup>2</sup></b>									
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
<b>Cable connector, long, with contact carrier, without contacts, for cable Ø 7.5 mm to 18 mm, connection cross section up to 4 mm<sup>2</sup></b>									
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
<b>Accessories</b>									
<b>Crimp contacts</b>		For socket contacts, see page 136				For socket contacts, see page 136			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



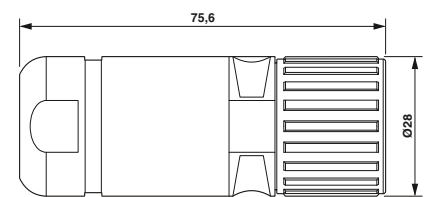
Short design



Short design



Long design



Long design

**Coupler connector, long and short design**

- Compatible with mating plugs with SPEEDCON or M23 standard knurled nuts
- Individual marking of connectors with color rings

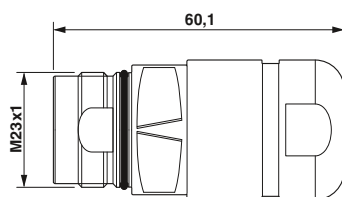


**Coupler connector, short**

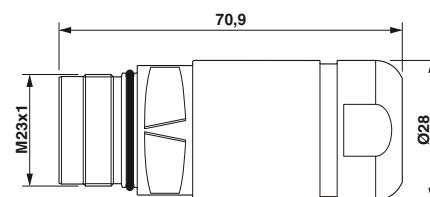


**Coupler connector, long**

Description	Cable clamping area	Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Coupler connector, short, with contact carrier, without contacts, for cable Ø 7.5 mm to 14 mm, connection cross section up to 2.5 mm<sup>2</sup></b>		<b>5+PE-pos.</b>		<b>4+3+PE-pos.</b>		<b>5+PE-pos.</b>		<b>4+3+PE-pos.</b>	
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				
<b>Coupler connector, long, with contact carrier, without contacts, for cable Ø 7.5 mm to 18 mm, connection cross section up to 4 mm<sup>2</sup></b>									
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			
<b>Crimp contacts</b>		For pin contacts, see page 136				For pin contacts, see page 136			
Color rings, 50 pcs. in set (to be ordered separately)		See page 164				See page 164			



**Short design**



**Long design**

# Connectors

## M23 - power connectors

### Device connector, straight and angled, rotatable

- Compatible with mating plugs with SPEEDCON or M23 standard knurled nuts



Device connector, straight



Device connector, angled rotatable

#### Ordering data

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
5+PE-pos.		4+3+PE-pos.	
1605520	1	1605589	1
1620619	1	1620620	1

#### Ordering data

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
5+PE-pos.		4+3+PE-pos.	
1620657	1	1620660	1
1620661	1	1620662	1

Description

Device connector with contact carrier without contacts

Flange dimensions: 26 mm x 26 mm

Device connector, with reinforced contact carrier (black) for angled mating plugs, without contacts

Flange dimensions: 26 mm x 26 mm

Device connector with contact carrier without contacts

Flange dimensions: 28 mm x 28 mm

#### Accessories

Crimp contacts

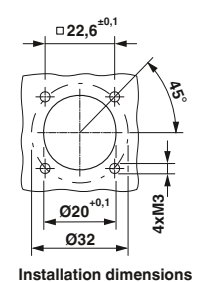
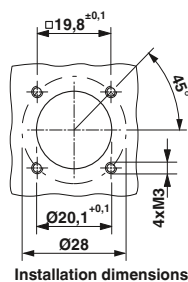
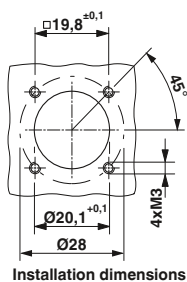
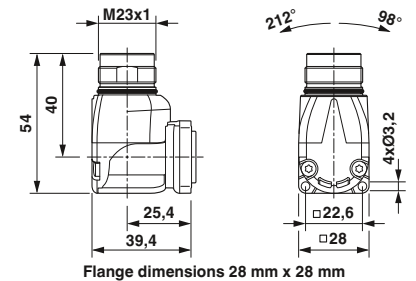
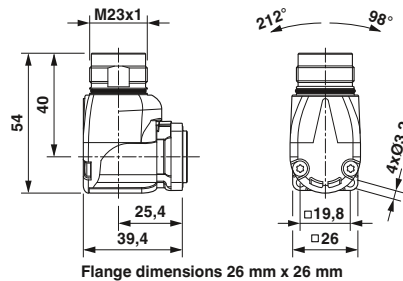
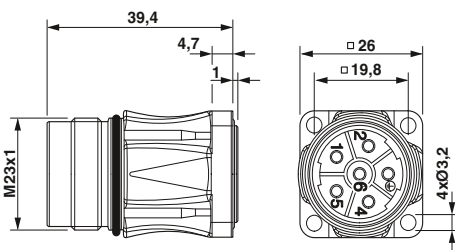
Color rings, 50 pcs. in set (to be ordered separately)

For pin contacts, see page 136

See page 164

For pin contacts, see page 136

See page 164





# Connectors

## M23 - power connectors

### Panel feed-through, long and short design

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

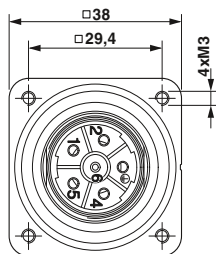


Panel feed-through, short

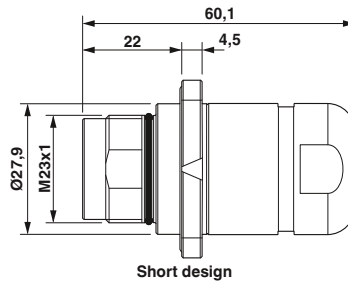


Panel feed-through, long

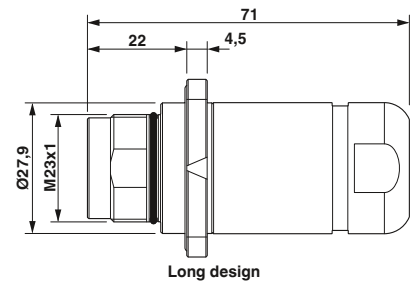
Description		Cable clamping area		Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through, short</b> with contact carrier, without contacts, for cable Ø 7.5 to 14 mm, connection cross section up to 2.5 mm <sup>2</sup>				<b>5+PE-pos.</b>		<b>4+3+PE-pos.</b>	
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		
<b>Panel feed-through, long</b> with contact carrier, without contacts, for cable Ø 7.5 to 18 mm, connection cross section up to 4 mm <sup>2</sup>							
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
Crimp contacts		Accessories				Accessories	
Color rings, 50 pcs. in set (to be ordered separately)		For pin contacts, see page 136 See page 164				For pin contacts, see page 136 See page 164	



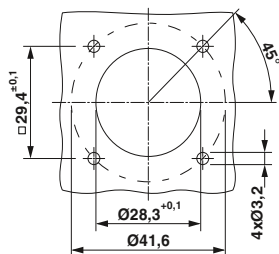
Flange dimensions for short and long design



Short design



Long design



Installation dimensions for short and long design

### Panel feed-through, fully wired

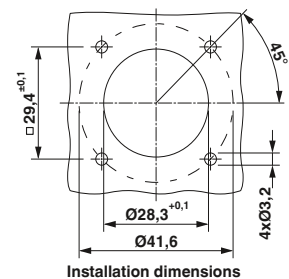
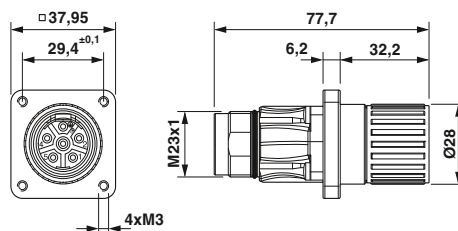
- Front mounting
- Internally fully wired and fitted with contacts
- Compatible with mating plugs with M23 standard knurled nuts



Panel feed-through,  
pin/socket

#### Ordering data

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	Panel feed-through, pin inside - socket outside, fully wired	1605492	1	1605567



# Connectors

## M23 - power connectors

### Crimp contacts, turned

The 6-pos. (5+PE) versions are assembled with 2 mm Ø contacts. The 8-pos. (4+3+PE) versions are equipped with four 1 mm Ø signal contacts and four 2 mm Ø contacts.

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

- Short version: connection cross sections up to 2.5 mm<sup>2</sup>, max. cable diameter of 14 mm
- Long version: connection cross sections up to 4 mm<sup>2</sup>, max. cable diameter of 18 mm



Crimp contacts, socket



Crimp contacts, pin

		Ordering data			Ordering data		
Description	Connection cross section [mm <sup>2</sup> ]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Contacts, socket Ø 2.0 mm for cable and device connectors with knurled nuts, power and PE contacts</b>							
	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			
<b>Contacts, socket Ø 1.0 mm for cable and device connectors with knurled nuts, signal contacts</b>							
	0.06 ... 0.2	SF-6CS2000	1605562	100			
	0.14 ... 0.5	SF-10KS004	1607356	100			
	0.5 ... 1.0	SF-6AS2000	1605557	100			
<b>Contacts, pin Ø 2.0 mm for coupler connectors, power and PE contacts</b>							
	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
<b>Contacts, pin Ø 1.0 mm for coupler connectors, signal contacts</b>							
	0.06 ... 0.2				SF-6CP2000	1605559	100
	0.14 ... 0.5				SF-10KP004	1607355	100
	0.5 ... 1.0				SF-6AP2000	1605554	100
<b>Contacts, pin Ø 2.0 mm for device connectors, power and PE contacts</b>							
	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
<b>Contacts, pin Ø 1.0 mm for device connectors, signal contacts</b>							
	0.06 ... 0.2				SF-6CP2000	1605559	100
	0.14 ... 0.5				SF-10KP004	1607355	100
	0.5 ... 1.0				SF-6AP2000	1605554	100
		<b>Accessories</b>			<b>Accessories</b>		
<b>Crimping tools</b>		Order separately, see page 159 onwards			Order separately, see page 159 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





### Mechanical and electrical data

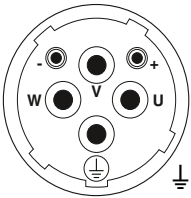
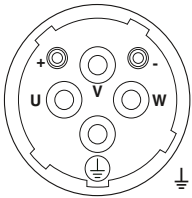
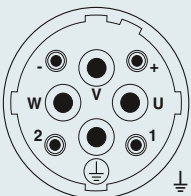
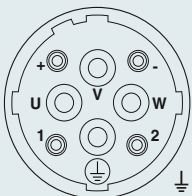
Mechanical data	
Housing material:	Copper zinc alloy (CuZn), die-cast zinc (GD-Zn)
Housing surface:	Nickel-plated/thick layer passivated (can be coated)
Insulating body:	Polyamide (PA 66)
Contact material:	Copper zinc alloy (CuZn)
Contact surface:	Nickel-plated (Ni) with gold coating (Au)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FKM)
Ambient temperature:	-40°C ... 125°C
Cable entry:	Cable outside diameter of 9.0 - 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
Mech. insertion/withdrawal cycles:	Standard: 50
Protection class	IP67 in the locked state

Electrical data						
Number of positions	6 (2+3+PE)			8 (4+3+PE)		
	2	3	PE	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 <sup>1)</sup> [A]	30	70	–	30	70	–
<b>Specifications according to DIN EN 61984:2009</b>						
Rated voltage [V AC/DC]	250	630	–	250	630	–
Test/surge voltage [kV]	4	6	–	4	6	–
Surge voltage category	III			III		
Pollution degree	3			3		
Installation height [m]	Up to 3000			Up to 3000		
Cable clamping area <sup>2)</sup> Max. Ø [mm]	26.5			26.5		

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

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

Contact chamber numbering  
(view of plug-in side)

Number of positions	Pin	Socket
<p>6-pos. (2 + 3 + PE) Crimp</p>	 <p>Diagram showing the pin side of a 6-position connector. The top row contains three pins labeled -, V, and +. The middle row contains three pins labeled W, U, and a central pin. The bottom row contains a grounding spring symbol (a vertical line with a horizontal bar and a downward arrow) and an asterisk (*).</p>	 <p>Diagram showing the socket side of a 6-position connector. The top row contains three sockets labeled +, V, and -. The middle row contains three sockets labeled U, W, and a central socket. The bottom row contains a grounding spring symbol and an asterisk (*).</p>
<p>8-pos. (4 + 3 + PE) Crimp</p>	 <p>Diagram showing the pin side of an 8-position connector. The top row contains three pins labeled -, V, and +. The middle row contains three pins labeled W, U, and a central pin. The bottom row contains two pins labeled 2 and 1, and a grounding spring symbol with an asterisk (*).</p>	 <p>Diagram showing the socket side of an 8-position connector. The top row contains three sockets labeled +, V, and -. The middle row contains three sockets labeled U, W, and a central socket. The bottom row contains two sockets labeled 1 and 2, and a grounding spring symbol with an asterisk (*).</p>

\* with grounding spring

# Connectors

## M40 - power connectors

### Selection guide

M40 power connectors up to 70 A/630 V, crimp ranges up to 16 mm<sup>2</sup>

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

The connectors are supplied fully assembled and are complemented by the respective 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 142.

Shielded



Mounting flange for wall mounting, see page 162.



M40 x 1.5 standard interlocking, see page 142.



#### Device connectors with knurled nut

Straight, see page 144.

Shielded



Angled, see page 145.



#### Coupler connectors

See page 142.

Shielded



#### Device connectors

Angled, rotatable, see page 146.

Straight, see page 143.



## Crimp contacts

## Tools/accessories

## Socket contacts

Turned, see page 147.



Socket contacts

## Crimping tools

Crimping pliers, see page 159.



Crimping pliers with digital display for turned crimp contacts, see page 159.



## Pin contacts

Turned, see page 147.



Pin contacts

## Accessories

Color rings for individually marking the connectors, see page 164.

**Note:**

For reasons of safety, only socket contacts may be used in the live part of the connector.

# Connectors

## M40 - power connectors

### Cable connector

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

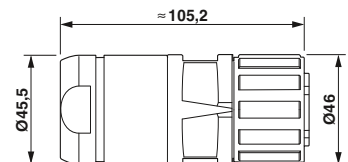


Cable connector, SPEEDCON



Cable connector

Description		Ordering data		Ordering data					
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.		
Cable connector housing, with contact carrier, without contacts, connection cross section up to 16 mm <sup>2</sup>	Cable clamping area	2+3+PE-pos.		4+3+PE-pos.		2+3+PE-pos.		4+3+PE-pos.	
	9 mm ... 14 mm	1613428	1	1613434	1	1613518	1	1613528	1
	14 mm ... 20.5 mm	1613429	1	1613435	1	1613519	1	1613529	1
	20.5 mm ... 26.5 mm	1613430	1	1613436	1	1613520	1	1613530	1
<b>Crimp contacts</b>		<b>Accessories</b>				<b>Accessories</b>			
Color rings, 50 pcs. in set (to be ordered separately)		For socket contacts, see page 147 See page 164				For socket contacts, see page 147 See page 164			



Coupler and device connector

- Compatible with mating plugs with SPEEDCON or M40 standard knurled nuts
- Individual marking of connectors with color rings

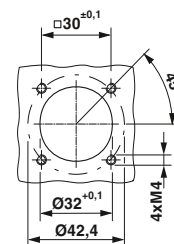
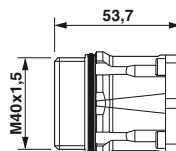
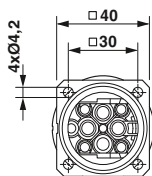
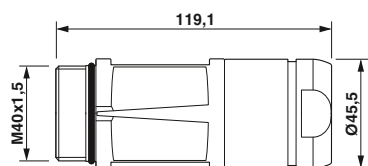


Coupling connector



Device connector, straight

Description	Cable clamping area	Ordering data				Ordering data			
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Coupler connector</b> , with contact carrier, <b>without</b> contacts, connection cross section up to 16 mm <sup>2</sup>	9 mm ... 14 mm	1613425	1	1613431	1	1613517	1	1613527	1
	14 mm ... 20.5 mm	1613426	1	1613432	1				
	20.5 mm ... 26.5 mm	1613427	1	1613433	1				
<b>Device connector, straight</b> , with contact carrier, <b>without</b> contacts	Connection cross section up to 10 mm <sup>2</sup>								
<b>Crimp contacts</b>		<b>Accessories</b>				<b>Accessories</b>			
Color rings, 50 pcs. in set (to be ordered separately)		For pin contacts, see page 147 See page 164				For pin contacts, see page 147 See page 164			



Installation dimensions

# Connectors

## M40 - power connectors

### Device connector with knurled nut

- SPEEDCON fast locking system or M40 standard interlocking
- Standard knurled nuts compatible with mating plugs with SPEEDCON or M40 standard external thread
- Device connectors with knurled nuts must be fitted with socket contacts.

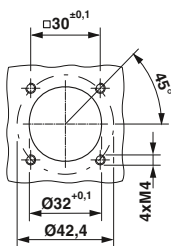


Device connector with knurled nut, straight, SPEEDCON

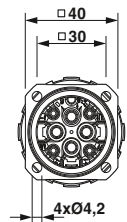
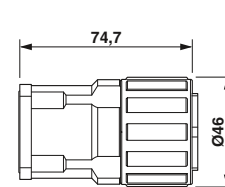
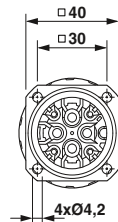
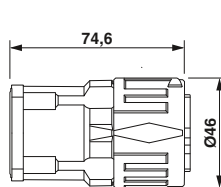


Device connector with knurled nut, straight

Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector with SPEEDCON knurled nut, straight, with contact carrier, <b>without</b> contacts Connection cross section up to 16 mm <sup>2</sup>	1613524	1	1613534	1				
Device connector with standard knurled nut, straight, with contact carrier, <b>without</b> contacts Connection cross section up to 16 mm <sup>2</sup>					1605823	1	1605865	1
Accessories		Accessories		Accessories		Accessories		
Crimp contacts Color rings, 50 pcs. in set (to be ordered separately)	For socket contacts, see page 147 See page 164				For socket contacts, see page 147 See page 164			



Installation dimensions



**Device connector with knurled nut**

Device connectors with knurled nuts must be equipped with socket contacts.



Device connector with knurled nut, angled, SPEEDCON



Device connector with knurled nut, angled

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.

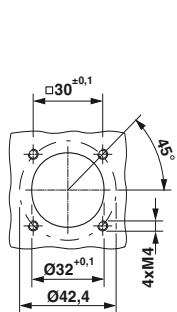
1613525	1	1613535	1
---------	---	---------	---

1607532	1	1607543	1
---------	---	---------	---

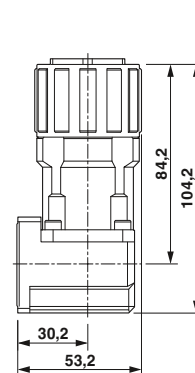
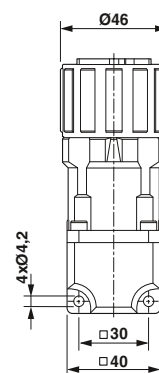
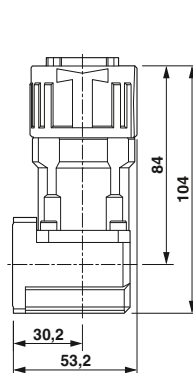
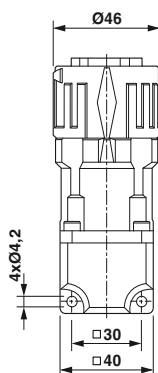
Accessories	
For socket contacts, see page 147	
See page 164	

Accessories	
For socket contacts, see page 147	
See page 164	

Description
Device connector with SPEEDCON knurled nut, angled, with contact carrier, <b>without</b> contacts
Connection cross section up to 16 mm <sup>2</sup>
Device connector with knurled nut, angled, with contact carrier, <b>without</b> contacts
Connection cross section up to 16 mm <sup>2</sup>
Crimp contacts
Color rings, 50 pcs. in set (to be ordered separately)



Installation dimensions





# Connectors

## M40 - power connectors

### Device connector, angled, rotatable

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



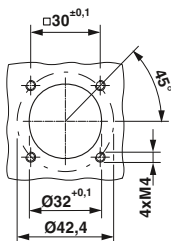
Device connector,  
angled rotatable

#### Ordering data

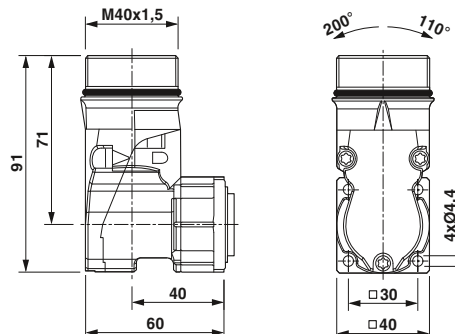
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	Device connector, angled, rotatable, with contact carrier, without contacts Connection cross section up to 10 mm <sup>2</sup>	1620663	1	1620664

#### Accessories

Crimp contacts	For pin contacts, see page 147			
Color rings, 50 pcs. in set (to be ordered separately)	See page 164			



Installation dimensions



## Crimp contacts, turned

The 6-pos. (2+3+PE) versions are equipped with two Ø 2 mm signal contacts and four 3.6 mm contacts (three power, 1 PE contact).

The 8-pos. (4+3+PE) versions are equipped with four 2 mm signal contacts and four 3.6 mm contacts (three power, 1 PE contact).

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



Crimp contacts, socket



Crimp contacts, pin

		Ordering data			Ordering data		
Description	Connection cross section [mm²]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Contacts, socket Ø 3.6 mm, for cable and device connectors with knurled nuts, power and PE contacts</b>							
	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			
<b>Contacts, socket Ø 2.0 mm, for cable and device connectors with knurled nuts, signal contacts</b>							
	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			
<b>Contacts, pin Ø 3.6 mm, for coupler connectors, power and PE contacts</b>							
	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
<b>Contacts, pin Ø 2.0 mm, for coupler connectors, signal contacts</b>							
	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
<b>Contacts, pin Ø 3.6 mm, for device connectors, power and PE contacts</b>							
	0.75 ... 1.5				SM-36KP001	1605743	20
	1.0 ... 2.5				SM-36KP009	1607057	20
	1.0 ... 4.0				SM-36KP002	1605744	20
	4.0 ... 6.0				SM-36KP003	1605745	20
	6.0 ... 10.0				SM-36KP004	1605747	20
<b>Contacts, pin Ø 2.0 mm, for device connectors, signal contacts</b>							
	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
		<b>Accessories</b>			<b>Accessories</b>		
<b>Crimping tools</b>		Order separately, see page 159			Order separately, see page 159		

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

# 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)
Contact connection method:	Crimp version
Sealing and O-ring:	Fluorocarbon rubber (FPM)
Ambient temperature:	-40°C ... 120°C
Cable entry:	Cable and coupler connectors for cable outside diameter of 17 - 36 mm, shielded
Type of locking:	M58 x 2 screw locking
Mech. insertion/withdrawal cycles:	Standard: 100
Protection class:	IP67 in the locked state

#### Electrical data

Number of positions	6 (2+3+PE)			8 (4+3+PE)		
	2	3	PE	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 [mm <sup>2</sup> ]	0.75 ... 1.5	10 ... 50	10 ... 50	0.75 ... 1.5	10 ... 50	10 ... 50
Nominal current per contact at 25°C <sup>1)</sup> [A]	12	150	–	12	150	–
<b>Specifications according to DIN EN 61984:2009</b>						
Rated voltage [V AC/DC]	250	630	–	250	630	–
Test/surge voltage [kV AC]	4	6	–	4	6	–
Surge voltage category		III			III	
Pollution degree		3			3	
Installation height [m]		Up to 2000			Up to 2000	
Cable clamping area <sup>2)</sup> Max. Ø [mm]		36			36	

<sup>1)</sup> The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.

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

#### Note:

Unlike plug-in devices, connectors may only be inserted or removed when disconnected from the power.

**Contact chamber numbering**  
(view of plug-in side)

Number of positions	Pin	Socket
<p>6-pos. (2 + 3 + PE) Crimp</p>		
<p>8-pos. (4 + 3 + PE) Crimp</p>		

\* with grounding spring,  
PE leading

# Connectors

## M58 - power connectors

### Selection guide

M58 power connectors up to 150 A/630 V, crimp ranges up to 50 mm<sup>2</sup>

- Cable connectors
- Coupler connectors
- Device connectors, straight

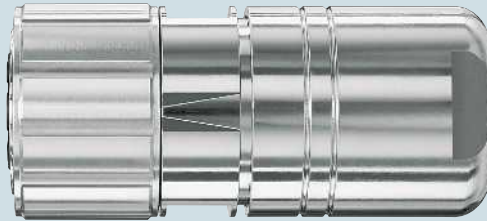
The power connectors are supplied fully assembled and are complemented by the respective crimp contacts.

The product chart provides an overview of the available components.

### Connector type

#### Cable connectors

Shielded



See page 152.

#### Coupler connectors

Shielded



See page 152.

#### Device connectors

Shielded



See page 153.

## Crimp contacts

## Socket contacts

Turned, see page 154.



Socket contacts

Pin contacts

Pin contacts

## Pin contacts

Turned, see page 154.



## Tools/accessories

## Crimping tools

Crimping device for power and PE contacts  
 $\varnothing$  10 mm,  
 see page 160.



Crimping pliers for signal contacts  $\varnothing$  1.6 mm,  
 see page 160.

**Note:**

For reasons of safety, only socket contacts may be used in the live part of the connector.

# Connectors

## M58 - power connectors

### Cable and coupler connector

- High transmission capacities of up to 630 V and 150 A
- Connection cross sections up to 50 mm<sup>2</sup>
- Cable clamping area from 17 mm to 36 mm

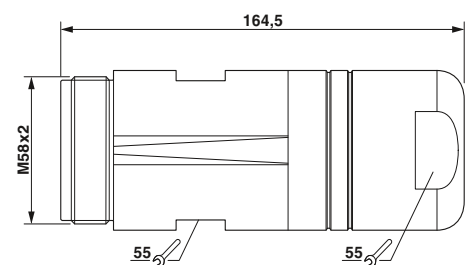
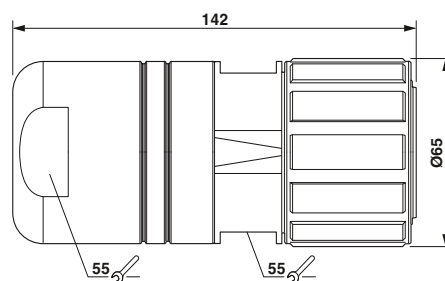


Cable connector



Coupling connector

Description		Ordering data		Ordering data		Ordering data		Ordering data	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Connector housing, with contact carrier, <b>without</b> contacts, for cable diameter:	Cable clamping area	2+3+PE-pos.		4+3+PE-pos.		2+3+PE-pos.		4+3+PE-pos.	
	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 socket contacts, see page 154				For pin contacts, see page 154			



### Device connector for front mounting

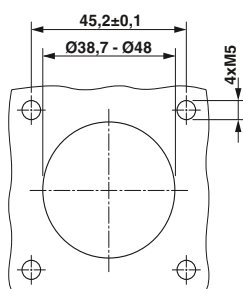
Coupler and device connectors must be fitted with pin contacts, cable connectors must be fitted with socket contacts.



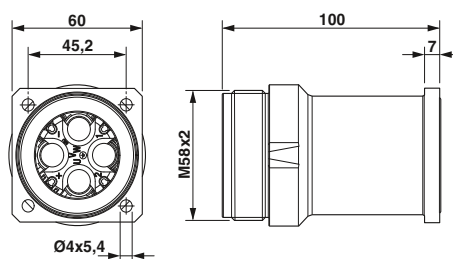
Device connector,  
straight

#### Ordering data

Description	Order No.		Pcs. / Pkt.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Device connector, straight, with contact carrier, without contacts	1615686	1	1615687	1
<b>Accessories</b>				
Crimp contacts	For pin contacts, see page 154			



Installation dimensions





# Connectors

## M58 - power connectors

### Crimp contacts, turned

The 6-pos. (2+3+PE) versions are equipped with two Ø 1.6 mm signal contacts and four 10 mm contacts (three power, 1 PE contact).

The 8-pos. (4+3+PE) versions are equipped with four 1.6 mm signal contacts and four 10 mm contacts (three power, 1 PE contact).

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



Crimp contacts, socket



Crimp contacts, pin

Description	Connection cross section [mm <sup>2</sup> ]	Ordering data			Ordering data		
		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Contacts, socket Ø 10.0 mm for cable connectors, power and PE contacts</b>	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			
<b>Contacts, socket Ø 1.6 mm for cable connectors, signal contacts</b>	0.75 ... 1.5	SL-16KS010	1607956	4			
<b>Contacts, pin Ø 10.0 mm for coupler and device connectors, power and PE contacts</b>	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
<b>Contacts, pin Ø 1.6 mm for coupler and device connectors, signal contacts</b>	0.75 ... 1.5				SL-16KP010	1607909	4
		Accessories			Accessories		
Crimping tools		Order separately, see page 160 onwards			Order separately, see page 160 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



# Connectors

## Tools and accessories

### Tools and accessories for M23 signal connectors

For RC crimp contacts, RC-Z2130 and RC-Z2514 crimping pliers are used for rolled or turned crimp contacts.

RC-Z2514 crimping pliers with 4-arbor pressing are suitable for crimping turned RC contacts. Detailed operating instructions are included in the packaging.



Crimping tools for rolled/turned contacts



Contact insertion/unlocking tool

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Crimping pliers for rolled RC crimp contacts</b> Ø 1 mm Litz wire cross section 0.08 ... 0.56 mm <sup>2</sup>	RC-Z2130	1604267	1			
<b>Crimping pliers for turned RC crimp contacts</b> Ø 1 mm / Ø 1.5 mm / Ø 2 mm Litz wire cross section of 0.08 ... 2.5 mm <sup>2</sup>	RC-Z2514	1614590	1			
<b>Insertion and unlocking tool</b> for RC crimp contacts Socket/pin Ø 1 mm Socket/pin Ø 1.5 mm Socket/pin Ø 2 mm				RC-Z2494	1614123	1
				RC-Z2274	1604409	1
				RC-Z2490	1611803	1



## Tools and accessories

### Crimping tools for punched-rolled C-HC crimp contacts

The manual crimping pliers are suitable for single processing. For processing taped products, a bench-mounted electric crimping device with integrated feed mechanism is available.

- The SF-Z0041 adapter enables tools for the manual crimping pliers for single processing to be used with the electric crimping device.



Hand crimping tools for punched-rolled C-HC crimp contacts



Electrical crimp device for punched-rolled C-HC crimp contacts

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Hand crimping pliers</b> , basic tool for individual processing						
for C-HC crimp contacts	SF-Z0029	1607458	1			
<b>Tool head for crimping pliers SF-Z0029</b> , for C-HC crimp contacts						
Contacts Ø 2 mm	SF-Z0030	1607459	1			
Contacts Ø 1 mm	SF-Z0031	1607461	1			
<b>Electric crimping device</b> , for processing taped products						
for C-HC crimp contacts				SF-Z0032	1607462	1
<b>Tool head for electrical crimp device SF-Z0032</b> , for C-HC crimp contacts, processing for taped articles						
Contacts Ø 2.0 mm / connection 1.0 mm <sup>2</sup>				SF-Z0033	1607463	1
Contacts Ø 2.0 mm / connection 1.5 mm <sup>2</sup>				SF-Z0047	1614689	1
Contacts Ø 2.0 mm / connection 2.5 mm <sup>2</sup>				SF-Z0035	1607465	1
Contacts Ø 1.0 mm / connection 0.08 ... 0.2 mm <sup>2</sup>				SF-Z0039	1607470	1
Contacts Ø 1.0 mm / connection 0.2 ... 0.56 mm <sup>2</sup>				SF-Z0040	1607471	1
<b>Media hub for elec. crimping device SF-Z0032</b> for accommodating rolls up to Ø 60 cm						
				SF-Z0052	1615413	1
<b>Adapter for electrical crimp device SF-Z0032</b> , for accommodating tool heads for single processing						
				SF-Z0041	1607472	1

## Crimping tools for turned contacts

The crimping pliers are suitable for crimping turned contacts with  $\varnothing$  0.6 mm,  $\varnothing$  1 mm,  $\varnothing$  2 mm, and  $\varnothing$  3.6 mm (excl. M23 signal connectors). For large litz wire cross sections, a pneumatic crimping tool is available.

## Notes:

For crimping tools for M23 signal connectors, see page 156



Manual crimping pliers



Crimping tool, pneumatic

Description	Litz wire cross section [mm <sup>2</sup> ]	Ordering data			Ordering data		
		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Manual crimping pliers with digital display</b> for turned crimp contacts with $\varnothing$ 1 mm, $\varnothing$ 2 mm, $\varnothing$ 3.6 mm	0.06 ... 6	SF-Z0025	1607452	1			
<b>Positioners</b> for crimping the SF-6FS2000 / SF-6DP2000 contacts with a connection cross section of 1.5 mm <sup>2</sup>		SF-Z0042	1613666	1			
<b>Manual crimping pliers with digital display</b> for turned crimp contacts with $\varnothing$ 2 mm, $\varnothing$ 3.6 mm	1.5 ... 10	SF-Z0026	1607454	1			
<b>Manual crimping pliers with digital display</b> for turned crimp contacts with $\varnothing$ 0.6 mm, $\varnothing$ 1 mm, $\varnothing$ 2 mm	0.06 ... 2.5	SF-Z0054	1615585	1			
<b>Crimping tool, pneumatic</b> for turned crimp contacts $\varnothing$ 3.6 mm	6.0 ... 16				SF-Z0014	1607446	1
<b>Crimp head</b> for crimping tool, pneumatic					SF-Z0003	1605657	1
<b>Positioner</b> for crimp head SF-Z0003, for device connectors					SF-Z0011	1605675	1
<b>Positioner</b> for crimp head SF-Z0003, for cable and coupler connectors	Marking "D" "F" marking				SF-Z0013	1605681	1

# Connectors

## Tools and accessories

### Crimping tools for turned contacts for M58 power connectors

For turned crimp contacts with  $\varnothing$  1.6 mm for M58 power connectors, SF-Z0025 manual crimping pliers are used.

For user-friendly crimping of contacts with  $\varnothing$  10 mm, the SL-Z0007 electric crimping tool is available.

Crimping stamps for processing contacts with  $\varnothing$  10 mm are used in pairs. The stamps are tailored to the connection cross sections and marked.



Electro-hydraulic crimping device



Manual crimping pliers

Description	Connection cross section [mm <sup>2</sup> ]	Ordering data			Ordering data		
		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Electro-hydraulic crimping device incl. charger and rechargeable battery</b> , for Litz wire cross section 10 ... 50 mm <sup>2</sup> (power and PE contacts $\varnothing$ 10 mm)		SL-Z0007	1613484	1			
<b>Crimping stamp</b> for crimping device SL-Z0007	10	SL-Z0011	1613488	1			
<b>Crimping stamp</b> for crimping device SL-Z0007	16	SL-Z0012	1613489	1			
<b>Crimping stamp</b> for crimping device SL-Z0007	25	SL-Z0013	1613490	1			
<b>Crimping stamp</b> for crimping device SL-Z0007	35	SL-Z0014	1613491	1			
<b>Crimping stamp</b> for crimping device SL-Z0007	50	SL-Z0015	1613492	1			
<b>Crimping tool with digital display</b>	0.06 ... 6				SF-Z0025	1607452	1
<b>Accessories for electro-hydraulic crimping device SL-Z0007</b>							
Replacement battery		SL-Z0008	1613485	1			
Table holder incl. foot actuation switch		SL-Z0010	1613487	1			

#### Notes:

The manual SF-Z0025 crimping pliers with digital display are also suitable for crimping turned ST/SF/SM crimp contacts.

### Special wrench

The torque screwdriver 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 screwdriver with a set torque of 2.5 Nm.



Torque screwdriver 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.
<b>Torque screwdriver</b> incl. hook wrench							
	For M23 connectors with knurled nuts	<b>SF-Z0028</b>	<a href="#">1607456</a>	1			
<b>Replacement hook spanner</b> for torque screwdriver							
		<b>SF-Z0027</b>	<a href="#">1607455</a>	1			
<b>Special wrench</b> for cable/coupler connectors for screwing the adapter. Connection dimensions for torque wrench: 8.9 mm x 11.9 mm							
	for M17 connectors, WAF 19				<b>ST-Z0012</b>	<a href="#">1613667</a>	1
	for M23 connectors, WAF 24				<b>RF-Z0007</b>	<a href="#">1614347</a>	1
	for M40 connectors, WAF 41				<b>SM-Z0012</b>	<a href="#">1614349</a>	1
	for M58 connectors, WAF 55				<b>SL-Z0016</b>	<a href="#">1614348</a>	1



# Connectors

## Tools and accessories

### Unlocking tool, square mounting flange

The unlocking 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 unlocking 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.



Unlocking tool for snap-in contact carriers



Square mounting flange for cable/coupling connector for wall mounting

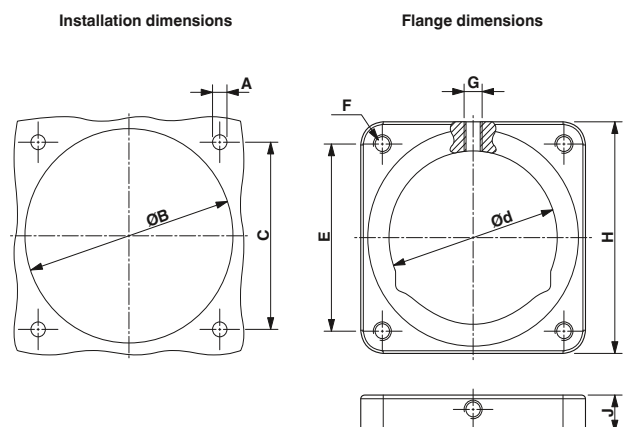
		Ordering data			Ordering data		
Description	Wall mounting	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Unlocking tool</b> for contact carriers, device connectors							
	For M17 signal/power connectors	<b>ST-Z0001</b>	<a href="#">1607770</a>	1			
	For M23 feedback connectors	<b>RF-Z0001</b>	<a href="#">1607904</a>	1			
	For M23 signal connectors	<b>CA-Z0001</b>	<a href="#">1620699</a>	1			
<b>Square mounting flange, metal, with O-ring seal</b> , for M17 (excl. M17 Compact) cable and coupler connectors for wall mounting							
	4 x Ø 2.7 mm				<b>ST-Z0002</b>	<a href="#">1607771</a>	1
	4 x M3				<b>ST-Z0003</b>	<a href="#">1607772</a>	1
<b>Square mounting flange, metal, without seal</b> , for M17 (excl. M17 Compact) cable and coupler connectors for wall mounting							
	4 x Ø 2.7 mm				<b>ST-Z0004</b>	<a href="#">1607773</a>	1
	4 x M3				<b>ST-Z0005</b>	<a href="#">1607775</a>	1
<b>Square mounting flange, metal, with O-ring seal</b> , for M23 feedback, cable, and coupler connectors for wall mounting							
	4 x M3				<b>RF-Z0003</b>	<a href="#">1607905</a>	1
<b>Square mounting flange, metal, with O-ring seal</b> , for M40 cable and coupler connectors for wall mounting							
	4 x Ø 4.3 mm				<b>SM-Z0003</b>	<a href="#">1607935</a>	1
<b>Square mounting flange, metal, without seal</b> , for M40 cable and coupler connectors for wall mounting							
	4 x Ø 4.3 mm				<b>SM-Z0004</b>	<a href="#">1607937</a>	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	4 x M2.5/∅ 3.2	∅ 22.9 +0.2	□ 22.6 ±0.1	∅ 21.6	□ 22.6 ±0.1	4 x M3/∅ 2.7	M2.5	□ 28.0 ±0.1	5
RF-Z0003	4 x ∅ 3.2	∅ 27.9 ±0.1	□ 28.3 ±0.1	∅ 26.2	□ 28.3 ±0.1	4 x M3	M3	□ 35.0	6
SM-Z0003 SM-Z0004	4 x M4/∅ 4.2	∅ 46.1 ±0.1	□ 42.4 ±0.1	∅ 45.0	□ 42.4 ±0.1	4 x ∅ 4.3	M3	□ 55.0 ±0.1	5.5

**Note:**

For insulating wall mounting, plastic mounting flanges are available on request.



# 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.
<b>Color rings for M17 connectors, 50 pcs. in set</b>							
	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
<b>Color rings for M23 signal connectors, 50 pcs. in set</b>							
	Green	RF-Z0014	1620588	50			
	Orange	RF-Z0015	1620592	50			
	Black	RF-Z0016	1620593	50			
<b>Color rings for M23 signal device connectors, front mounting, Pg13.5 and M20 fastening thread/rear mounting, central fastening thread, 50 pcs. in set</b>							
	Green				CA-Z0110	1620700	50
	Orange				CA-Z0111	1620701	50
	Black				CA-Z0112	1620702	50
<b>Color rings for M23 signal device connectors, front mounting, flange dimensions: 25 mm x 25 mm, 50 pcs. in set</b>							
	Green				CA-Z0120	1620704	50
	Orange				CA-Z0121	1620705	50
	Black				CA-Z0122	1620706	50
<b>Color rings for M23 feedback connectors and M23 signal device connectors, angled, rotatable, 50 pcs. in set</b>							
	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
<b>Color rings for M23 hybrid and power connectors, 50 pcs. in set</b>							
	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
<b>Color rings for M40 connectors, 50 pcs. in set</b>							
	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



### Dust protection 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.

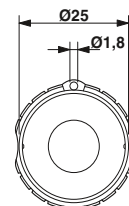
These prevent penetration of dust and humidity.

Plastic protective caps enable IP40 degree of protection when locked.



Plastic dust protection caps

Description	Degree of protection when locked	Ordering data		
		Type	Order No.	Pcs. / Pkt.
Plastic dust protection cap, for signal connector/power connector, with M17 external thread	IP40	ST-Z0006	1607776	25
Plastic dust protection cap, for signal connector/power connector, with M17 knurled nut (SPEEDCON and standard)	IP40	ST-Z0007	1607777	25
Plastic dust protection cap with lug for signal/power connectors with M23 external thread	IP40	SF-Z0019	1607449	25
Plastic dust protection cap, for signal connector/power connector, with M23 knurled nut	IP40	RC-Z2058	1604223	25
Plastic dust protection cap, for signal connector/power connector, with M23 external thread	IP40	RC-Z2059	1604225	25
Plastic dust protection cap, anti-static, black, for signal connector/power connector, with M23 knurled nut	IP40	RC-Z2468	1611796	25
Plastic dust protection cap, anti-static, black, for signal/power connectors with M23 external thread	IP40	RC-Z2469	1611797	25
Plastic dust protection cap for power connectors with M40 external thread	IP40	SM-Z0001	1605866	25
Plastic dust protection cap for power connectors with M58 external thread	IP40	SL-Z0005	1607926	25



SF-Z0019, eye for fixing rope

## Dust protection caps, metal

Metal protective caps are available for higher demands as regards the degree of protection. These enable IP67 when locked.

The wire is fixed to the housing panel and prevents the metal protective caps from being lost.



Metal dust protection caps

		Ordering data		
Description	Degree of protection when locked	Type	Order No.	Pcs. / Pkt.
<b>Metal dust protection cap</b> , for power connectors with M23 external thread	IP67	SC-Z2319	1605456	10
<b>Metal dust protection cap with steel wire</b> , for power connectors with M23 external thread	IP67	SC-Z2320	1605457	10
<b>Metal dust protection cap with steel wire</b> , for power connectors with M23 knurled nut	IP67	SC-Z2322	1605459	10
<b>Metal dust protection cap</b> , for signal connector, with M23 external thread	IP67	RC-Z2104	1604260	10
<b>Metal dust protection cap with steel wire</b> , for signal connectors with M23 external thread	IP67	RC-Z2068	1604236	10
<b>Metal dust protection cap with steel wire</b> , for signal connector, with M23 knurled nut	IP67	RC-Z2062	1604228	10



# Sensor/actuator cabling

## A one-stop-shop for the entire range of solutions for field installation

With distributed connection technology, passive distributor systems connect the I/O devices to the PLC controller.

Phoenix Contact offers the most comprehensive range of sensor/actuator cabling on the market. Passive M5, M8, M12, and 7/8" components consisting of distributor boxes, cables, and connectors for assembly are available from stock. A comprehensive range of valve connectors rounds off the entire range.

The 1/2" and 7/8" range for the North American market can be found on our website.

## Customer/sector-specific solutions

In order to be able to respond flexibly to your needs, cables and boxes can be manufactured to suit with specific cable lengths and types (e.g., a different sheath color).

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, Phoenix Contact offers a range of suitable product series.

## Faster assembly with the SPEEDCON fast locking system

SPEEDCON is the logical development of the M12 connector system that has been established and accepted for many years. Following the principle of "Plug & Turn", the connection time for M12 connectors is reduced by 90%.

Due to the 100% compatibility, redundant warehousing is eliminated.

## Assembled cables

3-pos. cables with connectors	170
4-pos. cables with connectors	180
5-pos. cables with connectors	186
6-pos. cables with connectors	191
8-pos. cables with connectors	193
12/17-pos. cables with connectors	198
Assembled M17 to M40 cables	202
Cables with valve connectors	214

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<b>Distributors and adapters</b>	<b>234</b>
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<b>Distributor boxes</b>	<b>246</b>
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<b>Cabling for the railway industry</b>	<b>256</b>
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<b>Cabling for the food industry</b>	<b>258</b>
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<b>Cabling for outdoor applications</b>	<b>260</b>
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<b>Cabling for robots and drag chains</b>	<b>262</b>
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<b>Cabling for power applications</b>	<b>264</b>
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<b>By the meter - cable rings, cable drums</b>	<b>282</b>
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<b>Accessories</b>	<b>286</b>
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<b>Cable range</b>	<b>298</b>
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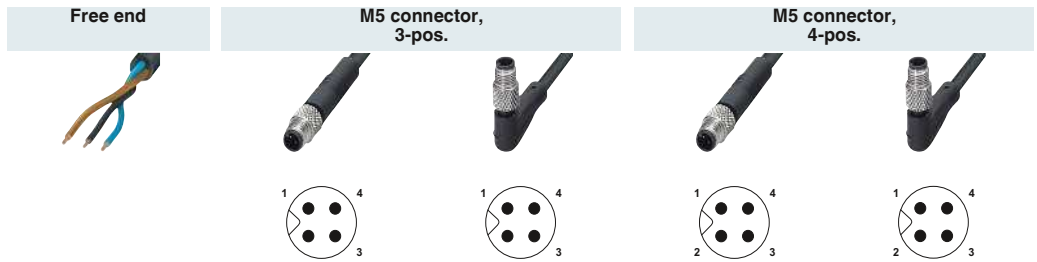



# Sensor/actuator cabling

## Assembled cables

### M5 SAC cable, 3 and 4-pos., cable type: PUR/PVC

**Notes:**  
For information about the cable qualities, see page 298



Free end	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	
	1.5 m	<a href="#">1530265</a>	1.5 m	<a href="#">1530346</a>	1.5 m	<a href="#">1530304</a>	1.5 m	<a href="#">1530388</a>	1.5 m	<a href="#">1530388</a>
	3 m	<a href="#">1530278</a>	3 m	<a href="#">1530359</a>	3 m	<a href="#">1530317</a>	3 m	<a href="#">1530391</a>	3 m	<a href="#">1530391</a>
	5 m	<a href="#">1530281</a>	5 m	<a href="#">1530362</a>	5 m	<a href="#">1530320</a>	5 m	<a href="#">1530401</a>	5 m	<a href="#">1530401</a>
	10 m	<a href="#">1530294</a>	10 m	<a href="#">1530375</a>	10 m	<a href="#">1530333</a>	10 m	<a href="#">1530414</a>	10 m	<a href="#">1530414</a>
<b>Socket M5, 3-pos., straight</b>  	1.5 m	<a href="#">1530427</a>								
	3 m	<a href="#">1530430</a>								
	5 m	<a href="#">1530443</a>								
	10 m	<a href="#">1530456</a>								
<b>Socket M5, 3-pos., angled</b>  	1.5 m	<a href="#">1530508</a>								
	3 m	<a href="#">1530511</a>								
	5 m	<a href="#">1530524</a>								
	10 m	<a href="#">1530537</a>								
<b>Socket M5, 4-pos., straight</b>  	1.5 m	<a href="#">1530469</a>								
	3 m	<a href="#">1530472</a>								
	5 m	<a href="#">1530485</a>								
	10 m	<a href="#">1530498</a>								
<b>Socket M5, 4-pos., angled</b>  	1.5 m	<a href="#">1530540</a>								
	3 m	<a href="#">1530553</a>								
	5 m	<a href="#">1530566</a>								
	10 m	<a href="#">1530579</a>								

Cable description	Cable type	Color coding	Pin assignment 3-pos.	Color coding	Pin assignment 4-pos.
PUR/PVC - black	PUR M5	BN	1	BN	1
		BK	4	WH	2
		BU	3	BK	4
				BU	3

		Technical data	Technical data
		M5 3-pos.	M5 4-pos.
Rated voltage	[V]	125	125
Rated current	[A]	1	1
Contact material		CuZn	CuZn
Contact surface material		Au	Au
Material of grip body		PUR	PUR
M5 circular connector according to:		IEC 61076-2-105	IEC 61076-2-105
Degree of protection		IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data			
Connector/socket	[°C]	-25 ... 80	-25 ... 80

# Sensor/actuator cabling

## Assembled cables

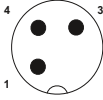
### M8 SAC cable, snap-in, 3 and 4-pos., cable type: PUR

**Notes:**  
For information about the cable qualities, see page 298

Free end



M12 connector, 3-pos.



Ordering data

Ordering data

Ordering data

#### M8 socket, snap-in, 3-pos., straight

Order No.

Order No.

Order No.



5 m [1519875](#)  
Variable [1697593](#)

Variable [1696853](#)

#### M8 socket, snap-in, 3-pos., angled



5 m [1519891](#)  
Variable [1697629](#)

Variable [1696882](#)

#### M8 socket, snap-in, 3-pos., with LEDs, angled



Variable [1513402](#)

Variable [1515675](#)

#### M8 socket, snap-in, 4-pos., straight



Variable [1513389](#)

#### M8 socket, snap-in, 4-pos., angled



Variable [1513392](#)

#### M8 socket, 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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 3-pos. M12 connector and a straight M8 snap-in socket, the ordering data is as follows:

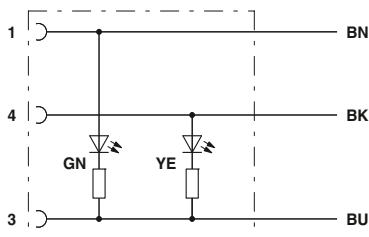
Order No.	Cable type	Length [m] Max. 40 m
1696853	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	Cable type	Suitable for:	Color coding	Pin assignment 3-pos.
PUR, halogen-free - black E221474	PUR	3/4-pos.	BN BK	1 4
PUR, halogen-free - gray E221474	280	3-pos.	BU	3
TPE-U highly flexible - gray E221474	800	3/4-pos.		

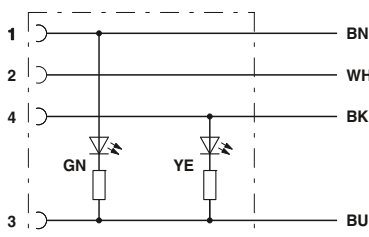
Color coding	Pin assignment 4-pos.
BN	1
WH	2
BK	4
BU	3

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 [V]	60	24	30	24
Rated current [A]	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 according to:	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				
Connector/socket	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of the M8 socket with LED, 3-pos.



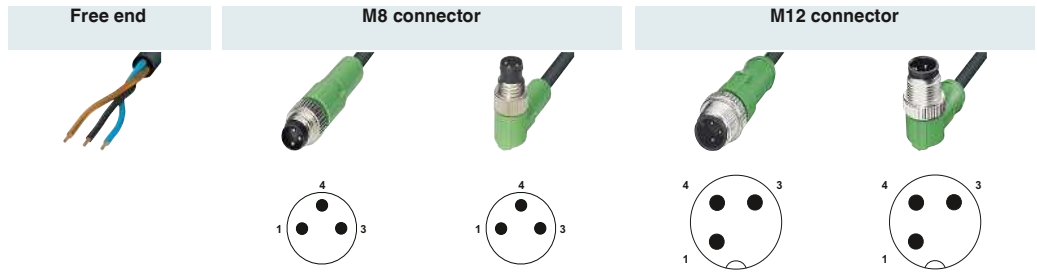
Contact assignment of the M8 socket with LED, 4-pos.

# Sensor/actuator cabling

## Assembled cables

### M8 and M12 SAC cable, 3-pos., cable type: PUR

Notes:  
For information about the cable qualities, see page 298



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	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	
<b>M8 socket, straight</b>			1.5 m	1669712	0.3 m	1681907	0.3 m	1682029	0.3 m	1668797	
			3 m	1669725	0.6 m	1681910	0.6 m	1682032	0.6 m	1668807	
			5 m	1669628	1.5 m	1681923	1.5 m	1682045	1.5 m	1668810	
			10 m	1694101	3 m	1681936	3 m	1682058	3 m	1668823	
			Variable	1697580	Variable	1697632	Variable	1697661	Variable	1696840	
<b>M8 socket, angled</b>			1.5 m	1669738	0.3 m	1681949	0.3 m	1682061	0.3 m	1668836	
			3 m	1669741	0.6 m	1681952	0.6 m	1682074	0.6 m	1668849	
			5 m	1669631	1.5 m	1681965	1.5 m	1682087	1.5 m	1668852	
			10 m	1694169	3 m	1681978	3 m	1682090	3 m	1668865	
			Variable	1697603	Variable	1697645	Variable	1697674	Variable	1696866	
<b>M8 socket, angled, with 2 LEDs</b>			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	
<b>M12 socket, straight</b>			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	
<b>M12 socket, straight, pin 2 - 4 bridged</b>			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
<b>M12 socket, straight, with LED</b>			1.5 m	1694185							
			3 m	1694198							
			5 m	1694787							
			10 m	1694790							
			Variable	1696701	Variable	1514197		Variable	1511802	Variable	1524763
<b>M12 socket, angled</b>			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	
<b>M12 socket, angled, pin 2 - 4 bridged</b>			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
<b>M12 socket, angled with LED</b>			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	
<b>M12 socket, angled, with LED, pin 2 - 4 bridged</b>			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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 3-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

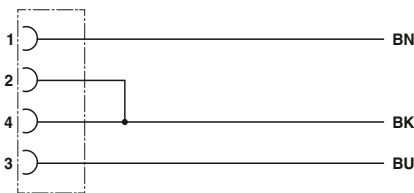
<b>Order No.</b>	<b>Cable type</b>	<b>Length [m]</b> Max. 40 m
1696756	PUR	4.5
<b>Minimum order amount = 25</b>		
<b>Increments:</b> 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

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

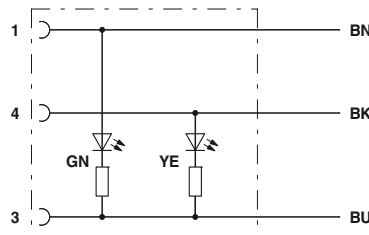
Color coding	Pin assignment
BN	1
BK	4
BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

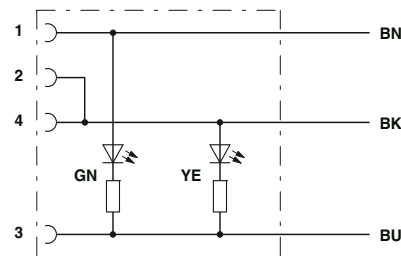
	Technical data	Technical data	Technical data	Technical data
	M8 3-pos.	M8 3-pos., with LEDs	M12 3-pos.	M12 3-pos., with LEDs
Rated voltage [V]	60	24	250	24
Rated current [A]	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104	IEC 61076-2-104	-	-
M12 circular connector according to:	-	-	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				
Connector/socket [°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M12 sockets bridged



Contact assignment of M8/M12 socket with two LEDs



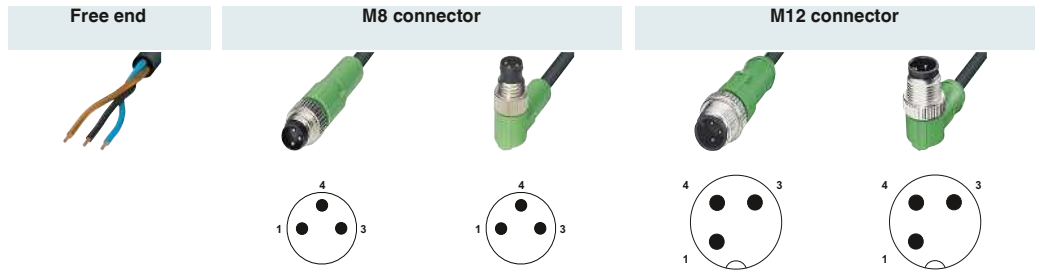
Contact assignment of M12 sockets with 2 LEDs, bridged

# Sensor/actuator cabling

## Assembled cables

### M8 and M12 SAC cable, 3-pos., cable type: PVC

Notes:  
For information about the cable qualities, see page 298



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	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
<b>M8 socket, straight</b>			1.5 m	1415870	0.3 m	1415877	0.3 m	1415881	0.3 m	1415525
			3 m	1415871	0.6 m	1415878	0.6 m	1415882	0.6 m	1415527
			5 m	1510748	1.5 m	1415879	1.5 m	1415883	1.5 m	1415528
			10 m	1506532	3 m	1415880	3 m	1415884	3 m	1415529
			Variable	1697580	Variable	1697632	Variable	1697661	Variable	1696840
<b>M8 socket, angled</b>			1.5 m	1415872	0.3 m	1415886	0.3 m	1415891	0.3 m	1415530
			3 m	1446320	0.6 m	1415888	0.6 m	1415892	0.6 m	1415531
			5 m	1403253	1.5 m	1415889	1.5 m	1415893	1.5 m	1415532
			10 m	1403773	3 m	1415890	3 m	1415894	3 m	1415533
			Variable	1697603	Variable	1697645	Variable	1697674	Variable	1696866
<b>M8 socket, angled, with 2 LEDs</b>			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
<b>M12 socket, straight</b>			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
<b>M12 socket, straight, pin 2 - 4 bridged</b>										
			Variable	1696691				Variable	1696769	Variable
<b>M12 socket, straight, with 2 LEDs</b>			1.5 m	1414556						
			3 m	1414561						
			5 m	1508459						
			10 m	1414565						
			Variable	1696701	Variable	1514197		Variable	1511802	Variable
<b>M12 socket, angled</b>			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
<b>M12 socket, angled, pin 2 - 4 bridged</b>										
			Variable	1696727				Variable	1696785	Variable
<b>M12 socket, angled, with 2 LEDs</b>			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
<b>M12 socket, angled, with LED, pin 2 - 4 bridged</b>										
			Variable	1696743				Variable	1696808	Variable

**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 sensor/actuator cable, PVC, black, 4.5 m long, with a straight 3-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

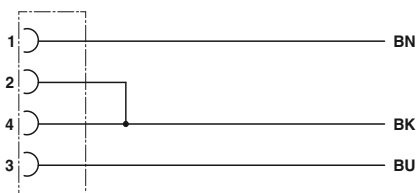
Order No.	Cable type	Length [m] Max. 40 m
1696756	PVC	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

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

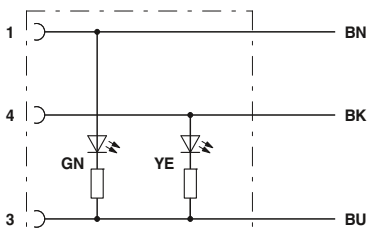
Color coding	Pin assignment
BN	1
BK	4
BU	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

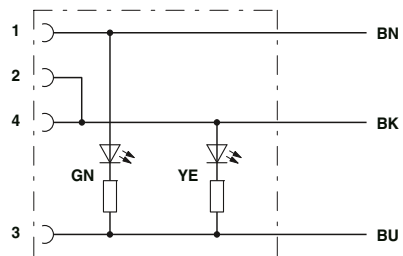
	Technical data	Technical data	Technical data	Technical data
	M8 3-pos.	M8 3-pos., with LEDs	M12 3-pos.	M12 3-pos., with LEDs
Rated voltage [V]	60	24	250	24
Rated current [A]	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104	IEC 61076-2-104	-	-
M12 circular connector according to:	-	-	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				
Connector/socket [°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M12 sockets bridged



Contact assignment of M8/M12 socket with two LEDs



Contact assignment of M12 sockets with 2 LEDs, bridged

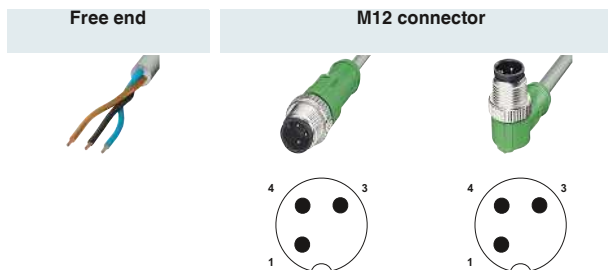


# Sensor/actuator cabling

## Assembled cables

### M12 SAC cable, 3-pos., cable type: 800

Notes:  
For information about the cable qualities, see page 302



Free end	Ordering data		Ordering data		Ordering data	
	Order No.	Length	Order No.	Length	Order No.	Length
		1.5 m	1456734	1.5 m	1456899	1.5 m
		3 m	1456747	3 m	1456909	3 m
		5 m	1456750	5 m	1456912	5 m
		10 m	1456763	10 m	1456925	10 m
		Variable	1696662	Variable	1696675	Variable
<b>M12 socket, straight</b> 		1.5 m	1456679	0.3 m	1456776	0.3 m
		3 m	1456682	0.6 m	1456789	0.6 m
		5 m	1456695	1.5 m	1456792	1.5 m
		10 m	1456705	3 m	1456802	3 m
		Variable	1696688	Variable	1696756	Variable
<b>M12 socket, angled</b> 		1.5 m	1454260	0.3 m	1456815	0.3 m
		3 m	1456718	0.6 m	1456828	0.6 m
		5 m	1454273	1.5 m	1456831	1.5 m
		10 m	1454299	3 m	1456844	3 m
		Variable	1696714	Variable	1696772	Variable
<b>M12 socket, angled, with 2 LEDs</b> 		1.5 m	1454312	0.3 m	1456857	0.3 m
		3 m	1456721	0.6 m	1456860	0.6 m
		5 m	1454325	1.5 m	1456873	1.5 m
		10 m	1454341	3 m	1456886	3 m
		Variable	1696730	Variable	1696798	Variable

### Ordering data for products with variable cables:

For a sensor/actuator cable, TPE-U 800, 4.5 m long, with a straight 3-pos. M12 connector and free cable end, the ordering data is as follows:

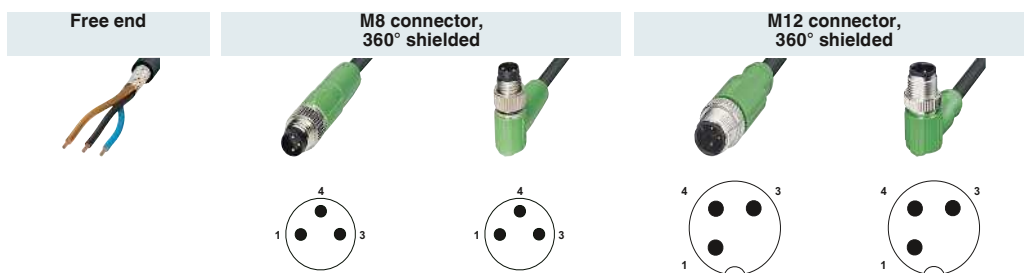
Cable description	Cable type	Color coding	Pin assignment
TPE-U highly flexible - gray Robots and drag chains	800	BN BK BU	1 4 3

Order No.	Cable type	Length [m] Max. 40 m
1696662	800	4.5
Minimum order amount = 25		
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 [V]	250	24
Rated current [A]	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 according to:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90

**M8 and M12 SAC cable, 3-pos., shielded, cable type: PUR**

**Notes:**  
For information about the cable qualities, see page 298



	Ordering data		Ordering data		Ordering data		Ordering data	
Free end	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	
	1.5 m	<b>1521614</b>	1.5 m	<b>1521669</b>	1.5 m	<b>1682650</b>	1.5 m	<b>1682689</b>
	3 m	<b>1521527</b>	3 m	<b>1521672</b>	3 m	<b>1682663</b>	3 m	<b>1682692</b>
	5 m	<b>1521630</b>	5 m	<b>1521685</b>	5 m	<b>1682676</b>	5 m	<b>1682702</b>
	10 m	<b>1521643</b>	10 m	<b>1521698</b>	10 m	<b>1500664</b>	10 m	<b>1500677</b>
	Variable	<b>1521656</b>	Variable	<b>1521708</b>	Variable	<b>1697425</b>	Variable	<b>1697438</b>
<b>M8 socket, straight, 360° shielded</b>	1.5 m	<b>1521711</b>	0.3 m	<b>1456310</b>				
	3 m	<b>1521724</b>	0.6 m	<b>1456323</b>				
	5 m	<b>1521737</b>	1.5 m	<b>1455285</b>				
	10 m	<b>1521740</b>	3 m	<b>1455298</b>				
	Variable	<b>1521753</b>	Variable	<b>1552052</b>	Variable	<b>1552078</b>		
<b>M8 socket, angled, 360° shielded</b>	1.5 m	<b>1521766</b>						
	3 m	<b>1521779</b>						
	5 m	<b>1521782</b>						
	10 m	<b>1521795</b>						
	Variable	<b>1521805</b>	Variable	<b>1552065</b>	Variable	<b>1552081</b>		
<b>M12 socket, straight, 360° shielded</b>	1.5 m	<b>1682786</b>			0.3 m	<b>1500800</b>		
	3 m	<b>1682799</b>			0.6 m	<b>1500813</b>		
	5 m	<b>1682809</b>			1.5 m	<b>1500826</b>		
	10 m	<b>1500680</b>			3 m	<b>1500839</b>		
	Variable	<b>1697441</b>			Variable	<b>1536049</b>	Variable	<b>1536065</b>
<b>M12 socket, angled, 360° shielded</b>	1.5 m	<b>1682812</b>			0.3 m	<b>1500923</b>		
	3 m	<b>1682825</b>			0.6 m	<b>1500936</b>		
	5 m	<b>1682838</b>			1.5 m	<b>1500949</b>		
	10 m	<b>1500693</b>			3 m	<b>1500952</b>		
	Variable	<b>1697454</b>			Variable	<b>1536052</b>	Variable	<b>1536078</b>

**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	Suitable for:
PUR, halogen-free - black E221474	<b>PUR</b>	M8/M12
PVC - black E221474	<b>PVC</b>	M12
PVC - gray E221474	<b>500</b>	M12

Color coding	Pin assignment
BN	1
BK	4
BU	3

**Ordering data for products with variable cable:**

For a shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 3-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m]
<b>1536049</b>	<b>PUR</b>	<b>4.5</b>
Minimum order amount = 25		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

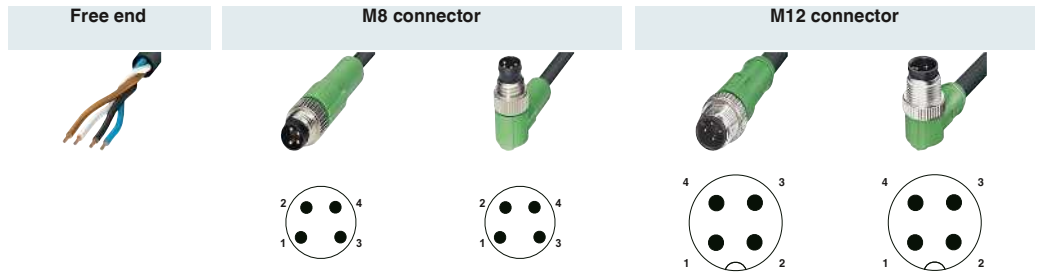
	Technical data	Technical data
	M8 3-pos., shielded	M12 3-pos., shielded
Rated voltage [V]	60	250
Rated current [A]	4	4
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104	-
M12 circular connector according to:	-	IEC 61076-2-101
Degree of protection	IP65 / IP67	IP65 / IP67
Temperature data		
Connector/socket [°C]	-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 298



		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	<a href="#">1681787</a>	1.5 m	<a href="#">1681813</a>	1.5 m	<a href="#">1668043</a>	1.5 m	<a href="#">1668166</a>
				3 m	<a href="#">1681790</a>	3 m	<a href="#">1681826</a>	3 m	<a href="#">1668056</a>	3 m	<a href="#">1668179</a>
				5 m	<a href="#">1681800</a>	5 m	<a href="#">1681839</a>	5 m	<a href="#">1668069</a>	5 m	<a href="#">1668182</a>
				10 m	<a href="#">1694143</a>	10 m	<a href="#">1694156</a>	10 m	<a href="#">1682993</a>	10 m	<a href="#">1694457</a>
				Variable	<a href="#">1697755</a>	Variable	<a href="#">1697768</a>	Variable	<a href="#">1696947</a>	Variable	<a href="#">1696950</a>
<b>M8 socket, straight</b>				1.5 m	<a href="#">1681842</a>	0.3 m	<a href="#">1682142</a>	0.3 m	<a href="#">1682223</a>	0.3 m	<a href="#">1694923</a>
				3 m	<a href="#">1681855</a>	0.6 m	<a href="#">1682155</a>	0.6 m	<a href="#">1682236</a>	0.6 m	<a href="#">1693076</a>
				5 m	<a href="#">1681868</a>	1.5 m	<a href="#">1682168</a>	1.5 m	<a href="#">1682249</a>	1.5 m	<a href="#">1693089</a>
				10 m	<a href="#">1683484</a>	3 m	<a href="#">1682171</a>	3 m	<a href="#">1682252</a>	3 m	<a href="#">1694936</a>
				Variable	<a href="#">1697771</a>	Variable	<a href="#">1697797</a>	Variable	<a href="#">1697810</a>	Variable	<a href="#">1697072</a>
<b>M8 socket, angled</b>				1.5 m	<a href="#">1681871</a>	0.3 m	<a href="#">1682184</a>	0.3 m	<a href="#">1682265</a>	0.3 m	<a href="#">1671551</a>
				3 m	<a href="#">1681884</a>	0.6 m	<a href="#">1682197</a>	0.6 m	<a href="#">1682278</a>	0.6 m	<a href="#">1671564</a>
				5 m	<a href="#">1681897</a>	1.5 m	<a href="#">1682207</a>	1.5 m	<a href="#">1682281</a>	1.5 m	<a href="#">1671577</a>
				10 m	<a href="#">1694172</a>	3 m	<a href="#">1682210</a>	3 m	<a href="#">1682294</a>	3 m	<a href="#">1671580</a>
				Variable	<a href="#">1697784</a>	Variable	<a href="#">1697807</a>	Variable	<a href="#">1697823</a>	Variable	<a href="#">1697085</a>
<b>M8 socket, angled, with 2 LEDs</b>				Variable	<a href="#">1517673</a>					Variable	<a href="#">1515031</a>
<b>M12 socket, straight</b>				1.5 m	<a href="#">1668108</a>			0.3 m	<a href="#">1668357</a>	0.3 m	<a href="#">1668593</a>
				3 m	<a href="#">1668111</a>			0.6 m	<a href="#">1668360</a>	0.6 m	<a href="#">1668603</a>
				5 m	<a href="#">1668124</a>			1.5 m	<a href="#">1668373</a>	1.5 m	<a href="#">1668616</a>
				10 m	<a href="#">1683002</a>			3 m	<a href="#">1668386</a>	3 m	<a href="#">1668629</a>
				Variable	<a href="#">1696963</a>	Variable	<a href="#">1506697</a>	Variable	<a href="#">1697001</a>	Variable	<a href="#">1697030</a>
<b>M12 socket, straight, with 2 LEDs</b>				1.5 m	<a href="#">1694800</a>						
				3 m	<a href="#">1694813</a>						
				5 m	<a href="#">1694826</a>						
				10 m	<a href="#">1694839</a>						
				Variable	<a href="#">1696976</a>						
<b>M12 socket, angled</b>				1.5 m	<a href="#">1668221</a>			0.3 m	<a href="#">1668470</a>	0.3 m	<a href="#">1668713</a>
				3 m	<a href="#">1668234</a>			0.6 m	<a href="#">1668483</a>	0.6 m	<a href="#">1668726</a>
				5 m	<a href="#">1668247</a>			1.5 m	<a href="#">1668496</a>	1.5 m	<a href="#">1668739</a>
				10 m	<a href="#">1681389</a>			3 m	<a href="#">1668506</a>	3 m	<a href="#">1668742</a>
				Variable	<a href="#">1696989</a>	Variable	<a href="#">1511718</a>	Variable	<a href="#">1697836</a>	Variable	<a href="#">1697014</a>
<b>M12 socket, angled, with 3 LEDs</b>				1.5 m	<a href="#">1668289</a>			0.3 m	<a href="#">1668519</a>	0.3 m	<a href="#">1668755</a>
				3 m	<a href="#">1668292</a>			0.6 m	<a href="#">1668522</a>	0.6 m	<a href="#">1668768</a>
				5 m	<a href="#">1668302</a>			1.5 m	<a href="#">1668535</a>	1.5 m	<a href="#">1668771</a>
				10 m	<a href="#">1681020</a>			3 m	<a href="#">1668548</a>	3 m	<a href="#">1668784</a>
				Variable	<a href="#">1696992</a>			Variable	<a href="#">1697027</a>	Variable	<a href="#">1697056</a>

**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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 4-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

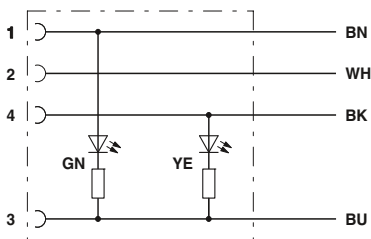
Order No.	Cable type	Length [m] Max. 40 m
1697001	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	UL <sub>US</sub>	Cable type	Suitable for:
PUR, halogen-free - black E221474		PUR	M8/M12
PUR, halogen-free - yellow E221474		240	M12
PUR, halogen-free - gray E221474		280	M8/M12
TPE-U highly flexible - gray E221474		800	M8/M12
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

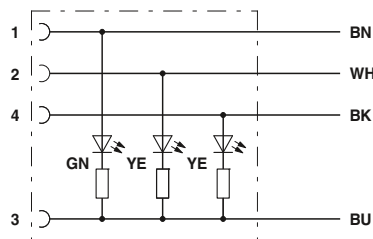
Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3

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 4-pos.	M8 4-pos., with LED	M12 4-pos.	M12 4-pos., with LED
Rated voltage [V]	30	24	250	24
Rated current [A]	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 according to:	IEC 61076-2-104	IEC 61076-2-104	-	-
M12 circular connector according to:	-	-	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				
Connector/socket [°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M8/M12 socket with LED



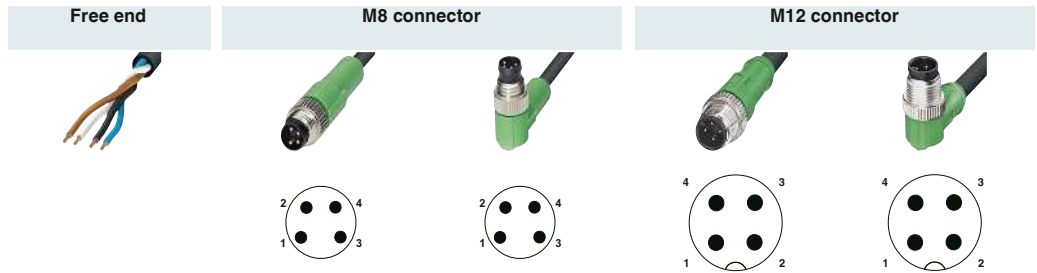
Contact assignment of M12 sockets with LED

# Sensor/actuator cabling

## Assembled cables

### M8 and M12 SAC cable, 4-pos., cable type: PVC

**Notes:**  
For information about the cable qualities, see page 298



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		
<b>M8 socket, straight</b>			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		
<b>M8 socket, angled</b>			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		
<b>M8 socket, angled, with 2 LEDs</b>			Variable	1517673					Variable	1515031		
<b>M12 socket, straight</b>			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	
<b>M12 socket, straight, with 2 LEDs</b>			1.5 m	1415596								
			3 m	1415597								
			5 m	1415602								
			10 m	1415605								
			Variable	1696976								
<b>M12 socket, angled</b>			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
<b>M12 socket, angled, with 3 LEDs</b>			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:**

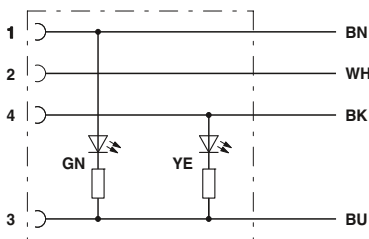
For a sensor/actuator cable, PVC, black, 4.5 m long, with a straight 4-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1697001	PVC	4.5
Minimum order amount = 25 Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

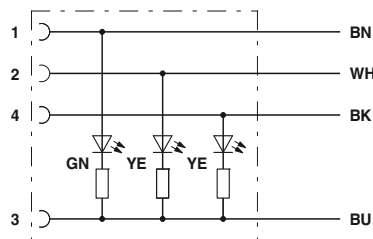
Cable description	Cable type	Suitable for:	Color coding	Pin assignment
PVC - black E221474	PVC	M8/M12	BN	1
PVC - gray E221474	500	M8/M12	WH	2
PVC - yellow E221474	540	M12	BK	4
PVC 105° - yellow E221474	542	M12	BU	3
PUR, halogen-free - black E221474	PUR	M8/M12		
PUR, halogen-free - yellow E221474	240	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 [V]	30	24	250	24
Rated current [A]	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 according to:	IEC 61076-2-104	IEC 61076-2-104	-	-
M12 circular connector according to:	-	-	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				
Connector/socket [°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M8/M12 socket with LED



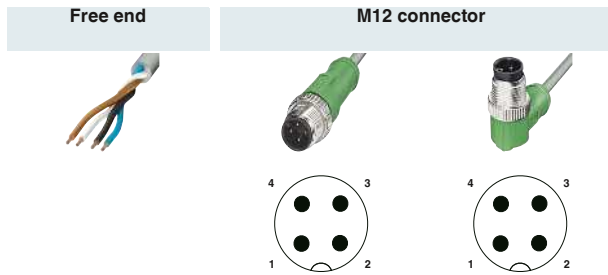
Contact assignment of M12 sockets with LED

# Sensor/actuator cabling

## Assembled cables

### M12 SAC cable, 4-pos., cable type: 800

Notes:  
For information about the cable qualities, see page 302



Free end	Ordering data		Ordering data		Ordering data	
	Order No.	Length	Order No.	Length	Order No.	Length
		1.5 m	1457018	1.5 m	1457128	1.5 m
		3 m	1457021	3 m	1457131	3 m
		5 m	1457034	5 m	1457144	5 m
		10 m	1457047	10 m	1457157	10 m
		Variable	1696947	Variable	1696950	Variable
<b>M12 socket, straight</b> 		1.5 m	1456938	0.3 m	1457050	0.3 m
		3 m	1456941	0.6 m	1457063	0.6 m
		5 m	1567322	1.5 m	1567270	1.5 m
		10 m	1567335	3 m	1457076	3 m
		Variable	1696963	Variable	1697001	Variable
<b>M12 socket, angled</b> 		1.5 m	1456954	0.3 m	1457089	0.3 m
		3 m	1456967	0.6 m	1567225	0.6 m
		5 m	1456970	1.5 m	1567238	1.5 m
		10 m	1456983	3 m	1457092	3 m
		Variable	1696989	Variable	1697014	Variable
<b>M12 socket, angled, with 3 LEDs</b> 		1.5 m	1456996	0.3 m	1457102	0.3 m
		3 m	1457005	0.6 m	1567173	0.6 m
		5 m	1567351	1.5 m	1567199	1.5 m
		10 m	1567364	3 m	1457115	3 m
		Variable	1696992	Variable	1697027	Variable

### Ordering data for products with variable cables:

For a sensor/actuator cable, TPE-U 800, 4.5 m long, with a straight 4-pos. M12 connector and free cable end, the ordering data is as follows:

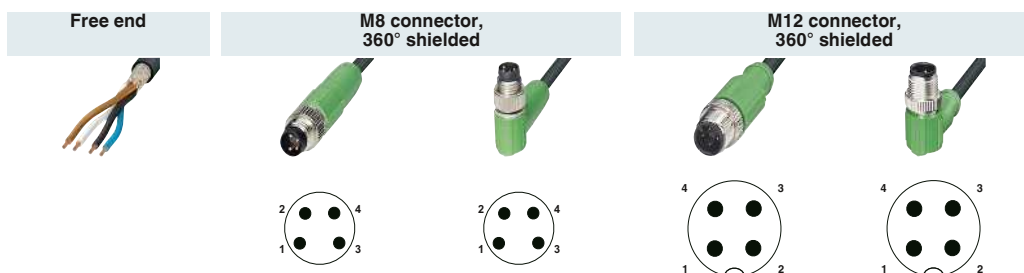
Cable description	Cable type	Color coding	Pin assignment
TPE-U highly flexible - gray Robots and drag chains	800	BN WH BK BU	1 2 4 3

Order No.	Cable type	Length [m] Max. 40 m
1696947	800	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

	Technical data	Technical data
	M12 4-pos.	M12 4-pos., with LED
Rated voltage [V]	250	24
Rated current [A]	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 according to:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90

**M8 and M12 SAC cable, 4-pos., shielded, cable type: PUR**

**Notes:**  
For information about the cable qualities, see page 298



	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Free end	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m <b>1521818</b>	1.5 m <b>1521863</b>	1.5 m <b>1682715</b>	1.5 m <b>1682870</b>					
		3 m <b>1521821</b>	3 m <b>1521876</b>	3 m <b>1682618</b>	3 m <b>1682883</b>					
		5 m <b>1521834</b>	5 m <b>1521889</b>	5 m <b>1682647</b>	5 m <b>1682896</b>					
		10 m <b>1521847</b>	10 m <b>1521892</b>	10 m <b>1694389</b>	10 m <b>1500703</b>					
		Variable <b>1521850</b>	Variable <b>1521902</b>	Variable <b>1697467</b>	Variable <b>1697470</b>					
<b>M8 socket, straight, 360° shielded</b>										
		1.5 m <b>1521915</b>	0.3 m <b>1574580</b>							
		3 m <b>1521928</b>	0.6 m <b>1455722</b>							
		5 m <b>1521931</b>	1.5 m <b>1455735</b>							
		10 m <b>1521944</b>	3 m <b>1574603</b>							
		Variable <b>1521957</b>	Variable <b>1552094</b>	Variable <b>1552104</b>						
<b>M8 socket, angled, 360° shielded</b>										
		1.5 m <b>1521960</b>								
		3 m <b>1521973</b>								
		5 m <b>1521986</b>								
		10 m <b>1521999</b>								
		Variable <b>1522008</b>	Variable <b>1552065</b>	Variable <b>1552120</b>						
<b>M12 socket, straight, 360° shielded</b>										
		1.5 m <b>1682841</b>			0.3 m <b>1500842</b>					
		3 m <b>1682854</b>			0.6 m <b>1500855</b>					
		5 m <b>1682867</b>			1.5 m <b>1500868</b>					
		10 m <b>1500716</b>			3 m <b>1500871</b>					
		Variable <b>1697483</b>			Variable <b>1536081</b>	Variable <b>1536104</b>				
<b>M12 socket, angled, 360° shielded</b>										
		1.5 m <b>1682906</b>			0.3 m <b>1500965</b>					
		3 m <b>1682919</b>			0.6 m <b>1500978</b>					
		5 m <b>1682922</b>			1.5 m <b>1500981</b>					
		10 m <b>1500729</b>			3 m <b>1500994</b>					
		Variable <b>1697496</b>			Variable <b>1536094</b>	Variable <b>1536117</b>				

**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	Suitable for:	Color coding	Pin assignment
PUR, halogen-free - black E221474	<b>PUR</b>	M8/M12	BN	1
PVC - black E221474	<b>PVC</b>	M12	WH	2
PVC - gray E221474	<b>500</b>	M12	BK	4
			BU	3

**Ordering data for products with variable cable:**

For a shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 4-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m]
<b>1536081</b>	<b>PUR</b>	<b>4.5</b>
Minimum order amount = 25		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

	Technical data	Technical data
	M8 4-pos., shielded	M12 4-pos., shielded
Rated voltage [V]	30	250
Rated current [A]	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 according to:	IEC 61076-2-104	-
M12 circular connector according to:	-	IEC 61076-2-101
Degree of protection	IP65 / IP67	IP65 / IP67
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90



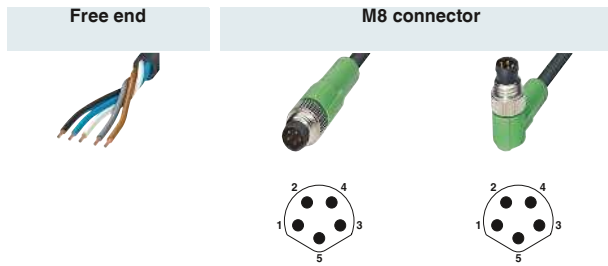
# Sensor/actuator cabling

## Assembled cables

### M8 SAC cable, 5-pos., B-coded, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298



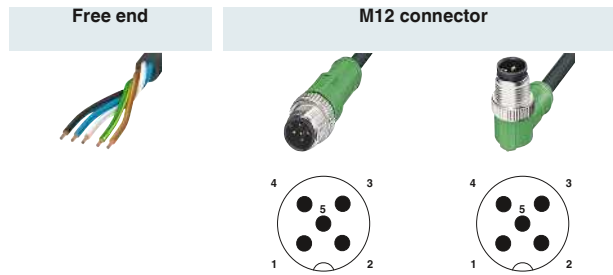
	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.
	1.5 m	1404461	1.5 m 1404465
	3 m	1404462	3 m 1404466
	5 m	1404463	5 m 1404467
	10 m	1404464	10 m 1404468
<b>M8 socket, straight</b> 	1.5 m	1404470	0.3 m 1404479
	3 m	1404471	0.6 m 1404480
	5 m	1404473	1.5 m 1404481
	10 m	1404474	3 m 1404482
<b>M8 socket, angled</b> 	1.5 m	1404475	
	3 m	1404476	
	5 m	1404477	
	10 m	1404478	

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen free - black	115	BN WH BK BU GY	1 2 4 3 5

		Technical data
		M85-pos.
Rated voltage	[V]	30
Rated current	[A]	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 according to:		IEC 61076-2-104
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Connector/socket	[°C]	-25 ... 90

**M12 SAC cable, 5-pos., cable type: PUR**

**Notes:**  
For information about the cable qualities, see page 298



	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
<b>M12 socket, straight</b> 	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
<b>M12 socket, angled</b> 	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
<b>M12 socket, angled, with 3 LEDs</b> 	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

**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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 5-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1697140	PUR	4.5
Minimum order amount = 25		
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	BN	1
PUR, halogen-free - black, 5th wire gray E221474	115	WH	2
TPE-U highly flexible - gray, 5th wire gray E221474	800	BK	4
PUR irradiated - orange E221474	150	BU	3
PVC - black E221474	PVC	GNYE	5
PVC - black, 5th wire gray E221474	515		
PVC - gray E221474	500		
PVC 105° - yellow E221474	540		
PVC 105° - yellow, 5th wire gray E221474	542		

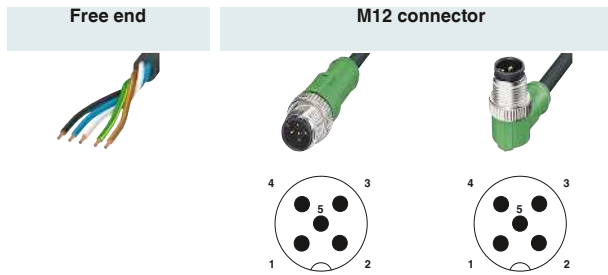
Technical data	Technical data
M12 5-pos.	M12 5-pos., with LED
Rated voltage [V]	60
Rated current [A]	4
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Connector/socket [°C]	-25 ... 90

# Sensor/actuator cabling

## Assembled cables

### M12 SAC cable, 5-pos., cable type: PVC

Notes:  
For information about the cable qualities, see page 298



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	
<b>M12 socket, straight</b> 		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
<b>M12 socket, angled</b> 		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
<b>M12 socket, angled, with 3 LEDs</b> 		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

### 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 sensor/actuator cable, PVC, black, 4.5 m long, with a straight 5-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

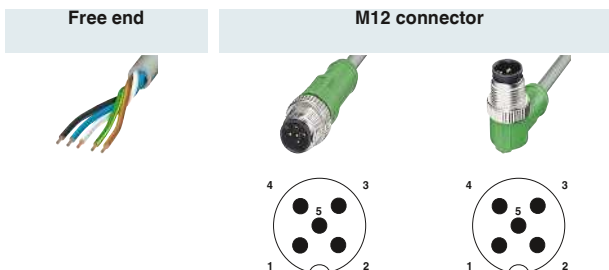
Order No.	Cable type	Length [m] Max. 40 m
1697140	PVC	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

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	GNYE	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 [V]	60	24
Rated current [A]	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
M12 circular connector according to:		
Degree of protection	IP65 / IP67 / IP68	IEC 61076-2-101
Temperature data		IP65 / IP67 / IP68
Connector/socket [°C]	-25 ... 90	-25 ... 90

**M12 SAC cable,  
5-pos.,  
cable type: 802**

**Notes:**  
For information about the cable qualities, see page 302



**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
<b>M12 socket, straight</b> 	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
<b>M12 socket, angled</b> 	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
<b>M12 socket, angled, with 3 LEDs</b> 	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

**Ordering data for products with variable cables:**

For a sensor/actuator cable, TPE-U 802, 4.5 m long, with a straight 5-pos. M12 connector and free cable end, the ordering data is as follows:

Cable description	Cable type	Color coding	Pin assignment
TPE-U highly flexible - gray Robots and drag chains	802	BN WH BK BU GNYE	1 2 4 3 5

Order No.	Cable type	Length [m] Max. 40 m
1697098	802	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

	Technical data	Technical data
	M12 5-pos.	M12 5-pos., with LED
Rated voltage [V]	60	24
Rated current [A]	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 according to:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90

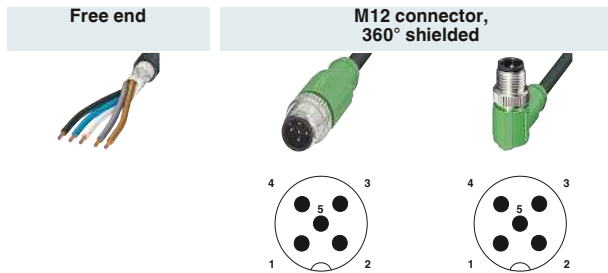
# Sensor/actuator cabling

## Assembled cables

### M12 SAC cable, 5-pos., shielded, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298



	Ordering data	Ordering data	Ordering data
Free end	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
<b>M12 socket, straight, 360° shielded</b> 	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
<b>M12 socket, angled, 360° shielded</b> 	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

### 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
PVC - black E221474	PVC	WH	2
PVC - gray E221474	500	BK	4
		BU	3
		GY	5

### Ordering data for products with variable cable:

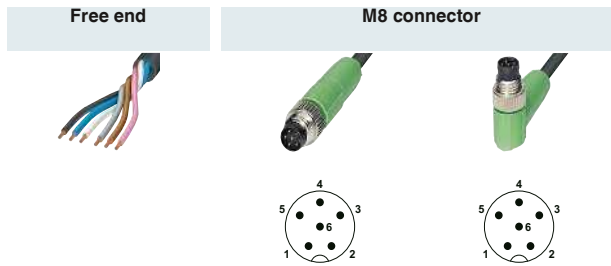
For a shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 5-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1536120	PUR	4.5
<b>Minimum order amount = 25</b>		
<b>Increments:</b>		
0.2 ... 3 m = 0.1 m		
> 3 m = 0.5 m		

Technical data	
<b>M12</b>	
<b>5-pos., shielded</b>	
Rated voltage [V]	60
Rated current [A]	4
Contact material	CuSn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101
Degree of protection	IP65 / IP67
Temperature data	
Connector/socket [°C]	-25 ... 90

**M8 SAC cable,  
6-pos.,  
cable type: PUR**

**Notes:**  
For information about the cable qualities, see page 298



	Ordering data	Ordering data	Ordering data
<b>Free end</b>	Order No.	Order No.	Order No.
	1.5 m	1.5 m	1.5 m
	3 m	3 m	3 m
	5 m	5 m	5 m
	10 m	10 m	10 m
	Variable	Variable	Variable
<b>M8 socket, straight</b>	Order No.	Order No.	Order No.
	1.5 m	1.5 m	1.5 m
	3 m	3 m	3 m
	5 m	5 m	5 m
	10 m	10 m	10 m
	Variable	Variable	Variable
<b>M8 socket, angled</b>	Order No.	Order No.	Order No.
	1.5 m	1.5 m	1.5 m
	3 m	3 m	3 m
	5 m	5 m	5 m
	10 m	10 m	10 m
	Variable	Variable	Variable

**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 WH BU BK GY PK	1 2 3 4 5 6

**Ordering data for products with variable cable:**

For a shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 6-pos. M8 connector and open cable end, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1522134	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Technical data	
<b>M8 6-pos.</b>	
Rated voltage	[V] 30
Rated current	[A] 1.5
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Connector/socket	[°C] -25 ... 90

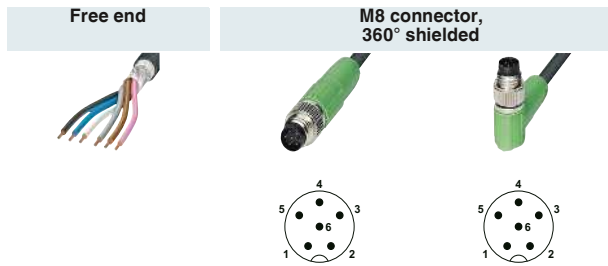
# Sensor/actuator cabling

## Assembled cables

### M8 SAC cable, 6-pos., shielded, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298



	Ordering data	Ordering data	Ordering data
Free end	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	5 m 1522370
	Variable	1522338	Variable 1522383
<b>M8 socket, straight, 360° shielded</b> 	1.5 m	1522396	
	3 m	1522406	
	5 m	1522419	
	10 m	1522422	
	Variable	1522435	Variable 1552010 Variable 1552036
<b>M8 socket, angled, 360° shielded</b> 	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	<table border="1"> <tr><td>BN</td><td></td><td>1</td></tr> <tr><td>WH</td><td></td><td>2</td></tr> <tr><td>BU</td><td></td><td>3</td></tr> <tr><td>BK</td><td></td><td>4</td></tr> <tr><td>GY</td><td></td><td>5</td></tr> <tr><td>PK</td><td></td><td>6</td></tr> </table>	BN		1	WH		2	BU		3	BK		4	GY		5	PK		6	
BN		1																			
WH		2																			
BU		3																			
BK		4																			
GY		5																			
PK		6																			

### Ordering data for products with variable cable:

For a shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 6-pos. M8 connector and a straight M8 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1552010	PUR	4.5
Minimum order amount = 25		<b>Increments:</b> 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Technical data	
M8 6-pos., shielded	
Rated voltage [V]	30
Rated current [A]	1.5
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104
Degree of protection	IP65 / IP67
Temperature data	
Connector/socket [°C]	-25 ... 90

**M8 SAC cable,  
8-pos.,  
cable type: PUR**

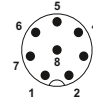
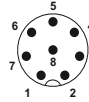
**Notes:**

For information about the cable qualities, see page 298

Free end



M8 connector



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
	1.5 m	<a href="#">1404178</a>	1.5 m <a href="#">1404182</a>
	3 m	<a href="#">1404180</a>	3 m <a href="#">1404186</a>
	5 m	<a href="#">1404181</a>	5 m <a href="#">1404185</a>
	10 m	<a href="#">1404179</a>	10 m <a href="#">1404183</a>
<b>M8 socket, straight</b> 	1.5 m <a href="#">1404187</a>	0.3 m <a href="#">1404196</a>	
	3 m <a href="#">1404188</a>	0.6 m <a href="#">1404198</a>	
	5 m <a href="#">1404189</a>	1.5 m <a href="#">1404199</a>	
	10 m <a href="#">1404190</a>	3 m <a href="#">1404200</a>	
<b>M8 socket, angled</b> 	1.5 m <a href="#">1404191</a>	0.3 m <a href="#">1404201</a>	
	3 m <a href="#">1404192</a>	0.6 m <a href="#">1404202</a>	
	5 m <a href="#">1404193</a>	1.5 m <a href="#">1404203</a>	
	10 m <a href="#">1404194</a>	3 m <a href="#">1404204</a>	

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen free - black	PUR	WH	1
		BN	2
		GN	3
		YE	4
		GY	5
		PK	6
		BU	7
		RD	8

**Technical data**

		M8 8-pos.
Rated voltage	[V]	30
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 according to:		IEC 61076-2-104
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Connector/socket	[°C]	-25 ... 85



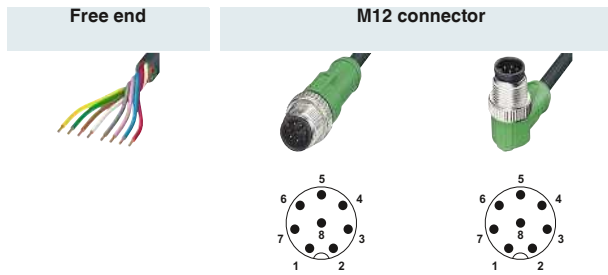
# Sensor/actuator cabling

## Assembled cables

### M12 SAC cable, 8-pos., cable type: PUR

**Notes:**

For information about the cable qualities, see page 298



	Ordering data	Ordering data	Ordering data
Free end	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
<b>M12 socket, straight</b> 	1.5 m	1522590	0.3 m 1522671
	3 m	1522600	0.6 m 1522684
	5 m	1520369	1.5 m 1522697
	10 m	1520372	3 m 1522707
	Variable	1522613	Variable 1522710
<b>M12 socket, angled</b> 	1.5 m	1522626	0.3 m 1522723
	3 m	1522639	0.6 m 1522736
	5 m	1522642	1.5 m 1522749
	10 m	1522655	3 m 1522752
	Variable	1522668	Variable 1522765

### 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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 8-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

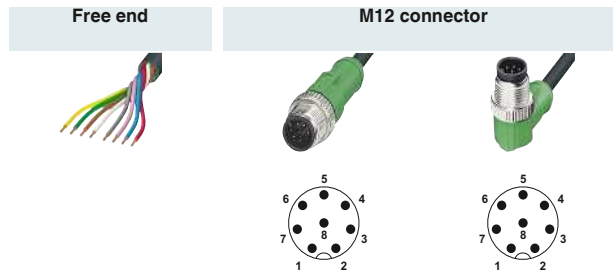
Order No.	Cable type	Length [m] Max. 40 m
1522710	PUR	4.5
Minimum order amount = 25		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free - black E221474	PUR	WH	1
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	
<b>M12 8-pos.</b>	
Rated voltage [V]	30
Rated current [A]	2
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68
Temperature data	
Connector/socket [°C]	-25 ... 90

**M12 SAC cable, 8-pos., cable type: PVC**

**Notes:**  
For information about the cable qualities, see page 298



	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
<b>M12 socket, straight</b> 	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
<b>M12 socket, angled</b> 	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

**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 sensor/actuator cable, PVC, black, 4.5 m long, with a straight 8-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1522710	PVC	4.5
Minimum order amount = 25		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	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	[V]	30
Rated current	[A]	2
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:		IEC 61076-2-101
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Connector/socket	[°C]	-25 ... 90

# Sensor/actuator cabling

## Assembled cables

### M8 SAC cable, 8-pos., shielded, cable type: PUR

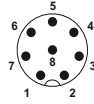
**Notes:**

For information about the cable qualities, see page 298

Free end



M8 connector, 360° shielded



	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	
<b>M8 socket, straight, 360° shielded</b> 	1.5 m	1404147	0.3 m
	3 m	1404148	0.6 m
	5 m	1404149	1.5 m
	10 m	1404150	3 m
			0.3 m
			0.6 m

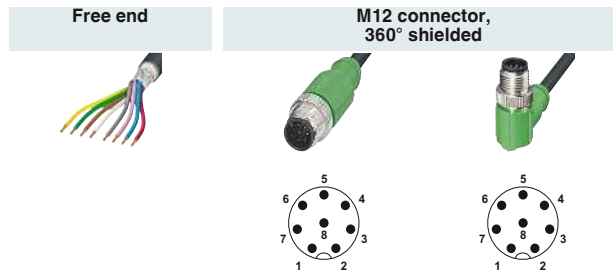
Cable description	Cable type	Color coding	Pin assignment
PUR, halogen free - black	PUR	WH	1
		BN	2
		GN	3
		YE	4
		GY	5
		PK	6
		BU	7
		RD	8

**Technical data**

		M8 8-pos.
Rated voltage	[V]	30
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 according to:		IEC 61076-2-104
Degree of protection		IP65 / IP67
Temperature data		
Connector/socket	[°C]	-25 ... 85

**M12 SAC cable, 8-pos., shielded, cable type: PUR**

**Notes:**  
For information about the cable qualities, see page 298



Free end	Ordering data		Ordering data		Ordering data	
	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m	<a href="#">1522778</a>	1.5 m	<a href="#">1522817</a>	
		3 m	<a href="#">1522781</a>	3 m	<a href="#">1522820</a>	
		5 m	<a href="#">1526981</a>	5 m	<a href="#">1522833</a>	
		10 m	<a href="#">1522794</a>	10 m	<a href="#">1522846</a>	
		Variable	<a href="#">1522804</a>	Variable	<a href="#">1522859</a>	
<b>M12 socket, straight, 360° shielded</b> 	1.5 m	<a href="#">1522862</a>	0.3 m	<a href="#">1522969</a>		
	3 m	<a href="#">1522875</a>	0.6 m	<a href="#">1522972</a>		
	5 m	<a href="#">1522888</a>	1.5 m	<a href="#">1522985</a>		
	10 m	<a href="#">1522891</a>	3 m	<a href="#">1522998</a>		
	Variable	<a href="#">1522901</a>	Variable	<a href="#">1523007</a>	Variable	<a href="#">1551998</a>
<b>M12 socket, angled, 360° shielded</b> 	1.5 m	<a href="#">1522914</a>	0.3 m	<a href="#">1523010</a>		
	3 m	<a href="#">1522927</a>	0.6 m	<a href="#">1523023</a>		
	5 m	<a href="#">1522930</a>	1.5 m	<a href="#">1523036</a>		
	10 m	<a href="#">1522943</a>	3 m	<a href="#">1523049</a>		
	Variable	<a href="#">1522956</a>	Variable	<a href="#">1523052</a>	Variable	<a href="#">1552007</a>

**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 shielded sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 8-pos. M12 connector and a straight M12 socket, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
<a href="#">1523007</a>	<a href="#">PUR</a>	4.5
Minimum order amount = 25		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	<a href="#">PUR</a>	WH	1
		BN	2
PUR, halogen-free - gray E221474	<a href="#">280</a>	GN	3
		YE	4
PVC - black E221474	<a href="#">PVC</a>	GY	5
		PK	6
		BU	7
		RD	8

Technical data	
<b>M12 8-pos., shielded</b>	
Rated voltage [V]	30
Rated current [A]	2
Contact material	CuZn
Contact surface material	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101
Degree of protection	IP65 / IP67
Temperature data	
Connector/socket [°C]	-25 ... 90

# Sensor/actuator cabling

## Assembled cables

### M12-SPEEDCON, SAC cable, 12 and 17-pos., cable type: PUR

Notes:  
For information about the cable qualities, see page 298



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	1430530	1.5 m	1430572	1.5 m	1430695
	3 m	1430543	3 m	1430585	3 m	1430705
	5 m	1430556	5 m	1430598	5 m	1430718
	10 m	1430569	10 m	1430608	10 m	1430721
<b>M12 socket, SPEEDCON, 12-pos., straight</b> 	1.5 m	1430611				
	3 m	1430624				
	5 m	1430637				
	10 m	1430640				
<b>M12 socket, SPEEDCON, 12-pos., angled</b> 	1.5 m	1430653				
	3 m	1430666				
	5 m	1430679				
	10 m	1430682				
<b>M12 socket, SPEEDCON, 17-pos., straight</b> 	1.5 m	1430776				
	3 m	1430789				
	5 m	1430792				
	10 m	1430802				
<b>M12 socket, SPEEDCON, 17-pos., angled</b> 	1.5 m	1430815				
	3 m	1430828				
	5 m	1430831				
	10 m	1430844				

Cable description	Cable type	Color coding	Pin assignment, 12-pos.	Color coding	Pin assignment, 17-pos.
PUR halogen-free - black	PUR	BN	1	BN	1
		BU	2	BU	2
		WH	3	WH	3
		GN	4	GN	4
		PK	5	PK	5
		YE	6	YE	6
		BK	7	BK	7
		GY	8	GY	8
		RD	9	RD	9
		VT	10	VT	10
		GYPK	11	GYPK	11
		RDBU	12	RDBU	12
				WHGN	13
		BNGN	14		
		WHYE	15		
		YEBN	16		
		WHGY	17		

	Technical data	Technical data
	M12 12-pos.	M12 17-pos.
Rated voltage [V]	30	30
Rated current [A]	1.5	1.5
Contact material	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90

**M12-SPEEDCON, SAC cable, 12 and 17-pos., cable type: PVC**

**Notes:**

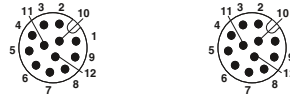
For information about the cable qualities, see page 298



Free end



M12 connector, SPEEDCON, 12-pos.



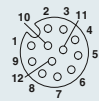
M12 connector, SPEEDCON, 17-pos.



Ordering data

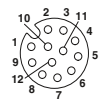
Free end	Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
	1.5 m	1554775	1.5 m	1554814	1.5 m	1555266
	3 m	1554788	3 m	1554827	3 m	1555279
	5 m	1554791	5 m	1554830	5 m	1555282
	10 m	1554801	10 m	1554843	10 m	1555295

M12 socket, SPEEDCON, 12-pos., straight



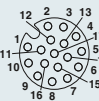
1.5 m	1554856
3 m	1554869
5 m	1554872
10 m	1554885

M12 socket, SPEEDCON, 12-pos., angled



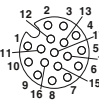
1.5 m	1554898
3 m	1554908
5 m	1554924
10 m	1554937

M12 socket, SPEEDCON, 17-pos., straight



1.5 m	1555347
3 m	1555350
5 m	1555363
10 m	1555376

M12 socket, SPEEDCON, 17-pos., angled



1.5 m	1555389
3 m	1555392
5 m	1555402
10 m	1555415

Cable description	Cable type	Color coding	Pin assignment, 12-pos.	Color coding	Pin assignment, 17-pos.
PVC - black	PVC	BN	1	BN	1
		BU	2	BU	2
		WH	3	WH	3
		GN	4	GN	4
		PK	5	PK	5
		YE	6	YE	6
		BK	7	BK	7
		GY	8	GY	8
		RD	9	RD	9
		VT	10	VT	10
		GYPK	11	GYPK	11
		RDBU	12	RDBU	12
		WHGN		WHGN	13
		BNGN		BNGN	14
		WHYE		WHYE	15
		YEBN		YEBN	16
		WHGY		WHGY	17

	Technical data	Technical data
	M12 12-pos.	M12 17-pos.
Rated voltage [V]	30	30
Rated current [A]	1.5	1.5
Contact material	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101
Degree of protection	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data		
Connector/socket [°C]	-25 ... 90	-25 ... 90

# Sensor/actuator cabling

## Assembled cables

### M12-SPEEDCON and M23 SAC cable, 12-pos., shielded

**Notes:**

For information about the cable qualities, see page 298



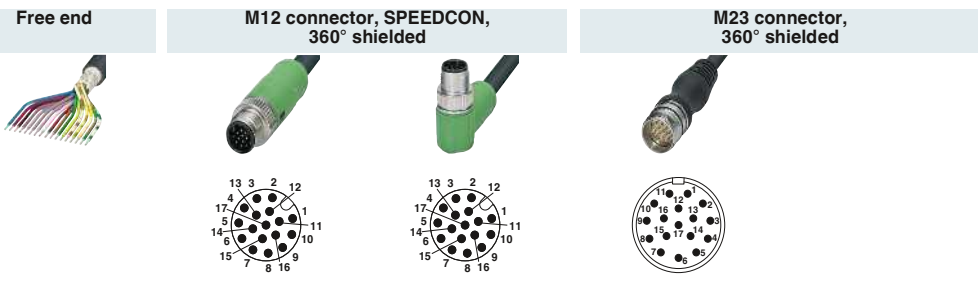
Free end	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.	Order No.	Order No.
		1.5 m <a href="#">1430048</a>	1.5 m <a href="#">1430080</a>		
		3 m <a href="#">1430051</a>	3 m <a href="#">1430093</a>		
		5 m <a href="#">1430064</a>	5 m <a href="#">1430103</a>		
		10 m <a href="#">1430077</a>	10 m <a href="#">1430116</a>		
<b>M12 socket, SPEEDCON, straight, 360° shielded</b>					
	0.5 m <a href="#">1437083</a>			0.5 m <a href="#">1437287</a>	
	1 m <a href="#">1434730</a>			1 m <a href="#">1437290</a>	
	1.5 m <a href="#">1430129</a>				
	3 m <a href="#">1430132</a>	3 m <a href="#">1402551</a>		2 m <a href="#">1437300</a>	
	5 m <a href="#">1430145</a>			5 m <a href="#">1437313</a>	
	10 m <a href="#">1430158</a>				
<b>M12 socket, SPEEDCON, angled, 360° shielded</b>					
	1.5 m <a href="#">1430161</a>				
	3 m <a href="#">1430174</a>				
	5 m <a href="#">1430187</a>				
	10 m <a href="#">1430190</a>				
<b>M23 socket, straight, 360° shielded</b>					
		0.5 m <a href="#">1437326</a>			
		1 m <a href="#">1437339</a>			
		2 m <a href="#">1437342</a>			
		5 m <a href="#">1437355</a>			

Cable description	Cable type	Color coding	Pin assignment	
			M12	M23
PUR/PVC - black, twisted pair	35T	BN	1	1
		BU	2	2
		WH	3	3
		GN	4	4
		PK	5	5
		YE	6	6
		BK	7	7
		GY	8	8
		RD	9	9
		VT	10	10
		GYPK	11	11
		RDBU	12	12

		Technical data	
		M12 12-pos.	M23 12-pos.
Rated voltage	[V]	30	30
Rated current	[A]	1.5	1.5
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	PUR
M12 circular connector according to:		IEC 61076-2-101	IEC 61076-2-101
Degree of protection		IP65 / IP67	IP65 / IP67
Temperature data			
Connector/socket	[°C]	-25 ... 90	-40 -25 ... 125 90

**M12-SPEEDCON and M23 SAC cable, 17-pos., shielded**

**Notes:**  
For information about the cable qualities, see page 298



Free end	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
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Free end	Order No.	Order No.	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 socket, SPEEDCON, straight, 360° shielded	Order No.	Order No.	Order No.	Order No.
	0.5 m	1437368		
	1 m	1437371		
	2 m	1437384		
	5 m	1437397		
	1.5 m	1430284	5 m	1402421
	3 m	1430297	10 m	1402422
	5 m	1430307		
	10 m	1430310		

M12 socket, SPEEDCON, angled, 360° shielded	Order No.	Order No.	Order No.	Order No.
	1.5 m	1430323		
	3 m	1430336		
	5 m	1430349		
	10 m	1430352		

M23 socket, straight, 360° shielded	Order No.	Order No.	Order No.	Order No.
	0.5 m	1437407		
	1 m	1437410		
	2 m	1437423		
	5 m	1437436		

Cable description	Cable type	Color coding	Pin assignment	
			M12	M23
PUR/PVC - black, twisted pair	35T	BN	1	1
		BU	2	2
		WH	3	3
		GN	4	4
		PK	5	5
		YE	6	6
		BK	7	7
		GY	8	8
		RD	9	9
		VT	10	10
		GYPK	11	11
		RDBU	12	12
		WHGN	13	13
		BNGN	14	14
		WHYE	15	15
		YEEN	16	16
		WHGY	17	17

		Technical data	
		M12 17-pos.	M23 17-pos.
Rated voltage	[V]	30	30
Rated current	[A]	1.5	1.5
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	PUR
M12 circular connector according to:		IEC 61076-2-101	IEC 61076-2-101
Degree of protection		IP65 / IP67	IP65 / IP67
Temperature data			
Connector/socket	[°C]	-25 ... 90	-40 -25 ... 125 90



# Sensor/actuator cabling

## Assembled cables

### M17 and M23 plastic molded signal connectors

- Feedback connectors
- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug 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, socket, standard, 60 V, 3.6 A

M23, 12-position, socket, counter direction, 150 V, 9 A

M23, 12-position, socket, 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., pin



2 m	1624778
5 m	1624783
10 m	1624784

M23, 12-pos., pin



2 m	1619289
5 m	1619290
10 m	1619291

M23, 12-pos., pin







M23, 17-pos., pin



## Cable information:

Type/application	Color	Structure	Sheath/core material	Assignment	Temperature range
E00 Feedback	Orange	Shielded, 4 x 2 x 0.25 + 2 x 0.5	TPU/PP	1 - pink 2 - red 3 - black 4 - blue 5 - brown 6 - green 7 - violet 8 - gray 9 - exterior shield 10 - white 11 - n.c. 12 - brown	Mobile: -20°C ... 60°C Fixed: -40°C ... 80°C
E01 Feedback	Green	Shielded, 3 x 2 x 0.14 + 2 x 0.5 + 4 x 0.14 + 4 x 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, socket, standard, 150 V, 9 A		M23, 12-position, socket, standard, 150 V, 9 A		M23, 17-position, socket, standard, 100 V, 9 A		M23, 17-position, socket, 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	<a href="#">1619250</a>	2 m	<a href="#">1619285</a>	2 m	<a href="#">1619277</a>	2 m	<a href="#">1619286</a>
5 m	<a href="#">1619273</a>	5 m	<a href="#">1619283</a>	5 m	<a href="#">1619278</a>	5 m	<a href="#">1619287</a>
10 m	<a href="#">1619274</a>	10 m	<a href="#">1619284</a>	10 m	<a href="#">1619279</a>	10 m	<a href="#">1619288</a>
2 m	<a href="#">1619292</a>						
5 m	<a href="#">1619293</a>						
10 m	<a href="#">1619294</a>						
				2 m	<a href="#">1619295</a>		
				5 m	<a href="#">1619296</a>		
				10 m	<a href="#">1619297</a>		

# Sensor/actuator cabling

## Assembled cables

### M17 plastic molded power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug head temperature range -40°C to +105°C
- Standard contact numbering
- M17 standard thread - SPEEDCON fast locking system on request

M17, 3+PE-position, socket, standard, 630 V, 18 A

M17, 3+PE-position, socket, standard, 630 V, 26 A

M17, 5+PE-position, socket, 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., pin



2 m	1619304
5 m	1619305
10 m	1619306

2 m	1619326
5 m	1619327
10 m	1619328

M17, 5+PE-pos., pin



2 m	1619316
5 m	1619317
10 m	1619318

M17, 7+PE-pos., pin



## 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		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: -20°C ... 60°C Fixed: -40°C ... 80°C	

M17, 5+PE-position,  
socket, standard,  
630 V, 15 A



C01

Ordering data

Order No.

2 m [1619310](#)  
5 m [1619311](#)  
10 m [1619312](#)

M17, 4+3+PE-position,  
socket, standard,  
630 V, 12 A



D00

Ordering data

Order No.

2 m [1624785](#)  
5 m [1624786](#)  
10 m [1624792](#)

M17, 4+3+PE-position,  
socket, standard,  
630 V, 15 A



D01

Ordering data

Order No.

2 m [1619313](#)  
5 m [1619314](#)  
10 m [1619315](#)

2 m [1619319](#)  
5 m [1619321](#)  
10 m [1619322](#)

2 m [1624787](#)  
5 m [1624788](#)  
10 m [1624789](#)

2 m [1619323](#)  
5 m [1619324](#)  
10 m [1619325](#)

# Sensor/actuator cabling

## Assembled cables

### M23 plastic molded power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug 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, socket, standard, 630 V, 34 A

M23, 4+PE-position, socket, standard, 630 V, 34 A

M23, 5+PE-position, socket, standard, 630 V, 18 A



A00

A01

C02

Ordering data

Ordering data

Ordering data

Order No.

Order No.

Order No.

Free end



2 m	<a href="#">1624771</a>
5 m	<a href="#">1619622</a>
10 m	<a href="#">1624772</a>

2 m	<a href="#">1625776</a>
5 m	<a href="#">1625777</a>
10 m	<a href="#">1625775</a>

2 m	<a href="#">1618957</a>
5 m	<a href="#">1618958</a>
10 m	<a href="#">1618959</a>

M23, 3+PE-pos., pin



2 m	<a href="#">1624773</a>
5 m	<a href="#">1619606</a>
10 m	<a href="#">1624774</a>

M23, 4+PE-pos., pin



2 m	<a href="#">1625779</a>
5 m	<a href="#">1625781</a>
10 m	<a href="#">1625780</a>

M23, 5+PE-pos., pin



2 m	<a href="#">1618964</a>
5 m	<a href="#">1618965</a>
10 m	<a href="#">1618966</a>

### Cable information:

Type	Color	Structure	Sheath/core material	Assignment	Temperature range
A00 Energy	Gray	Shielded, 4 x 4.0	PVC/PVC	1 - nc 2 - black 3 PE - green/yellow	4 - black 1 5 - black 2 6 - nc Fixed: -40°C ... 90°C
A01 Energy	Gray	5 x 4.0	PVC/PVC	1 - black 4 2 - black 3 PE - green/yellow	4 - black 1 5 - black 2 6 - nc Fixed: -40°C ... 90°C
C02 Servo	Orange	Shielded, 4 x 1.50 + 2 x 1.5	PUR/TPM	1 - black U 2 - black V 6 - black W PE - green/yellow	4 - black, (BR1 brake) 5 - white, (BR2 brake) Flexible: -20°C ... 60°C Fixed: -40°C ... 80°C
C03 Servo	Orange	Shielded, 4 x 2.50 + 2 x 1.5	TPU/TPM		Flexible: -20°C ... 70°C Fixed: -50°C ... 80°C

M23, 5+PE-position,  
socket, standard,  
630 V, 18 A

M23, 5+PE-position,  
socket, standard,  
630 V, 26 A

M23, 5+PE-position,  
socket, standard,  
630 V, 26 A



C02

C03

C03

Ordering data		Ordering data		Ordering data	
Order No.		Order No.		Order No.	
2 m	1620415	2 m	1620396	2 m	1620418
5 m	1620416	5 m	1620397	5 m	1620419
10 m	1620417	10 m	1620398	10 m	1620420



	2 m	1620406	
	5 m	1620407	
	10 m	1620408	

# Sensor/actuator cabling

## Assembled cables

### M23 plastic molded power connectors

- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug 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, socket, standard, 250 V/630 V, 18 A

M23, 4+3+PE-position, socket, standard, 250 V/630 V, 18 A

M23, 4+3+PE-position, socket, 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 [1620399](#)  
5 m [1620400](#)  
10 m [1620401](#)

2 m [1620421](#)  
5 m [1620422](#)  
10 m [1620423](#)

2 m [1620402](#)  
5 m [1620404](#)  
10 m [1620405](#)

M23, 4+3+PE-pos., pin



2 m [1620409](#)  
5 m [1620410](#)  
10 m [1620411](#)

2 m [1620412](#)  
5 m [1620413](#)  
10 m [1620414](#)

## Cable information:

Type	Color	Structure	Sheath/core material	Assignment		Temperature range
D02 Servo	Orange	Shielded, 4 x 1.5 + 2 x 2 x 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. -)	<b>Flexible:</b> -20°C ... 60°C <b>Fixed:</b> -40°C ... 80°C
D03 Servo	Orange	Shielded, 4 x 2.5 + 2 x 2 x 0.75	PUR/TPM			<b>Flexible:</b> -20°C ... 60°C <b>Fixed:</b> -40°C ... 80°C

M23, 4+3+PE-position,  
socket, 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

### M40 plastic molded power connectors




- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug 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, socket, standard, 250 V/630 V, 26 A

M40, 2+3+PE-position, socket, standard, 250 V/630 V, 34 A

M40, 2+3+PE-position, socket, standard, 250 V/630 V, 44 A



	C03		C04		C05	
	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
<b>Free end</b>	2 m	1619329	2 m	1620311	2 m	1620316
	5 m	1620309	5 m	1620313	5 m	1620317
	10 m	1620310	10 m	1620314	10 m	1620318
<b>M40, 2+3+PE-pos., pin</b>	2 m	1620345	2 m	1620348	2 m	1620376
	5 m	1620346	5 m	1620349	5 m	1620377
	10 m	1620347	10 m	1620375	10 m	1620378
<b>M40, 4+3+PE-pos., pin</b>						
						

### Cable information:

Type	Color	Structure	Sheath/core material	Assignment	Temperature range	
<b>C03 Servo</b>	Orange	Shielded, 4 x 2.50 + 2 x 1.5	TPU/TPM	U - black U V - black V W - black W PE - green/yellow	+ - black, (BR1) -- white, (BR2)	<b>Mobile:</b> -20°C ... 70°C <b>Fixed:</b> -50°C ... 80°C
<b>C04 Servo</b>	Orange	Shielded, 4 x 4.00 + 2 x 1.5	TPU/TPM			<b>Mobile:</b> -20°C ... 70°C <b>Fixed:</b> -50°C ... 80°C
<b>C05 Servo</b>	Orange	Shielded, 4 x 6.00 + 2 x 1.5	PUR/TPE			<b>Mobile:</b> -40°C ... 80°C <b>Fixed:</b> -50°C ... 90°C
<b>C06 Servo</b>	Orange	Shielded, 4 x 10.0 + 2 x 1.5	TPU/TPM			<b>Mobile:</b> -20°C ... 70°C <b>Fixed:</b> -50°C ... 80°C
<b>D03 Servo</b>	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	+ - black 5 (brake) -- black 6 (brake) 1 - black 7 (motor temp. +) 2 - black 8 (motor temp. -)	<b>Mobile:</b> -20°C ... 60°C <b>Fixed:</b> -40°C ... 80°C
<b>D04 Servo</b>	Orange	Shielded, 4 x 4.0 + 2 x 1.5 + 2 x 1.0	PUR/TPM			<b>Mobile:</b> -30°C ... 80°C <b>Fixed:</b> -45°C ... 80°C
<b>D05 Servo</b>	Orange	Shielded, 4 x 6.0 + 2 x 1.5 + 2 x 1.0	PUR/TPM			<b>Mobile:</b> -30°C ... 60°C <b>Fixed:</b> -30°C ... 80°C
<b>D06 Servo</b>	Orange	Shielded, 4 x 10 + 2 x 1.5 + 2 x 1.0	PUR/TPM			<b>Mobile:</b> -20°C ... 60°C <b>Fixed:</b> -40°C ... 80°C

M40, 2+3+PE-position, socket, 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, socket, 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, socket, 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, socket, 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, socket, 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), and power
- Rated voltage: 630 V AC/850 V DC
- Contact material gold-plated CuZn
- Flame-retardant TPU handle material
- Knurl CuZn/Gd-Zn, nickel-plated
- IP67 protection
- Plug 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, socket, standard, 50 V/630 V, 26 A

M23, 4+4+4+PE-position, pin, standard, 50 V/630 V, 26 A

M23, 4+4+4+PE-position, socket, standard, 50 V/630 V, 26 A



	H00		H00		H00	
	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
<b>Free end</b>						
	2 m	1622224	2 m	1622227	2 m	1622230
	5 m	1622225	5 m	1622228	5 m	1622231
	10 m	1622226	10 m	1622229	10 m	1622232
<b>M23, 4+4+4+PE-pos., pin</b>						
	2 m	1622244				
	5 m	1622245				
	10 m	1622246				
<b>M23, 4+4+4+PE-pos., pin</b>						
	2 m	1622247				
	5 m	1622248				
	10 m	1622249				
<b>M23, 4+4+4+PE-pos., pin</b>						
					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 + 4 x 22 AWG/C + 4 x 0.5	PUR/TPE, polyolefin	A - black BK1 (2.5 mm <sup>2</sup> ) B - black BK2 (2.5 mm <sup>2</sup> ) C - black BK3 (2.5 mm <sup>2</sup> ) D - black BK4 (2.5 mm <sup>2</sup> ) PE - green/yellow (2.5 mm <sup>2</sup> )	1 - brown BN (0.5 mm <sup>2</sup> ) 2 - violet VT (0.5 mm <sup>2</sup> ) 3 - black BK (0.5 mm <sup>2</sup> ) 4 - green GN (0.5 mm <sup>2</sup> ) 5 - blue BU (0.34 mm <sup>2</sup> ) 6 - yellow YE (0.34 mm <sup>2</sup> ) 7 - white WH (0.34 mm <sup>2</sup> ) 8 - orange OG (0.34 mm <sup>2</sup> )	<b>Mobile:</b> -30°C ... 60°C <b>Fixed:</b> -40°C ... 80°C

M23, 4+4+4+PE-position,  
pin, 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 connector with Zener diode, cable type: PUR

**Notes:**  
For information about the cable qualities, see page 298



		Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Type	Diagram	Length	Order No.	Length	Order No.	Length	Order No.	Length	Order No.	Length	Order No.
Type A		1.5 m	1434989	0.3 m	1434882	0.3 m	1434934				
		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	Variable	1405650		
Type B		1.5 m	1435386	0.3 m	1435289	0.3 m	1435331				
		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	Variable	1405651		
Type BI		1.5 m	1435234	0.3 m	1435137	0.3 m	1435182				
		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	Variable	1405652		
Type C		1.5 m	1435535	0.3 m	1435438	0.3 m	1435483				
		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	Variable	1405653		
Type CI		1.5 m	1435687	0.3 m	1435580	0.3 m	1435632				
		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	Variable	1405654		

### 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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, type A valve connector with Zener diode and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1434921	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	Cable type	M12					Color coding	Pin assignment
		M8	M12	A	B(I)	C(I)		
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR	x	x	x	x	x	BK1: 1 BK2: 2 GNYE: 3, 4, 5	Pin assignment M12: 3, 4, 5
PUR, halogen-free - black, 1.0 mm <sup>2</sup>	121		x	x				
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		x	x	x	x		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		x	x	x	x		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		x	x	x	x		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		x	x	x	x		
PVC - black, 0.5 mm <sup>2</sup>	PVC	x	x	x	x	x	Color coding M8: BU: 3, BN: 4	Pin assignment M8: 3, 4
PVC - black, 0.75 mm <sup>2</sup>	534		x	x	x	x		
PVC - gray, 0.5 mm <sup>2</sup>	500		x	x	x	x		

#### Technical data

Connector	
Rated voltage	[V] 24
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85

**Valve connector with Zener diode, cable type: PVC**

**Notes:**

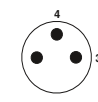
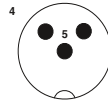
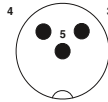
For information about the cable qualities, see page 298



Free end

M12 connector, SPEEDCON

M8 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 sensor/actuator cable, PVC, black, 4.5 m long, type A valve connector with Zener diode and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1434921	PVC	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	Cable type	M8	M12	A	B(I)	C(I)
PVC - black, 0.5 mm <sup>2</sup>	PVC	x	x	x	x	x
PVC - black, 0.75 mm <sup>2</sup>	534		x	x	x	x
PVC - gray, 0.5 mm <sup>2</sup>	500		x	x	x	x
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR	x	x	x	x	x
PUR, halogen-free - black, 1.0 mm <sup>2</sup>	121		x	x		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		x	x	x	x
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		x	x	x	x
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		x	x	x	x
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		x	x	x	x

Color coding		Pin assignment M12
BK1	1	3
BK2	2	4
GNYE		5

Color coding M8		Pin assignment M8
BU		3
BN		4

**Technical data**

**Connector**

Rated voltage	[V]	24
Rated current	[A]	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		
Connector/socket	[°C]	-25 ... 90
Valve connectors	[°C]	-20 ... 85

# Sensor/actuator cabling

## Assembled cables

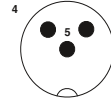
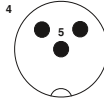
### Valve connector with 24 V varistor, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298

Free end

M12 connector, SPEEDCON



		Ordering data		Ordering data		Ordering data	
Type	Diagram	Length	Order No.	Length	Order No.	Length	Order No.
Type A		1.5 m	1443103				
		3 m	1443116				
		5 m	1443129				
		10 m	1443132				
		Variable	1400876	Variable	1400874	Variable	1400875
Type B		1.5 m	1443145				
		3 m	1443158				
		5 m	1443161				
		10 m	1443174				
		Variable	1400882	Variable	1400880	Variable	1400881
Type BI		1.5 m	1443187				
		3 m	1443190				
		5 m	1443200				
		10 m	1443213				
		Variable	1400879	Variable	1400877	Variable	1400878
Type C		1.5 m	1443226				
		3 m	1443239				
		5 m	1443242				
		10 m	1443255				
		Variable	1400894	Variable	1400892	Variable	1400893
Type CI		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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, type B valve connector with 24 V varistor and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400880	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

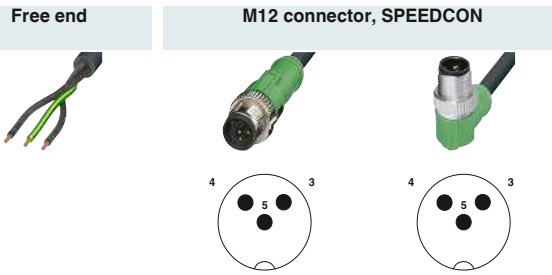
Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR	BK1 1 BK2 2 GNYE	3 4 5
PUR, halogen-free - black, 1.0 mm <sup>2</sup> Type A valve connector only	121		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		
PVC - black, 0.5 mm <sup>2</sup>	PVC		
PVC - black, 0.75 mm <sup>2</sup>	534		
PVC - gray, 0.5 mm <sup>2</sup>	500		

#### Technical data

Connector	
Rated voltage	[V] 24
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85

**Valve connector with 24 V varistor, cable type: PVC**

**Notes:**  
For information about the cable qualities, see page 298



		Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.	
Type A		10 m	1415908				
		10 m	1415909				
		10 m	1415910				
		10 m	1415911				
		Variable	1400876	Variable	1400874	Variable	1400875
Type B		1.5 m	1415925				
		3 m	1415926				
		5 m	1415927				
		10 m	1415928				
		Variable	1400882	Variable	1400880	Variable	1400881
Type BI		1.5 m	1415931				
		3 m	1415932				
		5 m	1415933				
		10 m	1415934				
		Variable	1400879	Variable	1400877	Variable	1400878
Type C		1.5 m	1415935				
		3 m	1415936				
		5 m	1415937				
		10 m	1415938				
		Variable	1400894	Variable	1400892	Variable	1400893
Type CI		1.5 m	1415941				
		3 m	1415942				
		5 m	1415943				
		10 m	1415944				
		Variable	1400891	Variable	1400889	Variable	1400890

**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 sensor/actuator cable, PVC, black, 4.5 m long, type B valve connector with 24 V varistor and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400880	PVC	4.5
Minimum order amount = 25		
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 <sup>2</sup>	PVC	BK1 1, BK2 2	3, 4, 5
PVC - black, 0.75 mm <sup>2</sup>	534		
PVC - gray, 0.5 mm <sup>2</sup>	500		
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR		
PUR, halogen-free - black, 1.0 mm <sup>2</sup> Type A valve connector only	121		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		

Technical data	
Connector	
Rated voltage	[V] 24
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85



# Sensor/actuator cabling

## Assembled cables

### Valve connector with 230 V varistor, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298

Free end



#### Ordering data

#### Type A



	Order No.
1.5 m	1402985
3 m	1400694
5 m	1400648
10 m	1402986

#### Technical data

		Connector
Rated voltage	[V]	230
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

## Valve connector with 230 V varistor, cable type: PVC

### Notes:

For information about the cable qualities, see page 298

### Free end



### Ordering data

#### Type A



	Order No.
1.5 m	<a href="#">1415912</a>
3 m	<a href="#">1415913</a>
5 m	<a href="#">1415914</a>
10 m	<a href="#">1415915</a>

### Technical data

		Connector
Rated voltage	[V]	230
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

# Sensor/actuator cabling

## Assembled cables

### Valve connector with energy-reducing function, 1 A




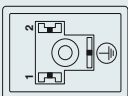

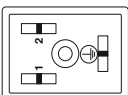




Free end  
1 A



**Notes:**

For information about the cable qualities, see page 298

**Ordering data**

Type	Order No.
<b>Type A</b>  	1.5 m <a href="#">1413115</a>
	3 m <a href="#">1413114</a>
	5 m <a href="#">1413116</a>
	10 m <a href="#">1413118</a>
<b>Type B</b>  	1.5 m <a href="#">1401294</a>
	3 m <a href="#">1401295</a>
	5 m <a href="#">1401338</a>
	10 m <a href="#">1401339</a>
<b>Type BI</b>  	1.5 m <a href="#">1401340</a>
	3 m <a href="#">1401350</a>
	5 m <a href="#">1401358</a>
	10 m <a href="#">1401359</a>
<b>Type C</b>  	1.5 m <a href="#">1401434</a>
	3 m <a href="#">1401435</a>
	5 m <a href="#">1401448</a>
	10 m <a href="#">1401465</a>
<b>Type CI</b>  	1.5 m <a href="#">1401466</a>
	3 m <a href="#">1401542</a>
	5 m <a href="#">1401544</a>
	10 m <a href="#">1401617</a>

**Technical data**

		Connector
Rated voltage	[V]	24
Rated current	[A]	1
Material contact surface valve connector		Ag
Degree of protection		IP67
Temperature data		
Valve connectors	[°C]	-25 ... 80

**Valve connector  
with energy-reducing function,  
4 A**

Free end  
4 A



**Notes:**

For information about the cable qualities, see page 298

**Ordering data**

**Type A**



	Order No.
1.5 m	1400827
3 m	1401131
5 m	1401136
10 m	1401168

**Technical data**

		Connector
Rated voltage	[V]	24
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 connector with freewheeling diode, cable type: PUR

**Notes:**

For information about the cable qualities, see page 298

Free end



**Type A**



**Ordering data**

	Order No.
1.5 m	1400589
3 m	1400588
5 m	1400798
10 m	1400799

**Technical data**

		Connector
Rated voltage	[V]	24
Rated current	[A]	2
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

## Valve connector with freewheeling diode, cable type: PVC

### Notes:

For information about the cable qualities, see page 298

### Free end



### Ordering data

#### Type A



	Order No.
1.5 m	1415916
3 m	1415917
5 m	1415918
10 m	1415919

### Technical data

		Connector
Rated voltage	[V]	24
Rated current	[A]	2
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-20 ... 85

# Sensor/actuator cabling

## Assembled cables

### Valve connector without wiring, cable type: PUR

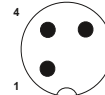
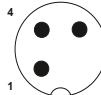
**Notes:**

For information about the cable qualities, see page 298

Free end













M12 connector, SPEEDCON



Ordering data

Ordering data

Ordering data

Type	Order No.	Order No.	Order No.	
<b>Type A</b>  	1.5 m	1402983		
	3 m	1439544		
	5 m	1402984		
	10 m	1400732		
	Variable	1400897	Variable 1400895	Variable 1400896
<b>Type B</b>  	Variable	1400909	Variable 1400903	Variable 1400905
	<b>Type BI</b>  	5 m	1439065	
10 m		1438862		
Variable		1400902	Variable 1400900	Variable 1400901
<b>Type C</b>  	5 m	1400814		
	10 m	1400641		
	Variable	1400921	Variable 1400919	Variable 1400920
<b>Type CI</b>  	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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, unwired type C valve connector and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400919	PUR	4.5

Minimum order amount = 25

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 <sup>2</sup>	PUR	BK1 1, BK2 2, GNYE	3, 4, 5
PUR, halogen-free - black, 1.0 mm <sup>2</sup> Type A valve connector only	121		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		
PVC - black, 0.5 mm <sup>2</sup>	PVC		
PVC - black, 0.75 mm <sup>2</sup>	534		
PVC - gray, 0.5 mm <sup>2</sup>	500		

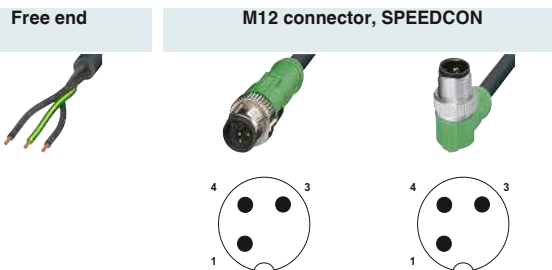
#### Technical data

##### Connector

Rated voltage	[V]	60
Rated current	[A]	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		
Connector/socket	[°C]	-25 ... 90
Valve connectors	[°C]	-20 ... 85

**Valve connector without wiring, cable type: PVC**

**Notes:**  
For information about the cable qualities, see page 298



		Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.	
<b>Type A</b>		1.5 m	1415920				
		3 m	1415921				
		5 m	1402977				
		10 m	1402978				
		Variable	1400897	Variable	1400895	Variable	1400896
<b>Type B</b>		Variable	1400909	Variable	1400903	Variable	1400905
		<b>Type BI</b>		5 m	1439065		
	10 m	1438862					
	Variable	1400902		Variable	1400900	Variable	1400901
<b>Type C</b>		5 m	1400814				
		10 m	1400641				
		Variable	1400921	Variable	1400919	Variable	1400920
<b>Type CI</b>		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 sensor/actuator cable, PVC, black, 4.5 m long, unwired type C valve connector and a 3-pos. straight M12 connector, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1400919	PVC	4.5
Minimum order amount = 25		
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 <sup>2</sup>	PVC	BK1 1, BK2 2	3
PVC - black, 0.75 mm <sup>2</sup>	534		4
PVC - gray, 0.5 mm <sup>2</sup>	500		5
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR		
PUR, halogen-free - black, 1.0 mm <sup>2</sup> Type A valve connector only	121		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		

Technical data	
Connector	
Rated voltage	[V] 60
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85



# Sensor/actuator cabling

## Assembled cables

### Valve connector, pressure switch with 2 LEDs, cable type: PUR

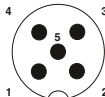
**Notes:**

For information about the cable qualities, see page 298

Free end



M12 connector, SPEEDCON



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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, 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] Max. 40 m
1435072	PUR	4.5

Minimum order amount = 25

**Increments:**  
0.2 ... 3 m = 0.1 m  
> 3 m = 0.5 m

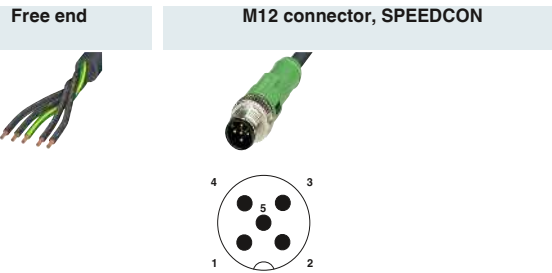
Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR	BK1 1 BK2 2	1 2
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240	BK3 3 BK2 4	4 3
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280	GNYE	5
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		
PVC - black, 0.5 mm <sup>2</sup>	PVC		
PVC - black, 0.75 mm <sup>2</sup>	534		
PVC - gray, 0.5 mm <sup>2</sup>	500		

#### Technical data

Connector	
Rated voltage	[V] 24
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85

**Valve connector, pressure switch with 2 LEDs, cable type: PVC**

**Notes:**  
For information about the cable qualities, see page 298



		Ordering data		Ordering data		Ordering data	
Type AD		Order No.	Order No.	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 sensor/actuator cable, PVC, black, 4.5 m long, 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] Max. 40 m
1435072	PVC	4.5
Minimum order amount = 25 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 <sup>2</sup>	PVC	BK1 <b>1</b>	1
PVC - black, 0.75 mm <sup>2</sup>	534	BK2 <b>2</b>	2
PVC - gray, 0.5 mm <sup>2</sup>	500	BK3 <b>3</b>	4
		BK2 <b>4</b>	3
		GNYE	5
PUR, halogen-free - black, 0.5 mm <sup>2</sup>	PUR		
PUR, halogen-free - yellow, 0.5 mm <sup>2</sup>	240		
PUR, halogen-free - gray, 0.5 mm <sup>2</sup>	280		
PUR irradiated - orange, 0.5 mm <sup>2</sup>	150		
PUR, highly flexible - gray, 0.5 mm <sup>2</sup>	800		

Technical data	
Connector	
Rated voltage	[V] 24
Rated current	[A] 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	
Connector/socket	[°C] -25 ... 90
Valve connectors	[°C] -20 ... 85

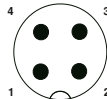
# Sensor/actuator cabling

## Assembled cables

### Valve connector, pressure switch without wiring

Free end

M12 connector, SPEEDCON



**Notes:**



For information about the cable qualities, see page 298



Ordering data

Ordering data

Ordering data

Type AD	Order No.	Order No.	Order No.
 	3 m <b>1438956</b>	Variable <b>1400899</b>	Variable <b>1400898</b>

### Ordering data for unwired type AD valve connector cables with variable cable:

For a sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, 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 <sup>2</sup>	<b>PUR</b>	BK1 <b>1</b> BK2 <b>2</b>	1 2
PVC - black, 0.5 mm <sup>2</sup>	<b>PVC</b>	BK3 <b>3</b>	4
PVC - black, 0.75 mm <sup>2</sup>	<b>534</b>	GNYE	5

Order No.	Cable type	Length [m] Max. 40 m
<b>1400898</b>	<b>PUR</b>	<b>4.5</b>
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

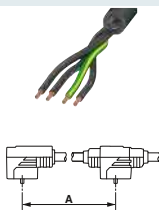
#### Technical data

		Connector
Rated voltage	[V]	60
Rated current	[A]	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		
Connector/socket	[°C]	-25 ... 90
Valve connectors	[°C]	-20 ... 85

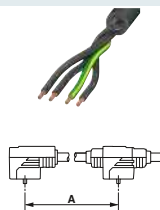
**Double valve connector with Zener diode**

**Notes:**  
For information about the cable qualities, see page 298

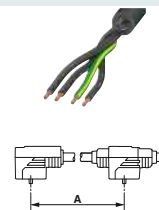
Free end  
A = 10 cm



Free end  
A = 15 cm





Free end  
A = 20 cm



Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.		Order No.		Order No.

<b>Type A</b>  	1.5 m	<b>1457982</b>	1.5 m	<b>1458020</b>	1.5 m	<b>1458062</b>
	3 m	<b>1457995</b>	3 m	<b>1458033</b>	3 m	<b>1458075</b>
	5 m	<b>1458004</b>	5 m	<b>1458046</b>	5 m	<b>1458088</b>
	10 m	<b>1458017</b>	10 m	<b>1458059</b>	10 m	<b>1458091</b>

<b>Type B</b>  	1.5 m	<b>1458169</b>	1.5 m	<b>1458208</b>	1.5 m	<b>1458240</b>
	3 m	<b>1458172</b>	3 m	<b>1458211</b>	3 m	<b>1458253</b>
	5 m	<b>1458185</b>	5 m	<b>1458224</b>	5 m	<b>1458266</b>
	10 m	<b>1458198</b>	10 m	<b>1458237</b>	10 m	<b>1458279</b>

<b>Type BI</b>  	1.5 m	<b>1458347</b>	1.5 m	<b>1458389</b>	1.5 m	<b>1458428</b>
	3 m	<b>1458350</b>	3 m	<b>1458392</b>	3 m	<b>1458431</b>
	5 m	<b>1458363</b>	5 m	<b>1458402</b>	5 m	<b>1458444</b>
	10 m	<b>1458376</b>	10 m	<b>1458415</b>	10 m	<b>1458457</b>

**Technical data**

**Connector**

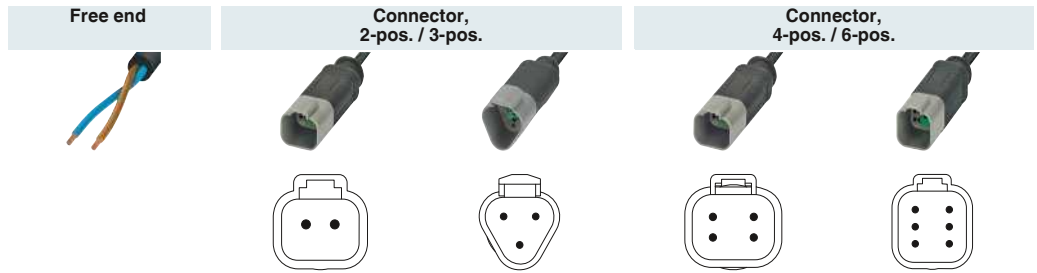
Rated voltage	[V]	24
Rated current	[A]	4
Material contact surface valve connector		Sn
Degree of protection		IP65 / IP67
Temperature data		
Valve connectors	[°C]	-25 ... 85

# Sensor/actuator cabling

## Assembled cables

### Valve connector, Deutsch DT06 and DT04, without wiring

**Notes:**  
For information about the cable qualities, see page 298



		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	<a href="#">1414999</a>	1.5 m	<a href="#">1415012</a>	1.5 m	<a href="#">1415030</a>
						3 m	<a href="#">1415000</a>	3 m	<a href="#">1415013</a>	3 m	<a href="#">1415031</a>
						5 m	<a href="#">1415001</a>	5 m	<a href="#">1415014</a>	5 m	<a href="#">1415032</a>
						10 m	<a href="#">1415002</a>	10 m	<a href="#">1415015</a>	10 m	<a href="#">1415033</a>
<b>Socket, 2-pos.</b>											
		1.5 m	<a href="#">1410723</a>	0.3 m	<a href="#">1414991</a>						
		3 m	<a href="#">1410724</a>	0.6 m	<a href="#">1414992</a>						
		5 m	<a href="#">1410726</a>	1.5 m	<a href="#">1414993</a>						
		10 m	<a href="#">1410727</a>	3 m	<a href="#">1414994</a>						
<b>Socket, 3-pos.</b>											
		1.5 m	<a href="#">1414995</a>			0.3 m	<a href="#">1415003</a>				
		3 m	<a href="#">1414996</a>			0.6 m	<a href="#">1415004</a>				
		5 m	<a href="#">1414997</a>			1.5 m	<a href="#">1415005</a>				
		10 m	<a href="#">1414998</a>			3 m	<a href="#">1415006</a>				
<b>Socket, 4-pos.</b>											
		1.5 m	<a href="#">1415007</a>					0.3 m	<a href="#">1415016</a>		
		3 m	<a href="#">1415008</a>					0.6 m	<a href="#">1415017</a>		
		5 m	<a href="#">1415010</a>					1.5 m	<a href="#">1415019</a>		
		10 m	<a href="#">1415011</a>					3 m	<a href="#">1415025</a>		
<b>Socket, 6-pos.</b>											
		1.5 m	<a href="#">1415026</a>							0.3 m	<a href="#">1415035</a>
		3 m	<a href="#">1415027</a>							0.6 m	<a href="#">1415036</a>
		5 m	<a href="#">1415028</a>							1.5 m	<a href="#">1415037</a>
		10 m	<a href="#">1415029</a>							3 m	<a href="#">1415038</a>

#### Technical data

		Connector
Rated voltage	[V]	48
Rated current	[A]	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		
Connector/socket	[°C]	-20 ... 85

**Valve connector,  
Deutsch DT06-2S  
with LED**

Free end

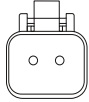


**Notes:**

For information about the cable qualities, see page 298

**Ordering data**

Socket, 2-pos.



	Order No.
1.5 m	1410728
3 m	1410729
5 m	1410730
10 m	1410731

**Technical data**

**Connector**

Rated voltage	[V]	24
Rated current	[A]	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		
Connector/socket	[°C]	-20 ... 85

## Assembled cables

### Valve connector, Deutsch DT06-2S with freewheeling diode

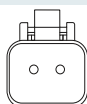
**Notes:**

For information about the cable qualities, see page 298

Free end



Socket, 2-pos.



**Ordering data**

	Order No.
1.5 m	1410732
3 m	1410733
5 m	1410734
10 m	1410735

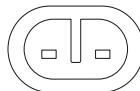
**Technical data**

		Connector
Rated voltage	[V]	24
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		
Connector/socket	[°C]	-20 ... 85

**Valve connector, Superseal**

Free end

Connector



**Notes:**

For information about the cable qualities, see page 298

Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
		1.5 m	<a href="#">1410752</a>
		3 m	<a href="#">1410753</a>
		5 m	<a href="#">1410755</a>
		10 m	<a href="#">1410756</a>

**Socket, straight**



1.5 m	<a href="#">1410748</a>	0.3 m	<a href="#">1410757</a>
3 m	<a href="#">1410749</a>	0.6 m	<a href="#">1410759</a>
5 m	<a href="#">1410750</a>	1.5 m	<a href="#">1410760</a>
10 m	<a href="#">1410751</a>	3 m	<a href="#">1410761</a>

**Technical data**

**Connector**

Rated voltage	[V]	24
Rated current	[A]	8
Contact material		CuZn
Material of grip body		PA
Material, knurls		not available
Degree of protection		IP67
Temperature data		
Connector/socket	[°C]	-20 ... 85



# Sensor/actuator cabling

## Distributors and adapters

### M8 Y cable, 3-pos., two cable outlets

#### M8 Y connector



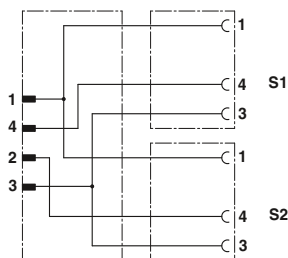
#### Notes:

For information about the cable qualities, see page 298

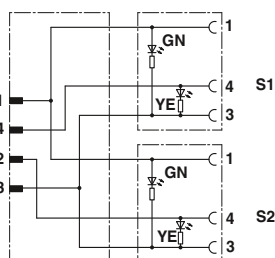
#### Ordering data

Free end	Order No.
	1.5 m 1458622
	3 m 1458635
	5 m 1458648
	10 m 1458651
<b>M8 socket, straight</b> 	0.3 m 1458664
	0.6 m 1458677
	1.5 m 1458680
	3 m 1458693
<b>M8 socket, angled</b> 	0.3 m 1458703
	0.6 m 1458716
	1.5 m 1458729
	3 m 1458732
<b>M8 socket, angled, with 2 LEDs</b> 	0.3 m 1458745
	0.6 m 1458758
	1.5 m 1458761
	3 m 1458774

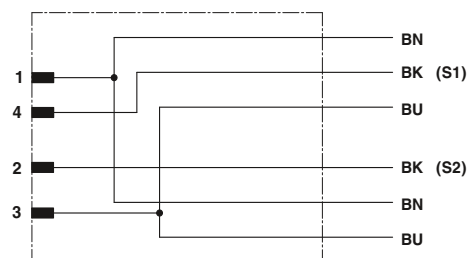
Cable description	Cable type	Color coding	Pin assignment, 3-pos.	
			Connector	Socket
PUR, halogen free - black	PUR	BN	1	1
		BK	2 + 4	4
		BU	3	3



Contact assignment of the M8 connector and the M8 sockets



Contact assignment of the M8 connector and the M8 sockets, with LEDs

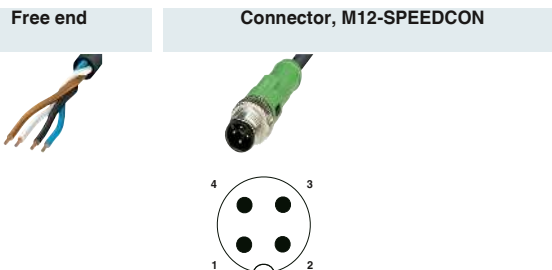


Contact assignment of the M8 Y connector with LEDs

		Technical data	
		Y-M8	Y-M8 with LEDs
Rated voltage	[V]	30	24
Rated current	[A]	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 according to:		IEC 61076-2-104	IEC 61076-2-104
Degree of protection		IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data			
Connector/socket	[°C]	-25 ... 90	-25 ... 90

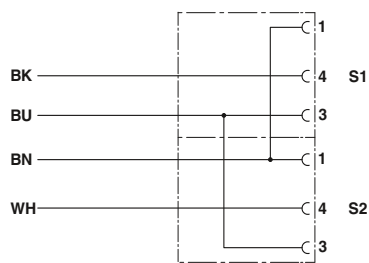
**M12 Y-cable, 4-pos., one cable outlet**

**Notes:**  
 For information about the cable qualities, see page 298  
 Further combinations on request.

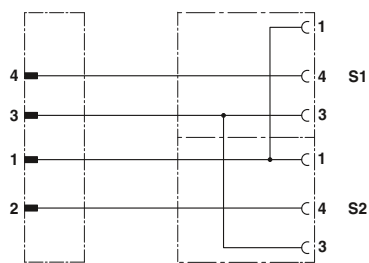


Y-connector with 2 x M12-SPEEDCON socket	Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.
	1.5 m	1436165	0.3 m	1436204		
	3 m	1436178	0.6 m	1436217		
	5 m	1436181	1.5 m	1436220		
	10 m	1436194	3 m	1436233		

Cable description	Cable type	Suitable for:	Color coding	Pin assignment		
				M12 4-pos.	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	[V] 60
Rated current	[A] 4
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
M12 circular connector according to:	IEC 61076-2-101
Degree of protection	IP65 / IP67
Temperature data	
Connector/socket	[°C] -25 ... 90

# Sensor/actuator cabling

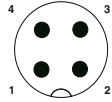
## Distributors and adapters

### M12 Y-cable, 4-pos., two cable outlets

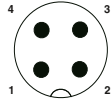
**Notes:**  
For information about the cable qualities, see page 298



M12 Y connector



M12 Y connector, SPEEDCON



Free end	Ordering data		Ordering data		Ordering data
	Order No.	Order No.	Order No.	Order No.	Order No.
	1.5 m	1669686	1.5 m	1524200	
	3 m	1669699	3 m	1524213	
	5 m	1669754	5 m	1524226	
	10 m	1694473	10 m	1524239	
	Variable	1697357	Variable	1524242	
<b>M8 socket, straight</b> 	0.3 m	1671331			
	0.6 m	1671344			
	1.5 m	1671357			
	3 m	1671360			
	Variable	1697399	Variable	1541885	
<b>M8 socket, angled</b> 	0.3 m	1671373			
	0.6 m	1671386			
	1.5 m	1671399			
	3 m	1671409			
	Variable	1697409	Variable	1541898	
<b>M8 socket, angled, with 2 LEDs</b> 	0.3 m	1671412			
	0.6 m	1671425			
	1.5 m	1671438			
	3 m	1671441			
	Variable	1697412	Variable	1541908	
<b>M12 socket, straight (2nd column M12-SPEEDCON socket)</b> 	Variable	1699766	Variable	1542198	
	Variable	1506419	Variable	1542004	
<b>M12 socket, angled (2nd column M12-SPEEDCON socket)</b> 	0.3 m	1668959			
	0.6 m	1668962			
	1.5 m	1668975			
	3 m	1668988			
	Variable	1697360	Variable	1542169	
<b>M12 socket, straight, pin 2 - 4 bridged (2nd column M12-SPEEDCON socket)</b> 	0.3 m	1668991			
	0.6 m	1669000			
	1.5 m	1669013			
	3 m	1669026			
	Variable	1697373	Variable	1542172	
<b>M12 socket, angled, pin 2 - 4 bridged (2nd column M12-SPEEDCON socket)</b> 	0.3 m	1669039			
	0.6 m	1669042			
	1.5 m	1669055			
	3 m	1669068			
	Variable	1697386	Variable	1542185	

**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 sensor/actuator cable, PUR, halogen-free, black, 4.5 m long, with a straight 4-pos. M12 Y-connector and two straight M12 sockets, the ordering data is as follows:

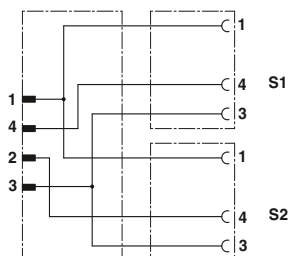
Order No.	Cable type	Length [m] Max. 40 m
1699766	PUR	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

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

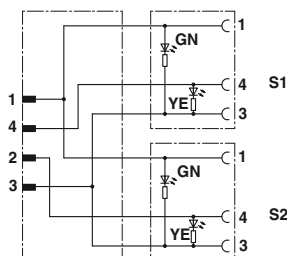
Color coding	Pin assignment, 3-pos.	
	Connector	Socket
BN	1	1
BK	2 + 4	4
BU	3	3

With a combination of M12 and M8 connectors, the limiting M8 value applies to the rated voltage.

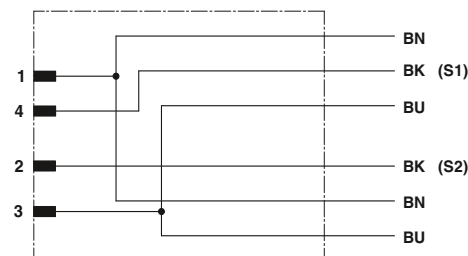
	Technical data		Technical data		Technical data		Technical data	
	Y-M8	Y-M8 with LEDs	Y-M12	Y-M12 with LEDs	Y-M12	Y-M12 with LEDs	Y-M12	Y-M12 with LEDs
Rated voltage [V]	60	24	250	24	250	24	250	24
Rated current [A]	4	4	4	4	4	4	4	4
Contact material	CuSn	CuSn	CuSn	CuSn	CuSn	CuSn	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au	Ni/Au	Ni/Au	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	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
M8 circular connector according to:	IEC 61076-2-104	IEC 61076-2-104	-	-	-	-	-	-
M12 circular connector according to:	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101	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	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68	IP65 / IP67 / IP68
Temperature data								
Connector/socket	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



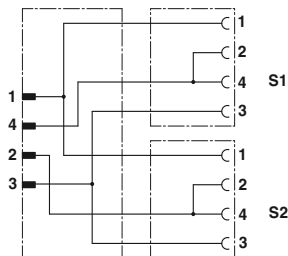
Contact assignment of the M12 connector and the M8/M12 sockets



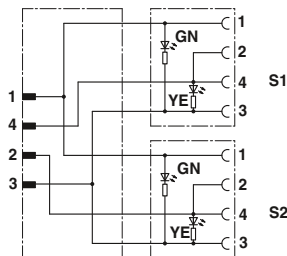
Contact assignment of the M12 connector and the M8 sockets, with LEDs



Contact assignment of the M12 Y-connector



Contact assignment of the M12 connector and the M12 socket, bridged



Contact assignment of the M12 connector and the M12 socket, with LEDs, bridged

# Sensor/actuator cabling

## Distributors and adapters

### M8/M12 Y-distributors, M12 T-distributors

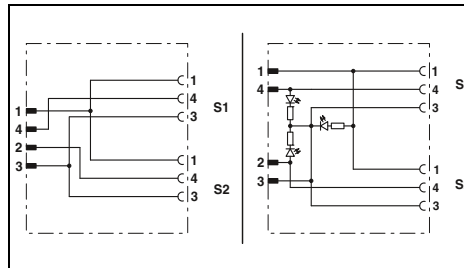


3-pos.

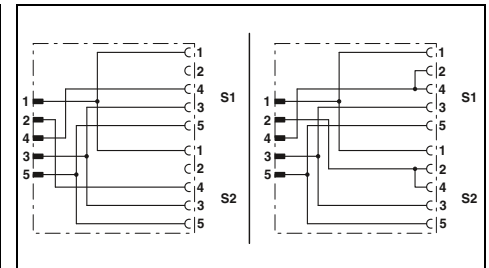


3+PE-pos.

ERC



ERC



#### Technical data

	Without LED	With 3 LEDs
General data		
M8 circular connector according to:	IEC 61076-2-104	-
M12 circular connector according to:	IEC 61076-2-101	-
Pollution degree	3	-
Degree of protection	IP65/IP67	-
Electrical data		
Rated voltage	60 V	24 V
Rated current	4 A	4 A
Material data		
Contact material	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au
Inflammability class according to UL 94	HB	HB
Temperature data		
Connector/socket	-25 ... 90	-25 ... 90

#### Ordering data

Description	Center distance	Without LED		With 3 LEDs	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>M8/M12 Y-distributor</b>					
M8 connector to 2x M8 sockets	12 mm	1696183	5		
M12 connector to 2x M8 sockets	12 mm	1683471	5		
<b>M8/M12 SPEEDCON Y-distributor</b>					
M12 connector to 2x M8 sockets	12 mm	1523984	5		
<b>M12 Y-distributor</b>					
M12 connector to 2x M12 sockets	18 mm				
M12 connector to 2x M12 sockets	21 mm				
<b>M12 SPEEDCON Y-distributor</b>					
M12 connector to 2x M12 sockets	18 mm				
M12 connector to 2x M12 sockets	21 mm			1403627	5
<b>T-distributor</b>					
M12 connector to 2x M12 sockets					

#### Technical data

	Not bridged	Pins 2 and 4 bridged
General data		
M8 circular connector according to:	-	-
M12 circular connector according to:	IEC 61076-2-101	-
Pollution degree	3	-
Degree of protection	IP65/IP67	-
Electrical data		
Rated voltage	60 V	60 V
Rated current	4 A	4 A
Material data		
Contact material	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au
Inflammability class according to UL 94	HB	HB
Temperature data		
Connector/socket	-25 ... 90	-25 ... 90

#### Ordering data

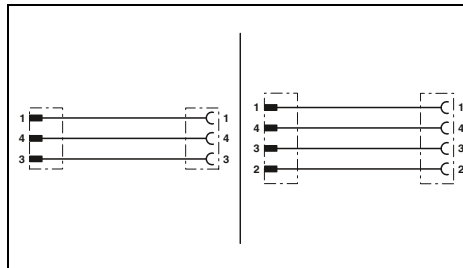
Description	Center distance	Not bridged		Pins 2 and 4 bridged	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>M8/M12 Y-distributor</b>					
M8 connector to 2x M8 sockets	12 mm				
M12 connector to 2x M8 sockets	12 mm				
<b>M8/M12 SPEEDCON Y-distributor</b>					
M12 connector to 2x M8 sockets	12 mm				
<b>M12 Y-distributor</b>					
M12 connector to 2x M12 sockets	18 mm	1683455	5	1683413	5
M12 connector to 2x M12 sockets	21 mm	1511789	5	1514016	5
<b>M12 SPEEDCON Y-distributor</b>					
M12 connector to 2x M12 sockets	18 mm	1523971	5	1523968	5
M12 connector to 2x M12 sockets	21 mm				
<b>T-distributor</b>					
M12 connector to 2x M12 sockets				1519723	1





3-, 4-pos.

ERC



#### Technical data

General data	3-pos.		4-pos.	
	M8 circular connector according to:	IEC 61076-2-104		
M12 circular connector according to:	IEC 61076-2-101			
Pollution degree	3			
Degree of protection	IP65/IP67			
Electrical data	60 V		30 V	
Rated voltage	60 V		30 V	
Rated current	4 A			
Material data	CuSn			
Contact material	CuSn			
Contact surface material	Ni/Au			
Inflammability class according to UL 94	HB			
Temperature data	-25 ... 90			
Connector/socket	[°C]			

#### Ordering data

Description	3-pos.		4-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Adapter</b>				
M8 connector to M12 socket	<a href="#">1519749</a>	5	<a href="#">1519736</a>	5
M12 connector to M8 socket	<a href="#">1519752</a>	5	<a href="#">1519765</a>	5
M12 connector to M8 snap-in socket	<a href="#">1519781</a>	5	<a href="#">1519778</a>	5

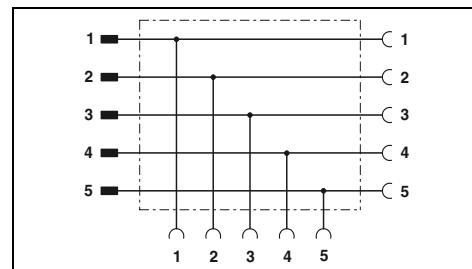
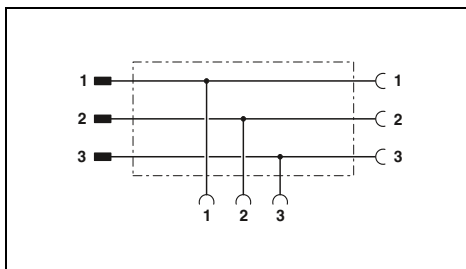
7/8" T-distributors, parallel



3-pos.



5-pos.



Technical data

General data	
Pollution degree	3
Degree of protection	IP65/IP67
Electrical data	
Rated voltage	600 V
Rated current	13 A (at 25 °C)
Material data	
Contact material	CuZn
Contact surface material	AU
Inflammability class according to UL 94	HB
Temperature data	
Connector/socket	[°C] -40 ... 80

Ordering data

Description	
<b>7/8" T-distributor, 7/8"-16UNF socket to 7/8"-16UNF socket and 7/8"-16UNF connector</b>	
3-pos.	
5-pos.	

Type	Order No.	Pcs. / Pkt.
<b>SAC-3P-MINT/2XMIN VP</b>	<b>1412393</b>	1

Technical data

General data	
Pollution degree	3
Degree of protection	IP65/IP67
Electrical data	
Rated voltage	250 V
Rated current	10 A (at 25 °C)
Material data	
Contact material	CuZn
Contact surface material	AU
Inflammability class according to UL 94	HB
Temperature data	
Connector/socket	-40 ... 80

Ordering data

Type	Order No.	Pcs. / Pkt.
<b>SAC-5P-MINT/2XMIN VP</b>	<b>1543977</b>	1







Valve connector type B

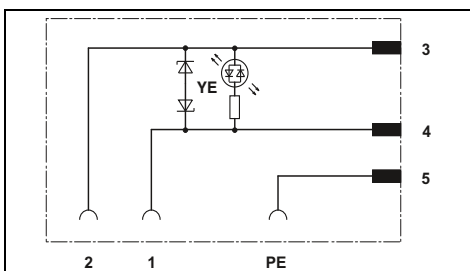


Valve connector type BI



DESINA valve connector type A

ERC (R)



Technical data

IEC 61076-2-101  
EN 175301-803

24 V AC/DC  
4 A  
≤ 55 V  
Yellow LED

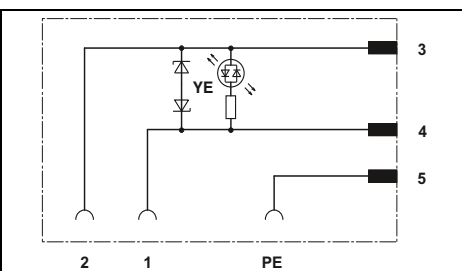
CuSn  
Sn  
CuSn  
Ni/Au  
TPU  
HB

-25 °C ... 85 °C (valve connector)

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

ERC (R)



Technical data

IEC 61076-2-101  
-

24 V AC/DC  
4 A  
≤ 55 V  
Yellow LED

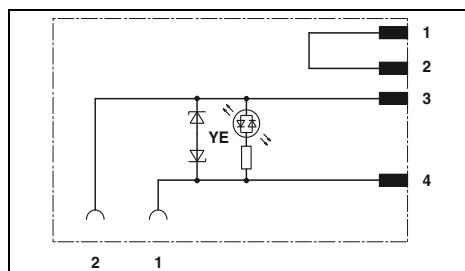
CuSn  
Sn  
CuSn  
Ni/Au  
TPU  
HB

-25 °C ... 85 °C (valve connector)

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

ERC (R)



Technical data

IEC 61076-2-101  
EN 175301-803

24 V AC/DC  
4 A  
≤ 55 V  
Yellow LED

CuSn  
Sn  
CuSn  
Ni/Au  
TPU  
HB

-25 °C ... 85 °C (valve connector)

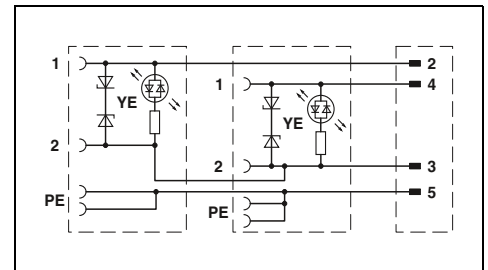
Ordering data

Type	Order No.	Pcs. / Pkt.
SAC-4P-MS/A-1L-Z D SCO	1458583	1

### Double valve connector adapter with M12-SPEEDCON connector, type A



Type A



General data	
M12 circular connector according to:	IEC 61076-2-101
Valve connector according to:	EN 175301-803
Degree of protection	IP65/IP67
Electrical data	
Rated voltage	24 V AC/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]

#### Technical data

IEC 61076-2-101  
EN 175301-803  
IP65/IP67

24 V AC/DC  
4 A

CuSn  
CuSn  
Ni/Au  
Sn  
TPU

-25 ... 85

Description
<p><b>Double valve connector</b>, connector distance: 10 cm, valve connector leading to valve connector adapter with:</p> <ul style="list-style-type: none"> <li>- Vertical M12 SPEEDCON connector</li> <li>- Horizontal M12 SPEEDCON connector</li> </ul>
<p><b>Double valve connector</b>, connector distance: 15 cm, valve connector leading to valve connector adapter with:</p> <ul style="list-style-type: none"> <li>- Vertical M12 SPEEDCON connector</li> <li>- Horizontal M12 SPEEDCON connector</li> </ul>
<p><b>Double valve connector</b>, connector distance: 20 cm, valve connector leading to valve connector adapter with:</p> <ul style="list-style-type: none"> <li>- Vertical M12 SPEEDCON connector</li> <li>- Horizontal M12 SPEEDCON connector</li> </ul>

#### 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

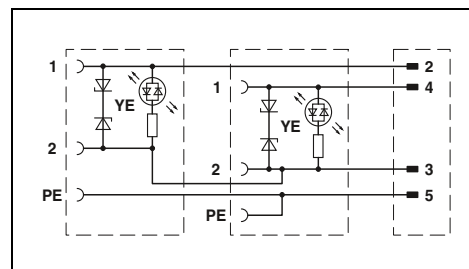
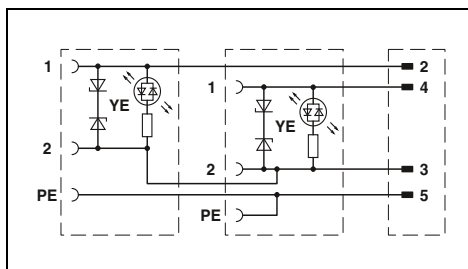
**Double valve connector adapter with M12-SPEEDCON connector, type B and BI**



Type B



Type BI



Technical data

Technical data

General data	
M12 circular connector according to:	IEC 61076-2-101
Valve connector according to:	EN 175301-803
Degree of protection	IP65/IP67
Electrical data	
Rated voltage	24 V AC/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]

Technical data	
IEC 61076-2-101	
EN 175301-803	
IP65/IP67	
Electrical data	
24 V AC/DC	
4 A	
Material data	
CuSn	
CuSn	
Ni/Au	
Sn	
TPU	
Temperature data	
-25 ... 85	

Technical data	
IEC 61076-2-101	
-	
IP65/IP67	
Electrical data	
24 V AC/DC	
4 A	
Material data	
CuSn	
CuSn	
Ni/Au	
Sn	
TPU	
Temperature data	
-25 ... 85	

Ordering data

Ordering data

Description
<b>Double valve connector</b> , connector distance: 10 cm, valve connector leading to valve connector adapter with: - Vertical M12 SPEEDCON connector - Horizontal M12 SPEEDCON connector
<b>Double valve connector</b> , connector distance: 15 cm, valve connector leading to valve connector adapter with: - Vertical M12 SPEEDCON connector - Horizontal M12 SPEEDCON connector
<b>Double valve connector</b> , connector distance: 20 cm, valve connector leading to valve connector adapter with: - Vertical M12 SPEEDCON connector - Horizontal M12 SPEEDCON 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

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

## Distributor boxes

### M8 distributor with metal thread



With a master cable



M12 plug-in connection, vertical



M12 plug-in connection, vertical

General data	
Degree of protection in acc. with IEC 60529/EN 60529	
M8 circular connector according to:	
M12 circular connector according to:	
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		Technical data		Technical data	
IP65 / IP67		IP65 / IP67		IP65 / IP67	
IEC 61076-2-104		IEC 61076-2-104		IEC 61076-2-104	
-		IEC 61076-2-101		IEC 61076-2-101	
2	2	2	2	1.5	1.5
2	2	2	2	1.5	1.5
6	4	4	4	1.5	1.5
30 x 22	30 x 27	30 x 27	30 x 27	30 x 27	30 x 27
102 / 122 / 141 / 161	93 / 113 / - / -	93 / 113 / - / -	93 / 113 / - / -	- / - / 133 / 152	- / - / 133 / 152
-30 ... 80	-30 ... 80	-30 ... 80	-30 ... 80	-30 ... 80	-30 ... 80
-40 ... 90	-	-	-	-	-
-5 ... 80	-	-	-	-	-

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	4	Variable
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	6	Variable
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	8	Variable
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
With LED	PNP	24 V DC	10	Variable

Ordering data		Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1516234	-	-	-
1516014	-	-	-	-	-
1516027	-	-	-	-	-
1516137	-	-	-	-	-
-	-	1516247	-	-	-
1516030	-	-	-	-	-
1516043	-	-	-	-	-
1516140	-	-	-	-	-
-	-	-	-	1434840	-
1516056	1516111	-	-	-	-
1516069	1516124	-	-	-	-
1516153	1516179	-	-	-	-
-	-	-	-	1434853	-
1516072	-	-	-	-	-
1516085	-	-	-	-	-
1516166	-	-	-	-	-

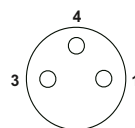
For accessories, refer to page  
 For master cable rings, see page  
 For master cable data, see page

Notes:	Notes:	Notes:
291	291	291
312	285	285

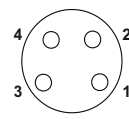
### Ordering example for products with variable master cable:

For a distributor with 4 single-occupancy slots and a master cable length of 34.5 m, the ordering data is as follows:

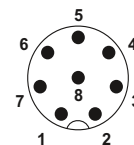
Order No.	Length [m]
1516137	34.5
Increment: 0.5 m;	
Length min.: 0.5 m	
Length max.: 50 m	



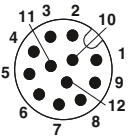
Pin assignment M8 socket, 3-pos.



Pin assignment M8 socket, 4-pos.



Connector pin assignment for M12 plug-in connection, 8-pos.



Pin assignment for M12 plug-in connection, 12-pos.



M16 plug-in connection, vertical



Spring connection, horizontal



Plug-in screw connection, horizontal



Header for plug-in screw connection

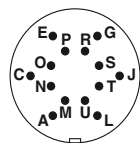


Connector hood, with a master cable



Connector hood, without master cable

Technical data		Technical data		Technical data		Technical data		Technical data		Technical data	
IP65 / IP67 IEC 61076-2-104		IP65 / IP67 IEC 61076-2-104		IP65 / IP67 IEC 61076-2-104		IP65 / IP67 IEC 61076-2-104		IP65 / IP67		IP65 / IP67	
-		-		-		-		-		-	
2		2		2		2		2		2	
2		2		2		2		-		-	
6		6		8		8		8		-	
30 x 26 93 / 113 / 132 / 152		30 x 44 122 / 142 / 176 / 196		30 x 44 122 / 142 / 176 / 196		30 x 20 122 / 142 / 176 / 196		30 x 24 - / - / - / -		30 x 24 - / - / - / -	
-30 ... 80		-30 ... 80		-30 ... 80		-30 ... 80		-30 ... 80 -40 ... 90 -5 ... 80		-30 ... 80	
-		-		-		-		-		-	
Ordering data		Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
1516182	-	1503386	-	1503412	-	1516250	-	-	-	1521229	-
-	-	-	-	-	-	-	-	1516292	-	-	-
-	-	-	-	-	-	-	-	1516302	-	-	-
-	-	-	-	-	-	-	-	1516373	-	-	-
1516195	-	1503399	-	1503425	-	1516263	-	-	-	1521216	-
-	-	-	-	-	-	-	-	1516315	-	-	-
-	-	-	-	-	-	-	-	1516328	-	-	-
-	-	-	-	-	-	-	-	1516386	-	-	-
1516205	-	1511747	1503454	1511750	1503467	1516276	-	-	-	1516425	-
-	-	-	-	-	-	-	-	1516331	-	-	-
-	-	-	-	-	-	-	-	1516344	-	-	-
-	-	-	-	-	-	-	-	1516399	-	-	-
1516218	-	1503409	-	1503438	-	1516289	-	-	-	1516412	-
-	-	-	-	-	-	-	-	1516357	-	-	-
-	-	-	-	-	-	-	-	1516360	-	-	-
-	-	-	-	-	-	-	-	1516409	-	-	-
Notes:		Notes:		Notes:		Notes:		Notes:		Notes:	
290 285		290 285		290 285		290		290		312	



Connector pin assignment for M16 plug-in connection, 14-pos.

## Distributor boxes

### M12 distributor with plastic thread, middle duty



With a master cable



Spring connection, horizontal



Push-in spring connection, horizontal

General data	
Degree of protection in acc. with IEC 60529/EN 60529	
M12 circular connector according to:	
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	Technical data	Technical data
IP65 / IP67	IP65 / IP67	IP65 / IP67
IEC 61076-2-101	IEC 61076-2-101	IEC 61076-2-101
2	2	2
4	4	4
12	12	-
54 x 23	54 x 42	54 x 43
117 / 123 / 149 / -	117 / 123 / 149 / -	117 / 123 / 149 / -
-25 ... 80	-25 ... 80	-25 ... 80
-40 ... 90	-	-
-5 ... 80	-	-

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	4	Variable
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	6	Variable
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	8	Variable
With LED	NPN	24 V DC	4	5 m
With LED	NPN	24 V DC	4	10 m
With LED	NPN	24 V DC	6	5 m
With LED	NPN	24 V DC	6	10 m
With LED	NPN	24 V DC	8	5 m
With LED	NPN	24 V DC	8	10 m

Ordering data		Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1452929	1452932	-	-
1452398	1452424	-	-	-	-
1452408	1452437	-	-	-	-
-	-	1452945	1452958	-	-
1452453	1452482	-	-	-	-
1452466	1452495	-	-	-	-
-	-	1452961	1452974	-	-
1452518	1452547	-	-	-	-
1452521	1452550	-	-	-	-
-	-	1452987	1452990	-	1412058
1452576	1452602	-	-	-	-
1452589	1452615	-	-	-	-
1401376	1401419	-	-	-	-
-	-	1453009	1453012	-	1412059
1452631	1452660	-	-	-	-
1452644	1452673	-	-	-	-
1401379	1401380	-	-	-	-
-	-	1453025	1453038	-	1412060
1452699	1452725	-	-	-	-
1452709	1452738	-	-	-	-
1401382	1401383	-	-	-	-
1405678	1405713	-	-	-	-
1405687	1405732	-	-	-	-
1405733	1405735	-	-	-	-
1405734	1405736	-	-	-	-
1405737	1405739	-	-	-	-
1405738	1405740	-	-	-	-

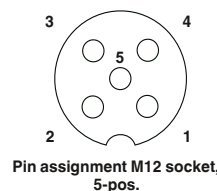
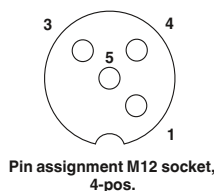
For accessories, refer to page  
 For master cable rings, see page  
 For master cable data, see page

Notes:	Notes:	Notes:
292	292	292
313	285	285

### Ordering example for products with variable master cable:

For a distributor with 4 single-occupancy slots and a master cable length of 34.5 m, the ordering data is as follows:

Order No.	Length [m]
1401376	34.5
	Increment: 0.5 m;
	Length min.: 0.5 m
	Length max.: 50 m







# Sensor/actuator cabling

## Distributor boxes

### M12 distributor with metal thread, heavy-duty



With a master cable



With halogen-free master line



Plug-in screw connection, horizontal

General data	
Degree of protection in acc. with IEC 60529/EN 60529	
M12 circular connector according to:	
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]

Technical data	Technical data	Technical data
IP65 / IP67 / IP69K IEC 61076-2-101	IP65 / IP67 / IP69K IEC 61076-2-101	IP65 / IP67 / IP69K IEC 61076-2-101
2 4 12 -	2 4 12 -	2 4 10 2x 8
58 x 26 117 / 126 / 153 / -	58 x 26 116 / 126 / 153 / -	58 x 45 117 / 126 / 153 / -
-30 ... 90 -40 ... 90 -5 ... 80	-30 ... 90 -40 ... 90 -5 ... 80	-30 ... 80 - -

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	4	Variable
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	6	Variable
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	PNP	24 V DC	8	Variable
With LED	NPN	24 V DC	4	-
With LED	NPN	24 V DC	4	Variable
With LED	NPN	24 V DC	6	-
With LED	NPN	24 V DC	6	Variable
With LED	NPN	24 V DC	8	-
With LED	NPN	24 V DC	8	Variable

Ordering data		Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	-	-	1516849	1516852
1516962	1516988	-	1517204	-	-
1516975	1516991	-	1517217	-	-
-	-	-	-	1516865	1516878
1517000	1517026	-	1517220	-	-
1517013	1517039	-	1517233	-	-
-	-	-	-	1516881	1516894
1517042	1517068	-	1517246	-	-
1517055	1517071	-	1517259	-	-
-	-	-	-	1516784	1516797
1517084	1517107	-	1517262	-	-
1517097	1517110	-	1517275	-	-
1516904	1516917	-	-	-	-
-	-	-	-	1516807	1516810
1517123	1517149	-	1517288	-	-
1517136	1517152	-	1517291	-	-
1516920	1516933	-	-	-	-
-	-	-	-	1516823	1516836
-	-	-	-	-	-
1517165	1517181	-	1517301	-	-
1517178	1517194	-	1517314	-	-
1516946	1516959	-	-	-	-
-	-	-	-	1537077	1537103
1537019	1537048	-	-	-	-
-	-	-	-	1537080	1537116
1537022	1537051	-	-	-	-
-	-	-	-	1537093	1537129
1537035	1537064	-	-	-	-

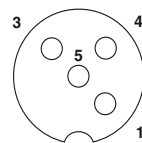
For accessories, refer to page  
 For master cable rings, see page  
 For master cable data, see page

Notes:	Notes:	Notes:
293	293	293
313	315	285

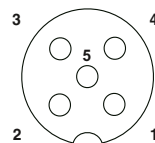
### Ordering example for products with variable master cable:

For a distributor with 4 single-occupancy slots and a master cable length of 34.5 m, the ordering data is as follows:

Order No.	Length [m]
1516904	34.5
	Increment: 0.5 m; Length min.: 0.5 m Length max.: 50 m



Pin assignment for M12 socket, 4-pos.



Pin assignment for M12 socket, 5-pos.



# Sensor/actuator cabling

## Distributor boxes

**QUICKON distributor,  
connection cross section:  
0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup>**



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]

Technical data		Technical data	
IP65 / IP67 / IP69K		IP65 / IP67 / IP69K	
2	4	2	4
12	-	10	2x 8
58 x 45	116 / 126 / 153 / -	58 x 45	117 / 126 / 153 / -
-30 ... 80	-40 ... 90	-30 ... 80	-
-5 ... 80	-	-	-

Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1548354	1548419
1548642	1548671	-	-
-	-	1548367	1548422
-	-	1548370	1548435
1548668	1548697	-	-
-	-	1548325	1548383
1548448	1548532	-	-
1548451	1548545	-	-
1548503	1548590	-	-
-	-	1548338	1548396
-	-	1548341	1548406
1548480	1548574	-	-
1548493	1548587	-	-
1548529	1548613	-	-

Status indication	Signal type	Rated voltage	Slots	Cable length
Without LED	Universal	48 V	4	-
Without LED	Universal	48 V	4	Variable
Without LED	Universal	48 V	6	-
Without LED	Universal	48 V	8	-
Without LED	Universal	48 V	8	Variable
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	4	Variable
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
With LED	PNP	24 V DC	8	Variable

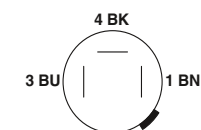
For accessories, refer to page  
For master cable rings, see page  
For master cable data, see page

Notes:	Notes:
295	295
312	285

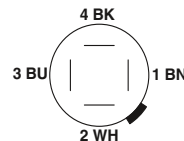
### Ordering example for products with variable master cable:

For a distributor with 4 single-occupancy QUICKON slots and a master cable length of 34.5 m, the ordering data is as follows:

Order No.	Length [m]
1548503	34.5
Increment: 0.5 m; Length min.: 0.5 m Length max.: 50 m	



Pin assignment for QUICKON connection, 3-pos.



Pin assignment for QUICKON connection, 4-pos.

**QUICKON distributor,  
connection cross section:  
0.34 mm<sup>2</sup> ... 0.75 mm<sup>2</sup>**



With a master cable



Spring connection, horizontal

<b>General data</b>	
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]
<b>Dimensions</b>	
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]

<b>Technical data</b>		<b>Technical data</b>	
IP65 / IP67		IP65 / IP67	
4	4	4	4
4	4	4	4
12	12	12	12
60 x 44		60 x 44	
97 / 134 / 170 / -		132 / 168 / 205 / -	
-25 ... 60		-25 ... 60	
-40 ... 90		-	
-5 ... 80		-	

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	4	Variable
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	6	Variable
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	8	Variable
With LED	NPN	24 V DC	4	-
With LED	NPN	24 V DC	6	-
With LED	NPN	24 V DC	8	-

Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1683633	-
1683662	-	-	-
1683675	-	-	-
-	-	1683646	-
1683688	-	-	-
1683691	-	-	-
-	-	1683659	-
1683701	-	-	-
1683714	-	-	-
-	-	1662939	-
1695223	-	-	-
1695236	-	-	-
1695249	-	-	-
-	-	1662942	-
1695252	-	-	-
1695265	-	-	-
1695278	-	-	-
-	-	1662955	-
1695281	-	-	-
1695294	-	-	-
1695304	-	-	-
-	-	1680856	-
-	-	1680869	-
-	-	1680872	-

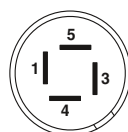
For accessories, refer to page  
 Master cable rings, refer to page  
 For master cable data, see page

Notes:	Notes:
296	296
313	285

**Ordering example for products with  
variable master cable:**

For a distributor with 4 single-occupancy QUICKON slots and a master cable length of 34.5 m, the ordering data is as follows:

Order No. <b>1695249</b>	Length [m] <b>34.5</b>
Increment: 0.5 m;	
Length min.: 0.5 m	
Length max.: 50 m	



Pin assignment for QUICKON connection, 4-pos.

## Distributor boxes

### M12 distributor, shielded, with metal housing



With a master cable



M23 plug-in connection, vertical

#### General data

Degree of protection in acc. with IEC 60529/EN 60529  
M12 circular connector according to:

#### 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	48 V	4	-
Without LED	Universal	48 V	4	5 m
Without LED	Universal	48 V	4	10 m
Without LED	Universal	48 V	6	-
Without LED	Universal	48 V	6	5 m
Without LED	Universal	48 V	6	10 m
Without LED	Universal	48 V	8	-
Without LED	Universal	48 V	8	5 m
Without LED	Universal	48 V	8	10 m

For accessories, refer to page  
For master cable rings, see page  
For master cable data, see page

#### ERC

Technical data
IP65 / IP67
IEC 61076-2-101
2
4
12
61 x 24
116 / 129 / 156 / -
-25 ... 70
-40 ... 90
-5 ... 80

#### ERC

Technical data
IP65 / IP67
IEC 61076-2-101
2
4
12
61 x 31
117 / 130 / 157 / -
-25 ... 70
-
-

#### Ordering data

Single occupancy	Double occupancy
-	-
-	1695786
-	1695799
-	-
-	1695809
-	1695812
-	-
-	1695825
-	1695838

#### Ordering data

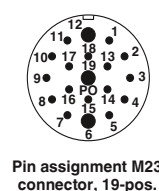
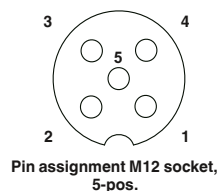
Single occupancy	Double occupancy
-	1695757
-	-
-	1695760
-	-
-	-
-	1695773
-	-
-	-

#### Notes:

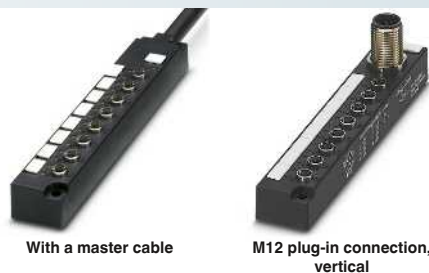
294
314

#### Notes:

294
285



**M5 distributor with metal thread**

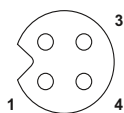


<b>General data</b>	
Degree of protection in acc. with IEC 60529/EN 60529	
M5 circular connector according to:	
M12 circular connector according to:	
<b>Electrical data</b>	
Rated current for each I/O signal	[A]
Rated current per slot	[A]
Rated current, total	[A]
<b>Dimensions</b>	
Width x height	[mm]
Length (4 / 6 / 8 / 10 slots)	[mm]
<b>Temperature data</b>	
Distributor box	[°C]
Master cable, fixed installation	[°C]
Master cable, flexible installation	[°C]

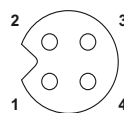
ERC	ERC
<b>Technical data</b>	<b>Technical data</b>
IP67	IP67
IEC 61076-2-105	IEC 61076-2-105
-	IEC 61076-2-101
1	1
1	1
3	3
20 x 14	20 x 28
76 / - / 116 / -	76 / - / 116 / -
-25 ... 80	-25 ... 80
-30 ... 70	-
-5 ... 70	-

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	8	-
With LED	PNP	24 V DC	8	5 m
With LED	PNP	24 V DC	8	10 m

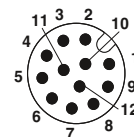
Ordering data		Ordering data	
Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	1530760	-
1530663	1530702	-	-
1530676	1530715	-	-
-	-	1530773	-
1530689	1530744	-	-
1530692	1530757	-	-



Pin assignment for M5 socket, 3-pos.



Pin assignment for M5 socket, 4-pos.



Pin assignment for M12 plug-in connection, 12-pos.



#### Versatile

Whether in the railway station, for control tasks or within rolling stock - our cables for the railway industry support flexible use.



#### Comprehensive portfolio

In addition to crimp and spring-cage connectors suitable for the rail industry, the product range includes assembled sensor/actuator cables with A-coding and data cables with D and X-coding for communication networks and passenger information systems.



#### Safe transmission

With 360° shielded connectors and cables, you can transmit signals reliably even in critical EMI applications.





#### Material selection

One of the most important aspects when choosing the right components for use in railway applications is material selection. We only use PA 6.6 as molding material which satisfies the stringent requirements regarding behavior in fire.



#### Securely locked

The vibration brake in the form of a wave shape with counterpart prevents the unintentional loosening of the plug-in connection in the event of vibrations.

The connectors are tested according to EN 50155 for resistance to shock and vibrations.



#### Temperature testing

Our products are intensively tested for an extended temperature range and for resistance to temperature shocks.



#### Certified according to 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 # and numbers in the search field.







#### Resistance to cleaning agents

The connectors in 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 hygienic design is suitable for use in this area.



#### Splash zone

The products in 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 hygienic or washdown design.



### Distributor boxes for the splash zone

Distributor boxes with stainless steel housing and permanently connected PVC master cable in 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 # and numbers in the search field.




## Sensor/actuator cabling

### Cabling for outdoor applications



#### 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 temperatures.



#### For a variety of applications

Outdoor components are particularly suitable for use in traffic management systems, snow cats and snow cannons, photovoltaic systems or wind power plants.



#### UV and ozone test

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 4, 5, and 8-pos. shielded and unshielded versions, PROFINET and Ethernet cables for data applications are also available.



**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 # and numbers in the search field.




## Sensor/actuator cabling

### Cabling for robots and drag chains



#### 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.



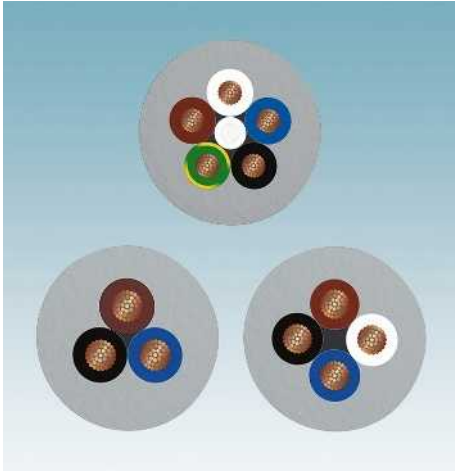
#### High level of resistance to welding sparks

The robust TPE-U outer sheath of the highly flexible cables is resistant to welding sparks and is particularly suitable for use in the field of 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 connectors are available both as plugs and sockets and with a straight or angled cable outlet.



**Highly flexible master cable**

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 checked by Quality Assurance.

# Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # and numbers in the search field.








### Compact size with maximum current carrying capacity

With the M12 power connectors, the M12 design opens up new areas of application for energy supply.



### DC application

The M12 power T and L DC codings are particularly suitable for the supply connection for I/O modules or for DC motors.



### AC application

The M12 power S, K, and M AC codings are particularly suitable for the supply connection for AC motors.



**Connectors for assembly**

M12 connectors in straight and angled version with 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 checked by Quality Assurance.

# Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # and numbers in the search field.

**Search** 





# Sensor/actuator cabling

## Cabling for power applications

### M12, power connector, screw connection



Metal knurl, 3-pos. + PE,  
S-coded



Metal knurl, 4-pos.,  
T-coded



#### Technical data

##### 3-pos. + PE

General data	
Pollution degree	3
Degree of protection	IP67
Connection method	Screw connection
Connection cross section [mm <sup>2</sup> ]	0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Electrical data	
Rated voltage	630 V AC
Rated current	12 A
Insulation resistance	> 10 GΩ
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA
Inflammability class according to UL 94	V0
Temperature data	
Plug/socket	-40 ... 85 [°C]

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>Connector, cable diameter: 8 mm ... 10 mm</b>			
Socket, straight	SACC-M12FSS-3PECON-PG11-M	1404642	1
Plug, straight	SACC-M12MSS-3PECON-PG11-M	1404641	1
Socket, angled	SACC-M12FRS-3PECON-PG11-M	1408987	1
Plug, angled	SACC-M12MRS-3PECON-PG11-M	1408985	1



#### Technical data

##### 4-pos.

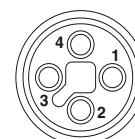
General data	
Pollution degree	3
Degree of protection	IP67
Connection method	Screw connection
Connection cross section [mm <sup>2</sup> ]	0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Electrical data	
Rated voltage	63 V DC
Rated current	12 A
Insulation resistance	> 10 GΩ
Material data	
Material contact/contact surface	CuZn / Au
Contact carrier material	PA
Inflammability class according to UL 94	V0
Temperature data	
Plug/socket	-40 ... 85

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>Connector, cable diameter: 8 mm ... 10 mm</b>			
Socket, straight	SACC-M12FST-3PECON-PG11-M	1404644	1
Plug, straight	SACC-M12MST-3PECON-PG11-M	1404643	1
Socket, angled	SACC-M12FRT-4CON-PG11-M	1408989	1
Plug, angled	SACC-M12MRT-4CON-PG11-M	1408988	1



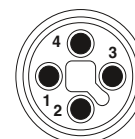
Connector pin assignment of M12 socket, 4-pos., S-coded,  
view of socket side



Connector pin assignment of M12 socket, 4-pos., T-coded,  
view of socket side



Connector pin assignment of M12 connector, 4-pos., S-coded,  
view of pin side



Connector pin assignment of M12 connector, 4-pos., T-coded,  
view of pin side

**M12 power device connector, 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

ERIC

Technical data	
General data	
Pollution degree	-
Degree of protection	-
Connection method	-
Electrical data	
Rated voltage	-
Rated current	-
Surge voltage category	-
Material data	
Material contact/contact surface	- / -
Contact carrier material	-
Cable gland material	Zinc die-cast, nickel-plated
Cable type	-
Temperature data	
Plug/socket	[°C] -40 ... 85
Cable, fixed installation	[°C] -

Ordering data	
Order No.	Pcs. / Pkt.
<b>1424131</b>	10

ERIC

Technical data	
S-coded, 3-pos. + PE	T-coded, 4-pos.
3	3
IP67	IP67
Individual wires	Individual wires
630 V	60 V
12 A	12 A
III	III
CuZn / Au	CuZn / Au
PA6	PA6
-	-
PP litz wire	PP litz wire
-25 ... 85	-25 ... 85
-40 ... 90	-40 ... 90

Ordering data	
Order No.	Pcs. / Pkt.
<b>1424129</b>	1
<b>1424130</b>	1

Description
Square flange housing, with flat gasket
Assembled contact carrier and insulating body, with 0.5 m litz wires and crimp contacts
Plug

# Sensor/actuator cabling

## Cabling for power applications

### M12 power device connector, 2-pos. + PE

- M16 fastening thread
- With 0.5 m long litz wires
- S-coded



S-coded, 2-pos. + PE

#### Technical data

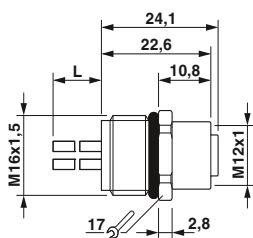
General data	Front mounting	Rear mounting
	Pollution degree	3
Degree of protection	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	630 V	630 V
Rated current	16 A	16 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA	PA
Inflammability class according to UL 94	V0	V0
Cable type	PP litz wire	PP litz wire
Temperature data		
Plug/socket	-25 ... 105 [°C]	-25 ... 105

#### Ordering data

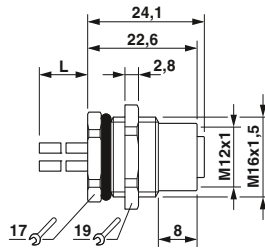
Description	Coding	Front mounting		Rear mounting	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Power device connectors</b>					
Socket	S power	1411654	1	1411652	1
Plug	S power	1411655	1	1411653	1

#### Accessories

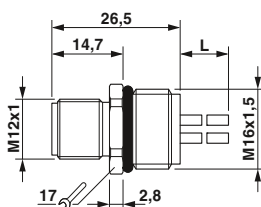
Flat nut, with: M16 thread	SACC-E-MU-M16	1504097	100
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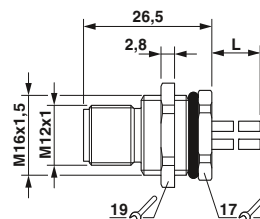
Dimensions: socket, front mounting



Dimensions: socket, rear mounting



Dimensions: plug, front mounting



Dimensions: plug, rear mounting

**M12 power device connector, 3-pos. + PE and 4-pos.**

- M16 fastening thread
- With 0.5 m long litz wires



S-coded, 3-pos. + PE



T-coded, 4-pos.

ERC

	Technical data	
	Front mounting	Rear mounting
General data		
Pollution degree	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
Inflammability class according to UL 94	V0	V0
Cable type	PP litz wire	PP litz wire
Temperature data		
Plug/socket	[-25 ... 85 °C]	[-25 ... 85 °C]
Cable, fixed installation	[-40 ... 90 °C]	[-40 ... 90 °C]

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Power device connectors</b>				
Socket	1424137	1	1424133	1
Plug	1424139	1	1424132	1

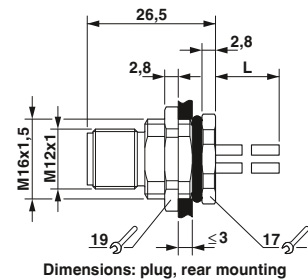
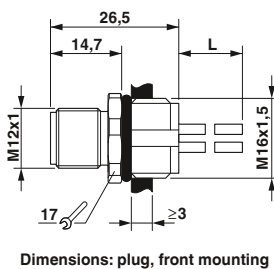
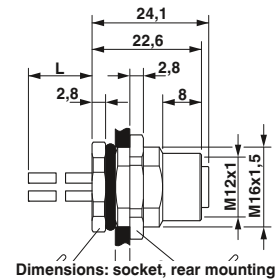
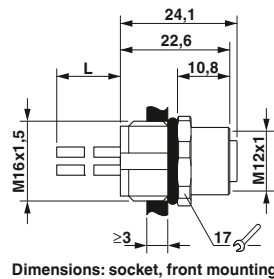
Flat nut, with: M16 thread	Accessories	
	Order No.	Pcs. / Pkt.
SACC-E-MU-M16	1504097	100

ERC

	Technical data	
	Front mounting	Rear mounting
General data		
Pollution degree	3	3
Degree of protection	IP65/IP67	IP65/IP67
Connection method	Individual wires	Individual wires
Electrical data		
Rated voltage	60 V	60 V
Rated current	12 A	12 A
Material data		
Material contact/contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA	PA
Inflammability class according to UL 94	V0	V0
Cable type	PP litz wire	PP litz wire
Temperature data		
Plug/socket	[-25 ... 85 °C]	[-25 ... 85 °C]
Cable, fixed installation	[-40 ... 90 °C]	[-40 ... 90 °C]

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Power device connectors</b>				
Socket	1424138	1	1424134	1
Plug	1424140	1	1424136	1

Flat nut, with: M16 thread	Accessories	
	Order No.	Pcs. / Pkt.
SACC-E-MU-M16	1504097	100



# Sensor/actuator cabling

## Cabling for power applications

### M12 power XL device connector, 3-pos. + PE and 4-pos.

- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19



S-coded, 3-pos. + PE



T-coded, 4-pos.

General data	
Pollution degree	3
Degree of protection	IP65/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
Inflammability class according to UL 94	V0
Cable type	PP litz wire
Temperature data	
Plug/socket	-25 ... 85 [°C]

Technical data			
Front mounting		Rear mounting	
3	3	3	3
IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67
Individual wires	Individual wires	Individual wires	Individual wires
630 V	630 V	630 V	630 V
12 A	12 A	12 A	12 A
CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
PA	PA	PA	PA
V0	V0	V0	V0
PP litz wire	PP litz wire	PP litz wire	PP litz wire
-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85

Technical data			
Front mounting		Rear mounting	
3	3	3	3
IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67
Individual wires	Individual wires	Individual wires	Individual wires
60 V	60 V	60 V	60 V
12 A	12 A	12 A	12 A
CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
PA	PA	PA	PA
V0	V0	V0	V0
PP litz wire	PP litz wire	PP litz wire	PP litz wire
-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85

Ordering data	
Description	
<b>Power device connectors</b>	
Socket	1411605
Plug	1411607

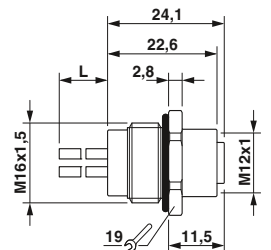
Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Front mounting		Rear mounting	
1411605	1	1411598	1
1411607	1	1411603	1

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Front mounting		Rear mounting	
1411606	1	1411599	1
1411608	1	1411604	1

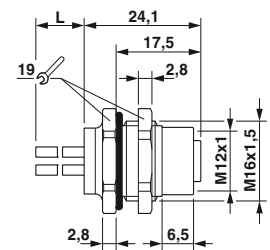
Accessories	
Flat nut, with: M16 thread	SACC-E-MU-M16

Accessories			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
SACC-E-MU-M16	1504097		100

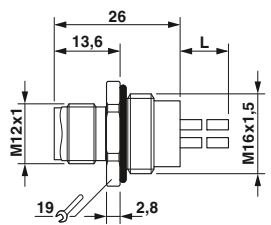
Accessories			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
SACC-E-MU-M16	1504097		100



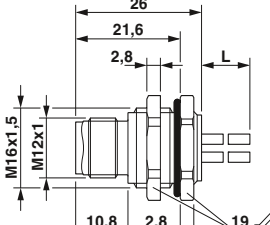
Dimensions: socket, front mounting



Dimensions: socket, rear mounting



Dimensions: plug, front mounting



Dimensions: plug, rear mounting

**M12-SPEEDCON power cable,  
2-pos.+PE, unshielded**

Free end

M12 connector, SPEEDCON



**Notes:**

For information about the cable qualities, see page 298



Ordering data      Ordering data      Ordering data

Free end	Order No.	Order No.	Order No.	Order No.		
		1 m	<a href="#">1411636</a>	1 m	<a href="#">1411640</a>	
			2 m	<a href="#">1411637</a>	2 m	<a href="#">1411641</a>
			5 m	<a href="#">1411638</a>	5 m	<a href="#">1411642</a>
			10 m	<a href="#">1411639</a>	10 m	<a href="#">1411643</a>

**M12 socket, SPEEDCON, straight**



1 m	<a href="#">1411644</a>
2 m	<a href="#">1411645</a>
5 m	<a href="#">1411646</a>
10 m	<a href="#">1411647</a>

**M12 socket, SPEEDCON, angled**



1 m	<a href="#">1411648</a>
2 m	<a href="#">1411649</a>
5 m	<a href="#">1411650</a>
10 m	<a href="#">1411651</a>

Cable description	Cable type	Color coding	Pin assignment
PVC - black	PVC	BK1	1
		BK2	2
		GNYE	3
			PE

**Technical data**

		M12
Rated voltage	[V]	230
Rated current	[A]	16
Inflammability class in acc. with UL 94		V0
Material contact M12		CuZn
Material contact surface M12		Au
Material handle M12		TPU, hardly inflammable, self-extinguishing
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP67
Temperature data		
Plug/socket	[°C]	-25 ... 105

# Sensor/actuator cabling

## Cabling for power applications

### M12-SPEEDCON power cable, 3-pos.+PE, S-coded, unshielded

Notes:  
For information about the cable qualities, see page 298

Free end




M12 connector, SPEEDCON



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
	1 m	1408835	1 m
	2 m	1408836	2 m
	5 m	1408837	5 m
	10 m	1408838	10 m

M12 socket, SPEEDCON, straight



1 m	1408843
2 m	1408844
5 m	1408845
10 m	1408846

M12 socket, SPEEDCON, angled



1 m	1408848
2 m	1408852
5 m	1408853
10 m	1408854

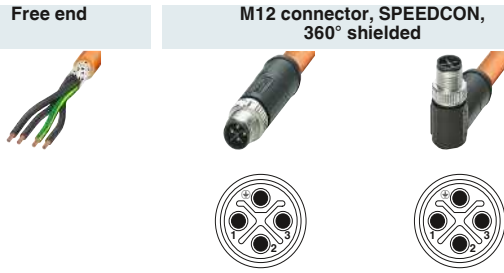
Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free - black	PUR	BK1	1
		BK2	2
		BK3	3
		GNYE	PE

#### Technical data

		M12
Rated voltage	[V]	630
Rated current	[A]	12
Material contact M12		CuZn
Material contact surface M12		Au
Material handle M12		TPU, hardly inflammable, self-extinguishing
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-25 ... 85

**M12-SPEEDCON power cable, 3-pos.+PE, S-coded, shielded**

**Notes:**  
For information about the cable qualities, see page 298



Ordering data

Free end	Order No.	Order No.	Order No.
		1.5 m	1.5 m
		3 m	3 m
		5 m	5 m
		10 m	10 m

M12 socket, SPEEDCON, straight, 360° shielded	Order No.	Order No.
	1.5 m	1.5 m
	3 m	3 m
	5 m	5 m
	10 m	10 m

M12 socket, SPEEDCON, angled, 360° shielded	Order No.	Order No.
	1.5 m	1.5 m
	3 m	3 m
	5 m	5 m
	10 m	10 m

Cable description	Cable type	Color coding	Pin assignment
PUR, halogen-free - orange	PUR	BK1 <b>1</b>	1
		BK2 <b>2</b>	2
		BK3 <b>3</b>	3
		GNYE	PE

Technical data

		M12
Rated voltage	[V]	630
Rated current	[A]	12
Material contact M12		CuZn
Material contact surface M12		Au
Material handle M12		TPU, hardly inflammable, self-extinguishing
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-25 ... 85



# Sensor/actuator cabling

## Cabling for power applications

### M12-SPEEDCON power cable, 4-pos., T-coded, unshielded

Notes:  
For information about the cable qualities, see page 298

Free end



M12 connector, SPEEDCON



Ordering data

Ordering data

Ordering data

Free end	Order No.	Order No.	Order No.
	1 m	1408812	1408816
	2 m	1408813	1408819
	5 m	1408814	1408820
	10 m	1408815	1408822
M12 socket, SPEEDCON, straight 	1 m	1408823	1408808
	2 m	1408824	1408809
	5 m	1408825	1408810
	10 m	1408826	1408811
M12 socket, SPEEDCON, angled 	1 m	1408827	1415196
	2 m	1408828	1415197
	5 m	1408829	1415198
	10 m	1408830	1415199

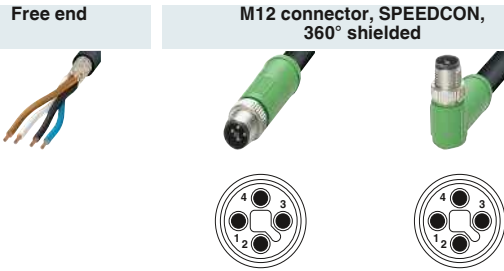
Cable description	Cable type	Color coding	Pin assignment												
PUR, halogen-free - black	PUR	<table border="1"> <tr><td>BN</td><td></td><td>1</td></tr> <tr><td>WH</td><td></td><td>2</td></tr> <tr><td>BK</td><td></td><td>4</td></tr> <tr><td>BU</td><td></td><td>3</td></tr> </table>	BN		1	WH		2	BK		4	BU		3	
BN		1													
WH		2													
BK		4													
BU		3													

#### Technical data

		M12
Rated voltage	[V]	60
Rated current	[A]	12
Material contact M12		CuZn
Material contact surface M12		Au
Material handle M12		TPU, hardly inflammable, self-extinguishing
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-25 ... 85

**M12-SPEEDCON power cable,  
4-pos., T-coded,  
shielded**

**Notes:**  
For information about the cable qualities, see page 298



**Ordering data**      **Ordering data**      **Ordering data**

Free end	Order No.	Order No.	Order No.
	1.5 m	<b>1424120</b>	1.5 m <b>1424124</b>
	3 m	<b>1424121</b>	3 m <b>1424125</b>
	5 m	<b>1424122</b>	5 m <b>1424126</b>
	10 m	<b>1424123</b>	10 m <b>1424127</b>

M12 socket, SPEEDCON, straight, 360° shielded	Order No.
	1.5 m <b>1424112</b>
	3 m <b>1424113</b>
	5 m <b>1424114</b>
	10 m <b>1424115</b>

M12 socket, SPEEDCON, angled, 360° shielded	Order No.	Order No.
	1.5 m <b>1424116</b>	1.5 m <b>1415202</b>
	3 m <b>1424117</b>	3 m <b>1415203</b>
	5 m <b>1424118</b>	5 m <b>1415204</b>
	10 m <b>1424128</b>	10 m <b>1415205</b>

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	[V]	60
Rated current	[A]	12
Material contact M12		CuZn
Material contact surface M12		Au
Material handle M12		TPU, hardly inflammable, self-extinguishing
Material, knurls		Zinc die-cast, nickel-plated
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-25 ... 85

# Sensor/actuator cabling

## Cabling for power applications

### 7/8" power cable, 4-pos. + PE, PUR cable, 1.5 mm<sup>2</sup>





**Notes:**  
For information about the cable qualities, see page 304

Free end



7/8" connector



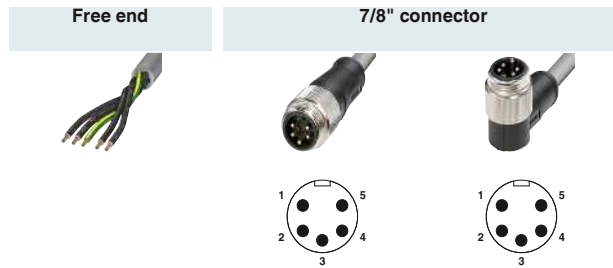
	Ordering data	Ordering data	Ordering data	
	Order No.	Order No.	Order No.	
<b>7/8" socket, straight</b>  	1.5 m	1443705	0.3 m 1443802	
	3 m	1443718	0.6 m 1443815	
	5 m	1443721	1 m 1443828	
	7.5 m	1443734	1.5 m 1443831	
	10 m	1443747	2 m 1443844	
<b>7/8" socket, angled</b>  	1.5 m	1443750	0.3 m 1443857	
	3 m	1443763	0.6 m 1443860	
	5 m	1443776	1 m 1443873	
	7.5 m	1443789	1.5 m 1443886	
	10 m	1443792	2 m 1443899	





Cable description	Cable type	Color coding	Pin assignment
PUR/PVC 1.5 mm <sup>2</sup> - gray	440	BK1	1
		BK2	2
		BK3	3
		BK4	4
		GNYE	3

		Technical data
		7/8", 1.5 mm <sup>2</sup>
Rated voltage	[V]	600
Rated current	[A]	10
Contact material		CuZn
Contact surface material		AU
Material of grip body		TPU
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Plug/socket	[°C]	-40 ... 90

**7/8" power cable, 4-pos. + PE,  
PUR cable, 2.5 mm<sup>2</sup>**

**Notes:**  
For information about the cable qualities, see page 304



		Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.	
<b>7/8" socket, straight</b>  	1.5 m	1443909	0.3 m	1419823			
	3 m	1443912	0.6 m	1419836			
	5 m	1443925	1 m	1419849			
	7.5 m	1443938	1.5 m	1419852			
	10 m	1443941	2 m	1419865			
<b>7/8" socket, angled</b>  	1.5 m	1443954	0.3 m	1419878			
	3 m	1443967	0.6 m	1419881			
	5 m	1443970	1 m	1419894			
	7.5 m	1419807	1.5 m	1419904			
	10 m	1419810	2 m	1419917			

Cable description	Cable type	Color coding		Pin assignment
PUR/PVC 2.5 mm <sup>2</sup> - gray	441	BK1	1	1
		BK2	2	2
		BK3	3	4
		BK4	4	5
		GNYE		3

		Technical data	
		7/8", 2.5 mm <sup>2</sup>	
Rated voltage	[V]	600	
Rated current	[A]	13	
Contact material		CuZn	
Contact surface material		AU	
Material of grip body		TPU	
Degree of protection		IP65 / IP67 / IP68	
Temperature data			
Plug/socket	[°C]	-40 ... 90	

# Sensor/actuator cabling

## Cabling for power applications

**7/8" power cable, 4-pos. + PE,  
PVC cable, 1.5 mm<sup>2</sup>**

**Notes:**





For information about the cable qualities, see page 304

Free end



7/8" connector



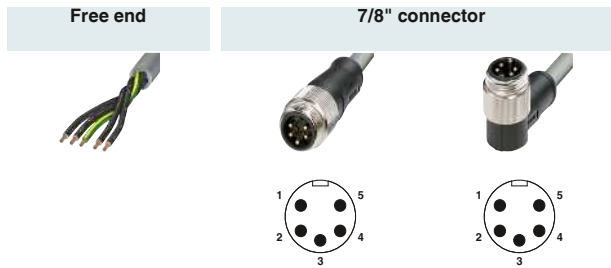
	Ordering data	Ordering data	Ordering data	
	Order No.	Order No.	Order No.	
<b>7/8" socket, straight</b>  	1.5 m	<a href="#">1443307</a>	0.3 m <a href="#">1443404</a>	
	3 m	<a href="#">1443310</a>	0.6 m <a href="#">1443417</a>	
	5 m	<a href="#">1443323</a>	1 m <a href="#">1443420</a>	
	7.5 m	<a href="#">1443336</a>	1.5 m <a href="#">1443433</a>	
	10 m	<a href="#">1443349</a>	2 m <a href="#">1443446</a>	
<b>7/8" socket, angled</b>  	1.5 m	<a href="#">1443352</a>	0.3 m <a href="#">1443459</a>	
	3 m	<a href="#">1443365</a>	0.6 m <a href="#">1443462</a>	
	5 m	<a href="#">1443378</a>	1 m <a href="#">1443475</a>	
	7.5 m	<a href="#">1443381</a>	1.5 m <a href="#">1443488</a>	
	10 m	<a href="#">1443394</a>	2 m <a href="#">1443491</a>	





Cable description	Cable type	Color coding	Pin assignment
PVC 1.5 mm <sup>2</sup> - gray	430	BK1	1
		BK2	2
		BK3	3
		BK4	4
		GNYE	5
			3

		Technical data
		7/8", 1.5 mm <sup>2</sup>
Rated voltage	[V]	600
Rated current	[A]	10
Contact material		CuZn
Contact surface material		AU
Material of grip body		TPU
Degree of protection		IP65 / IP67 / IP68
Temperature data		
Plug/socket	[°C]	-40 ... 90

**7/8" power cable, 4-pos. + PE,  
PVC cable, 2.5 mm<sup>2</sup>**

**Notes:**  
For information about the cable qualities, see page 304



		Ordering data		Ordering data		Ordering data	
		Order No.		Order No.		Order No.	
<b>7/8" socket, straight</b>  	1.5 m	1443501		0.3 m	1443608		
	3 m	1443514		0.6 m	1443611		
	5 m	1443527		1 m	1443624		
	7.5 m	1443530		1.5 m	1443637		
	10 m	1443543		2 m	1443640		
<b>7/8" socket, angled</b>  	1.5 m	1443556		0.3 m	1443653		
	3 m	1443569		0.6 m	1443666		
	5 m	1443572		1 m	1443679		
	7.5 m	1443585		1.5 m	1443682		
	10 m	1443598		2 m	1443695		

Cable description	Cable type	Color coding		Pin assignment
PVC 2.5 mm <sup>2</sup> - gray	431	BK1	1	1
		BK2	2	2
		BK3	3	4
		BK4	4	5
		GNYE		3

		Technical data	
		7/8", 2.5 mm <sup>2</sup>	
Rated voltage	[V]	600	
Rated current	[A]	13	
Contact material		CuZn	
Contact surface material		AU	
Material of grip body		TPU	
Degree of protection		IP65 / IP67 / IP68	
Temperature data			
Plug/socket	[°C]	-40 ... 90	

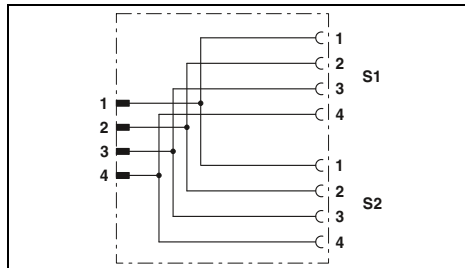
# Sensor/actuator cabling

## Cabling for power applications

### M12 Y-distributor for power connectors



Y-distributor, T-coded, 4-pos.



#### Technical data

General data	
Pollution degree	3
Degree of protection	IP65 / IP67
Electrical data	
Rated voltage	60 V
Rated current	2x 12 A (at 40 °C)
Material data	
Contact material	CuZn
Contact surface material	Ni/Au
Inflammability class according to UL 94	HB
Temperature data	
Plug/socket	[°C] -25 ... 80

#### Ordering data

Description	Center distance	Type	Order No.	Pcs. / Pkt.
Y-distributor, M12-SPEEDCON, unshielded, M12 connector (T-coded) to 2 x M12 socket (T-coded)	21 mm	SAC-4PY-MT/2XFT VP	1410632	5

**M12 distributor  
for power connectors**



new



**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 234
Temperature data	
Distributor box	-25 °C ... 60 °C

**Ordering data**

Description	Type	Order No.	Pcs. / Pkt.
<b>Power distributor</b> , M12-SPEEDCON socket, 4 slots, 4-pos., unshielded, status indicator: yes			
- with diagnostics port	SACB-4/T-L-8FUSE DIAG CT AXL	1411048	1
- without diagnostics port	SACB-4/T-L-8FUSE CT AXL	1413929	1

**Accessories**

Description	Type	Order No.	Pcs. / Pkt.
<b>M12 screw plug with SPEEDCON quick locking</b> For unused M12 sockets of sensor/actuator cables, boxes, and device connectors <b>UniCard</b> , for marking Phoenix Contact devices, Axioline Lettering field size: 7 x 10 mm, 30 individual labels	PROT-MS SCO	1553129	5
	UCT-EM (7X10)	0830765	10
<b>Torque screwdriver</b> With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1
<b>Nut</b> For assembling sensor/actuator cables with M12 connectors and for M12 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver	SAC BIT M12-D15	1208432	1
<b>Nut</b> For assembling SACC M12 connectors, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver	SACC BIT M12-D20	1208445	1



# Sensor/actuator cabling

## By the meter

### Cable rings for sensor cables

The special SAC cables are also available in 100 m cable rings for connecting the M8/M12 connectors that can be assembled.

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 298



Cable ring, 100 m, unshielded

Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>PUR, halogen-free - black, cable type: PUR</b> 3 x 0.25 mm <sup>2</sup> , conductor colors: BN/BU/BK 3 x 0.34 mm <sup>2</sup> , conductor colors: BN/BU/BK 4 x 0.25 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK	SAC-3P-100,0-PUR/0,25	1501689	1
	SAC-3P-100,0-PUR/0,34	1501650	1
	SAC-4P-100,0-PUR/0,25	1501692	1
	SAC-4P-100,0-PUR/0,34	1501663	1
4 x 0.34 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK	SAC-4P-100,0-PUR/0,34	1501663	1
5 x 0.34 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK/GN/YE	SAC-5P-100,0-PUR/0,34	1501676	1
6 x 0.25 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK/GY/PK	SAC-6P-100,0-PUR/0,25	1550614	1
8 x 0.25 mm <sup>2</sup> , conductor colors: WH/BN/GN/YE/GY/PK/BU/RD	SAC-8P-100,0-PUR/0,25	1550630	1
<b>PVC - black, cable type: PVC</b> 3 x 0.25 mm <sup>2</sup> , conductor colors: BN/BU/BK 3 x 0.34 mm <sup>2</sup> , conductor colors: BN/BU/BK 4 x 0.25 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK  4 x 0.34 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK  5 x 0.34 mm <sup>2</sup> , conductor colors: BN/WH/BU/BK/GN/YE  8 x 0.25 mm <sup>2</sup> , conductor colors: WH/BN/GN/YE/GY/PK/BU/RD  12 x 0.14 mm <sup>2</sup> , conductor colors: BN/BU/WH/GN/PK/YE/BK/GY/RD/VT/GYPK/RDBU 17 x 0.14 mm <sup>2</sup> , conductor colors: BN/BU/WH/GN/PK/YE/BK/GY/RD/VT/GYPK/RDBU/WHGN/BGN/WHYE/YEBN/WHGY <b>PUR/PVC - black, twisted pair, cable type: 35T</b>  12 x 0.14 mm <sup>2</sup> , conductor colors: (BN/BU)/(WH/GN)/(PK/YE)/(BK/GY)/(RD/VT)/(GYPK/RDBU)	SAC-3P-100,0-PVC/0,25	1501854	1
	SAC-3P-100,0-PVC/0,34	1501825	1
	SAC-4P-100,0-PVC/0,25	1501867	1
	SAC-4P-100,0-PVC/0,34	1501838	1
	SAC-5P-100,0-PVC/0,34	1501841	1
	SAC-8P-100,0-PVC/0,25	1550698	1
	SAC-12P-100,0-PVC/0,14	1441532	1
	SAC-17P-100,0-PVC/0,14	1441545	1

### Ordering example for cable drums with variable cable length:

For cable type: PVC - black, 5 x 0.34 mm<sup>2</sup>, shielded, and 340 m in length, the ordering data is as follows:

Order No.	Length [m]
1408527	340
	Increment: 10 m; Min. length: 110 m Max. length: 500 m



Cable drum, 110 m to 500 m, unshielded



Cable ring, 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-3P-PVC-0,25/...	1408518	1	SAC-3P-100,0-PVC/SH-0,34	1550656	1	SAC-3P-PVC-0,34-SH/...	1408525	1
SAC-3P-PVC-0,34/...	1408519	1	SAC-4P-100,0-PVC/SH-0,34	1550669	1	SAC-4P-PVC-0,34-SH/...	1408526	1
SAC-4P-PVC-0,25/...	1408521	1	SAC-5P-100,0-PVC/SH-0,34	1550672	1	SAC-5P-PVC-0,34-SH/...	1408527	1
SAC-4P-PVC-0,34/...	1408522	1	SAC-8P-100,0-PVC/SH-0,25	1550708	1	SAC-8P-PVC-0,25-SH/...	1408528	1
SAC-5P-PVC-0,34/...	1408523	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 rings for valve connector cables

The special SAC cables are also available in 100 m cable rings 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 298



Cable ring, 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.
<b>PUR, halogen-free - black, cable type: PUR</b> 3 x 0.5 mm <sup>2</sup> , conductor colors: BK 1/BK 2/GNYE	SAC-3P-100,0-PUR/0,5	1457393	1	SAC-3P-PUR-0,5/...	1408529	1
5 x 0.5 mm <sup>2</sup> , conductor colors: BK 1/BK 2/BK 3/BK 4/GNYE	SAC-5P-100,0-PUR/0,5	1457403	1	SAC-5P-PUR-0,5/...	1408530	1
<b>PVC - black, cable type: 534</b> 3 x 0.75 mm <sup>2</sup> , conductor colors: BK 1/BK 2/GNYE	SAC-3P-100,0-534/0,75	1457432	1			
5 x 0.75 mm <sup>2</sup> , conductor colors: BK 1/BK 2/BK 3/BK 4/GNYE	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 mm<sup>2</sup>, unshielded, and 340 m in length, the ordering data is as follows:

Order No.	Length [m]
1408530	340
	Increment: 10 m; Min. length: 110 m Max. length: 500 m

## Master cable rings for sensor/actuator boxes

Master cable rings are available for distributor boxes with spring connection or plug-in screw connection. Similarly, master cables can also be connected to covers and M23 sockets for assembly.

### Notes:

For information about the cable qualities, see page 312



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>Master cable ring with PE conductor, PUR/PVC, unshielded, length: 50 m</b>			
4 x 0.34 mm <sup>2</sup> / 3 x 0.75 mm <sup>2</sup>	SACB- 4X0,34/ 3X0,75-50,0 PUR	1503328	1
6 x 0.34 mm <sup>2</sup> / 3 x 0.75 mm <sup>2</sup>	SACB- 6X0,34/ 3X0,75-50,0 PUR	1503331	1
8 x 0.34 mm <sup>2</sup> / 3 x 0.75 mm <sup>2</sup>	SACB- 8X0,34/ 3X0,75-50,0 PUR	1503344	1
8 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB- 8X0,5/ 3X1,0-50,0 PUR	1503357	1
12 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-12X0,5/ 3X1,0-50,0 PUR	1503360	1
16 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-16X0,5/ 3X1,0-50,0 PUR	1503373	1
<b>Master cable ring with PE conductor, PUR/PVC, unshielded, length: 200 m</b>			
16 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-16X0,5/ 3X1,0-200,0 PUR	1559893	1
<b>Master cable ring with PE conductor, PUR/PVC, shielded, length: 50 m</b>			
8 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-8X0,5/3X1,0-50 PUR SH	1401240	1
12 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-12X0,5/3X1,0-50 PUR SH	1401239	1
16 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-16X0,5/3X1,0-50 PUR SH	1539156	1
<b>Master cable ring with PE conductor, PUR/PP halogen-free, unshielded, length: 50 m</b>			
8 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-8X0,5/3X1,0-50,0 HPUR	1401690	1
16 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-16X0,5/ 3X1,0-50,0 VPUR	1430938	1
<b>Master cable ring with PE conductor, PUR/PP, halogen-free, highly flexible, unshielded, length: 50 m</b>			
16 x 0.5 mm <sup>2</sup> / 3 x 1.0 mm <sup>2</sup>	SACB-16X0,5/ 3X1,0-50,0 80MC	1402304	1
<b>Master cable ring without PE conductor, PUR/PVC, unshielded, length: 50 m</b>			
4 x 0.34 mm <sup>2</sup> / 2 x 0.75 mm <sup>2</sup>	SACB- 4X0,34/2X0,75-50 PUR	1517576	1
6 x 0.34 mm <sup>2</sup> / 2 x 0.75 mm <sup>2</sup>	SACB- 6X0,34/2X0,75-50 PUR	1517589	1
8 x 0.34 mm <sup>2</sup> / 2 x 0.75 mm <sup>2</sup>	SACB- 8X0,34/2X0,75-50 PUR	1517592	1
10 x 0.34 mm <sup>2</sup> / 2 x 0.75 mm <sup>2</sup>	SACB-10X0,34/2X0,75-50 PUR	1517602	1
16 x 0.34 mm <sup>2</sup> / 2 x 0.75 mm <sup>2</sup>	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.



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>Torque screwdriver</b> ① With preset torque of 0.2 Nm and 4 mm hexagonal drive	TSD 02 SAC	1208487	1
<b>Nut</b> ② For assembling sensor/actuator cables with M8 connectors and for M8 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver	SAC BIT M8-D10	1208461	1
<b>Nut</b> ③ For assembling SACC M8 connectors with longitudinal knurl, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver	SACC BIT M8-D12	1208474	1
<b>Torque screwdriver</b> ④ With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1
<b>Nut</b> ⑤ For assembling sensor/actuator cables with M12 connectors and for M12 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver	SAC BIT M12-D15	1208432	1
<b>Nut</b> ⑥ For assembling SACC M12 connectors, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver	SACC BIT M12-D20	1208445	1

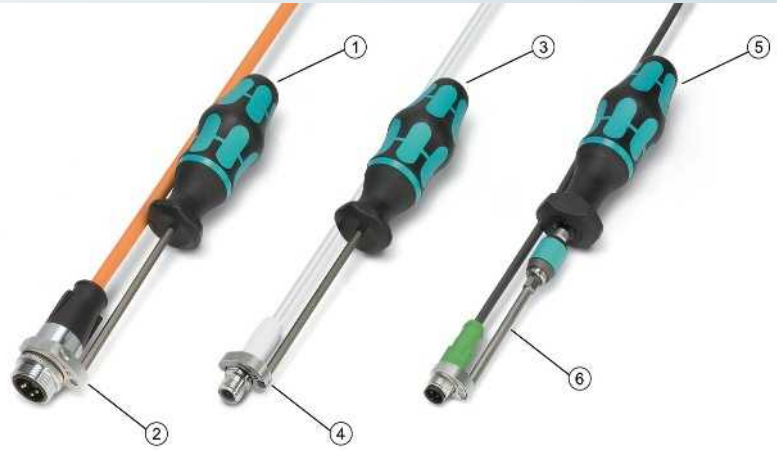
## Assembly tools for sensor/actuator cables

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 stainless steel knurl is also made from stainless steel. This prevents the connector knurls from being contaminated by corrosive materials.

For greater flexibility, screwdrivers with adjustable torque are also available. When used in conjunction with the adapter insert, they can also be used to accommodate the available plug attachments.



		Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	
<b>Torque screwdriver</b> With a preset torque of 0.8 Nm and a 4 mm hexagonal drive	TSD 08 SAC	1212597	1	
<b>Nut</b> For assembling 7/8" connectors, with 4 mm hexagonal drive	SAC BIT MIN-D25	1212512	1	
<b>Torque screwdriver</b> With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1	
<b>Nut</b> For mounting M12 connectors with hexagonal stainless steel knurl, wrench size 14, with 4 mm hexagonal drive	SAC BIT M12-W14	1212513	1	
<b>Torque screwdriver</b> , accuracy according to standard EN ISO 6789 Adjustable from 0.3 - 1.2 Nm Adjustable from 1.2 - 3 Nm Adjustable from 3 - 6 Nm	TSD-M 1,2NM TSD-M 3NM TSD-M 6NM	1212224 1212225 1212226	1 1 1	
<b>Adapter insert</b> For torque screwdrivers with adjustable torque, for accommodating plug attachments with 4 mm hexagonal drive	TSD-M SAC-BIT ADAPTER	1212600	1	

### Sealing elements

During transport or in the field, unoccupied plug-in connections must be protected or closed. Screw plugs, sealing caps and closing caps made of plastic or metal are suitable for this purpose. These achieve the IP65/IP67 as well as IP69K degrees of protection.



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>M5 screw plug</b> ① For unused M5 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M5	1533288	10
<b>M8 screw plug</b> ② For unused M8 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M8	1682540	5
<b>M12 screw plug</b> ③ For unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-M12	1680539	5
<b>M12 screw plug with SPEEDCON quick locking</b> ④ For unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-MS SCO	1553129	5
<b>M12 sealing cap</b> ⑤ For unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	PROT-M12 FS	1560251	5
<b>Screw plug M12, made of metal</b> ⑥ For unused M12 sockets of shielded sensor/actuator cables, boxes, and device connectors	PROT-M12 SH	1503302	5
<b>Metal M12 sealing cap</b> ⑦ For unused M12 connectors of sensor/actuator cables, device connectors, and I/O devices in the field	PROT-M12 FS-M	1430488	10
<b>M12 screw plug made of stainless steel</b> ⑧ For unused M12 sockets of sensor/actuator cables, boxes, and device connectors in the food and outdoor range	PROT-M12 FB	1555538	5
<b>Closing cap</b> ⑨ For Pg9/Pg11, to close unoccupied connections	Q-PROT 9/11	1670235	10
<b>M16 locking screw</b> 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.



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



## Accessories

### Accessories for M8 distributor boxes with plug-in master cable connection

The torque screwdriver with an M8 nut is the ideal tool for screwing in all M8 connectors with lengthwise knurl.

For distributors with 4 to 10 slots, we offer a suitable hood as replacement, a relevant screwdriver for fastening the hood as well as a torque screwdriver with a W24 nut for tightening the pressure nuts to a defined value.

The PROT M8 screw plug – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be marked using the marking material. They can be marked either by hand or using a plotter.



**Notes:**  
Additional marking material and tools can be found in Catalog 5.

		Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	
<b>Sensor/actuator connector hood</b> , with marking label, for sensor/actuator box with:				
4 single-occupancy M8 slots	SACB-C-H180- 4/3-M8	1521229	1	
6 single-occupancy M8 slots	SACB-C-H180- 6/3-M8	1521216	1	
8 single-occupancy M8 slots	SACB-C-H180- 8/3-M8	1516425	1	
Ten single-occupancy M8 slots	SACB-C-H180-10/3-M8	1516412	1	
<b>M8 screw plug</b>	PROT-M8	1682540	5	
For unused M8 sockets of sensor/actuator cables, boxes, and device connectors				
<b>Marking material</b> , 10-section				
- Unprinted	ZBF10:UNBEDRUCKT	0809997	10	
- Configurable	ZBF10 CUS	0825031	1	
<b>Torque screwdriver</b>	TSD 02 SAC	1208487	1	
With preset torque of 0.2 Nm and 4 mm hexagonal drive				
<b>Nut</b>	SAC BIT M8-D10	1208461	1	
For assembling sensor/actuator cables with M8 connectors and for M8 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver				
<b>Nut</b>	SACC BIT M8-D12	1208474	1	
For assembling SACC M8 connectors with longitudinal knurl, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver				
<b>Screwdriver</b>	SZK PZ2 VDE	1206463	10	
Size: PZ2 x 100 mm, length: 205 mm				
<b>Torque screwdriver</b>	TSD 25 SAC	1212315	1	
With a preset torque of 2.5 Nm and 4 mm hexagonal drive				
<b>Nut</b>	SAC BIT HOOD-W 24	1212486	1	
For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver				

### Accessories for M8 distributor boxes with M12/M16 plug-in connection

Suitable sockets in an angled design with a 5 and 10 meter master cable are available for distributors with 4 to 10 slots. In order to use a master cable as per the specific requirements, sockets are available in straight and angled designs for free assembly.

The slots can be marked using the marking material. They can be marked either 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 unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.



**Notes:**  
Additional marking material and tools can be found in Catalog 5.

Description	
<b>M16 socket, angled, with a master cable, for sensor/actuator box with:</b>	①
4 slots, cable length: 5 m	
4 slots, cable length: 10 m	
6 slots, cable length: 5 m	
6 slots, cable length: 10 m	
8 slots, cable length: 5 m	
8 slots, cable length: 10 m	
10 slots, cable length: 5 m	
10 slots, cable length: 10 m	
<b>M12 socket, angled, with connected master cable, for sensor/actuator box with:</b>	②
4 slots, cable length: 5 m	
4 slots, cable length: 10 m	
4 slots, cable length: variable	
6 slots, cable length: 5 m	
6 slots, cable length: 10 m	
6 slots, cable length: variable	
<b>M16 socket, 14-pos., straight, freely configurable, with solder connection, for an external cable diameter of 6.0 mm ... 8.0 mm</b>	③
<b>M16 socket, 14-pos., angled, freely configurable, with solder connection, for an external cable diameter of 6.0 mm ... 8.0 mm</b>	④
<b>M8 screw plug</b> For unused M8 sockets of sensor/actuator cables, boxes, and device connectors	⑤
<b>Marking material, 10-section</b> - Unprinted - Configurable	⑥
<b>Torque screwdriver</b> With preset torque of 0.2 Nm and 4 mm hexagonal drive	⑦
<b>Nut</b> For assembling sensor/actuator cables with M8 connectors and for M8 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver	⑧
<b>Nut</b> For assembling SACC M8 connectors with longitudinal knurl, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver	⑨

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>SAC-8P- 5,0-PUR/M16FR</b>	1693681	1
<b>SAC-8P-10,0-PUR/M16FR</b>	1693694	1
<b>SAC-10P- 5,0-PUR/M16FR</b>	1693704	1
<b>SAC-10P-10,0-PUR/M16FR</b>	1693717	1
<b>SAC-12P- 5,0-PUR/M16FR</b>	1693720	1
<b>SAC-12P-10,0-PUR/M16FR</b>	1693733	1
<b>SAC-14P- 5,0-PUR/M16FR</b>	1693746	1
<b>SAC-14P-10,0-PUR/M16FR</b>	1693759	1
<b>SAC-6P- 5,0-PURMC/M12FR</b>	1407820	1
<b>SAC-6P-10,0-PURMC/M12FR</b>	1407821	1
<b>SAC-6P-M12FR-PURMC/</b>	1520987	1
<b>SAC-8P- 5,0-PURMC/M12FR</b>	1407822	1
<b>SAC-8P-10,0-PURMC/M12FR</b>	1407823	1
<b>SAC-8P-M12FR-PURMC/</b>	1520990	1
<b>SACC-M16FS-14CON-M</b>	1500554	1
<b>SACC-M16FR-14CON-M</b>	1500253	1
<b>PROT-M8</b>	1682540	5
<b>ZBF10:UNBEDRUCKT</b>	0809997	10
<b>ZBF10 CUS</b>	0825031	1
<b>TSD 02 SAC</b>	1208487	1
<b>SAC BIT M8-D10</b>	1208461	1
<b>SACC BIT M8-D12</b>	1208474	1

### Ordering example for 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:

<b>Order No.</b>	<b>Length [m]</b> Max. 40 m
1520987	15.0
	<b>Increments:</b> 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 an M12 nut is the ideal tool for screwing in all M12 connectors with lengthwise knurl.

For the distributors, we offer a suitable hood as replacement, a matching screwdriver for fastening the hood as well as a torque screwdriver with a V24 nut for tightening the pressure nuts to a defined value.

The PROT-MS SCO screw plug – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be marked using the marking material. They can be marked either by hand or using a plotter.



**Notes:**  
Additional marking material and tools can be found in Catalog 5.

		Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	
<b>Connector hood with integrated connector</b> , for M12 sensor/actuator boxes with plastic thread and plug-in screw connection, for 4, 6 or 8 slots ①				
<b>M12 screw plug with SPEEDCON quick locking</b> ②	SACB-C-H180-8/16 SCO P	1453229	1	
For unused M12 sockets of sensor/actuator cables, boxes, and device connectors	PROT-MS SCO	1553129	5	
<b>Marking material</b> , 5-section ③				
- Unprinted, white	SS-ZB 17,5 WH	0804963	50	
- Unprinted, yellow	SS-ZB 17,5 YE	0804976	50	
- Configurable, white	SS-ZB 17,5 WH CUS	0824468	1	
- Configurable, yellow	SS-ZB 17,5 YE CUS	0824469	1	
<b>Torque screwdriver</b> ④	TSD 04 SAC	1208429	1	
With preset torque of 0.4 Nm and 4 mm hexagonal drive				
<b>Nut</b> ⑤	SAC BIT M12-D15	1208432	1	
For assembling sensor/actuator cables with M12 connectors and for M12 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver				
<b>Nut</b> ⑥	SACC BIT M12-D20	1208445	1	
For assembling SACC M12 connectors, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver				
<b>Screwdriver</b> ⑦	SZK PZ2 VDE	1206463	10	
Size: PZ2 x 100 mm, length: 205 mm				
<b>Torque screwdriver</b> ⑧	TSD 25 SAC	1212315	1	
With a preset torque of 2.5 Nm and 4 mm hexagonal drive				
<b>Nut</b> ⑨	SAC BIT HOOD-W 24	1212486	1	
For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver				
<b>Screwdriver</b> , suitable for all screw terminal blocks up to 1.5 mm <sup>2</sup> 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	
<b>Ferrules</b> , without plastic sleeves, CSA-certified ⑪				
0.5 mm <sup>2</sup>	A 0,5 - 6	3200218	1000	
0.75 mm <sup>2</sup>	A 0,75-10	3200234	1000	
1.0 mm <sup>2</sup>	A 1 -10	3200250	1000	
1.5 mm <sup>2</sup>	A 1,5 -10	3200276	1000	

### Accessories for M12 distributor boxes with metal thread and plug-in screw connection

The torque screwdriver with an M12 nut is the ideal tool for screwing in all M12 connectors with lengthwise knurl.

For the distributors, we offer a suitable hood as replacement, a matching screwdriver for fastening the hood as well as a torque screwdriver with a W24 nut for tightening the pressure nuts to a defined value.

The PROT-MS SCO screw plug – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be marked using the marking material. They can be marked either by hand or using a plotter.



#### Notes:

Additional marking material and tools can be found in Catalog 5.

Description	
<b>Connector hood</b> with integrated connector, for M12 sensor/actuator boxes with metal thread and plug-in screw connection, for 4, 6 or 8 slots	①
<b>M12 screw plug with SPEEDCON quick locking</b>	②
For unused M12 sockets of sensor/actuator cables, boxes, and device connectors	
<b>Marking material</b> , 5-section	③
- Unprinted, white - Unprinted, yellow - Configurable, white - Configurable, yellow	
<b>Torque screwdriver</b>	④
With preset torque of 0.4 Nm and 4 mm hexagonal drive	
<b>Nut</b>	⑤
For assembling sensor/actuator cables with M12 connectors and for M12 connectors with insulation displacement connection, for 4 mm hexagonal screwdriver	
<b>Nut</b>	⑥
For assembling SACC M12 connectors, excluding those with insulation displacement connection, for 4 mm hexagonal screwdriver	
<b>Screwdriver</b>	⑦
Size: PZ1 x 80 mm, length: 178 mm	
<b>Torque screwdriver</b>	⑧
With a preset torque of 2.5 Nm and 4 mm hexagonal drive	
<b>Nut</b>	⑨
For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	

#### Ordering data

Type	Order No.	Pcs. / Pkt.
SACB-C-H180 8/16 SCO	1516713	10
PROT-MS SCO	1553129	5
SS-ZB 17,5 WH	0804963	50
SS-ZB 17,5 YE	0804976	50
SS-ZB 17,5 WH CUS	0824468	1
SS-ZB 17,5 YE CUS	0824469	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





### Accessories for QUICKON distributor boxes with a connection cross section of 0.14 mm<sup>2</sup> ... 0.34 mm<sup>2</sup>

The Q-PROT 9/11 closing cap – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

A torque screwdriver with a W13 nut, already familiar from M8 or M12 screw connections, is now also available for the fast connection pressure nuts. The handling of the tools is self-explanatory and easy.

For the distributors, we offer a replacement plug hood, a relevant screwdriver for fastening the hood as well as a torque screwdriver with a W24 nut for tightening the pressure nuts to a defined value.

The slots can be marked using the marking material. They can be marked either by hand or using a plotter.

The QUICKON set comprising a splice ring, a pressure nut, and a line seal serves for replacement purposes if necessary.



#### Notes:

Additional marking material and tools can be found in Catalog 5.

Description	
<b>Connector hood</b> 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
<b>Closing cap</b> for Pg9/Pg11, to close unoccupied connections	②
<b>Marking material</b> , 5-section - Unprinted, white - Unprinted, yellow - Configurable, white - Configurable, yellow	③
<b>QUICKON set</b> for replacement purposes, consisting of splice ring, pressure nut, and conductor seal	④
<b>Screwdriver</b> Size: PZ1 x 80 mm, length: 178 mm	⑤
<b>Torque screwdriver</b> With a preset torque of 2.0 Nm and 4 mm hexagonal drive	⑥
<b>Nut</b> For the reliable tightening of the pressure nuts with a wrench size of 13 mm, for 4 mm hexagonal screwdriver	⑦
<b>Torque screwdriver</b> With a preset torque of 2.5 Nm and 4 mm hexagonal drive	⑧
<b>Nut</b> For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	⑨

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>SACB-C-H180 8/4 QO-0,34</b>	1560235	1
<b>Q-PROT 9/11</b>	1670235	10
<b>SS-ZB 17,5 WH</b>	0804963	50
<b>SS-ZB 17,5 YE</b>	0804976	50
<b>SS-ZB 17,5 WH CUS</b>	0824468	1
<b>SS-ZB 17,5 YE CUS</b>	0824469	1
<b>QO-SET</b>	1548626	20
<b>SZK PZ1 VDE</b>	1206450	10
<b>TSD 20 SAC</b>	1212020	1
<b>SAC BIT QUICKON-W13</b>	1212033	1
<b>TSD 25 SAC</b>	1212315	1
<b>SAC BIT HOOD-W 24</b>	1212486	1

# Sensor/actuator cabling

## Accessories

### Accessories for QUICKON distributor boxes with a connection cross section of 0.34 mm<sup>2</sup> ... 0.75 mm<sup>2</sup>

The scope of supply of the distributors includes a black rubber seal for an external cable diameter from 6.5 mm to 9.5 mm. Rubber seals are also available from 4.0 mm to 6.5 mm (yellow seal) or 9.0 mm to 13.0 mm (red seal) master cables. The torque screwdriver with a W24 nut is suitable for tightening the pressure nuts to a defined value.

The QUICKON set comprising a pressure nut, a cap, a line seal, and a splice ring serves for replacement purposes if necessary.

The socket wrench facilitates comfortable loosening or tightening of the QUICKON pressure nuts.

The Q-PROT 9/11 closing cap – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be marked using the marking material. They can be marked either by hand or using a plotter.

**Notes:**  
Additional marking material and tools can be found in Catalog 5.



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>Rubber seal</b> for Pg13.5 screw connection for cable Ø: 4.0 mm ... 6.5 mm ①	SACB-D PG 13,5 (4,0-6,5) YE	1680377	10
<b>Rubber seal</b> for Pg13.5 screw connection For cable Ø: 6.5 mm ... 9.5 mm ②	SACB-D PG 13,5 (6,5-9,5) BK	1680380	10
<b>Rubber seal</b> for Pg13.5 screw connection For cable Ø: 9.0 mm ... 13.0 mm ③	SACB-D PG 13,5 (9,0-13,0) RD	1680393	10
<b>Closing cap</b> For Pg9/ Pg11, to close unoccupied connections ④	Q-PROT 9/11	1670235	10
<b>Marking material</b> ⑤			
- Unprinted, white	ZBN 18:UNBEDRUCKT	2809128	10
- Unprinted, yellow	UC-TMF 16 YE	0819259	10
- Configurable, white	ZBN 18 CUS	0825059	1
- Configurable, yellow	ZBN 18 YE CUS	0825058	1
<b>QUICKON set</b> for replacement purposes, consisting of pressure nut, cap, conductor seal, and splice ring ⑥	Q SET-11/4 COD1 SACB-Q	1670743	25
<b>Screwdriver</b> Size: PZ1 x 80 mm, length: 178 mm ⑦	SZK PZ1 VDE	1206450	10
<b>Slotted socket wrench</b> for QUICKON nuts and panel feed-throughs, for wrench size: 22 mm ⑧	QSS 22	1670206	1
<b>Torque screwdriver</b> With a preset torque of 2.5 Nm and 4 mm hexagonal drive ⑨	TSD 25 SAC	1212315	1
<b>Nut</b> For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver ⑩	SAC BIT HOOD-W 24	1212486	1

















# Sensor/actuator cabling

## Sensor/actuator cable - cable range

### 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 for use in drag chains, revolving/swivel tables, and as machine control cables for extreme operating conditions. Suitable for bending cycle loads with long-term durability. The special PUR outer sheath offers excellent resistance to oils according to DIN EN 60811-2-1, lubricants, cooling agents, and other aggressive substances.

Additional features: halogen and PVC-free, no silicone or substances that would hinder coating with paint or varnish, resistant to hydrolysis and flame-retardant according to UL-FT2.

<b>Outer sheath material</b>	<b>PUR</b>
<b>Min. bending cycles</b>	<b>4 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traverse path</b>	<b>10 m</b>
<b>Acceleration</b>	<b>10 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3 m/s</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	172 234 236 282
		M8 Shielded	3 x 0.25 mm <sup>2</sup> (32 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	179 282
		M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	172 236 282
		M12 Shielded	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	179
		Valve connectors	3 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Mobile: -15°C ... +80°C Fixed: -40°C ... +80°C	216 to 224 284

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	4-pos.	M8	4 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	172 180 282
		M8 Shielded	4 x 0.25 mm <sup>2</sup> (32 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	185 282
		M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	180 235 282
		M12 Shielded	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	185 282
		M12 power	4 x 1.5 mm <sup>2</sup> (84 x 0.15 mm)		Brown, white, blue, black	PP	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C	274
		M12 power	4 x 1.5 mm <sup>2</sup> (84 x 0.15 mm)		Black 1, black 2, black 3, green-yellow	PP	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C	272
		M12 power Shielded	4 x 1.5 mm <sup>2</sup> (78 x 0.15 mm) Shielding: copper braid		Brown, white, blue, black	PP	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C	275
		Valve connectors	4 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, black 3, green-yellow	PP	Mobile: -20°C ... +80°C Fixed: -40°C ... +80°C	216 to 224
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, green-yellow	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	187 282
		M12 Shielded	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	190 282
		Valve connectors	5 x 0.5 mm <sup>2</sup> (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	228 284
	6-pos.	M8	6 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, white, blue, black, gray, pink	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	191 282

# Sensor/actuator cabling

## Sensor/actuator cable - cable range

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	6-pos.	M8 Shielded	6 x 0.14 mm <sup>2</sup> (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	192 282
	8-pos.	M8	8 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		According to DIN 47100	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	193
		M8 Shielded	8 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)  Shielding: copper braid		According to DIN 47100	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	196
		M12	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		According to DIN 47100	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	194 282
		M12 Shielded	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)  Shielding: copper braid		According to DIN 47100	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	197 282
		12-pos.	M12	12 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		According to DIN 47100	PP	Mobile: -20°C ... +80°C  Fixed: -40°C ... +80°C
	17-pos.	M12	17 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		According to DIN 47100	PP	Mobile: -20°C ... +80°C  Fixed: -40°C ... +80°C	198
PUR Orange	4-pos.	M12 power Shielded	4 x 1.5 mm <sup>2</sup> (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	273
115 Black	5-pos.	M8	5 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, white, blue, black, gray	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	186
		M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	PP	Mobile: -25°C ... +80°C  Fixed: -40°C ... +80°C	187
121 Black	3-pos.	Valve connectors	3 x 1.0 mm <sup>2</sup> (32 x 0.20 mm)		Black 1, black 2, green-yellow	PP	Mobile: -20°C ... +80°C  Fixed: -40°C ... +80°C	216 218
240 Yellow	3-pos.	Valve connectors	3 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Mobile: -15°C ... +80°C  Fixed: -40°C ... +80°C	216 to 224

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
240 Yellow	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	180
	5-pos.	Valve connectors	5 x 0.5 mm <sup>2</sup> (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	216 to 224
280 Gray	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	172 174 236
		M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	174 236
		Valve connectors	3 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, green-yellow	PP	Mobile: -15°C ... +80°C Fixed: -40°C ... +80°C	216 to 224
	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	180
	5-pos.	Valve connectors	5 x 0.5 mm <sup>2</sup> (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	228
	8-pos.	M12 Shielded	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)  Shielding: copper braid		According to DIN 47100	PP	Mobile: -25°C ... +80°C Fixed: -40°C ... +80°C	197

### TPE-U highly flexible



Permanently flexible control cable that is ideal for use in drag chains and industrial robots. The cable can be used wherever extreme bending and torsional stress occur simultaneously and significantly longer durability is desired. It is resistant to welding sparks and is therefore designed exclusively for use in resistance welding processes. The use of new materials eliminates irradiation cross-linking, which makes the cable easier to recycle. The cables therefore meet the requirements of DIN EN ISO 14001. Additional features: halogen and PVC-free, flame-retardant according to UL-FT1, VW1, and 1581 §1061, very good resistance to oils

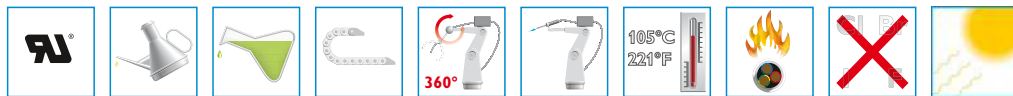
according to VDE 0250 Part 407, chemicals, lubricants, and coolants as well as other aggressive substances.

Due to the extremely robust outer sheath, this cable should only be stripped in 5 cm increments.

<b>Outer sheath material</b>	<b>TPE-U</b>
<b>Min. bending cycles</b>	<b>10 million</b>
<b>Minimum bending radius</b>	
<b>Fixed</b>	<b>5 x D</b>
<b>Mobile</b>	<b>7.5 x D</b>
<b>Traversal path</b>	<b>5 m</b>
<b>Acceleration</b>	<b>20 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3.33 m/s</b>
<b>Torsion angle</b>	<b>±360°</b>
<b>Min. torsion cycles</b>	<b>13 million</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page	
800 Gray	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, blue, black	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	172 174 236	
		M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	174 236 178	
	4-pos.	M8	4 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, white, blue, black	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	172 180	
		M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	180 184	
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	187	
	8-pos.	M12	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		According to DIN 47100	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	194	
	802 Gray	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, green-yellow	Polyester	Mobile: -30°C ... +90°C Fixed: -40°C ... +90°C 120°C ... 3000 h	189

**PUR irradiated, resistant to welding sparks**



Due to the irradiation of the PUR outer sheath, the properties typical of PUR, e.g., resistance to temperature, UV, and welding sparks, are greatly improved. The cables are suitable for robust use in robot technology, particularly in welding robots, and are characterized by very long durability. Flame-retardant according to DIN VDE 0472, Part 804, test type B.

<b>Outer sheath material</b>	<b>PUR irradiated</b>
<b>Min. bending cycles</b>	<b>5 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traverse path</b>	<b>10 m</b>
<b>Acceleration</b>	<b>10 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3 m/s</b>
<b>Torsion</b>	<b>±360°</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
150 Orange	3-pos.	M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	174 236
		Valve connectors	3 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, green-yellow	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	216 to 224
	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	180
	5-pos.	M12	4 x 0.34 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup> (42 x 0.1 mm, 24 x 0.15 mm)		Brown, white, blue, black, green-yellow	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	187
		Valve connectors	5 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	228
160 Yellow	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	Mobile: -40°C ... +105°C Fixed: -50°C ... +105°C	180

# Sensor/actuator cabling

## Sensor/actuator cable - cable range

### 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. They are free from 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 chemicals according to DIN EN 60811-2-1 and is

flame-retardant according to DIN EN 50265. The outer sheath is manufactured using the coextrusion process.

<b>Outer sheath material</b>	<b>PUR</b>
<b>Inner sheath material</b>	<b>PVC</b>
<b>Min. bending cycles</b>	<b>2 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traverse path</b>	<b>5 m</b>
<b>For type 35T</b>	<b>10 m</b>
<b>Acceleration</b>	<b>5 m/s<sup>2</sup></b>
<b>For type 35T</b>	<b>10 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3 m/s</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	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 <sup>2</sup> (18 x 0.1 mm) Shielding: copper braid		According to DIN 47100	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	200
	17-pos.	M12 Shielded	7 x 2 x 0.14 mm <sup>2</sup> 1 x 3 x 0.14 mm <sup>2</sup> (18 x 0.1 mm) Shielding: copper braid		According to DIN 47100	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	201
PUR Black For M5	3-pos.	M5	3 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -15°C ... +80°C	170
	4-pos.	M5	4 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -15°C ... +80°C	170

### PUR/PVC (for 7/8")



The cables are designed for robust use in machine tools, assembly/production lines, as well as production involving metal cutting.

They are free from 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 chemicals according to HD 22.10 and VDE 0282-10 and is flame-retardant according to EN 60332-1-2, UL VW1, and CSA FT1.

<b>Outer sheath material</b>	<b>PUR</b>
<b>Minimum bending radius</b>	<b>7.5 x D</b>
<b>Fixed</b>	<b>15 x D</b>
<b>Mobile</b>	<b>15 x D</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
440 Gray	5-pos.	7/8"	5 x 1.5 mm <sup>2</sup> (30 x 0.25 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +90°C Fixed: -40°C ... +90°C	278
441 Gray	5-pos.	7/8"	5 x 2.5 mm <sup>2</sup> (50 x 0.25 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +90°C Fixed: -40°C ... +90°C	279



PVC - 80°C and 105°C



These very reasonably priced high-quality cables are 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 oil and chemicals and is less susceptible to wear. Flame-retardant to VW-1 according to UL 758.

**VW-1** is the toughest flame-resistance test for single cables.

**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
PVC Black	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (14 x 0.15 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	174 236 282
		M12	3 x 0.34 mm <sup>2</sup> (19 x 0.15 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	174 236 282
		M12 Shielded	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	179 282
		Valve connectors	3 x 0.5 mm <sup>2</sup> (16 x 0.2 mm)		Black 1, black 2, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	216 to 224
	4-pos.	M8	4 x 0.25 mm <sup>2</sup> (14 x 0.15 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	180 282
		M12	4 x 0.34 mm <sup>2</sup> (19 x 0.15 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	180 282
		M12 Shielded	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	185 282
		Valve connectors	4 x 0.5 mm <sup>2</sup> (16 x 0.2 mm)		Black 1, black 2, black 3, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	228
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (19 x 0.15 mm)		Brown, white, blue, black, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	187 282



# Sensor/actuator cabling




## Sensor/actuator cable - cable range

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PVC Black	5-pos.	M12 Shielded	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)  Shielding: copper braid		Brown, white, blue, black, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	190 282
		Valve connectors	5 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +80°C	216 to 224
	8-pos.	M12	8 x 0.25 mm <sup>2</sup> (14 x 0.15 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	194 282
		M12 Shielded	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)  Shielding: copper braid and filler litz wire		White, brown, green, yellow, gray, pink, blue, red	PVC	Mobile: -5°C ... +105°C  Fixed: -25°C ... +105°C	197 282
	12-pos.	M12	12 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		According to DIN 47100	PVC	Mobile: -5°C ... +90°C  Fixed: -40°C ... +90°C	199 282
	17-pos.	M12	17 x 0.14 mm <sup>2</sup> (18 x 0.1 mm)		According to DIN 47100	PVC	Mobile: -5°C ... +90°C  Fixed: -25°C ... +90°C	199 282
500 Gray	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (14 x 0.15 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	174 236
		M12	3 x 0.34 mm <sup>2</sup> (19 x 0.15 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	174 236
		M12 Shielded	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)  Shielding: copper braid		Brown, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	179
	4-pos.	M8	4 x 0.25 mm <sup>2</sup> (14 x 0.15 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	180
		M12	4 x 0.34 mm <sup>2</sup> (19 x 0.15 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	180
		M12 Shielded	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)  Shielding: copper braid		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C  Fixed: -25°C ... +80°C	185

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
500 Gray	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	187
		M12 Shielded	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	190
	8-pos.	M12	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	194
515 Black	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	187
534 Black	3-pos.	Valve connectors	3 x 0.75 mm <sup>2</sup> (24 x 0.2 mm)		Black 1, black 2, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	216 to 224 284
	4-pos.	Valve connectors	4 x 0.75 mm <sup>2</sup> (24 x 0.2 mm)		Black 1, black 2, black 3, green-yellow	PVC	Mobile: -5°C ... +80°C Fixed: -40°C ... +80°C	228
	5-pos.	Valve connectors	5 x 0.75 mm <sup>2</sup> (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	228 284
540 Yellow	3-pos.	M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	174 236
	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	180
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +80°C Fixed: -25°C ... +80°C	187

# Sensor/actuator cabling

## Sensor/actuator cable - cable range

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
542 Yellow	3-pos.	M12	3 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, blue, black	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	174 236
	4-pos.	M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	180
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	PVC	Mobile: -5°C ... +105°C Fixed: -25°C ... +105°C	187



### PVC (for 7/8")



These very reasonably priced high-quality cables are 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 oil and chemicals and is less susceptible to wear. Flame-retardant according to IEC 60332-1-2 and UL 1581 Cable Flame Test.

**Outer sheath material** PVC  
**Minimum bending radius**  
 Fixed 4 x D  
 Mobile 12.5 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
430 Gray	5-pos.	7/8"	5 x 1.5 mm <sup>2</sup> (30 x 0.25 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +90°C Fixed: -40°C ... +90°C	276
431 Gray	5-pos.	7/8"	5 x 2.5 mm <sup>2</sup> (50 x 0.25 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	Mobile: -5°C ... +90°C Fixed: -40°C ... +90°C	277

**PE-X - for outdoor applications**



The halogen-free control cable is suitable for outdoor installation in direct sunlight. The insulation and sheath materials offer excellent resistance to weather, UV, and wear. The outstanding resistance to oil, high degree of flexibility, and low smoke gas density also make it suitable for automation technology as well as machine building and systems manufacturing.

Additional features: halogen-free according to

DIN VDE 0472 Part 815, flame-retardant according to DIN EN 60332-1-2 and 50266-2-5, UV resistant according to DIN VDE 0276-605, oil resistant according to DIN EN 60811-2-1 (168 h at 100°C) and 50306.

<b>Outer sheath material</b>	<b>PE copolymer irradiated</b>
<b>Min. bending cycles</b> Shielded	<b>2 million</b> <b>1 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traversal path</b>	<b>10 m</b>
<b>Acceleration</b>	<b>10 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3 m/s</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
28X Black	4-pos.	M12	4 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Brown, white, blue, black	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products
		M12 Shielded	4 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Brown, white, blue, black	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products
	5-pos.	M12	5 x 0.5 mm <sup>2</sup> (28 x 0.15 mm)		Brown, white, blue, black, gray	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products
		M12 Shielded	5 x 0.5 mm <sup>2</sup> (28 x 0.15 mm) Shielding: Copper braid		Brown, white, blue, black, gray	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products
	8-pos.	M12	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		According to DIN 47100	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products
		M12 Shielded	8 x 0.25 mm <sup>2</sup> (32 x 0.1 mm) Shielding: Copper braid		According to DIN 47100	PE copolymer	Mobile: -15°C ... +105°C Fixed: -40°C ... +105°C	phoenixcontact.net/products

# Sensor/actuator cabling

## Sensor/actuator cable - cable range

### PP-EPDM - for the food industry



This cable with PP-EPDM outer sheath is specifically designed for use in the food industry. Dirt can be easily detected on the light colored surface so that food is not contaminated by coming into contact with the cable. Furthermore, the cable is resistant to common cleaning agents and disinfectants.

Outer sheath material **PP-EPDM**

Minimum bending radius **10 x D**

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
600 Light gray	3-pos.	M8	3 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, blue, black	PP	Fixed: -40°C ... +105°C	phoenixcon tact.net/products
	4-pos.	M8	4 x 0.25 mm <sup>2</sup> (32 x 0.1 mm)		Brown, white, blue, black	PP	Fixed: -40°C ... +105°C	phoenixcon tact.net/products
		M12	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black	PP	Fixed: -40°C ... +105°C	phoenixcon tact.net/products
		M12 Shielded	4 x 0.34 mm <sup>2</sup> (42 x 0.1 mm) Shielding: Copper braid		Brown, white, blue, black	PP	Fixed: -40°C ... +105°C	phoenixcon tact.net/products
	5-pos.	M12	5 x 0.34 mm <sup>2</sup> (42 x 0.1 mm)		Brown, white, blue, black, gray	PP	Fixed: -40°C ... +105°C	phoenixcon tact.net/products




## RADOX® - for railway applications



In railway applications, special demands are placed on the cables used. Special considerations must be made regarding fire protection, in that cables must meet the highest fire safety standards. In addition, the cables are very resistant to mineral oil and fuel.

**Outer sheath material** RADOX® GKW S

**Minimum bending radius**  
**Fixed** 3 x D  
**Mobile** 4 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
28R Black	3-pos.	M12	3 x 0.5 mm <sup>2</sup> (19 x 0.18 mm) Shielding: Copper braid		White 1, white 2, white 3	RADOX® TI303	Mobile: -25°C ... +90°C Fixed: -40°C ... +120°C	phoenixcon tact.net/products
	4-pos.	M12	4 x 0.5 mm <sup>2</sup> (19 x 0.18 mm) Shielding: Copper braid		White 1, white 2, white 3, white 4	RADOX® TI303	Mobile: -25°C ... +90°C Fixed: -40°C ... +120°C	phoenixcon tact.net/products
	5-pos.	M12	5 x 0.5 mm <sup>2</sup> (19 x 0.18 mm) Shielding: Copper braid		White 1, white 2, white 3, white 4, white 5	RADOX® TI303	Mobile: -25°C ... +90°C Fixed: -40°C ... +120°C	phoenixcon tact.net/products

# Sensor/actuator cabling

## Sensor/actuator boxes - cable range

### 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. They are free from 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 chemicals according to VDE 0472 Part 803, is flame-retardant according to 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

**Min. 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	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR/PVC Black	3-pos., single-occu- pancy	M8 and QUICKON up to 0.34 mm <sup>2</sup> 4 slots	4 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		White, green, yellow, gray,  brown, blue	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	246 252 285
		M8 and QUICKON up to 0.34 mm <sup>2</sup> 6 slots	6 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, pink, red,  brown, blue	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	246 252 285
		M8 and QUICKON up to 0.34 mm <sup>2</sup> 8 slots	8 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, pink, red, black, violet,  brown, blue	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	246 252 285
		M8 10 slots	10 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, pink, red, black, violet, white-pink, pink-brown,  brown, blue	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	246 285
	4-pos., double-occu- pancy	QUICKON up to 0.34 mm <sup>2</sup> 4 slots	8 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green,  brown, blue	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	252
		M8 and QUICKON up to 0.34 mm <sup>2</sup> 8 slots	16 x 0.34 mm <sup>2</sup> 2 x 0.75 mm <sup>2</sup>		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	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	246 252 285

Type	Number of positions	Use	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 <sup>2</sup>  4 slots	4 x 0.34 mm <sup>2</sup>  3 x 0.75 mm <sup>2</sup>		White, green, yellow, gray,  brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 253 285
		M12 and QUICKON up to 0.75 mm <sup>2</sup>  6 slots	6 x 0.34 mm <sup>2</sup>  3 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, pink, red,  brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 253 285
		M12 and QUICKON up to 0.75 mm <sup>2</sup>  8 slots	8 x 0.34 mm <sup>2</sup>  3 x 0.75 mm <sup>2</sup>		White, green, yellow, gray, pink, red, black, violet,  brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 253 285
	5-pos., double-occu- pancy	M12  4 slots	8 x 0.50 mm <sup>2</sup>  3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green,  brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 285
		M12  6 slots	12 x 0.50 mm <sup>2</sup>  3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown,  brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 285
		M12  8 slots	16 x 0.50 mm <sup>2</sup>  3 x 1.00 mm <sup>2</sup>		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	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	248 250 285



# 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. Analog signals are reliably protected against electromagnetic influences by the tin-plated copper braid with 85% coverage. The cables are free from 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 chemicals according to VDE 0472 Part 803, is flame-retardant according to DIN EN 50265, and is resistant to hydrolysis.

Outer sheath material	<b>PUR</b>
Inner sheath material	<b>PVC</b>
Min. 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	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR/PVC shielded Black	5-pos., double-occu- pancy	M12 4 slots	8 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	254 285
		M12 6 slots	12 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PVC	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	254 285
		M12 8 slots	16 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		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	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	254 285

### PVC - for the food industry (for sensor/actuator boxes)



Master cable that is resistant to cleaning agents 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 according to IEC 60332-1-2 and UL 758 FT2 and has an oil-resistant outer sheath according to DIN EN 60811-404.

Outer sheath material	<b>PVC</b>
Minimum bending radius	
Fixed	5 x D
Mobile	10 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PVC Black	5-pos., double-occu- pancy	M12 8 slots	16 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		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	Mobile: -5°C ... +90°C  Fixed: -40°C ... +90°C	See: phoenixcon- tact.net/prod- ucts

**PUR, halogen-free (for sensor/actuator boxes)**



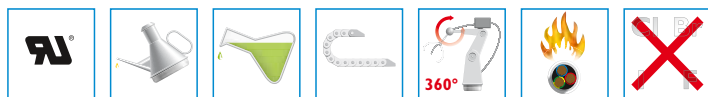
Permanently flexible control cables for use in drag chains and as machine control cables for extreme operating conditions. Suitable for bending cycle loads with long-term durability. The special PUR outer sheath offers excellent resistance to oils according to VDE 0472 Part 803, lubricants, cooling agents, and other aggressive substances. Additional features: halogen-

and PVC-free, no silicone or substances that would hinder coating with paint or varnish, resistant to hydrolysis, and flame-retardant according to DIN EN 50265.

<b>Outer sheath material</b>	<b>PUR</b>
<b>Min. bending cycles</b>	<b>1.5 ... 2 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traverse path</b>	<b>2 m</b>
<b>Speed</b>	<b>2 m/s</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
PUR Black	5-pos., double-occu- pancy	M12 4 slots	8 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PP	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	250 285
		M12 6 slots	12 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PP	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	250 285
		M12 8 slots	16 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		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	Mobile: -5°C ... +80°C  Fixed: -40°C ... +90°C	250 285

**80 MC - highly stranded (for sensor/actuator boxes)**



Permanently flexible cables for use in drag chains, industrial robots or portal tables. Suitable for bending cycle loads and torsional stress with long-term durability. The special PUR outer sheath offers excellent resistance to oils according to DIN EN 60811-2-1, chemicals, and hydrolysis.

The cable is also flame-retardant according to DIN EN 50265-2-1 and is halogen-free.

<b>Outer sheath material</b>	<b>PUR</b>
<b>Min. bending cycles</b>	<b>5 million</b>
<b>Minimum bending radius</b>	<b>10 x D</b>
<b>Traverse path</b>	<b>5 m</b>
<b>Acceleration</b>	<b>5 m/s<sup>2</sup></b>
<b>Speed</b>	<b>3 m/s</b>
<b>Torsion angle</b>	<b>+/- 120°</b>
<b>Min. torsion cycles</b>	<b>3 million</b>
<b>Test length</b>	<b>1 m</b>
<b>Tested at</b>	<b>+20°C ... +25°C</b>

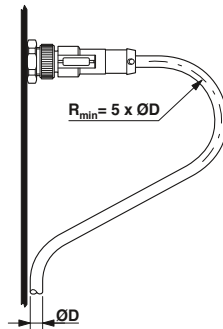
Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
80MC Black	5-pos., double-occu- pancy	M12 8 slots	16 x 0.50 mm <sup>2</sup> 3 x 1.00 mm <sup>2</sup>		White, green, yellow, gray, pink, red, black, violet, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, white-gray, gray-brown, brown, blue, green-yellow	PP	Mobile: +5°C ... +70°C  Fixed: -30°C ... +70°C	285



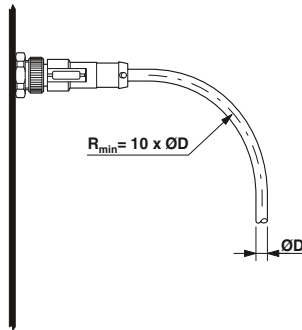
The following pages provide an overview of the appropriate installation of SAC cables in harsh industrial environments that will guarantee a long service life and reduce costs.

### Bending radius

In the case of a mobile installation, a generous bending radius can be advantageous, since the greater the bending radius, the lower the voltages occurring as a result of the movement. The result is an increased cable service life (the minimum cable-specific bending radii must be taken into consideration).



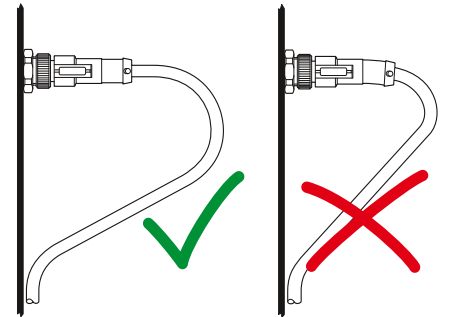
Fixed installation



Mobile installation

### Load

A sufficient cable loop at the connection point can prevent the material from becoming prematurely worn and in the case of additional loads ensures sufficient clearance for voltages to be absorbed.



### Mobile installation

In the case of a mobile installation, the cable length should be sufficient to adequately absorb the tensile loads. This can be implemented, for example, using 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 these should be arranged into separate bore holes in the neutral zone of the drag chain.

The laying of cables that have very different outside diameters next to or across each other is generally not recommended. If, however, this cannot be avoided for design reasons, isolating segments or bridges should be installed for a reasonable service life. If isolating segments cannot be installed between each cable, we recommend that our cables with an outside diameter < 10 mm should be laid loose, together with cables with similar cross sections within a guide tube in the drag chain.

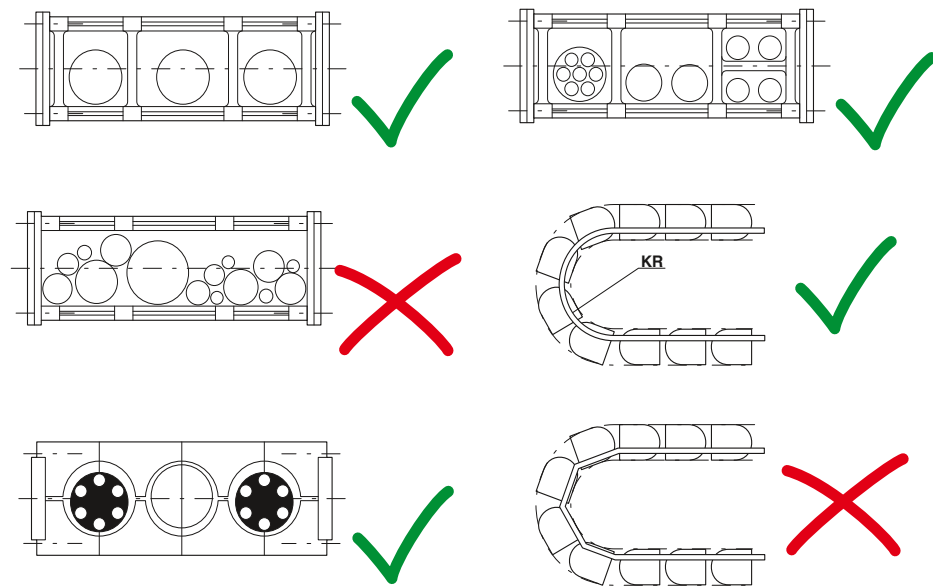
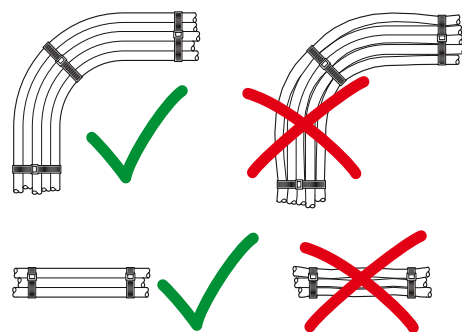
In terms of the arrangement of the cables, it is also important to ensure that heavy cables are routed outwards and light cables, such as our SAC cables, are routed inwards. They should be strain-relieved on both sides, or at least at the moving end of the drag chain. A distance of 20 to 30 times the outside diameter of the cable is recommended between the point at which the bending motion ends and the attachment.

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 outside 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 outside diameters should only be laid next to each other when bridges are used.



KR = radius of curvature



# Data connectors and cables

Standardized data interfaces are increasingly being used in industrial applications as part of the decentralization of complex manufacturing systems and the increasing need for rapid information and data exchange.

PLUSCON data is the connector range from Phoenix Contact for secure and reliable data transmission. Benefit from innovative connection technologies and a design suitable for industrial applications. The product range includes assembled cables, flush-type connectors, and connectors for field assembly, plus special tool-free connector systems for FO and copper-based cabling.

When it comes to implementing networks, Phoenix Contact offers a comprehensive portfolio for Industrial Ethernet and PROFINET as well as EtherCAT®. Furthermore, we offer components for fieldbus systems such as PROFIBUS, CANopen®/DeviceNet™, and FOUNDATION Fieldbus.

## Solutions for copper cabling

- Up to 10 Gbps
- Protection class IP20 to IP69K
- 4 and 8-pos. versions
- Spring, pierce, and IDC displacement connection
- 360° shielding concept
- For all common networks and fieldbuses

## Solutions for FO cabling

- Up to 40 Gbps
- Protection class IP20 to IP65/67
- For POF, PCF, and GOF
- For all common FO interfaces

<b>System overview - network</b>	<b>320</b>
<b>System overview - fieldbuses</b>	<b>322</b>
<b>Network components</b>	
M12 connectors	324
Version 1 connectors	330
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IP20 connectors	360
Accessories	370
Patch cables	374
Assembled cables	380
Assembled FO cables	396
<b>Fieldbus components</b>	
M12 connectors	406
M12 flush-type connectors	408
Assembled cables	412
AS-Interface	426
D-SUB connectors	432
<b>D-SUB-based connectors</b>	<b>436</b>
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<b>Cable range</b>	<b>440</b>

### Industrial Ethernet



#### Ethernet

#### Ethernet

#### Ethernet

#### Ethernet

#### Ethernet

<b>Area of application</b>	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
<b>Topology</b>	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
<b>Data transmission</b>	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	Connector			Connector			Connector			Connector			Connector	
	Signal des.	RJ45	M8	Signal des.	RJ45	M12	Signal des.	RJ45	M12	Signal des.	RJ45	M12	Signal des.	M12
TD+	1	1	TD+	1	1	D1+	1	6	D1+	1	1	TD+	1	
TD-	2	4	TD-	2	3	D1-	2	4	D1-	2	2	TD-	2	
RD+	3	2	RD+	3	2	D3+	5	1	D3+	5	7	RD+	3	
RD-	6	3	RD-	6	4	D3-	4	7	D3-	4	8	RD-	4	
						D2+	3	5	D2+	3	3			
						D2-	6	8	D2-	6	4			
						D4+	7	2	D4+	7	5			
						D4-	8	3	D4-	8	6			

Signal designation Wire assignment	Wire color		Signal		Wire color		Signal		Wire color		Signal		Wire color		Signal	
	YE	Yellow	TD+	WHOG	Orange	TD+	WHOG	Orange	D1+	WHOG	Orange	D1+	WHOG	Orange	TD+	WHOG
OG	Orange	TD-	OG	Orange	TD-	OG	Orange	D1-	OG	Orange	D1-	OG	Orange	TD-	OG	Orange
WH	White	RD+	WHGN	Green	RD+	WHBU	Blue	D3+	WHBU	Blue	D3+	WHGN	Green	RD+	WHGN	Green
BU	Blue	RD-	GN	Green	RD-	BU	Blue	D3-	BU	Blue	D3-	GN	Green	RD-	BU	Blue
						WHGN	Green	D2+	WHGN	Green	D2+	WH	White		WH	White
						GN	Green	D2-	GN	Green	D2-	BN	Brown		BN	Brown
						WHBN	Brown	D4+	WHBN	Brown	D4+	BK	Black		BK	Black
						BN	Brown	D4-	BN	Brown	D4-					

<b>Segment length</b>	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device
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#### User organization

<b>Standardization of cabling</b>	ISO/IEC 24702	ISO/IEC 24702	ISO/IEC 24702	ISO/IEC 24702	
<b>Connector pin assignments</b>					
	Plug    Socket	Plug    Socket	Plug    Socket	Plug    Socket	Plug    Socket
	M8, 4-pos.	M12, 4-pos., D-coded	M12, 8-pos., A-coded	M12, 8-pos., X-coded	M12, hybrid, 8-pos., Y-coded
	Plug    Socket	Plug    Socket	Plug    Socket	Plug    Socket	
	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	RJ45, 8-pos.	

<b>Topology</b>	See <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	See <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	See <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	See <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	See <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>
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Ethernet/IP™	PROFINET	EtherCAT®	Sercos®	VARAN	
Automation applications in industrial control technology	Automation applications in industrial control technology	Production, process automation in the automotive industry	Automation technology	Motion control applications	Automation technology
Usually active star topology	Usually active star topology	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 100 Mbps	Up to 100 Mbps	100 Mbps to 1 Gbps	100 Mbps, upgrade to Gigabit Ethernet possible	Fast Ethernet with 100 Mbps	Up to Gigabit Ethernet

2+4 power/Ethernet connection technology (IP65 and IP67)

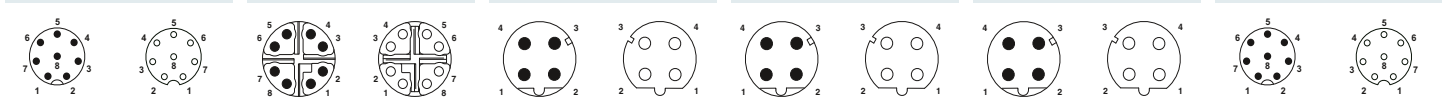
Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector		Signal des.	Connector	
	RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12		RJ45	M12
TD+	1	1	D1+	1	1	TD+	1	1	TD+	1	1	TD+	2	2	TD+	2	
TD-	2	3	D1-	2	2	TD-	2	3	TD-	2	3	TD-	1	3	TD-	1	
RD+	3	2	D3+	5	7	RD+	3	2	RD+	3	2	RD+	3	5	RD+	3	
RD-	6	4	D3-	4	8	RD-	6	4	RD-	6	4	RD-	6	8	RD-	6	
			D2+	3	3												
			D2-	6	4												
			D4+	7	5												
			D4-	8	6												

Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal	Wire color	Signal
WHOG	TD+	WHOG	D1+	YE	TD+	YE	TD+	YE	TD+	n. c.	
OG	TD-	OG	D1-	OG	TD-	OG	TD-	OG	TD-	OG	TD-
WHBU		WHBU	D3+	WH	RD+	WH	RD+	WH	RD+	WHOG	TD+
BU		BU	D3-	BU	RD-	BU	RD-	BU	RD-	n. c.	
WHGN	RD+	WHGN	D2+							WHGN	RD+
GN	RD-	GN	D2-							BU	
WHBN		WHBN	D4+							BN	
BN		BN	D4-							GN	RD-

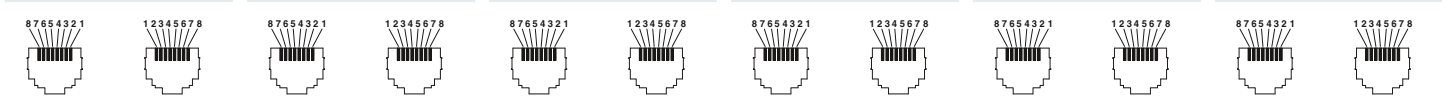
Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device	Up to 100 m from hub/switch to termination device
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<a href="http://www.odva.org">www.odva.org</a>	<a href="http://www.odva.org">www.odva.org</a>	<a href="http://www.profibus.com">www.profibus.com</a>	<a href="http://www.ethercat.org">www.ethercat.org</a>	<a href="http://www.sercos.de">www.sercos.de</a>	<a href="http://www.varan-bus.net">www.varan-bus.net</a>
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IEC 61784-5-2	IEC 61784-5-2	IEC 61784-5-3	IEC 61784-5-12	IEC 61784-5-16	
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Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket
M12, 8-pos., A-coded		M12, 8-pos., X-coded		M12, 4-pos., D-coded		M12, 4-pos., D-coded		M12, 4-pos., D-coded		M12, 8-pos., A-coded	























































Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket	Plug	Socket
RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.		RJ45, 8-pos.	

See [phoenixcontact.net/products](http://phoenixcontact.net/products)



# Data connectors and cables

## System overview - fieldbuses

	INTERBUS	PROFIBUS DP	PROFIBUS PA	DeviceNet™																																																																																			
																																																																																							
<b>Area of application</b>	Sensor/actuator level, process automation, monitoring PC	Distributed I/O devices for networking several controllers	Process automation for potentially explosive areas (Ex zone 0 and 1)	Automation technology																																																																																			
<b>Topology</b>	Active ring structure	Line, tree, ring or star depending on the physical network design	Line, tree or ring	Line																																																																																			
<b>Data transmission</b>	Between 500 kbps and 16 Mbps depending on the segment length	Up to 12 Mbps	Up to 31.25 kbps	Up to 500 kBaud																																																																																			
<b>Special connectors</b>																																																																																							
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<b>User organization</b>	<a href="http://www.interbusclub.com">www.interbusclub.com</a>	<a href="http://www.profibus.com">www.profibus.com</a>	<a href="http://www.profibus.com">www.profibus.com</a>	<a href="http://www.odva.org">www.odva.org</a>																																																																																			
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CANopen®	AS-Interface	FOUNDATION Fieldbus	USB	CC-Link																																																																																											
Automation technology and for networking within complex devices	Sensor/actuator level	Process automation	All industrial environments	Production level applications																																																																																											
Line or tree (when using repeaters)	Bus, star, ring, and tree structures	Point-to-point line (with branch lines), tree structure, combination of all topologies	Star topology, the connection is established at the star nodes via hubs	Bus, multi-drop, T-branching, star																																																																																											
10 kBaud to 1 Mbaud	167 kbps	H1: 31.25 kbps, IEC physical transmission channel, incl. Ex bus H2: 1.0 and 2.5 Mbps data rate, via two-wire cable or fiber optics	Up to 480 Mbps	Up to 10 Mbps																																																																																											
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### M12 connector and cable connector, for assembly

new



10 Gbps, IDC QUICKON connection, X-coded



10 Gbps, Piercecon® connection, X-coded



M12 circular connector according to:

Pollution degree	3
Degree of protection	IP65/IP67
Connection method	IDC connection technology
Electrical data	
Rated voltage	57 V DC
Rated current	0.6 A (30 W)
Insulation resistance	≥ 100 MΩ
Transmission characteristics (category)	CAT6 <sub>A</sub>
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA
Inflammability class according to UL 94	V0
Coding	X - data
No. of pos.	8
Temperature data	-40 ... 85 [°C]
Plug/socket	

#### Technical data

	Ethernet	PROFINET
IEC 61076-2-109	3	3
IP65/IP67	IP65/IP67	IP65/IP67
Connection method	IDC connection technology	IDC connection technology
Electrical data		
Rated voltage	57 V DC	57 V DC
Rated current	0.6 A (30 W)	0.6 A (30 W)
Insulation resistance	≥ 100 MΩ	≥ 100 MΩ
Transmission characteristics (category)	CAT6 <sub>A</sub>	CAT6 <sub>A</sub>
Material data		
Contact material	CuSn	CuSn
Contact surface material	Ni/Au	Ni/Au
Contact carrier material	PA	PA
Inflammability class according to UL 94	V0	V0
Coding	X - data	X - data
No. of pos.	8	8
Temperature data	-40 ... 85	-40 ... 85

#### Technical data

	Ethernet
IEC 61076-2-109	2
IP65/IP67	IP65/IP67
Connection method	Piercecon®
Electrical data	
Rated voltage	48 V
Rated current	0.5 A
Insulation resistance	≥ 100 MΩ
Transmission characteristics (category)	CAT6 <sub>A</sub>
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PP
Inflammability class according to UL 94	V0
Coding	X - data
No. of pos.	8
Temperature data	-40 ... 85

#### Ordering data

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Ethernet		PROFINET	

#### Ordering data

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

**Connector, CAT6<sub>A</sub>, shielded, X-coded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10.0 mm**

Plug, straight

**Cable connector, CAT6<sub>A</sub>, shielded, X-coded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10.0 mm**

1411043 1 1411044 1

1414412 1 1414413 1

**Connector, CAT6<sub>A</sub>, shielded, X-coded, color-coded litz wire manager, cable diameter: 4 mm ... 8 mm**

Plug, straight

Plug, angled

1417430 1

1417443 1

#### Accessories

VS-CABLE-STRIP-VARIO	1657407	1
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#### Accessories

VS-CABLE-STRIP-VARIO	1657407	1
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**Stripping tool, for multiple-stage repositioning of shielded conductors**

**M12 connector and cable connector, for assembly**

new



100 Mbps, IDC QUICKON connection, D-coded



100 Mbps, IDC QUICKON connection

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M12 circular connector according to:

Pollution degree	3
Degree of protection	IP65/IP67
Connection method	IDC connection technology
<b>Electrical data</b>	
Rated voltage	250 V AC/DC
Rated current	4 A
Insulation resistance	≥ 100 Ω
Transmission characteristics (category)	CAT5
<b>Material data</b>	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	PA
Inflammability class according to UL 94	V0
Coding	D - data
<b>Temperature data</b>	
Plug/socket	[-40 ... 85] [°C]

Technical data	
Ethernet	PROFINET
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65/IP67	IP65/IP67
IDC connection technology	IDC connection technology
<b>Electrical data</b>	
250 V AC/DC	250 V AC/DC
4 A	4 A
≥ 100 Ω	≥ 100 Ω
CAT5	CAT5
<b>Material data</b>	
CuSn	CuSn
Ni/Au	Ni/Au
PA	PA
V0	V0
D - data	D - data
<b>Temperature data</b>	
-40 ... 85	-40 ... 85

Technical data	
D-coded	A-coded
IEC 61076-2-101	IEC 61076-2-101
3	3
IP67	IP67
IDC connection technology	IDC connection technology
<b>Electrical data</b>	
60 V DC	30 V
1.75 A	2 A
≥ 100 MΩ	≥ 100 MΩ
CAT5	CAT5
<b>Material data</b>	
CuSn	CuSn
Ni/Au	Ni/Au
PA 66	PA 66
V0	V0
D - data	A - standard
<b>Temperature data</b>	
-40 ... 85	-40 ... 85

Description
<b>Connector, 4-pos., shielded, D-coded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10 mm</b>
Plug, straight
Socket, straight
<b>Connector, 4-pos., shielded, D-coded, color-coded terminal blocks for Ethernet, max. cable diameter: 8 mm</b>
Plug, angled
Socket, angled
<b>Connector, 4-pos., shielded, D-coded, color-coded terminal blocks for PROFINET, max. cable diameter: 8 mm</b>
Plug, angled
Socket, angled
<b>Connector, 8-pos., shielded, A-coded, color-coded terminal blocks for Ethernet, max. cable diameter: 8 mm</b>
Plug, straight
Plug, angled
Socket, straight
Socket, angled
<b>Connector, 6-pos., shielded, A-coded, color-coded terminal blocks for VARAN, max. cable diameter: 8 mm</b>
Plug, straight
Plug, angled
Socket, straight
Socket, angled
<b>Cable connector, CAT5, 4-pos., shielded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10 mm</b>
<b>Stripping tool, for multiple-stage repositioning of shielded conductors</b>

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Ethernet		PROFINET	
1411066	1	1411068	1
1411069	1	1411071	1
1414415	1	1414416	1
<b>Accessories</b>			
VS-CABLE-STRIP-VARIO	1657407	1	

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
D-coded		A-coded	
1553624	1		
1553637	1		
1554539	1		
1554542	1		
		1543236	1
		1553653	1
		1553640	1
		1553666	1
		1429130	1
		1429156	1
		1429143	1
		1429169	1
<b>Accessories</b>			
VS-CABLE-STRIP-VARIO	1657407	1	

### M12 flush-type connector, with 0.5 m litz wires



Front mounting,  
D-coded



Rear mounting,  
D-coded



Technical data	
SACC-E-...-4CON-M16/0,5 SCO	
Electrical data	
Nominal voltage $U_N$	250 V
Rated current	4 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Contact material	CuZn
Material of grip body	-
Inflammability class according to UL 94	V0
Connection method	Individual wires
Insertion/withdrawal cycles	> 100
Temperature data	
Plug/socket	[-25 -40 ... 85 85] [°C]

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>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 mm<sup>2</sup></b>		
Socket		
<b>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 mm<sup>2</sup></b>		
Socket		
<b>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 mm<sup>2</sup></b>		
Socket		
<b>SACC-E-FSD-4CON-M16/0,5 SCO</b>	<b>1535202</b>	1
<b>SACC-EC-FSD-4CON-M16/0,5 SCO</b>	<b>1535215</b>	1



Technical data	
SACC-DSI-FSD-4CON...	
Electrical data	
Nominal voltage $U_N$	250 V
Rated current	4 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Contact material	CuZn
Material of grip body	-
Inflammability class according to UL 94	V0
Connection method	Individual wires
Insertion/withdrawal cycles	≥ 100
Temperature data	
Plug/socket	[-25 -40 ... 85 85]

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>SACC-DSI-FSD-4CON-PG9/0,5 SCO</b>	<b>1551529</b>	1

**Control cabinet feed-through/bulkhead, M12/RJ45**



**Bulkhead,  
10 Gbps**



**Bulkhead,  
100 Mbps and 1 Gbps**



**Technical data**

VS-BH-M12FSX-10G-RJ45/...	
Electrical data	
Nominal voltage U <sub>N</sub>	60 V
Rated current	0.5 A
Transmission characteristics (category)	CAT6 <sub>A</sub>
Contact material	Copper alloy
Material of grip body	PA
Inflammability class according to UL 94	V0
Insertion/withdrawal cycles	≥ 100
Temperature data	
Plug/socket	-25 ... 85 [°C]

**Technical data**

VS-BH-M12FS-8CON-RJ45...		VS-BH-M12FSD-RJ45...	
Electrical data		Electrical data	
Nominal voltage U <sub>N</sub>	50 V	Nominal voltage U <sub>N</sub>	50 V
Rated current	1 A	Rated current	1 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)	Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Contact material	Copper alloy	Contact material	Copper alloy
Material of grip body	PA	Material of grip body	PA
Inflammability class according to UL 94	V0	Inflammability class according to UL 94	V0
Insertion/withdrawal cycles	≥ 100	Insertion/withdrawal cycles	≥ 100
Temperature data		Temperature data	
Plug/socket	-25 ... 85	Plug/socket	-25 ... 85

**Ordering data**

Description	Type	Order No.	Pcs. / Pkt.
<b>Control cabinet feed-through, CAT6<sub>A</sub>, M12, 8-pos., X-coded to RJ45 socket</b>			
Socket exit 90°	VS-BH-M12FSX-10G-RJ45/90	1404548	1
Socket exit 180°	VS-BH-M12FSX-10G-RJ45/180	1404549	1

**Ordering data**

Description	Type	Order No.	Pcs. / Pkt.
<b>Control cabinet feed-through, M12, 8-pos., A-coded on RJ45 socket</b>			
Socket exit 90°	VS-BH-M12FS-8CON-RJ45/ 90	1405057	1
Socket exit 180°	VS-BH-M12FS-8CON-RJ45/180	1405060	1
<b>Control cabinet feed-through, M12, 4-pos., D-coded on RJ45 socket</b>			
Socket exit 90°	VS-BH-M12FSD-RJ45/90	1657261	1
Socket exit 180°	VS-BH-M12FSD-RJ45/180	1657494	1

### M12 terminal outlets, IP65/67

- Easy installation, thanks to captive cover screws
- Robust design
- Integrated cable management system



Terminal outlet with 2 x M12 slots

#### Technical data

VS-TO-RO-MCBK-F142...

#### Electrical data

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

Terminal outlet, M12, IP65/67, 2 slots, with protective plugs, 2 cable entries

M12 with 2 x sockets, 8-pos., A-coded

M12 with 2 x socket, 4-pos., D-coded

#### Type

#### Order No.

Pcs. /  
Pkt.

VS-TO-RO-MCBK-F1422/1422

1404304

1

VS-TO-RO-MCBK-F1421/1421

1404294

1

**FO connectors, cables, and panel feed-throughs for POF, PCF, and GOF, IP65/67**

- 2.2 mm individual wires made from extremely hard-wearing polyamide chloride (PA)
- Assembled patch cable with test report
- Robust connector, IP65/67



M12 optic connectors



M12 transceiver

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			Technical data			Technical data		
Material data								
Ferrule material			Copper alloy			-		
Inflammability class according to UL 94			V0			V0		
Degree of protection			IP65/IP67			IP65/IP67		
Cable diameter			7.5 mm ... 8.5 mm			-		
Temperature data								
Ambient temperature (operation)			-20 °C ... 70 °C			-40 °C ... 85 °C		
			Ordering data			Ordering data		
Description	Cable length	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.	
Assembled FO round cable, 980/1000 µm POF fiber, M12 FO to M12 FO	1 m	FOC-PN-B-1000/M12-C/M12-C/1	1408871	1				
	2 m	FOC-PN-B-1000/M12-C/M12-C/2	1408870	1				
	5 m	FOC-PN-B-1000/M12-C/M12-C/5	1416680	1				
Assembled FO round cable, 980/1000 µm POF fiber, M12 FO to SC-RJ/IP20	1 m	FOC-PN-B-1000/M12-C/SCRJ/1	1408865	1				
	2 m	FOC-PN-B-1000/M12-C/SCRJ/2	1408864	1				
	5 m	FOC-PN-B-1000/M12-C/SCRJ/5	1416648	1				
Assembled FO breakout cable, 200/230 µm PCF-GI fiber, M12 FO to M12 FO	1 m	FOC-HCS-GI-1005/M12-C/M12-C/1	1408873	1				
	2 m	FOC-HCS-GI-1005/M12-C/M12-C/2	1408872	1				
	5 m	FOC-HCS-GI-1005/M12-C/M12-C/5	1416693	1				
Assembled FO round cable, 200/230 µm PCF-GI fiber, M12 FO to SC-RJ/IP20	1 m	FOC-HCS-GI-1005/M12-C/SCRJ/1	1408867	1				
	2 m	FOC-HCS-GI-1005/M12-C/SCRJ/2	1408866	1				
	5 m	FOC-HCS-GI-1005/M12-C/SCRJ/5	1416651	1				
Assembled FO round cable, 50/125 µm GOF-MM fiber, M12 FO to M12 FO	1 m	FOC-M12-M12-GB02/1	1408875	1				
	2 m	FOC-M12-M12-GB02/2	1408874	1				
	5 m	FOC-M12-M12-GB02/5	1416703	1				
Assembled FO round cable, 50/125 µm GOF-MM fiber, M12 FO to LC duplex	1 m	FOC-M12-LC:A-GB02/1	1408869	1				
	2 m	FOC-M12-LC:A-GB02/2	1408868	1				
	5 m	FOC-M12-LC:A-GB02/5	1416664	1				
M12 fiber optic transceiver, duplex, for POF fiber, for PCB mounting, M16 fastening thread, with sealing cap					FOC-M12-MNNA-TC-650	1416716	1	
					FOC-M12-MNNA-TC-1300	1416729	1	
					FOC-M12-BU/BU	1416677	1	
Wavelength: 650 nm Wavelength: 1300 nm M12 fiber optics coupling, duplex, suitable for all fibers, with wall bracket, IP65 degree of protection					FOC-M12-RS-POF	1406421	1	
					FOC-M12-RS-HCS	1406422	1	
					FOC-M12-RS-GOF	1406423	1	
Repair set, 10 replacement ferrules for M12 fiber optic connectors in plastic box For 980/1000 µm POF fiber For 200/230 µm PCF fiber For 50/125 µm GOF fiber								
			Accessories			Accessories		
Ferrule cleaner, approx. 500 cleaning cycles								
2.50 mm, for ST, SC, FC						FOC-TOOL-FERRULECLEANER-2.50	1407029	1



### RJ45 connector, IP65/67



RJ45 connector

#### Technical data

VS-V1-C-RJ45-MNNA-PG9-8-I-5-S

Electrical data	
Rated voltage	50 V
Rated current	1.75 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Surge voltage category	I
Material data	
Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
Pollution degree	2
Connection data	
Connection method	IDC connection
Connection cross section AWG	27 ... 24 (stranded)
External cable diameter	5 mm ... 10 mm
Insertion/withdrawal cycles	750
Temperature data	
Ambient temperature (operation)	-40 °C ... 70 °C

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 connector</b> , IP67, with bayonet interlocking, metal housing, CAT5, 8-pos.	VS-V1-C-RJ45-MNNA-PG9-8-I-5-S	1419182	1

#### Accessories

<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1
<b>Protective cover</b> , IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ connector	VS-V1-C-PC-POBK	1419183	1

## RJ45 panel mounting frame, IP65/67



Panel mounting frame with  
RJ45 coupling module



Panel mounting frame with  
RJ45 cable connection module

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### Technical data

Electrical data	
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
No. of pos.	8
Connection cross section AWG	-
Insertion/withdrawal cycles	750
Temperature data	
Ambient temperature (operation)	-40 °C ... 70 °C

### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 panel mounting frame, IP67, for bayonet locking, metal, with socket/socket contact insert, for round mounting cutout, with seal, without mounting screws</b>			
<b>RJ45 panel mounting frame, IP67, for bayonet locking, metal, with contact insert for cable connection, for round mounting cutout, with seal, without mounting screws</b>	VS-V1-F-RJ45-MNNA-1-C-S-JJ-S	1419184	1

### Accessories

<b>Protective cover, IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ panel mounting frame</b>	VS-V1-F-PC-POBK	1419186	1
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ERIC

### Technical data

Electrical data	
Transmission characteristics (category)	CAT5 (IEC 11801:2002)
Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
No. of pos.	8
Connection cross section AWG	26 ... 22 (stranded)
Insertion/withdrawal cycles	750
Temperature data	
Ambient temperature (operation)	-40 °C ... 70 °C

### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 panel mounting frame, IP67, for bayonet locking, metal, with contact insert for cable connection, for round mounting cutout, with seal, without mounting screws</b>			
<b>RJ45 panel mounting frame, IP67, for bayonet locking, metal, with contact insert for cable connection, for round mounting cutout, with seal, without mounting screws</b>	VS-V1-F-RJ45-MNNA-1-C-S-JI-S	1419185	1

### Accessories

<b>Protective cover, IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ panel mounting frame</b>	VS-V1-F-PC-POBK	1419186	1
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### FO connector and panel mounting frame, for POF, IP65/67



SC-RJ connector



Panel mounting frame with SC-RJ coupling module

ERC

#### Technical data

VS-V1-C-...-A4A-G

#### Material data

Housing material

Color

Degree of protection

Cable diameter

Insertion/withdrawal cycles

Temperature data

Ambient temperature (operation)

Zinc die-cast  
Silver  
IP67  
5 mm ... 10 mm  
500

-40 °C ... 70 °C

#### Ordering data

#### Description

**SC-RJ FO connector**, IP67, with bayonet interlocking, metal housing, duplex, with adhesive connection technology

For POF fiber

**SC-RJ panel mounting frame**, IP67, for bayonet interlocking, metal, SC-RJ to 2 x SC, for round mounting cutout, with seal, without mounting screws, with coupling for:

GOF multi mode, POF

Type	Order No.	Pcs. / Pkt.
VS-V1-C-SCRJ-MNNA-PG9-A4A-G	1419189	1

#### Accessories

**Protective cover**, IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ connector

**Protective cover**, IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ panel mounting frame

VS-V1-C-PC-POBK	1419183	1
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ERC

#### Technical data

VS-V1-F-...-C-S-A1

Zinc die-cast  
Silver  
IP67  
-  
500

-40 °C ... 70 °C

#### Ordering data

Type	Order No.	Pcs. / Pkt.
VS-V1-F-SCRJ-MNNA-PG9-C-S-A1	1420197	1

#### Accessories

VS-V1-F-PC-POBK	1419186	1
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## FO connector and panel mounting frame, for GOF, IP65/67



SC-RJ connector



Panel mounting frame with SC-RJ coupling module

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### Technical data

VS-V1-C-SCRJ-MNNA-PG9...

Material data	
Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
Color	Silver
Degree of protection	IP67
Cable diameter	5 mm ... 10 mm
Insertion/withdrawal cycles	500
Temperature data	
Ambient temperature (operation)	-40 °C ... 70 °C

Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
Color	Silver
Degree of protection	IP67
Cable diameter	5 mm ... 10 mm
Insertion/withdrawal cycles	500

### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>SC-RJ FO connector</b> , IP67, with bayonet interlocking, metal housing, duplex, with adhesive connection technology			
For multi-mode fiber	VS-V1-C-SCRJ-MNNA-PG9-A1-G	1419187	1
For single-mode fiber	VS-V1-C-SCRJ-MNNA-PG9-B1-G	1419188	1
<b>LC FO connector</b> , IP67, with bayonet interlocking, metal housing, duplex, with adhesive connection technology			
For multi-mode fiber	VS-V1-C-LC-MNNA-PG9-A1-G	1419190	1
For single-mode fiber	VS-V1-C-LC-MNNA-PG9-B1-G	1419191	1
<b>SC-RJ panel mounting frame</b> , IP67, for bayonet interlocking, metal, SC-RJ to 2 x SC, for round mounting cutout, with seal, without mounting screws, with coupling for:			
GOF multi mode, POF			
Single mode			
<b>LC panel mounting frame</b> , IP67, for bayonet interlocking, metal, for round mounting cutout, with seal, without mounting screws, with coupling for:			
GOF multi mode			
GOF single mode			

### Accessories

<b>Protective cover</b> , IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ connector	VS-V1-C-PC-POBK	1419183	1
<b>Protective cover</b> , IP67, plastic, for covering the contact insert in the RJ45, LC, and SC-RJ panel mounting frame			

ERIC

### Technical data

VS-V1-F-SCRJ-MNNA-PG9-C-S...

Housing material	Zinc die-cast
Inflammability class according to UL 94	V0
Color	Silver
Degree of protection	IP67
Cable diameter	-
Insertion/withdrawal cycles	500

-40 °C ... 70 °C

### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>VS-V1-F-SCRJ-MNNA-PG9-C-S-A1</b>		1420197	1
<b>VS-V1-F-SCRJ-MNNA-PG9-C-S-B1</b>		1420207	1
<b>VS-V1-F-LC-MNNA-PG9-C-S-A1</b>		1420210	1
<b>VS-V1-F-LC-MNNA-PG9-C-S-B1</b>		1420223	1

### Accessories

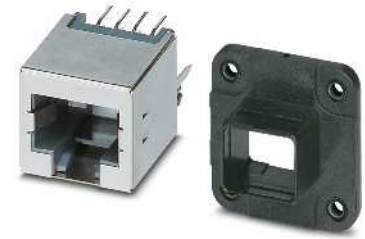
<b>VS-V1-F-PC-POBK</b>	1419186	1
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### RJ45 connector, IP65/67

- Compact design
- IP67 protection class
- Push-pull interlocking



RJ45 connector



Panel mounting frames and RJ45 modules

	Technical data			Technical data		
Electrical data						
Transmission characteristics (category)	CAT6 <sub>A</sub>			CAT5		
Material data						
Housing material	Plastic			Copper alloy		
Inflammability class according to UL 94	V0			V0		
Mechanical data						
No. of pos.	8			8		
Connection method	Crimp connection			Solder connection		
Connection cross section AWG	28 ... 24 (stranded)			-		
Temperature data						
Ambient temperature (operation)	-40 °C ... 70 °C			-40 °C ... 70 °C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>RJ45 connector</b> , IP67, with push-pull interlocking (version 4), plastic housing, for 10 Gbps, for 24 ... 28 AWG stranded conductors	<b>CUC-V04-RJ45-POBK-8</b>	<b>1407413</b>	1			
<b>RJ45 socket insert</b> , 1-way, for PCB mounting, CAT5, 8-pos., shielded				<b>CUC-V04-BU-180</b>	<b>1407409</b>	1
Straight solder pins				<b>CUC-V04-BU-90</b>	<b>1407408</b>	1
Angled solder pins				<b>CUC-V04-F-POBK-180</b>	<b>1407410</b>	1
<b>Panel mounting frame</b>				<b>CUC-V04-F-POBK-90</b>	<b>1407411</b>	1
For 180° socket insert				<b>CUC-V04-F-BU/BU-RJ45</b>	<b>1407412</b>	1
For 90° socket insert						
<b>Panel mounting frame set</b>						
Socket/socket						
	Accessories			Accessories		
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	<b>VS-CABLE-STRIP-VARIO</b>	<b>1657407</b>	1			
<b>Electronic diagonal cutter</b> , tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version	<b>MICROFOX-SP-1</b>	<b>1212487</b>	1			
<b>Crimping pliers</b> , for assembling the RJ45 connectors	<b>FL CRIMPTOOL</b>	<b>2744869</b>	1			





**RJ45 panel mounting frames and Freetnet socket inserts, IP65/67**



**Keystone panel mounting frames and keystones**



**Freetnet panel mounting frames and modules**

Technical data	
VS-08-BU-RJ45-6/KA/LSA	
Electrical data	
Nominal voltage U <sub>N</sub>	250 V AC
Rated current	2 A
Housing material	Nickel-plated brass
Contact material	Copper alloy
Inflammability class according to UL 94	V0
No. of pos.	8
Connection method	LSA
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-20 °C ... 70 °C

Technical data	
VS-08-BU-RJ45/10G-F	VS-A-F-IP67
Electrical data	
Nominal voltage U <sub>N</sub>	50 V
Rated current	1 A
Housing material	Copper alloy
Contact material	CuSn
Inflammability class according to UL 94	V0
No. of pos.	8
Connection method	IDC
Insertion/withdrawal cycles	≥ 750
Temperature data	
Ambient temperature (operation)	-10 °C ... 60 °C

Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 socket insert</b> , 8-pos., shielded, with cable connection			
CAT6	VS-08-BU-RJ45-6/KA/LSA	1653168	5
<b>RJ45 socket insert</b> , 8-pos., shielded, socket to socket			
CAT5	VS-08-BU-RJ45/BU	1689064	5
CAT6	VS-08-BU-RJ45-6-MOD/BU	1653155	5
<b>RJ45 keystone panel mounting frame</b> , 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
<b>RJ45 keystone panel mounting frame</b> , 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

Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 Freetnet socket insert</b> , 8-pos., shielded, with cable connection			
10 Gbps, CAT6 <sub>A</sub>	VS-08-BU-RJ45/10G-F	1424009	1
<b>RJ45 Freetnet socket insert</b> , 8-pos., shielded, with cable connection			
1 Gbps, CAT5	VS-08-BU-RJ45-5-F/PK	1652936	1
<b>RJ45 Freetnet socket insert</b> , 8-pos., shielded, socket to socket			
1 Gbps, CAT5	VS-08-BU/BU-RJ45-F	1405617	1
<b>Freetnet panel mounting frame</b> , 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			
Description	Type	Order No.	Pcs. / Pkt.
<b>Protective cover</b> for Version 6 panel mounting frame			
Military gray RAL 7042	VS-08-SD-F	1652606	5
Deep black RAL 9005	VS-08-SD-F-BK	1658066	5
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1

Accessories			
Description	Type	Order No.	Pcs. / Pkt.
<b>Protective cover</b> for Version 6 panel mounting frame			
Military gray RAL 7042	VS-08-SD-F	1652606	5
Deep black RAL 9005	VS-08-SD-F-BK	1658066	5
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	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

#### Technical data

Electrical data	VS-TO-RO-MCBK-F141...
Transmission characteristics (category)	CAT5
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.
<b>Terminal outlet RJ45 IP65/67, 2 slots version 6, with protective plugs, 2 cable entries</b> 2x RJ45	VS-TO-RO-MCBK-F1418/1418	1404278	1

## Field coupling, IP65/IP67

- Fixed mounting is also an option
- Including covers to protect against environmental influences



Field coupling with RJ45



### Technical data

VS-08-KU-IP67	
Rated voltage	50 V
Rated current	1 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002)

Electrical data
Rated voltage
Rated current
Transmission characteristics (category)
Material data
Housing material
Contact material
Inflammability class according to UL 94

PBT
Copper alloy
V0

Mechanical data
No. of pos.
Degree of protection

8
IP65/IP67

Temperature data
Ambient temperature (operation)

-10 °C ... 60 °C
------------------

### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>RJ45 coupling, IP67, CAT5, with protective cover</b>			
Military gray RAL 7042	VS-08-KU-IP67	<a href="#">1689268</a>	1
Deep black RAL 9005	VS-08-KU-IP67-BK	<a href="#">1658684</a>	1

### FO connectors, IP65/67

**Notes:**

For further technical data, see:  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



**SC-RJ connector  
for polymer fiber 980/1000 µm**

ERC

Material data
Housing material
Ferrule material
Inflammability class according to UL 94
Color
Degree of protection
External cable diameter
Wire diameter
Ferrule diameter
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Technical data	
PA	
Copper alloy	
V0	
Gray	
IP67	
5 mm ... 8.5 mm	
2.2 mm	
2.50 mm	
≥ 1000	
-20 °C ... 70 °C	

Description
<b>FO connector SC-RJ</b> , duplex, with fast connection
POF fiber 980/1000 µm
PCF fiber 200/230 µm
GOF, 50/125 µm, multi mode
<b>SC-RJ socket insert</b> , duplex, for VARIOSUB IP67 panel mounting frame, can be used for GOF multi mode, GOF single mode, PCF, and POF fiber types
- 1 x SC-RJ/SC-RJ (duplex)
<b>VS-SC-RJ panel mounting frame</b> , for use with an AVAGO transceiver, type: AFBR 5978Z
<b>Freet panel mounting frame</b> , version 6, for round mounting cutout, with seal, without mounting screws
Military gray RAL 7042
Deep black RAL 9005

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>VS-SCRJ-POF-FA-IP67</b>	<b>1657009</b>	1

<b>Protective cover SC-RJ/IP67</b> , for covering the SC-RJ pin insert on the SC-RJ/IP67 sleeve housing
<b>Protective cover</b> for version 6 panel mounting frame
Military gray RAL 7042
Deep black RAL 9005
<b>Tool set for POF assembly</b> , for field installation of SC connectors
<b>Tool set for PCF assembly</b> , for field installation of SC connectors
<b>Tool set for GOF assembly</b> , for field installation of LC and SC connectors

Accessories		
Type	Order No.	Pcs. / Pkt.
<b>VS-SCRJ-PC</b>	<b>1653757</b>	5
<b>TF-SCRJ-POF KONF SET</b>	<b>1405246</b>	1



SC-RJ connector  
for PCF fiber 200/230 μm



SC-RJ connector  
for 50/125 μm multi mode fiberglass



Panel mounting frame  
and SC-RJ coupling module

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ERIC

ERIC

Technical data		
PA		
Copper alloy		
V0		
Gray		
IP67		
5 mm ... 8.5 mm		
2.9 mm		
2.50 mm		
≥ 1000		
-20 °C ... 70 °C		

Technical data		
PA		
Zirconia ceramics		
V0		
Gray		
IP67		
5 mm ... 8.5 mm		
2.9 mm		
2.50 mm		
≥ 1000		
-20 °C ... 70 °C		

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-HCS-FA-IP67	1657012	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-SCRJ-GOF-FA-IP67	1657083	1

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		
Type	Order No.	Pcs. / Pkt.
VS-SCRJ-PC	1653757	5
FOC-TOOL-PCF KONF SET	1411051	1

Accessories		
Type	Order No.	Pcs. / Pkt.
VS-SCRJ-PC	1653757	5
FOC-TOOL-GOF KONF SET	1411049	1

Accessories		
Type	Order No.	Pcs. / Pkt.
VS-08-SD-F	1652606	5
VS-08-SD-F-BK	1658066	5

### SC-RJ terminal outlet, 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**

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, HCS, POF	
Connection profile	SCRJ according to DIN EN 50377-6-1	
Insertion/withdrawal cycles	≥ 500	
Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-TO-RO-MCBK-F1420/1420	1404317	1
Description		
Terminal outlet SC-RJ IP65/67, 2 slots version 6, with protective plugs, 2 cable entries		

**SC-RJ coupling,  
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****Technical data**

Material data	
Housing material	PBT
Contact material	-
Ferrule material	Zirconia ceramics
Inflammability class according to UL 94	V0
Mechanical data	
No. of pos.	2
Color	Gray
Degree of protection	IP65/IP67
Temperature data	
Ambient temperature (operation)	-10 °C ... 60 °C

**Ordering data**

Description	<b>Type</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>
	<b>SC-RJ coupling</b> , IP67, duplex, can be used for GOF (multi mode and single mode), PCF, and polymer fiber types	<b>FOC-V06-D1PGY-S/SJBE4</b>	<b>1410050</b>
			<b>1</b>

### Push-pull ADVANCE connector, IP65/67

- 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

	Technical data				Technical data			
Degree of protection	Ethernet IP65/IP67		PROFINET IP65/IP67		Ethernet IP65/IP67		PROFINET IP65/IP67	
Connection cross section AWG	26 ... 24 (solid)		23 ... 22 (solid)		26 ... 24 (solid)		23 ... 22 (solid)	
Transmission speed	10 Gbps		10 Gbps		10 Gbps		10 Gbps	
Housing material	Zinc die-cast		Zinc die-cast		Zinc die-cast		Zinc die-cast	
External cable diameter	5.5 mm ... 10 mm		5.5 mm ... 10 mm		5.5 mm ... 10 mm		5.5 mm ... 10 mm	
Insertion/withdrawal cycles	≥ 750		≥ 750		≥ 750		≥ 750	
Temperature data								
Ambient temperature (operation)	-40 °C ... 70 °C		-40 °C ... 70 °C		-40 °C ... 70 °C		-40 °C ... 70 °C	
	Ordering data				Ordering data			
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	Ethernet		PROFINET		Ethernet		PROFINET	
<b>Push-pull ADVANCE</b> , RJ45 industrial connector, IP67, 8-pos.								
Single pack	1407890	1	1407889	1	1468007	1	1408027	1
Pack of 10	1467901	1	1408039	1	1467807	1	1408092	1
	Accessories				Accessories			
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1		VS-CABLE-STRIP-VARIO	1657407	1	
<b>Electronic diagonal cutter</b> , tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version	MICROFOX-SP-1	1212487	1		MICROFOX-SP-1	1212487	1	





### RJ45 panel mounting frames and Freenet socket inserts, IP65/67



Freenet panel mounting frames and modules



Freenet panel mounting frame with central nut and modules

Technical data	
Electrical data	VS-08-BU-RJ45/10G-F
Nominal voltage $U_N$	50 V
Rated current	1 A
Housing material	Copper alloy
Contact material	CuSn
Inflammability class according to UL 94	V0
No. of pos.	8
Connection method	IDC
Insertion/withdrawal cycles	≥ 750
Temperature data	
Ambient temperature (operation)	-10 °C ... 60 °C

Technical data	
Electrical data	VS-08-BU-RJ45-5-F/PK
Nominal voltage $U_N$	50 V
Rated current	1 A
Housing material	Copper alloy
Contact material	Copper alloy
Inflammability class according to UL 94	V0
No. of pos.	8
Connection method	IDC
Insertion/withdrawal cycles	≥ 750
Temperature data	
Ambient temperature (operation)	-20 °C ... 70 °C

Technical data	
Electrical data	VS-08-BU-RJ45/10G-F
Nominal voltage $U_N$	50 V
Rated current	1 A
Housing material	Copper alloy
Contact material	Copper alloy
Inflammability class according to UL 94	V0
No. of pos.	8
Connection method	IDC
Insertion/withdrawal cycles	≥ 750
Temperature data	
Ambient temperature (operation)	-20 °C ... 70 °C

Ordering data	
Description	
<b>RJ45 Freenet socket insert</b> , 8-pos., shielded, with cable connection 10 Gbps, CAT6 <sub>A</sub>	
<b>RJ45 Freenet socket insert</b> , 8-pos., shielded, with cable connection 1 Gbps, CAT5	
<b>RJ45 Freenet socket insert</b> , 8-pos., shielded, socket to socket 1 Gbps, CAT5	
<b>RJ45 Freenet panel mounting frame</b> , version 14, IP65/IP67, for rectangular mounting cutout, with seal, without mounting screws	
Metal housing	
Plastic housings	
<b>RJ45 Freenet panel mounting frame</b> , version 14, IP65/IP67, for round mounting cutout, with seal and central nut	
Metal housing	

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-08-BU-RJ45/10G-F	1424009	1
VS-08-BU-RJ45-5-F/PK	1652936	1
VS-08-BU/BU-RJ45-F	1405617	1
VS-PPC-F1-RJ45-MNNA-1R-F	1405358	1
VS-PPC-F1-RJ45-POBK-1R-F	1608197	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-08-BU-RJ45/10G-F	1424009	1
VS-08-BU-RJ45-5-F/PK	1652936	1
VS-08-BU/BU-RJ45-F	1405617	1
VS-PPC-F1-RJ45-MNNA-1C-F	1405222	1

Accessories	
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

Accessories		
VS-PPC-C1-PC-ROBK-L	1405293	1
VS-CABLE-STRIP-VARIO	1657407	1

Field couplings,  
IP65/67



RJ45 and power field coupling  
with cable connection



RJ45 field coupling  
with cable connection

	Technical data			Technical data		
Electrical data	VS-MP-PPC/CG-PO/10G			VS-MP-PPC/CG-10G		
Transmission characteristics (category)	CAT6 <sub>A</sub>			CAT6 <sub>A</sub>		
Material data	Aluminum press-drawn section / die-cast zinc			Aluminum press-drawn section / die-cast zinc		
Connection data	Spring connection / IDC			IDC		
Connection method	-			-		
Connection cross section AWG	5 mm ... 8 mm (data cable gland)			5 mm ... 8 mm (data cable gland)		
Cable diameter	> 1000 (data)			> 1000 (data)		
Insertion/withdrawal cycles	-			-		
Temperature data	-40 °C ... 70 °C			-40 °C ... 70 °C		
Ambient temperature (operation)						
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Multi-port connection</b> , for passive PROFINET cabling to robots, including mounting foot	VS-MP-PPC/CG-PO/10G	1403682	1	VS-MP-PPC/CG-10G	1403678	1
<b>Multi-port power connection</b> : push-pull power, for passive PROFINET cabling to robots, including mounting foot	VS-MP-PPC/CG-PO	1403681	1			
	Accessories			Accessories		
Protective cover	VS-PPC-C1-PC-ROBK-L	1405293	1	VS-PPC-C1-PC-ROBK-L	1405293	1
For data port	VS-PPC-C2-PC-ROBK-L	1405303	1	VS-PPC-C2-PC-ROBK-L	1405303	1
For power port	VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors						

### 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

Electrical data	VS-MP-PPC/PPC-1G
Rated voltage	-
Rated current	-
Transmission characteristics (category)	CAT5
Material data	
Housing material	Aluminum press-drawn section / die-cast zinc
Contact material	Phosphor bronze
Inflammability class according to UL 94	V0
Mechanical data	
No. of pos.	8
Degree of protection	IP65
Temperature data	
Ambient temperature (operation)	-

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>Multi-port data coupling:</b> for passive PROFINET cabling to robots, including mounting foot Metal housing	VS-MP-PPC/PPC-1G	1403685	1
<b>Multi-port power coupling:</b> for passive PROFINET cabling to robots, including mounting foot	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**

	Technical data			Technical data		
Electrical data						
Rated voltage	-			-		
Rated current	-			-		
Transmission characteristics (category)	CAT6			CAT6		
Material data						
Housing material	Aluminum cast alloy, powder-coated			Aluminum cast alloy, powder-coated		
Mechanical data						
Color	Black			Black		
Degree of protection	IP65/IP67			IP65/IP67		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Terminal outlet, IP65/IP67, 2 slots, version 14, with protective plugs, 2 cable entries</b> Push-pull with 2 x RJ45	VS-TO-RO-MCBK-F1411/1411	1404281	1			
<b>Terminal outlet, IP65/IP67, 2 slots, version 14, with protective plugs, 2 cable entries</b> Push-pull with 1 x Power and 1 x RJ45				VS-TO-RO-MCBK-F1411/1413	1404333	1

### Push-pull power connector, IP65/67

- Fixed coding for PROFINET
- Flexible coding (on request)
- Various solder versions
- Spring connection



Push-pull connector



Push-pull panel mounting side

	Technical data			Technical data		
	VS-PPC-C2-MSTB-MNNA...			VS-MSTBA...-BK-A	VS-PPC-F2-MSTB-MNNA...	
Electrical data						
Rated current	16 A			16 A	-	
Material data						
Housing material	Zinc die-cast			-	Zinc die-cast	
Inflammability class according to UL 94	V0			V0	V0	
Conductor cross section	0.75 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>			-	-	
Connection cross section AWG	18 ... 13			-	-	
Insertion/withdrawal cycles	≤ 100			≥ 100	≥ 500	
Temperature data						
Ambient temperature (operation)	-40 °C ... 70 °C			-40 °C ... 70 °C	-40 °C ... 80 °C	
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Connector MSTB, IP67</b> , with a push-pull interlock, 5-pos., with a spring, for cable diameter 9.0 mm ... 13.0 mm						
Metal housing, 24 V	VS-PPC-C2-MSTB-MNNA-P13-A5-SP	1608074	1			
Plastic housing, 24 V	VS-PPC-C2-MSTB-POBK-P13-A5-SP	1657892	1			
Plastic housing, 400 V	VS-PPC-C2-MSTB-POBK-P13-B5-SP	1608236	1			
<b>MSTB contact insert</b> , for PCB mounting, 24 V, 5-pos., RAL 9005 (black), for VS-PPC-F2-MSTB-...-1R-P panel mounting frame						
Angled solder pins				VS-MSTBAH 2,5/ 5-GB-5,08-BK-A	1657915	50
Straight solder pins				VS-MSTBVA 2,5/ 5-GB-5,08-BK-A	1609565	50
<b>MSTB contact insert</b> , for PCB mounting, 400 V, 5-pos., RAL 3000 (red), for VS-PPC-F2-MSTB-...-1R-P panel mounting frame						
Angled solder pins				VS-MSTBAH 2,5/ 5-GB-5,08-RD-B	1609549	50
Straight solder pins				VS-MSTBVA 2,5/ 5-GB-5,08-RD-B	1609581	50
<b>MSTB panel mounting frame, IP67</b> , 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
Plastic housing				VS-PPC-F2-MSTB-POBK-1R-P	1608281	1
<b>MSTB panel mounting frame, IP67</b> , for push-pull locking, with an integrated contact insert for conductor connection, spring connection, for rectangular mounting cutout, with seal, without mounting screws						
24 V, plastic				VS-PPC-F2-MSTB-POBK-1R-SPSA5	1608294	1
400 V, plastic				VS-PPC-F2-MSTB-POBK-1R-SPSB5	1608304	1
24 V, metal				VS-PPC-F2-MSTB-MNNA-1R-SPSA5	1608249	1
400 V, metal				VS-PPC-F2-MSTB-MNNA-1R-SPSB5	1608252	1
<b>MSTB panel mounting frame, IP67</b> , for push-pull locking, metal, with an integrated contact insert for conductor connection, spring, for round mounting cutout, with seal, without mounting screws						
24 V				VS-PPC-F2-MSTB-MNNA-1C-SPSA5	1405248	1
400 V				VS-PPC-F2-MSTB-MNNA-1C-SPSB5	1405167	1
<b>Protective cover, IP67</b> , to cover the contact insert in the push-pull panel mounting frame Power						
Metal housing				VS-PPC-C2-PC67-MNNA	1404045	1
<b>Protective cover</b>						
For power port				VS-PPC-C2-PC-ROBK-L	1405303	1
<b>Protective cap, IP65</b> , 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 distributor,  
IP65/67**



Push-pull Y-distributor



Push-pull H-distributor

	Technical data			Technical data		
Electrical data	VS-PPC-J-1220-1227-1020-0,2			VS-PPC-J-4X-1227		
Rated voltage	24 V			24 V		
Rated current	16 A			16 A		
Material data	Aluminum die-cast			Zinc die-cast		
Housing material	Aluminum die-cast			Zinc die-cast		
Mechanical data	5			5		
No. of pos.	5			5		
Degree of protection	IP65/IP67			IP65/IP67		
Temperature data	-40 °C ... 70 °C (cable, fixed installation)			-40 °C ... 70 °C		
Ambient temperature (operation)	-40 °C ... 70 °C (cable, fixed installation)			-40 °C ... 70 °C		
Ordering data						
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>PROFINET Y-distributor</b> with assembled power cable, 5-pos., IP65/IP67, <b>MSTB connector</b> with metal housing to 2 x socket in the metal housing, cable length:						
0.2 m	VS-PPC-J-1220-1227-1020-0,2	1404799	1			
Variable	VS-PPC-J-1220-1227-1020-...	1405484	1			
<b>PROFINET Y-distributor</b> with assembled power cable, 5-pos., IP65/IP67, <b>7/8" connector</b> with metal housing to 2 x socket in the metal housing, cable length:						
0.2 m	VS-PPC-J-1226-1227-1021-0,2	1404812	1			
Variable	VS-PPC-J-1226-1227-1021-...	1405497	1			
<b>Power H distributor</b> , 4 x MSTB contact inserts, metal housing, without mounting screws				VS-PPC-J-4X-1227	1405387	1
Accessories						
<b>Mounting foot</b> for power distributors, plastic	VS-PPC-J-M	1405390	1	VS-PPC-J-M	1405390	1

**Ordering example for articles with variable cable:**

For a distributor with a cable length of 34.5 m, the order data is as follows:

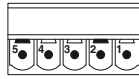
Order No.	Length [m]
1405484	34.5
	Increment: 0.5 m; Maximum length: 50 m

# Data connectors and cables

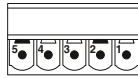
## Network components - version 14 connectors

### Assembled POWER cables 2.5 mm<sup>2</sup>

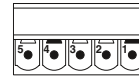
Power, metal,  
24 V


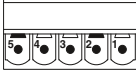

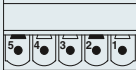

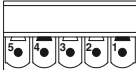


Power, plastic,  
24 V



Power, plastic,  
400 V



		Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
		Order No.	Order No.	Order No.	Order No.	Order No.
<b>Power, metal, 24 V</b>  	1 m	1609170				
	2 m	1609183				
	5 m	1609196				
	Variable	1609206				
<b>Power, plastic, 24 V</b>  	1 m	1609251				
	2 m	1609264				
	5 m	1609277				
	Variable	1609280				
<b>Power, plastic, 400 V</b>  	1 m	1609374				
	2 m	1609387				
	5 m	1609390				
	Variable	1609400				

### Ordering example for cable with variable cable length:

Assembled PROFINET Power cable for 24 V, with two push-pull connectors in metal design and a cable length of 34.5 m.

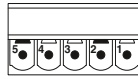
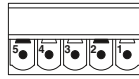
Order No.	Length [m] Max. 100 m
1609206	34.5
1609280 1609400	<b>Increments:</b> 1.0 m ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

Technical data	Technical data	Technical data	Technical data
	Power, metal, 24 V	Power, plastic, 24 V	Power, plastic, 400 V
Housing material	Zinc die-cast	PA-GF	PA-GF
Outer sheath, material	PVC	PVC	PVC
Conductor cross section [mm <sup>2</sup> ]	2.5	2.5	2.5
External cable diameter [mm]	11.8	11.8	11.8
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Ambient temperature			
Fixed installation [°C]	-40 ... 70	-40 ... 70	-40 ... 70
Flexible installation [°C]	-5 ... 70	-5 ... 70	-5 ... 70
Plug/socket [°C]	-40 ... 70	-40 ... 70	-40 ... 70

**Assembled POWER cables  
1.5 mm<sup>2</sup>**

Power, metal,  
24 V

Power, plastic,  
24 V



Ordering data

Ordering data

Ordering data

Power, 7/8"



Order No.

Order No.

Order No.

1 m	<b>1609219</b>
2 m	<b>1609222</b>
5 m	<b>1609235</b>
Variable	<b>1609248</b>

1 m	<b>1609293</b>
2 m	<b>1609303</b>
5 m	<b>1609316</b>
Variable	<b>1609329</b>

**Ordering example for cable with  
variable cable length:**

Assembled PROFINET Power cable for 24 V, with one push-pull connector in metal design and a 7/8" connector and a cable length of 34.5 m.

Order No.	Length [m] Max. 100 m
<b>1609248</b> / <b>1609329</b>	34.5
<b>Increments:</b> 1.0 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

Technical data	Technical data	
	Power, plastic, 24 V	Power, metal, 24 V
Housing material	Zinc die-cast/PBT	PA-GF/PBT
Outer sheath, material	PVC	PVC
Conductor cross section [mm <sup>2</sup> ]	1.5	1.5
External cable diameter [mm]	10	10
Degree of protection	IP65/IP67	IP65/IP67
Ambient temperature		
Fixed installation [°C]	-40 ... 70	-40 ... 70
Flexible installation [°C]	-5 ... 70	-5 ... 70
Plug/socket [°C]	-40 ... 70	-40 ... 70



# Data connectors and cables

## Network components - version 14 connectors

### Push-pull ADVANCE connector, IP65/67

- Available for POF, PCF, and GOF
- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal



SC-RJ connector, straight cable outlet



SC-RJ connector, cable outlet at the top

Degree of protection	IP65/IP67
Housing material	Zinc die-cast
External cable diameter	5.5 mm ... 10 mm
Insertion/withdrawal cycles	≥ 50
Temperature data	
Ambient temperature (operation)	-40 °C ... 70 °C

Technical data		
POF	PCF	GOF
IP65/IP67	IP65/IP67	IP65/IP67
Zinc die-cast	Zinc die-cast	Zinc die-cast
5.5 mm ... 10 mm	5.5 mm ... 10 mm	5.5 mm ... 10 mm
≥ 50	≥ 50	≥ 50
-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C

Technical data		
POF	PCF	GOF
IP65/IP67	IP65/IP67	IP65/IP67
Zinc die-cast	Zinc die-cast	Zinc die-cast
5.5 mm ... 10 mm	5.5 mm ... 10 mm	5.5 mm ... 10 mm
≥ 50	≥ 50	≥ 50
-40 °C ... 70 °C	-40 °C ... 70 °C	-40 °C ... 70 °C

Description
<b>Push-pull ADVANCE</b> , SC-RJ connector
Single pack
Pack of 10

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
POF		PCF		GOF	
1407896	1	1407897	1	1407898	1
1408047	1	1408048	1	1408049	1

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
POF		PCF		GOF	
1408028	1	1408029	1	1408030	1
1408093	1	1408094	1	1408095	1

Tool set for POF assembly, for field installation of SC connectors
Tool set for PCF assembly, for field installation of SC connectors
Tool set for GOF assembly, for field installation of LC and SC connectors

Accessories			
TF-SCRJ-POF KONF SET	1405246	1	
FOC-TOOL-PCF KONF SET	1411051	1	
FOC-TOOL-GOF KONF SET	1411049	1	

Accessories			
TF-SCRJ-POF KONF SET	1405246	1	
FOC-TOOL-PCF KONF SET	1411051	1	
FOC-TOOL-GOF KONF SET	1411049	1	

**Push-pull ADVANCE connector,  
IP65/67**



**SC-RJ connector,  
cable outlet at the bottom**



**SC-RJ connector**

ERIC ®

	Technical data						Technical data					
	POF		PCF		GOF		POF		PCF			
Degree of protection	IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67			
Housing material	Zinc die-cast		Zinc die-cast		Zinc die-cast		PA-GF		PA-GF			
External cable diameter	5.5 mm ... 10 mm		5.5 mm ... 10 mm		5.5 mm ... 10 mm		6.5 mm ... 9.5 mm		6.5 mm ... 9.5 mm			
Insertion/withdrawal cycles	≥ 50		≥ 50		≥ 50		≥ 500		≥ 500			
Temperature data												
Ambient temperature (operation)	-40 °C ... 70 °C		-40 °C ... 70 °C		-40 °C ... 70 °C		-20 °C ... 70 °C		-20 °C ... 70 °C			
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.
<b>Push-pull ADVANCE, SC-RJ connector</b>												
Single pack	<b>1407902</b>	1	<b>1407904</b>	1	<b>1407905</b>	1						
Pack of 10	<b>1408053</b>	1	<b>1408055</b>	1	<b>1408056</b>	1						
<b>FO connector SC-RJ, IP67, with push-pull locking, duplex, with fast connection technology</b>												
Plastic housings							<b>1657850</b>	1	<b>1657863</b>	1		
Tool set for POF assembly, for field installation of SC connectors	Accessories						Accessories					
<b>TF-SCRJ-POF KONF SET</b>					<b>1405246</b>	1	<b>TF-SCRJ-POF KONF SET</b>			<b>1405246</b>	1	
<b>FOC-TOOL-PCF KONF SET</b>					<b>1411051</b>	1	<b>FOC-TOOL-PCF KONF SET</b>			<b>1411051</b>	1	
<b>FOC-TOOL-GOF KONF SET</b>					<b>1411049</b>	1						

### FO connectors, panel mounting frames, and couplings



SC-RJ panel mounting side

ERC

#### Technical data

	Metal housing	Plastic housing
Material data		
Housing material	Zinc die-cast	PA-GF
Ferrule material	-	-
Inflammability class according to UL 94	V0	V0
Color	Silver	Black
Degree of protection	IP65/IP67	IP65/IP67
Insertion/withdrawal cycles	≥ 500	≥ 500
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	-40 °C ... 80 °C

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>SC-RJ panel mounting frame, IP67, for push-pull locking, for rectangular mounting cutout, for AVAGO transceiver (type: AFR5978BZ) on PCB, with seal, without mounting screws</b>			
Metal housing	VS-PPC-F1-SCRJ-MNNA-1RP	1608061	1
Plastic housing	VS-PPC-F1-SCRJ-POBK-1RP	1657889	1
<b>SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling, for push-pull interlocking, for square mounting cutout, with grommet, without mounting screws</b>			
Metal housing	VS-PPC-F1-SCRJ-MNNA-1RF	1405374	1
Plastic housing	VS-PPC-F1-SCRJ-POBK-1RF	1608210	1
<b>SC-RJ panel mounting frame, IP67, incl. SC-RJ coupling, for push-pull interlocking, for round mounting cutout, with seal</b>			
	VS-PPC-F1-SCRJ-MNNA-1C-F	1405235	1

#### Accessories

<b>Protective cover</b> for data port	VS-PPC-C1-PC-ROBK-L	1405293	1
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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. $\geq 500$ (data) // $\leq 100$ (power)	Power: 5-pos. $\leq 100$ (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-PPC-C2-PC-ROBK-L	1405303	1
VS-CABLE-STRIP-VARIO	1657407	1

Material data
Housing material
Connection data
Connection profile
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
<b>Multi-port connection</b> , for passive PROFINET cabling to robots, including mounting foot
<b>Multi-port power connection</b> : push-pull power, for passive PROFINET cabling to robots, including mounting foot
<b>Multi-port power coupling</b> : for passive PROFINET cabling to robots, including mounting foot

Protective cover
for data port
for power port
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors

ERC

Technical data	
VS-MP-PPC/CG-FO	
Aluminum press-drawn section / die-cast zinc	
Data: SCRJ $\geq 500$ (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

### Terminal outlet and coupling, 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

ERIC

	Technical data			Technical data		
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		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Terminal outlet SC-RJ/Power IP65/67 push-pull</b> , 2 slots version 14, with protective plugs, 2 cable entries	VS-TO-RO-MCBK-F1417/1413	1404346	1			
<b>Terminal outlet SC-RJ IP65/67 push-pull</b> , 2 slots version 14, with protective plugs, 2 cable entries	VS-TO-RO-MCBK-F1417/1417	1404320	1			
<b>SC-RJ push-pull coupling</b> , IP67, metal, with protective cover, color: nickel-plated				VS-PPC-J-1-SCRJ-MNBK	1405206	1



### RJ45 connector, IP20



RJ45 crimp connectors



RJ45 field connection connectors

ERC

	Technical data			Technical data		
	VS-08-RJ45-10G/C	VS-08-ST-H...-RJ45		VS-08-RJ45-10G/Q	VS-...-RJ45-...-Q...	
Electrical data						
Transmission characteristics (category)	CAT6 <sub>A</sub>	-		CAT6 <sub>A</sub> (IEC 60512-27-100:2008, TIA-568-C.2:2009)	CAT5 (IEC 11801:2002)	
Surge voltage category	I	I		I	I	
Material data						
Housing material	-	-		PA 6.6	PA 6.6	
Contact material	Phosphor bronze	Copper alloy		CuSn	CuSn	
Inflammability class according to UL 94	V2	V2		V2	V2	
Pollution degree	-	2		2	2	
External cable diameter	-	-		4.5 mm ... 8 mm	4.5 mm ... 8 mm	
Insertion/withdrawal cycles	-	≥ 750		≥ 750	≥ 750	
Temperature data						
Ambient temperature (operation)	-25 °C ... 60 °C	-25 °C ... 60 °C		-40 °C ... 70 °C	-20 °C ... 70 °C	
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>RJ45 connector</b> , IP20, CAT6 <sub>A</sub> , 8-pos., with QUICKON fast connection technology, for 1-wire and 7-wire AWG 26 ... 24 conductors, color: black				VS-08-RJ45-10G/Q	1419001	1
<b>RJ45 connector</b> , IP20, CAT5, 8-pos., with QUICKON fast connection technology, for 1 and 7-wire conductors 26 ... 24 AWG Gray Black				VS-08-RJ45-5-Q/IP20	1656725	1
<b>RJ45 connector</b> , 4-pos., with QUICKON fast connection technology, for 22 AWG, color: gray				VS-08-RJ45-5-Q/IP20 BK	1658008	1
<b>RJ45 pin insert</b> , CAT6 <sub>A</sub> , 10 Gbps	VS-08-RJ45-10G/C	1418853	5	VS-PN-RJ45-5-Q/IP20	1658435	1
<b>RJ45 pin insert</b> , 8-pos., shielded, IDC connection technology, for 27 ... 26 AWG litz wires, with strain relief						
CAT5	VS-08-ST-H11-RJ45	1652716	5			
<b>RJ45 bend protection sleeve</b> , for VS-08-ST-H11-RJ45 and VS-08-RJ45-10G/C pin inserts, for cable diameters up to 7 mm						
Gray	VS-08-KS-H/GY	1654743	5			
Green	VS-08-KS-H/GN	1654756	5			
	Accessories			Accessories		
<b>Crimp tool</b> , pliers with die, for VS-08-ST-H...-RJ45	VS-CT-RJ45-H	1653265	1			
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	VS-CABLE-STRIP-VARIO	1657407	1	VS-CABLE-STRIP-VARIO	1657407	1
<b>Shielding foil set</b> , 25 pcs., replacement for VS-PN-RJ45-5-Q/IP20				VS-08-RJ45-FOLIEN-SET	1417184	1

**RJ45 industrial connector, 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**

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
IP20	IP20
26 ... 24 (solid)	23 ... 22 (solid)
26 ... 24 (stranded)	23 ... 22 (stranded)
10 Gbps	10 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

Technical data	
Ethernet	PROFINET
IP20	IP20
26 ... 24 (solid)	23 ... 22 (solid)
26 ... 24 (stranded)	23 ... 22 (stranded)
10 Gbps	10 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

Description
<b>RJ45 industrial connector, 8-pos.</b>
Single pack
Pack of 30
<b>RJ45 industrial connector, 8-pos., cable outlet at the bottom</b>
Single pack
Pack of 30
<b>RJ45 industrial connector, 8-pos., cable outlet at the top</b>
Single pack
Pack of 30

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Ethernet		PROFINET	
1406333	1	1406334	1
1406351	1	1406352	1

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Ethernet		PROFINET	
1406339	1	1406340	1
1406357	1	1406358	1
1406336	1	1406337	1
1406354	1	1406355	1

<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors
<b>Electronic diagonal cutter</b> , tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version
<b>Markers for terminal blocks, roll</b> , unmarked, can be marked with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1
White
Red
Green
<b>Marker for terminal blocks, sheet</b> , white, unmarked, can be marked with: BLUEMARK CLED, BLUEMARK LED, plotter

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
TMT 5 R RD	0816427	1
TMT 5 R GN	0816401	1
UC-TMF 5	0818153	10

Accessories		
VS-CABLE-STRIP-VARIO	1657407	1
MICROFOX-SP-1	1212487	1
TMT 5 R	0816430	1
TMT 5 R RD	0816427	1
TMT 5 R GN	0816401	1
UC-TMF 5	0818153	10



### RJ45 panel mounting frames and inserts, IP20



Keystone panel mounting frames and keystones

Technical data																			
Electrical data	VS-08-BU-RJ45-6/KA/LSA																		
Rated current	2 A																		
Transmission characteristics (category)	-																		
Material data																			
Housing material	Nickel-plated brass																		
Contact material	Copper alloy																		
Inflammability class according to UL 94	V0																		
Mechanical data																			
No. of pos.	8																		
Connection method	LSA																		
Conductor cross section	0.13 mm <sup>2</sup> ... 0.32 mm <sup>2</sup> (solid)																		
Connection cross section AWG	26 ... 22 (solid)																		
Temperature data																			
Ambient temperature (operation)	-20 °C ... 70 °C																		
Ordering data																			
Description	<table border="1"> <thead> <tr> <th>Type</th> <th>Order No.</th> <th>Pcs. / Pkt.</th> </tr> </thead> <tbody> <tr> <td><b>RJ45 socket insert</b>, 8-pos., shielded, socket to socket</td> <td></td> <td></td> </tr> <tr> <td>CAT5 <b>RJ45 socket insert</b>, 8-pos., shielded, with cable connection</td> <td><b>VS-08-BU-RJ45/BU</b></td> <td><b>1689064</b></td> <td>5</td> </tr> <tr> <td>CAT6 <b>RJ45 panel mounting frame</b>, single, for modular socket inserts (keystone), without mounting screws</td> <td><b>VS-08-BU-RJ45-6/KA/LSA</b></td> <td><b>1653168</b></td> <td>5</td> </tr> <tr> <td></td> <td><b>VS-08-A-RJ45/MOD-1-IP20</b></td> <td><b>1689433</b></td> <td>5</td> </tr> </tbody> </table>	Type	Order No.	Pcs. / Pkt.	<b>RJ45 socket insert</b> , 8-pos., shielded, socket to socket			CAT5 <b>RJ45 socket insert</b> , 8-pos., shielded, with cable connection	<b>VS-08-BU-RJ45/BU</b>	<b>1689064</b>	5	CAT6 <b>RJ45 panel mounting frame</b> , single, for modular socket inserts (keystone), without mounting screws	<b>VS-08-BU-RJ45-6/KA/LSA</b>	<b>1653168</b>	5		<b>VS-08-A-RJ45/MOD-1-IP20</b>	<b>1689433</b>	5
Type	Order No.	Pcs. / Pkt.																	
<b>RJ45 socket insert</b> , 8-pos., shielded, socket to socket																			
CAT5 <b>RJ45 socket insert</b> , 8-pos., shielded, with cable connection	<b>VS-08-BU-RJ45/BU</b>	<b>1689064</b>	5																
CAT6 <b>RJ45 panel mounting frame</b> , single, for modular socket inserts (keystone), without mounting screws	<b>VS-08-BU-RJ45-6/KA/LSA</b>	<b>1653168</b>	5																
	<b>VS-08-A-RJ45/MOD-1-IP20</b>	<b>1689433</b>	5																
Accessories																			
<b>Split-core tool</b> , for connecting the copper wires to the LSA Plus strips	<b>CT-WZ/A</b>	<b>2765505</b>	1																
<b>Stripping tool</b> , for multiple-stage repositioning of shielded conductors	<b>VS-CABLE-STRIP-VARIO</b>	<b>1657407</b>	1																

**RJ45 patch panel  
IP20**



**Patch panel  
with various connection types**



**Patch panel  
with IDC fast connection**



Technical data	
FL-PP-RJ45-...	
Electrical data	
Rated voltage	-
Rated current	-
Transmission characteristics (category)	-
Material data	
Housing material	PVC / PA
Contact material	-
Inflammability class according to UL 94	-
Mechanical data	
No. of pos.	-
Color	Green
Degree of protection	IP20
Connection method	-
Conductor cross section	-
Connection cross section AWG	-
Temperature data	
Ambient temperature (operation)	-25 °C ... 70 °C

Technical data	
VS-PP-F-RJ45-CAT6	
Electrical data	
Rated voltage	50 V
Rated current	1 A
Transmission characteristics (category)	-
Material data	
Housing material	PC-GF
Contact material	Copper alloy
Inflammability class according to UL 94	V0
Mechanical data	
No. of pos.	8
Color	Gray
Degree of protection	IP20
Connection method	IDC fast connection
Conductor cross section	0.2 mm <sup>2</sup> ... 0.32 mm <sup>2</sup>
Connection cross section AWG	24 ... 22
Temperature data	
Ambient temperature (operation)	-10 °C ... 60 °C

Ordering data			
Type	Order No.	Pcs. / Pkt.	
<b>Patch panel, one RJ45 socket to 8 IDC connection terminal blocks</b> (1:1 assignment), CAT5, 10/100/1000 Mbps, DIN rail mounting, IP20, option of shield contacting on DIN rail via jumpers			
- RJ45 to LSA connection terminal blocks			
<b>Patch panel, one RJ45 socket to 8 screw connection terminal blocks</b> (1:1 assignment), CAT5, 10/100/1000 Mbps, DIN rail mounting, IP20, option of shield contacting on DIN rail via jumpers			
- RJ45 to screw connection terminal blocks			
<b>Patch panel, two RJ45 sockets</b> (1:1 assignment), CAT5, 10/100/1000 Mbps, DIN rail mounting, IP20, option of shield contacting on DIN rail via jumpers			
- RJ45 to spring connection terminal blocks			
<b>RJ45 patch panel</b> , DIN rail mounting, IP20, CAT6			
for 1 Gbps			
<b>RJ45 patch panel</b> , DIN rail mounting, IP20, CAT6 <sub>A</sub>			
for 10 Gbps			
<b>FL-PP-RJ45-LSA</b>	<b>2901645</b>	1	
<b>FL-PP-RJ45-SC</b>	<b>2901643</b>	1	
<b>FL-PP-RJ45/RJ45</b>	<b>2901646</b>	1	
<b>FL-PP-RJ45-SCC</b>	<b>2901642</b>	1	

Ordering data			
Type	Order No.	Pcs. / Pkt.	
<b>VS-PP-F-RJ45-CAT6</b>	<b>1658118</b>	1	
<b>VS-PP-F-RJ45-10G</b>	<b>1403154</b>	1	

### FO connectors, IP20



POF, 980/1000 μm



PCF, 200/230 μm, 2.9 mm

ERC

#### Technical data

Material data
Housing material
Ferrule material
Inflammability class according to UL 94
Color
Degree of protection
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

PBT  
Copper alloy  
V0  
Black  
IP20  
≥ 1000

-20 °C ... 70 °C

#### Ordering data

Description
<b>FO connector SC-RJ, duplex, with fast connection</b>
IP20, for single wire diameter: 2.9 mm
IP20, for single wire diameter: 2.2 mm
<b>FO connector for 200/230 μm PCF fibers, crimp connection</b>
- SC-RJ
- SC duplex
<b>Connector set for polymer fibers</b> (diameter of the individual elements: 2.2 mm), for self-assembly, with bend protection
- F-SMA set, 4 connectors
<b>Connector set for PCF fibers</b> (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
<b>Connector set for PROFINET PCF fibers</b> (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

<b>Tool set for POF assembly</b> , for field installation of SC connectors
<b>Tool set for PCF assembly</b> , for field installation of SC connectors

TF-SCRJ-POF KONF SET	1405246	1
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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

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PCF, 200/230 μm, 2.2 mm



PCF, 200/230 μm

ERIC

Technical data			Technical data		
PBT Copper alloy V0 Black IP20 ≥ 1000			PBT Zirconia ceramics V0 Beige IP20 ≥ 500		
-20 °C ... 70 °C			-40 °C ... 70 °C		
Ordering data			Ordering data		
Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
VS-SCRJ-HCS-FA-IP20-PN	1404087	1	FOC-C-SCRJ-PCF	1411304	1
			FOC-C-SCDU-PCF	1411305	1
PSM-SET-SC-DUPLEX/2-HCS/PN	2313779	1			
PSM-SET-B-FOC/4-HCS/PN	2313782	1			
Accessories			Accessories		
			FOC-TOOL-PCF KONF SET	1411051	1

## Network components - IP20 connectors

### FO connector, 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

	Technical data			Technical data		
Material data						
Housing material	-			-		
Ferrule material	Zirconia ceramics			Zirconia ceramics		
Inflammability class according to UL 94	V0			V0		
Color	Beige			Beige		
Degree of protection	IP20			IP20		
Insertion/withdrawal cycles	≥ 500 (according to IEC 61300-2-2)			≥ 500 (according to IEC 61300-2-2)		
Temperature data						
Ambient temperature (operation)	-10 °C ... 70 °C (IEC 61300-2)			-10 °C ... 70 °C (IEC 61300-2)		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>FO connector, fast connection, reusable</b>						
GOF, 50/125 µm, multi mode	FOC-C-LCDU-GOF-MM	1411052	1	FOC-C-LC-P-GOF-MM	1411294	1
GOF, 9/125 µm, single mode (APC)	FOC-C-LCDU-GOF-SM-APC	1412472	1	FOC-C-LC-P-GOF-SM-APC	1412476	1
GOF, 9/125 µm, single mode (PC)	FOC-C-LCDU-GOF-SM-PC	1411053	1	FOC-C-LC-P-GOF-SM-PC	1411295	1
<b>FO connector, fast connection, reusable, value pack</b>						
GOF, 50/125 µm, multi mode	FOC-C-LCDU-GOF-MM/10	1411298	1			
GOF, 9/125 µm, single mode (APC)	FOC-C-LCDU-GOF-SM-APC/10	1412479	1			
GOF, 9/125 µm, single mode (PC)	FOC-C-LCDU-GOF-SM-PC/10	1411299	1			
	Accessories			Accessories		
<b>Tool set for GOF assembly, for field installation of LC and SC connectors</b>	FOC-TOOL-GOF KONF SET	1411049	1	FOC-TOOL-GOF KONF SET	1411049	1

new



SC duplex connector,  
2.5 mm - ferrules

new



SC simplex connector for pigtails,  
2.5 mm - ferrules

new



SC-RJ connector,  
2.5 mm - ferrules

Technical data
-
Zirconia ceramics
V0
Green
IP20
≥ 500 (according to IEC 61300-2-2)
-10 °C ... 70 °C (IEC 61300-2)

Technical data
-
Zirconia ceramics
V0
Blue
IP20
≥ 500 (according to IEC 61300-2-2)
-10 °C ... 70 °C (IEC 61300-2)

Technical data
-
Zirconia ceramics
V0
Beige
IP20
≥ 500 (according to IEC 61300-2-2)
-10 °C ... 70 °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

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

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		
Type	Order No.	Pcs. / Pkt.
FOC-TOOL-GOF KONF SET	1411049	1

Accessories		
Type	Order No.	Pcs. / Pkt.
FOC-TOOL-GOF KONF SET	1411049	1

Accessories		
Type	Order No.	Pcs. / Pkt.
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

	Technical data			Technical data		
Material data						
Housing material	PBT			-		
Ferrule material	Zirconia ceramics			-		
Inflammability class according to UL 94	V0			-		
Color	Black			-		
Degree of protection	IP20			-		
Insertion/withdrawal cycles	≥ 500			-		
Temperature data						
Ambient temperature (operation)	-25 °C ... 70 °C			-		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
SC-RJ coupling, for VS-TO-... terminal outlets and 19" VS-PP-19-1HE-16-F patch panels, and VS-SI-FP-2F front plate	VS-SCRJ-GOF-KU	1654358	1			
Coupling; set, consisting of:				PSM-SET-FSMA-LINK/2	2799416	1
- 2x F-SMA/F-SMA				PSM-SET-BFOC-LINK/2	2799429	1
- 2x B-FOC (ST®)/B-FOC (ST®)				VS-SCRJ-GOF-BU/BU	1652978	1
- 1 x SC-RJ/SC-RJ (duplex)				FL MM PATCH COUPLER LC-LC	2700312	1
- 1 x LC/LC (duplex, multi-mode fiber)				FL SM PATCH COUPLER LC-LC	2700313	1
- 1 x LC/LC (duplex, single-mode fiber)				FL COUPLER SC-DUPLEX	2901788	1
- 1x SC duplex/SC duplex						

**FO patch panel and splice box**

- Patch panel suitable for fiber types:
- POF (980/1000 μm), PCF (200/230 μm), GOF MM (50/125 μm), GOF SM (9/125 μm)
- Splice box:
- Compact dimensions despite large splice comb
  - Snap-in adapter for easy DIN rail mounting
  - Ready for equipotential bonding
  - Suitable for industrial applications



**SC-RJ patch panel, socket/socket**



**Splice box for DIN rail**

	Technical data			Technical data		
<b>Material data</b>						
Housing material	PC-GF			Sheet steel		
Ferrule material	Zirconia ceramics			-		
Inflammability class according to UL 94	V0			V0		
Color	Gray			Light gray RAL 7035		
Degree of protection	IP20			IP20		
Insertion/withdrawal cycles	≥ 500			> 500		
<b>Temperature data</b>						
Ambient temperature (operation)	-10 °C ... 60 °C			-25 °C ... 70 °C (according to IEC 61300-2)		
	Ordering data			Ordering data		
<b>Description</b>	<b>Type</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>	<b>Type</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>
<b>SC-RJ patch panel</b> , DIN rail mounting, IP20, 1 slot	<b>VS-PP-F-SCRJ</b>	<b>1658121</b>	1	<b>FOC-PP-SB-LC:6</b>	<b>1411901</b>	1
<b>Splice box</b> , for DIN rail, robust metal housing, for GOF multi mode				<b>FOC-PP-SB-SC:6</b>	<b>1411902</b>	1
6 x LC duplex				<b>FOC-PP-SB-ST:6</b>	<b>1411903</b>	1
6 x SC duplex						
12 x ST						
	Accessories			Accessories		
<b>Cable gland</b> , M20				<b>G-INS-M20-S68N-PNES-GY</b>	<b>1411125</b>	5
Locking nut, M20				<b>A-INL-M20-P-GY</b>	<b>1411207</b>	5



## Data connectors and cables

### Network components - accessories

#### Accessories for processing fiber optics



Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Ceramic blade</b>	FOC-TOOL-CERAMIC-BLADE	1407019	1			
<b>Solvent dispenser, 100 ml, lockable pump dispenser</b>				FOC-TOOL-DISPENSER	1406995	1

#### Polishing fiber optic connectors



Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Polishing film, silicon carbide</b> 15 µm	FOC-POLISHINGFILM-SK-15.0	1407034	25			
<b>Polishing film, AlO<sub>2</sub></b> 1 µm	FOC-POLISHINGFILM-AO-01.0	1407037	25			
3 µm	FOC-POLISHINGFILM-AO-03.0	1407039	25			
<b>Polishing film, diamond</b> 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			
<b>Polishing disc</b> 1.25 mm, for LC				FOC-POLISHINGDISC-1.25	1407024	1
2.50 mm, for ST, SC, FC				FOC-POLISHINGDISC-2.50	1407021	1

Cleaning tools for fiber optic connection technology



Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Ferrule cleaner</b> , approx. 500 cleaning cycles						
1.25 mm, for LC	FOC-TOOL-FERRULECLEANER-1.25	1407032	1			
2.50 mm, for ST, SC, FC	FOC-TOOL-FERRULECLEANER-2.50	1407029	1			
<b>Stick cleaner</b> for couplings and plug end faces						
1.25 mm, for LC				FOC-TOOL-STICKCLEANER-1.25	1407000	1
2.50 mm, for ST, SC, FC				FOC-TOOL-STICKCLEANER-2.50	1407002	1

Tool for processing fiber optics



Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Fiber stripper</b> , 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			
<b>T-stripper</b>						
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
<b>Electrician's scissors</b> , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum, Kevlar fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint						
				CUTFOX-ES	1212621	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



Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Polishing tool set SC-RJ, for polymer fiber</b> , for field assembly of SC-RJ/IP20 and SC-RJ/IP67 connectors with fast connection system	VS-SCRJ-POF-KONFTOOL-POLISH	1658820	1			
<b>Refill set for VS-SC-RJ-POF-KONFTOOL-POLISH</b> , consisting of two polishers and a polishing disc - For SCRJ connectors	VS-SCRJ-POF-POLISH	1656673	1			
<b>Tool set for POF assembly</b> , for field installation of SC connectors.				TF-SCRJ-POF KONF SET	1405246	1
<b>Cutting tool</b> , SC-RJ, for polymer fiber				CUTFOX-SCRJ-POF	1405247	1
<b>Sheath stripping tool</b> , for polymer fiber				WIREFOX-PN POF	1405249	1
<b>Electrician's scissors</b> , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum, Kevlar fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint				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



Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
Tool set for PCF assembly, for field installation of SC connectors	FOC-TOOL-PCF KONF SET	1411051	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



Ordering data			
Description	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

### Ethernet RJ45, patch cables



### Ethernet

RJ45 connector, IP20, straight



RJ45 connector, IP20, angled



RJ45 connector, IP20, straight



RJ45 connector, IP20, angled



**Ordering data**

**Order No.**

0.3 m	1417993
0.5 m	1418028
1 m	1418057
2 m	1418109
5 m	1418141

**Ordering data**

**Order No.**

0.3 m	1418002
0.5 m	1418031
1 m	1418070
2 m	1418125
5 m	1418154

0.3 m	1418015
0.5 m	1418044
1 m	1418099
2 m	1418138
5 m	1418167

**Notes:**

For information about the cable qualities, see page 445

Pin RJ45 <sup>*)</sup>	RJ45 <sup>*)</sup>	Wire color	Signal
1	1	WHOG	D1+
2	2	OG	D1-
5	5	WHBU	D3+
4	4	BU	D3-
3	3	WHGN	D2+
6	6	GN	D2-
7	7	WHBN	D4+
8	8	BN	D4-

\*) RJ45 assignment according to TIA568B

**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 ... 80
Flexible installation	[°C]	-20 ... 80

**Technical data**

**Patch cable**

CAT5  
 4x2xAWG26/7; SF/UTP  
 4x 2x 0.14 mm<sup>2</sup>  
 7x 0.16 mm  
 26  
 6.4 mm  
 ≤ 290 Ω/km  
 Aluminum-coated foil, tinned copper braided shield

Bare Cu litz wires  
 PUR  
 water blue RAL 5021  
 white/blue-blue,  
 white/orange-orange,  
 white/green-green,  
 white/brown-brown

## RJ45 patch cables

## Notes:

Additional accessories for network installation can be found in the "Ethernet networks" section on page 376

## Ethernet



RJ45 patch cables  
for IP20 applications

## Technical data

	FL CAT5 PATCH 0,3	FL CAT6 PATCH 0,3
Cable, properties		
External diameter	5.5 mm	5.5 mm
Single wire, material	Cu litz wire	Cu litz wire
Individual wires per module	8	8
Single wire, cross section	0.14 mm <sup>2</sup>	0.14 mm <sup>2</sup>
Outer sheath, material	LSFROH	LSFROH
Smallest bending radius, fixed installation	30 mm	30 mm
Shielding	SF/UTP	S/FTP
Plug		
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
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

### 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.
<b>Dust protection with color marking</b> , 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			
<b>Security frame</b> 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
<b>Locking element</b> for FL PLUG GUARD... security frame						
- Locking element				FL PORT GUARD	2891220	20
- Key				FL PLUG GUARD KEY	2891327	1
<b>Color marking</b> for FL CAT... Patch...						
- Black						
- Blue						
- Brown						
- Yellow						
- Gray						
- Green						
- Red						
- Violet						
<b>Security element</b> for FL CAT ...patch...						
- Security element						
- Security element, lockable						
- Key						
<b>Dust protection cap</b> for RJ45 socket						





Color coding for RJ45 FL patch cables



Security element for RJ45 FL patch cables



Dust protection for RJ45 sockets

Ordering data			Ordering data			Ordering data		
Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
FL PATCH CCODE BK	2891194	20	FL PATCH SAFE CLIP	2891246	20	FL RJ45 PROTECT CAP	2832991	10
FL PATCH CCODE BU	2891291	20	FL PATCH GUARD	2891424	20			
FL PATCH CCODE BN	2891495	20	FL PATCH GUARD KEY	2891521	1			
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						





### Modular distribution panel

- Plug and play
- Extremely robust design
- GHMT-certified
- Front release without special tool
- Modules can be replaced



Assembled modules  
for 19" mounting frames



19" mounting frame

	Technical data			Technical data		
Electrical data	CAT6 <sub>A</sub>			CUC-PP-FRAME-19		
Transmission characteristics (category)	Class E <sub>A</sub>			-		
Material data	Stainless steel			Steel, powder-coated		
Housing material	V0			V0		
Inflammability class according to UL 94	18 mm ... 18 mm			-		
Connection data	≥ 750			-		
External cable diameter	-20 °C ... 60 °C			-20 °C ... 60 °C		
Insertion/withdrawal cycles						
Temperature data						
Ambient temperature (operation)						
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>19-inch frame</b> , empty, for using 8 modules (RJ45/ARJ45)				<b>CUC-PP-FRAME-19</b>	<a href="#">1407986</a>	1
Gray (similar to RAL 7035) Black (similar to RAL 9005)				<b>CUC-PP-FRAME-19 BK</b>	<a href="#">1409140</a>	1
<b>RJ45 module</b> , 6 x RJ45 to 6 x RJ45, CAT6 <sub>A</sub> , can be unlocked from the front, variable length	<b>CUC-PP-MODUL-RJ45:6-RJ45:6/...</b>	<a href="#">1407995</a>	1			
<b>Patch bay</b> , 19", for orderly cabling in the control cabinet				<b>CUC-PP-PATCHBAY</b>	<a href="#">1407994</a>	1
Gray, with plastic hooks						
<b>Dummy frame</b> , size of one module, for use in the frame	<b>CUC-PP-MODUL-COVER</b>	<a href="#">1407988</a>	1			
	Accessories			Accessories		
<b>Screw set</b> , fixing material for the frame				<b>CUC-PP-FRAME-SCREWSET</b>	<a href="#">1407989</a>	1
<b>Cable binder</b> , fixing material for module cable routing	<b>CUC-PP-MODUL-CABLEFIXSET</b>	<a href="#">1407991</a>	1			

### Ordering example for modules of variable length:

For an RJ45 module with a cable length of 25.0 m, the ordering data is as follows:

Order No.	Length [m]
<a href="#">1407995</a>	25
	Max. 80 m
	Increment: 1.5 m ... 80 m = 0.5 m



### Network cables, sold by the meter, PROFINET, EtherCAT®, shielded



**Notes:**  
For information about the cable qualities, see page 440



4-wire, star quad



4-wire, star quad

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>PVC solid - green</b> , 1 x 4 x 22 AWG, CAT5, SF/TQ, type A						
Cable ring: 100 m	VS-OE-OE-93A-100,0	1416392	1			
Cable ring: 1 m ... 100 m	VS-93A/...	1416486	1			
<b>PVC stranded - green</b> , 1 x 4 x 22 AWG, CAT5, SF/TQ, type B						
Cable ring: 100 m	VS-OE-OE-93B-100,0	1416389	1			
Cable ring: 1 m ... 100 m	VS-OE-OE-93B/...	1417362	1			
Cable drum: 110 m ... 500 m	NBC-93B/...	1408537	1			
<b>PUR suitable for use with drag chain</b> - green, 1 x 4 x 22 AWG, CAT5, SF/TQ, type C						
Cable ring: 100 m	VS-OE-OE-93C-100,0	1416376	1			
Cable ring: 1 m ... 100 m	VS-OE-OE-93C/...	1417491	1			
Cable drum: 110 m ... 500 m	NBC-93C/...	1408538	1			
<b>PUR suitable for use with robots</b> - green, 1 x 4 x 22 AWG, CAT5, S/TQ						
Cable ring: 100 m	VS-OE-OE-93R-100,0	1416363	1			
Cable ring: 1 m ... 100 m	VS-OE-OE-93R/...	1417388	1			
Cable drum: 110 m ... 500 m	NBC-93R/...	1408539	1			
<b>RADOX® for railway applications</b> - black, 1 x 4 x 22 AWG, CAT5, SF/TQ						
Cable ring: 1 m ... 100 m	VS-OE-OE-937/...	1402687	1			
Cable drum: 110 m ... 500 m	NBC-937/...	1408540	1			
<b>PVC stranded</b> - green, 1 x 4 x 22 AWG, CAT5, SF/TQ						
Cable drum: 110 m ... 500 m	NBC-93G/...	1408541	1			

### Ordering example for cables with variable cable length:

For a network cable type 93A with a cable length of 34.0 m, the ordering data is as follows:

Order No.	Length [m]
1416486	34.0 Max. 100 m
	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 440

Ethernet



2-pair, twisted pair

Ethernet



4-pair, twisted pair

Description	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>PUR stranded</b> - blue, 2 x 2 x 26 AWG, CAT5, SF/UTP						
Cable ring: 100 m	VS-OE-OE-93E-100,0	1416295	1			
Cable ring: 1 m ... 100 m	VS-OE-OE-93E/...	1417320	1			
Cable drum: 110 m ... 500 m	NBC-93E/...	1408534	1			
<b>PUR solid</b> - blue, 4 x 2 x 24 AWG, CAT5, SF/UTP						
Cable ring: 100 m				VS-OE-OE-94A-100,0	1416305	1
Cable ring: 1 m ... 100 m				VS-94A/...	1416415	1
<b>PUR stranded</b> - blue, 4 x 2 x 26 AWG, CAT5, SF/UTP						
Cable ring: 100 m				VS-OE-OE-94B-100,0	1416567	1
Cable ring: 1 m ... 100 m				VS-OE-OE-94B/...	1417333	1
Cable drum: 110 m ... 500 m				NBC-94B/...	1408535	1
<b>PUR suitable for use with drag chain</b> - blue, 4 x 2 x 26 AWG, CAT5, S/UTP						
Cable ring: 100 m				VS-OE-OE-94C-100,0	1416318	1
Cable ring: 1 m ... 100 m				VS-OE-OE-94C/...	1417346	1
Cable drum: 110 m ... 500 m				NBC-94C/...	1408536	1
<b>PVC stranded, outdoor</b> - black, 4 x 2 x 26 AWG, CAT5, SF/UTP						
Cable ring: 100 m				VS-OE-OE-94D-100,0	1416334	1
Cable ring: 1 m ... 100 m				VS-94D/...	1416444	1
<b>FRNC solid</b> - blue, 4 x 2 x 23 AWG, CAT7, S/FTP						
Cable ring: 100 m				VS-OE-OE-94E-100,0	1416350	1
Cable ring: 1 m ... 100 m				VS-94E/...	1416460	1
<b>PUR stranded</b> - blue, 4 x 2 x 26 AWG, CAT6 <sub>A</sub> , S/FTP						
Cable ring: 100 m				VS-OE-OE-94F-100,0	1416347	1
Cable ring: 1 m ... 100 m				VS-OE-OE-94F/...	1417359	1

Ordering example for cables  
with variable cable length:

For a network cable type 94A with a cable length of 34.0 m, the ordering data is as follows:

Order No.	Length [m]
1416415	34.0
	Max. 100 m
	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, 4-pos., shielded, CAT5



RJ45 connector, IP20

RJ45 connector, IP20

RJ45 connector, Version 14, metal



R4AC

R4ACR

R4RC

Ordering data

Ordering data

Ordering data

Order No.

Order No.

Order No.

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 connector, SPEEDCON



MSD SCO

M12 connector, SPEEDCON



MRD SCO

Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
Variable	Variable	5 m
1411857	1411858	1411859
1 m 1408968	1 m 1418248	5 m 1416138
2 m 1408969	2 m 1418277	
5 m 1408970	Variable	
10 m 1408971	Variable	
Variable 1411861	Variable 1411862	Variable 1411863
	1 m 1409002	
	2 m 1409003	
	5 m 1409004	
	10 m 1409005	
	Variable 1411865	
		1 m 1408974
		2 m 1408975
		5 m 1408972
		10 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 network cable, type 93C, fitted with a straight M12 connector at one end and an RJ45 connector with IP20 protection at the other end, and 4.5 m in length, the ordering data is as follows:

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PVC stranded - 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 stranded - green, 1 x 4, CAT5	93M				

Order No.	Cable type	Length [m] Max. 100 m
1408639	93C	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

RJ45 connector, Version 14, plastic	M12 connector, SPEEDCON	M12 connector, SPEEDCON	M12 socket, SPEEDCON	M12 socket, SPEEDCON	M12 flush-type socket, rear mounting
					
<b>R4QC</b>	<b>MSD SCO</b>	<b>MRD SCO</b>	<b>FSD SCO</b>	<b>FRD SCO</b>	<b>FSDBP</b>
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 1407495 2 m 1407496 5 m 1407497 10 m 1407498 Variable 1408640	Variable 1408633	1 m 1407528 2 m 1407529 5 m 1407530 10 m 1407531 Variable 1408623	Variable 1408615	1 m 1437779 2 m 1437782 5 m 1437795
5 m 1416168	1 m 1407499 2 m 1407500 5 m 1407501 10 m 1407502 Variable 1408639	Variable 1408632	1 m 1407532 2 m 1407533 5 m 1407534 10 m 1407535 Variable 1408622	Variable 1408613	
Variable 1411860	1 m 1407508 2 m 1407509 5 m 1407510 10 m 1407511 Variable 1408638	Variable 1408631	1 m 1407536 2 m 1407537 5 m 1407538 10 m 1407539 Variable 1408621	Variable 1408612	
5 m 1416141	1 m 1407516 2 m 1407517 5 m 1407518 10 m 1407519 Variable 1408636	Variable 1408628	1 m 1407544 2 m 1407545 5 m 1407546 10 m 1407547 Variable 1408619	Variable 1408610	
Variable 1411864	1 m 1407520 2 m 1407521 5 m 1407522 10 m 1407523 Variable 1408635	Variable 1408626	1 m 1407548 2 m 1407549 5 m 1407551 10 m 1407552 Variable 1408618	Variable 1408609	
1 m 1408978 2 m 1408979 5 m 1408977 10 m 1408980 Variable 1411867	1 m 1407524 2 m 1407525 5 m 1407526 10 m 1407527 Variable 1408634	Variable 1408625	1 m 1407553 2 m 1407554 5 m 1407555 10 m 1407556 Variable 1408617	Variable 1408608	
		Variable 1408624	Variable 1408616	Variable 1408607	

	Technical data	Technical data	Technical data	Technical data
Transmission characteristics (category)	<b>PROFINET PVC stranded CAT5 [93B]</b>	<b>PROFINET drag chain CAT5 [93C]</b>	<b>PROFINET robot CAT5 [93R]</b>	<b>PROFINET railway applications [937]</b>
Cable structure	CAT5 1x4xAWG22/7; SF/TQ	CAT5 1x4xAWG22/7; SF/TQ	CAT5 1x4xAWG22/19; S/TQ	CAT5 1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm <sup>2</sup>	4x 0.34 mm <sup>2</sup>	4x 0.34 mm <sup>2</sup>	4x 0.34 mm <sup>2</sup>
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	≤ 120 Ω/km	≤ 120 Ω/km	≤ 120 Ω/km	≤ 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	RADOX® GWK S
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	[°C] -40 ... 70	[°C] -40 ... 80	[°C] -50 ... 90
Flexible installation	[°C] -40 ... 70	[°C] -40 ... 70	[°C] -40 ... 80	[°C] -40 ... 90

# Data connectors and cables

## Network components - assembled cables

### Assembled cables, EtherCAT®, 4-pos., shielded, CAT5



RJ45 connector, IP20



R4AC

Ordering data

Order No.

RJ45 connector, IP20



R4ACR

Ordering data

Order No.

M12 connector, SPEEDCON



MSD SCO

Ordering data

Order No.

Open cable end



OE

RJ45 connector, IP20



R4AC

RJ45 connector, IP20



R4ACR

M12 connector, SPEEDCON



MSD SCO

M12 connector, SPEEDCON



MRD SCO

RJ45 connector, Freetnet



F4AC

Ordering data	Order No.	Ordering data	Order No.	Ordering data	Order No.
Variable	1411868	Variable	1411869	Variable	1408600
1 m	1408981	1 m	1402505	1 m	1407561
2 m	1408982	2 m	1402508	2 m	1407562
5 m	1408983			5 m	1407563
10 m	1408984			10 m	1407564
		Variable	1411871	Variable	1408599
		1 m	1409006	1 m	1407565
		2 m	1409007	2 m	1407566
		5 m	1409014	5 m	1407567
		10 m	1409015	10 m	1407568
		Variable	1411872	Variable	1408598
				1 m	1407569
				2 m	1407570
				5 m	1407571
				10 m	1407572
				Variable	1408597
2 m	1419142				
Variable	1411873				

### Information for products with fixed cable length:





Products with fixed cable length are produced with the 93G cable type and are available from stock.

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PVC stranded - green, 1 x 4, CAT5	93G	1	1	YE	TD+
		3	2	OG	TD-
PUR suitable for drag chain applications - green, 1 x 4, CAT5	93H	2	3	WH	RD+
		4	6	BU	RD-

### Ordering data for cables with variable cable length:

For a network cable, type 93H, fitted with a straight M12 connector at one end and an RJ45 connector with IP20 protection at the other end, and 4.5 m in length, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408599	93H	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

M12 connector, SPEEDCON	M12 socket, SPEEDCON	M12 socket, SPEEDCON	M12 flush-type socket, rear mounting
			
<b>MRD SCO</b>	<b>FSD SCO</b>	<b>FRD SCO</b>	<b>FSDBP</b>
<b>Ordering data</b>	<b>Ordering data</b>	<b>Ordering data</b>	<b>Ordering data</b>
<b>Order No.</b>	<b>Order No.</b>	<b>Order No.</b>	<b>Order No.</b>
Variable <a href="#">1408596</a>	Variable <a href="#">1408590</a>	Variable <a href="#">1408584</a>	1 m <a href="#">1419135</a> 2 m <a href="#">1419136</a> 5 m <a href="#">1419137</a>
Variable <a href="#">1408595</a>	Variable <a href="#">1408589</a>	Variable <a href="#">1408583</a>	2 m <a href="#">1419146</a>
Variable <a href="#">1408594</a>	Variable <a href="#">1408587</a>	Variable <a href="#">1408582</a>	
Variable <a href="#">1408593</a>	Variable <a href="#">1408586</a>	Variable <a href="#">1408581</a>	
Variable <a href="#">1408592</a>	Variable <a href="#">1408585</a>	Variable <a href="#">1408580</a>	

	<b>Technical data</b>	<b>Technical data</b>
	<b>EtherCAT® [93G]</b>	<b>EtherCAT® [93H]</b>
Transmission characteristics (category)	CAT5	CAT5
Cable structure	1x4xAWG22/7; SF/TQ	1x4xAWG22/7; SF/TQ
Conductor cross section	4x 0.34 mm <sup>2</sup>	4x 0.34 mm <sup>2</sup>
Conductor structure for signal	7x 0.25 mm	7x 0.25 mm
AWG signal line	22	22
Cable diameter	6.5 mm	6.5 mm
Conductor resistance	≤ 120 Ω/km	≤ 120 Ω/km
Type of shield	Aluminum-coated foil, tinned copper braided shield	Aluminum-coated foil, tinned copper braided shield
Conductor material	Tin-plated Cu litz wires	Tin-plated Cu litz wires
Outer sheath material	PVC	PUR
Color of outer sheath	Green RAL 6018	Green RAL 6018
Color, single wire	White, yellow, blue, orange	White, yellow, blue, orange
<b>Ambient temperature</b>		
Fixed installation	[°C] -40 ... 70	-40 ... 70
Flexible installation	[°C] -40 ... 70	-40 ... 70



### Assembled cables, Ethernet, 4-pos., shielded, CAT5



### Ethernet

#### Open cable end



OE

#### M8 connector



M8MS

#### RJ45 connector, IP20



R4AC

#### M8 connector



#### M8 socket



#### M8MS

#### Ordering data

#### Order No.

1 m	1407344
2 m	1407345
5 m	1407346
10 m	1407347
Variable	1408719

#### M8FS

#### Ordering data

#### Order No.

Variable	1408716
1 m	1407348
2 m	1407349
5 m	1407350
10 m	1407351
Variable	1408718
1 m	1407352
2 m	1407353
5 m	1407354
10 m	1407355
Variable	1408717
Variable	1408715
Variable	1408714

### Information for products with fixed cable lengths:

Products with fixed cable lengths are produced with the **93B** cable type and are available from stock.

### Ordering data for cables with variable cable lengths:

For a network cable, type **93B**, fitted with a **straight M8 connector** at one end and an **RJ45 connector with IP20 protection** at the other end, and **4.5 m in length**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408717	93B	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Pin	M8	RJ45	Wire color	Signal
2	1	YE		TD+
3	2	OG		TD-
1	3	WH		RD+
4	6	BU		RD-

#### Technical data

#### PROFINET PVC stranded CAT5 [93B]

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  
Flexible installation

CAT5  
1x4xAWG22/7; SF/TQ  
4x 0.34 mm<sup>2</sup>  
7x 0.25 mm  
22  
6.5 mm  
≤ 120 Ω/km  
Aluminum-coated foil, tinned copper braided shield  
Tin-plated Cu litz wires  
PVC  
Green RAL 6018  
White, yellow, blue, orange

[-°C] -40 ... 70  
[°C] -40 ... 70



## 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 connector, SPEEDCON



MSD SCO

M12 connector, SPEEDCON



MRD SCO

RJ45 connector, IP20



R4AC

Ordering data

Order No.

1 m 1405633

Variable 1411827

1 m 1408933

2 m 1408934

5 m 1408935

10 m 1408936

Variable 1411831

RJ45 connector,  
Version 6



R4MC

Ordering data

Order No.

2 m 1405675

Variable 1411828

2 m 1405921

Variable 1411832

1 m 1408937

2 m 1408938

5 m 1408939

10 m 1408940

Variable 1411835

RJ45 connector,  
Version 14, metal



R4RC

Ordering data

Order No.

5 m 1405743

Variable 1411829

5 m 1405992

Variable 1411833

1 m 1408941

2 m 1408942

5 m 1408943

10 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 network cable, type 93E, fitted with a straight M12 connector at one end and an RJ45 connector with IP20 protection at the other end, and 4.5 m in length, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408712	93E	4.5
Minimum order amount = 25		Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PUR stranded - blue, 2 x 2, CAT5	93E	1	1	WHOG	TD+
		3	2	OG	TD-
		2	3	WHGN	RD+
		4	6	GN	RD-

RJ45 connector, Version 14, plastic	M12 connector, SPEEDCON	M12 connector, SPEEDCON	M12 socket, SPEEDCON	M12 socket, SPEEDCON	M12 flush-type socket, rear mounting
					
<b>R4QC</b>	<b>MSD SCO</b>	<b>MRD SCO</b>	<b>FSD SCO</b>	<b>FRD SCO</b>	<b>FSDBP</b>
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 <a href="#">1407356</a> 2 m <a href="#">1407357</a> 5 m <a href="#">1407358</a> 10 m <a href="#">1407359</a> Variable <a href="#">1408713</a>	Variable <a href="#">1408705</a>	1 m <a href="#">1407380</a> 2 m <a href="#">1407381</a> 5 m <a href="#">1407382</a> 10 m <a href="#">1407383</a> Variable <a href="#">1408697</a>	Variable <a href="#">1408690</a>	2 m <a href="#">1405866</a>
5 m <a href="#">1405772</a> Variable <a href="#">1411830</a>	1 m <a href="#">1407360</a> 2 m <a href="#">1407361</a> 5 m <a href="#">1407362</a> 10 m <a href="#">1407363</a> Variable <a href="#">1408712</a>	Variable <a href="#">1408704</a>	1 m <a href="#">1407384</a> 2 m <a href="#">1407385</a> 5 m <a href="#">1407386</a> 10 m <a href="#">1407387</a> Variable <a href="#">1408696</a>	Variable <a href="#">1408689</a>	2 m <a href="#">1406085</a>
5 m <a href="#">1406030</a> Variable <a href="#">1411834</a>	1 m <a href="#">1407364</a> 2 m <a href="#">1407365</a> 5 m <a href="#">1407366</a> 10 m <a href="#">1407367</a> Variable <a href="#">1408710</a>	Variable <a href="#">1408703</a>	1 m <a href="#">1407388</a> 2 m <a href="#">1407389</a> 5 m <a href="#">1407390</a> 10 m <a href="#">1407391</a> Variable <a href="#">1408695</a>	Variable <a href="#">1408688</a>	2 m <a href="#">1406247</a>
	1 m <a href="#">1407368</a> 2 m <a href="#">1407369</a> 5 m <a href="#">1407370</a> 10 m <a href="#">1407371</a> Variable <a href="#">1408709</a>	Variable <a href="#">1408702</a>	1 m <a href="#">1407392</a> 2 m <a href="#">1407393</a> 5 m <a href="#">1407394</a> 10 m <a href="#">1407395</a> Variable <a href="#">1408694</a>	Variable <a href="#">1408687</a>	2 m <a href="#">1406519</a>
1 m <a href="#">1408947</a> 2 m <a href="#">1408948</a> 5 m <a href="#">1408946</a> 10 m <a href="#">1408949</a> Variable <a href="#">1411837</a>	1 m <a href="#">1407372</a> 2 m <a href="#">1407373</a> 5 m <a href="#">1407374</a> 10 m <a href="#">1407375</a> Variable <a href="#">1408707</a>	Variable <a href="#">1408701</a>	1 m <a href="#">1407396</a> 2 m <a href="#">1407397</a> 5 m <a href="#">1407398</a> 10 m <a href="#">1407399</a> Variable <a href="#">1408693</a>	Variable <a href="#">1408686</a>	2 m <a href="#">1406603</a>
	1 m <a href="#">1407376</a> 2 m <a href="#">1407377</a> 5 m <a href="#">1407378</a> 10 m <a href="#">1407379</a> Variable <a href="#">1408706</a>	Variable <a href="#">1408700</a>	1 m <a href="#">1407400</a> 2 m <a href="#">1407401</a> 5 m <a href="#">1407402</a> 10 m <a href="#">1407403</a> Variable <a href="#">1408692</a>	Variable <a href="#">1408684</a>	
		Variable <a href="#">1408699</a>	Variable <a href="#">1408691</a>	Variable <a href="#">1408683</a>	

### Technical data

#### PUR ETHERNET 2x2 FLEX [93E]

Transmission characteristics (category)  
Cable structure  
Conductor cross section  
Conductor structure for signal  
AWG signal line  
Cable diameter  
Conductor resistance  
Type of shield

CAT5  
2x2xAWG26/7; SF/UTP  
2x 2x 0.14 mm<sup>2</sup>  
7x 0.16 mm  
26  
6.4 mm  
≤ 290 Ω/km  
Aluminum-coated foil, tinned copper braided shield

Conductor material  
Outer sheath material  
Color of outer sheath  
Color, single wire

Bare Cu litz wires  
PUR  
water blue RAL 5021  
white/orange-orange,  
white/green-green

#### Ambient temperature

Fixed installation	[°C]	-40 ... 80
Flexible installation	[°C]	-20 ... 80

## 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 connector, SPEEDCON



MS SCO

M12 connector, SPEEDCON



MR SCO

RJ45 connector, IP20



R4AC

Ordering data

Order No.

5 m 1407699

Variable 1411838

1 m 1408950

2 m 1408951

5 m 1408952

10 m 1408953

Variable 1411842

RJ45 connector,  
Version 6



R4MC

Ordering data

Order No.

5 m 1407725

Variable 1411839

5 m 1407932

Variable 1411843

1 m 1408955

2 m 1408956

5 m 1408954

10 m 1408958

Variable 1411846

RJ45 connector,  
Version 14, metal



R4RC

Ordering data

Order No.

5 m 1407783

Variable 1411840

5 m 1407990

Variable 1411844

1 m 1408961

2 m 1408962

5 m 1408959

10 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 network cable, type **94C**, fitted with a **straight M12 connector** at one end and an **RJ45 connector with IP20 protection** at the other end, and **4.5 m in length**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408681	94C	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PUR stranded - 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-

RJ45 connector, Version 14, plastic	M12 connector, SPEEDCON	M12 connector, SPEEDCON	M12 socket, SPEEDCON	M12 socket, SPEEDCON	M12 flush-type socket, rear mounting
					
<b>R4QC</b>	<b>MS SCO</b>	<b>MR SCO</b>	<b>FS SCO</b>	<b>FR SCO</b>	<b>FSBP</b>
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 <a href="#">1407404</a> 2 m <a href="#">1407405</a> 5 m <a href="#">1407406</a> 10 m <a href="#">1407407</a> Variable <a href="#">1408682</a>	Variable <a href="#">1408675</a>	1 m <a href="#">1407439</a> 2 m <a href="#">1407440</a> 5 m <a href="#">1407441</a> 10 m <a href="#">1407442</a> Variable <a href="#">1408665</a>	Variable <a href="#">1408657</a>	5 m <a href="#">1407877</a>
5 m <a href="#">1407819</a> Variable <a href="#">1411841</a>	1 m <a href="#">1407414</a> 2 m <a href="#">1407415</a> 5 m <a href="#">1407416</a> 10 m <a href="#">1407417</a> Variable <a href="#">1408681</a>	Variable <a href="#">1408674</a>	1 m <a href="#">1407443</a> 2 m <a href="#">1407444</a> 5 m <a href="#">1407445</a> 10 m <a href="#">1407446</a> Variable <a href="#">1408664</a>	Variable <a href="#">1408655</a>	5 m <a href="#">1412082</a>
5 m <a href="#">1412024</a> Variable <a href="#">1411845</a>	1 m <a href="#">1407422</a> 2 m <a href="#">1407423</a> 5 m <a href="#">1407424</a> 10 m <a href="#">1407425</a> Variable <a href="#">1408679</a>	Variable <a href="#">1408671</a>	1 m <a href="#">1407451</a> 2 m <a href="#">1407452</a> 5 m <a href="#">1407453</a> 10 m <a href="#">1407454</a> Variable <a href="#">1408662</a>	Variable <a href="#">1408653</a>	5 m <a href="#">1412231</a>
	1 m <a href="#">1407426</a> 2 m <a href="#">1407427</a> 5 m <a href="#">1407428</a> 10 m <a href="#">1407429</a> Variable <a href="#">1408678</a>	Variable <a href="#">1408670</a>	1 m <a href="#">1407455</a> 2 m <a href="#">1407456</a> 5 m <a href="#">1407457</a> 10 m <a href="#">1407458</a> Variable <a href="#">1408661</a>	Variable <a href="#">1408652</a>	5 m <a href="#">1412503</a>
1 m <a href="#">1408965</a> 2 m <a href="#">1408966</a> 5 m <a href="#">1408964</a> 10 m <a href="#">1408967</a> Variable <a href="#">1411848</a>	1 m <a href="#">1407430</a> 2 m <a href="#">1407431</a> 5 m <a href="#">1407432</a> 10 m <a href="#">1407433</a> Variable <a href="#">1408677</a>	Variable <a href="#">1408668</a>	1 m <a href="#">1407459</a> 2 m <a href="#">1407460</a> 5 m <a href="#">1407461</a> 10 m <a href="#">1407462</a> Variable <a href="#">1408660</a>	Variable <a href="#">1408651</a>	5 m <a href="#">1412590</a>
	1 m <a href="#">1407434</a> 2 m <a href="#">1407435</a> 5 m <a href="#">1407436</a> 10 m <a href="#">1407438</a> Variable <a href="#">1408676</a>	Variable <a href="#">1408667</a>	1 m <a href="#">1407463</a> 2 m <a href="#">1407464</a> 5 m <a href="#">1407465</a> 10 m <a href="#">1407466</a> Variable <a href="#">1408659</a>	Variable <a href="#">1408650</a>	
		Variable <a href="#">1408666</a>	Variable <a href="#">1408658</a>	Variable <a href="#">1408649</a>	

	Technical data	Technical data
	<b>Ethernet, flexible, CAT5 [94B]</b>	<b>Ethernet drag chain CAT5 [94C]</b>
Transmission characteristics (category)	CAT5	CAT5
Cable structure	4x2xAWG26/7; SF/UTP	4x2xAWG26/19; S/UTP
Conductor cross section	4x 2x 0.14 mm <sup>2</sup>	4x 2x 0.14 mm <sup>2</sup>
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	≤ 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

**Assembled cables,  
Ethernet, 8-pos.,  
shielded, CAT6<sub>A</sub>**



### Ethernet

	RJ45 connector, IP20	RJ45 connector, Version 6	RJ45 connector, Version 14, metal
	<b>R4AC</b>	<b>R4MC</b>	<b>R4RC</b>
	Ordering data	Ordering data	Ordering data
	Order No.	Order No.	Order No.
Open cable end			
<b>OE</b>	Variable	Variable	Variable
	1411853	1415639	1415637
RJ45 connector, IP20			
<b>R4AC</b>			
RJ45 connector, Version 6			
<b>R4MC</b>			
RJ45 connector, Version 14, metal			
<b>R4RC</b>			
RJ45 connector, Version 14, plastic			
<b>R4QC</b>			
M12 connector, SPEEDCON			
<b>MSX SCO</b>			

### Information for products with fixed cable lengths:




Products with fixed cable lengths are produced with the **94F** cable type and are available from stock.

### Ordering data for cables with variable cable lengths:

For a network cable, type **94F**, fitted with a **straight M12 connector** at one end and an **RJ45 connector with IP20 protection** at the other end, and **4.5 m in length**, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408647	94F	4.5
Minimum order amount = 25		
Increments: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m		

Cable description	Cable type	Pin		Wire color	Signal
		M12	RJ45		
PUR stranded - blue, 4 x 2, CAT6 <sub>A</sub>	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 connector, SPEEDCON	M12 flush-type socket, rear mounting
		
<b>R4QC</b>	<b>MSX SCO</b>	<b>FSBPX</b>
Ordering data	Ordering data	Ordering data
Order No.	Order No.	Order No.
	1 m <a href="#">1407467</a>	0.5 m <a href="#">1424135</a>
	2 m <a href="#">1407468</a>	1 m <a href="#">1424148</a>
	5 m <a href="#">1407469</a>	2 m <a href="#">1424151</a>
	10 m <a href="#">1407470</a>	5 m <a href="#">1424164</a>
Variable <a href="#">1415638</a>	Variable <a href="#">1408648</a>	
	1 m <a href="#">1407471</a>	
	2 m <a href="#">1407472</a>	
	5 m <a href="#">1407473</a>	
	10 m <a href="#">1407474</a>	
Variable <a href="#">1411856</a>	Variable <a href="#">1408647</a>	

	1 m <a href="#">1407475</a>	
	2 m <a href="#">1407476</a>	
	5 m <a href="#">1407477</a>	
	10 m <a href="#">1407478</a>	
	Variable <a href="#">1408646</a>	
	1 m <a href="#">1407479</a>	
	2 m <a href="#">1407480</a>	
	5 m <a href="#">1407481</a>	
	10 m <a href="#">1407482</a>	
Variable <a href="#">1414324</a>	Variable <a href="#">1408645</a>	
	1 m <a href="#">1407483</a>	
	2 m <a href="#">1407484</a>	
	5 m <a href="#">1407485</a>	
	10 m <a href="#">1407486</a>	
	Variable <a href="#">1408644</a>	

Technical data	
Ethernet 10 Gbit [94F]	
Transmission characteristics (category)	CAT6 <sub>A</sub>
Cable structure	4x2xAWG26/7; S/FTP
Conductor cross section	4x 2x 0.14 mm <sup>2</sup>
Conductor structure for signal	7x 0.16 mm
AWG signal line	26
Cable diameter	6.4 mm
Conductor resistance	≤ 290 Ω/km
Type of shield	Tinned copper braided shield
Type of pair shielding	Aluminum-lined foil
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
Ambient temperature	
Fixed installation	[-20 ... 80 °C]
Flexible installation	[-20 ... 80 °C]



### Assembled cables for railway applications, Ethernet, shielded, CAT6<sub>A</sub>



M12 connector, SPEEDCON



MSX SCO

Ordering data

Order No.

Open cable end



OE

M12 connector, SPEEDCON, straight



MSX SCO

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 [°C]

Flexible installation [°C]

Technical data

Ethernet for rail applications [94S]

CAT7

4x2xAWG26/7; S/FTP

4x 2x 0.14 mm<sup>2</sup>

7x 0.16 mm

26

6.6 mm

≤ 145 Ω/km

Tinned copper braided shield

Aluminum-lined polyester foil

Tin-plated Cu litz wires

Elastomer electron beam cross-linked

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 connector, SPEEDCON



MSY SCO

M12 connector,  
SPEEDCON



MSY SCO

Ordering data

Order No.

1 m	1407487
2 m	1407488
5 m	1407489
10 m	1407490
Variable	1408642

M12 flush-type socket,  
rear mounting



FSBPY

Ordering data

Order No.

0.5 m	1407504
1 m	1407505
2 m	1407506
5 m	1407507

**Information for products with  
fixed cable lengths:**

Products with fixed cable lengths are produced with the 94H cable type and are available from stock.

**Ordering data for cables  
with variable cable lengths:**

For a network cable, type 94H, fitted with a straight M12 connector at one end and an RJ45 connector with IP20 protection at the other end, and 4.5 m in length, the ordering data is as follows:

Order No.	Cable type	Length [m] Max. 100 m
1408717	94H	4.5
Minimum order amount = 25		
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
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**

<b>Ethernet hybrid [94H]</b>
CAT5
1x4xAWG26+1x4xAWG20
0.15 [mm²]
19x 0.10 mm
26
0.6 [mm²]
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 optic 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

		Technical data		
Cable, properties		Individual wire diameter	2.8 mm	
		Outer sheath, material	FRNC	
		External sheath, strain relief elements	Non-metallic, aramide fiber	
		Lateral pressure, long-term	60 N/cm	
		Tensile strength short-term/long-term	600 N	
		Halogen-free	According to 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	
		Ordering data		
Description	Length of cable	Type	Order No.	Pcs. / Pkt.
FO patch cable with <b>single-mode fiberglass (OS1)</b>				
- <b>LC connector</b> to LC, SC duplex or B-FOC connector				
	1 m	FL SM PATCH 1,0 LC-LC	<a href="#">2989187</a>	1
	2 m	FL SM PATCH 2,0 LC-LC	<a href="#">2989284</a>	1
	5 m	FL SM PATCH 5,0 LC-LC	<a href="#">2901826</a>	1
FO patch cable with <b>single-mode fiberglass (OS1)</b>				
- <b>SC duplex connector</b> to SC duplex or B-FOC connector				
	1 m			
	2 m			
	5 m			
FO patch cable with <b>single-mode fiberglass (OS1)</b>				
- <b>B-FOC connector</b> to B-FOC connector				
	1 m			
	2 m			
	5 m			



SC duplex connector



B-FOC connector

Technical data
2.8 mm
FRNC
Non-metallic, aramide fiber
60 N/cm
600 N
According to IEC 60754-2
-25 °C ... 70 °C
-5 °C ... 50 °C
-5 °C ... 70 °C

Technical data
2.8 mm
FRNC
Non-metallic, aramide fiber
60 N/cm
600 N
According to IEC 60754-2
-25 °C ... 70 °C
-5 °C ... 50 °C
-5 °C ... 70 °C

Ordering data		
Type	Order No.	Pcs. / Pkt.
FL SM PATCH 1,0 LC-SC	2989190	1
FL SM PATCH 2,0 LC-SC	2989297	1
FL SM PATCH 5,0 LC-SC	2901827	1
FL SM PATCH 1,0 SC-SC	2901829	1
FL SM PATCH 2,0 SC-SC	2901830	1
FL SM PATCH 5,0 SC-SC	2901831	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
FL SM PATCH 1,0 LC-ST	2989242	1
FL SM PATCH 2,0 LC-ST	2989349	1
FL SM PATCH 5,0 LC-ST	2901828	1
FL SM PATCH 1,0 SC-ST	2901832	1
FL SM PATCH 2,0 SC-ST	2901833	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

## Network components - assembled fiber optic cables

### Fiber optic outdoor cables, sold by the meter

- Robust round cable 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/...
<b>Cable data</b>				
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)
<b>Outer sheath</b>				
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
<b>Individual wire</b>				
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
<b>General data</b>				
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 as per:	Complying with IEC 60754-1/2	Complying with IEC 60754-1/2	Complying with IEC 60754-1/2	Complying with IEC 60754-1/2

	Ordering data			Ordering data		
	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Description</b>						
<b>GOF outdoor cable, 2-wire, full breakout cable for fixed installation</b>	FOC-OE-OE-GB01/...	1406429	1			
<b>GOF outdoor cable, 2-wire, full breakout cable for flexible installation</b>	FOC-OE-OE-GB02/...	1406430	1			
<b>GOF outdoor cable, 4-wire, full breakout cable for fixed installation</b>	FOC-OE-OE-GB03/...	1406431	1			
<b>PCF outdoor cable, 2-wire, full breakout cable for fixed installation</b>	FOC-OE-OE-HB01/...	1406432	1			

### Ordering example for cables with variable cable lengths:

For fiber optic outdoor cable type **GB02** with a cable length of 34.0 m, the ordering data is as follows:

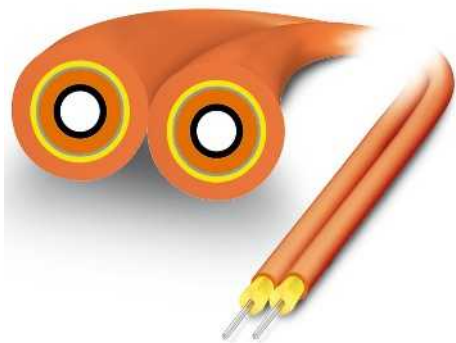
<b>Order No.</b>	<b>Length [m]</b> Max. 1000 m
1406430	34.0
	<b>Increment:</b> 1.0 m ... 1000 m = 1.0 m



# Data connectors and cables

## Network components - assembled fiber optic cables

### Zip cord fiberglass cable for assembly, OM2



- Multi-mode patch cable 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			
	Variable	1411561	
SC-RJ connector, IP20			
		1 m 1409813 2 m 1400697	1 m 1409810 2 m 1400690
SCRJ		Variable 1405703	Variable 1405700
SC duplex connector, IP20			1 m 1409798 2 m 1400685
			Variable 1405697
SCDUP			
B-FOC (ST®) connector, IP20			
BFOC			
LC duplex connector, IP20			1 m 1409790 2 m 1400639
			Variable 1405691
LC			

### Ordering example for configured cable:

For a zip cord fiberglass cable, fitted with an IP20 SC duplex connector at one end and an IP20 SC-RJ connector at the other end, and 15 m in length, the ordering data is as follows:

Order No.	Length [m]
1405700	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 m 1409822  
2 m 1400706

Variable 1405710

1 m 1409819  
2 m 1400703

Variable 1405708

1 m 1409824  
2 m 1404768

Variable 1405712

1 m 1409816  
2 m 1400701

Variable 1405706

1 m 1409793  
2 m 1400682

Variable 1405694

1 m 1409787  
2 m 1400604

Variable 1405688

Technical data

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

50/125 µm OM2

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 as per:

-

Orange

2.8 - 5.7 mm

-

-

-

900 µm

15.80 kg/km

-10 °C ... 70 °C

-25 °C ... 70 °C

-5 °C ... 50 °C

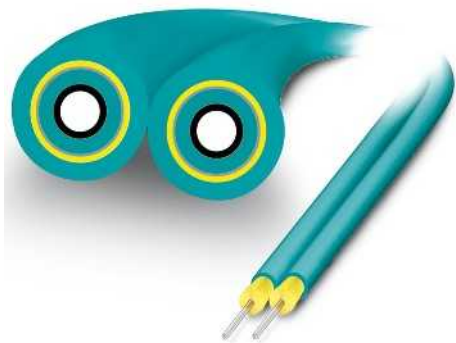
Complying with IEC 60754-1/2



# Data connectors and cables

## Network components - assembled fiber optic cables

### Zip cord fiberglass cable for assembly, OM3



- Multi-mode patch cable 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 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	1411563	
		1 m 1409814	1 m 1409811
		2 m 1400699	2 m 1400691
		Variable 1405704	Variable 1405701
			1 m 1409799
			2 m 1400688
			Variable 1405698
			1 m 1409791
			2 m 1400673
			Variable 1405692

### Ordering example for configured cable:

For a zip cord fiberglass cable, fitted with an IP20 SC duplex connector at one end and an IP20 SC-RJ connector at the other end, and 15 m in length, the ordering data is as follows:

Order No.	Length [m]
1405701	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 m 1409823  
2 m 1400711

Variable 1405711

1 m 1409821  
2 m 1400705

Variable 1405709

1 m 1409818  
2 m 1400702

Variable 1405707

1 m 1409796  
2 m 1400683

Variable 1405695

1 m 1409788  
2 m 1400621

Variable 1405695

Technical data

Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

Smallest bending radius, fixed installation

Smallest bending radius, movable installation

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 as per:

I-V(ZN)H

50/125 µm OM3

2.5 dB/km (at 850 nm),  
0.7 dB/km (at 1300 nm)

15 nm

30 nm

-

Aqua

2.8 - 5.7 mm

-

-

-

-

15.80 kg/km

-10 °C ... 70 °C

-25 °C ... 70 °C

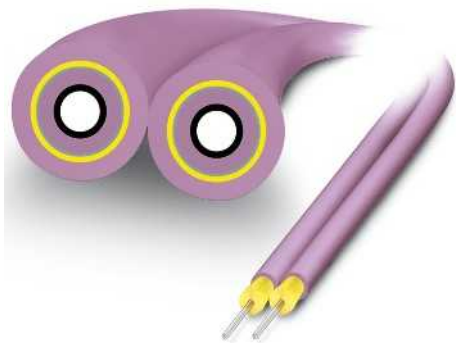
-5 °C ... 50 °C

Complying with IEC 60754-1/2

# Data connectors and cables

## Network components - assembled fiber optic cables

### Zip cord fiberglass cable for assembly, OM4



- Multi-mode patch cable 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 m 1409815 2 m 1400700	1 m 1409812 2 m 1400695
		Variable 1405705	Variable 1405702
			1 m 1409801 2 m 1400689
			Variable 1405699
			1 m 1409792 2 m 1400681
			Variable 1405693

### Ordering example for configured cable:

For a zip cord fiberglass cable, fitted with an IP20 SC duplex connector at one end and an IP20 SC-RJ connector at the other end, and 15 m in length, the ordering data is as follows:

Order No.	Length [m]
1405702	15

Length:	Min. 1 m Max. 1000 m
Increment:	1 m      1 m ... 1000 m

LC duplex connector,  
IP20

LC

## Ordering data

Order No.

1 m	1409797
2 m	1400684

Variable	1405696
----------	---------

1 m	1409789
2 m	1400622

Variable	1405690
----------	---------

## Technical data

## Cable data

Cable abbreviation in accordance with IEC 61977:2010

Fibers

Attenuation, typical

I-V(ZN)H

50/125 µm OM4

2.5 dB/km (at 850 nm),  
0.7 dB/km (at 1300 nm)

Smallest bending radius, fixed installation

Smallest bending radius, movable installation

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 as per:

15 nm

30 nm

-

Violet

2.8 - 5.7 mm

-

-

-

-

15.80 kg/km

-10 °C ... 70 °C

-25 °C ... 70 °C

-5 °C ... 50 °C

Complying with IEC 60754-1/2

### M12 connector, for assembly



INTERBUS



PROFIBUS DP



#### Technical data

M12 circular connector according to:

Pollution degree	3
Degree of protection	IP67
Connection method	Spring connection
<b>Electrical data</b>	
Rated voltage	60 V DC
Rated current	4 A
Insulation resistance	≥ 100 MΩ
<b>Material data</b>	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU
Inflammability class according to UL 94	V0
Coding	B-coded
No. of pos.	5
<b>Temperature data</b>	
Plug/socket	-40 ... 85 [°C]

#### Spring connection

IEC 61076-2-101
3
IP67
Spring connection

#### Screw connection

IEC 61076-2-101
3
IP67
Screw connection



#### Technical data

M12 circular connector according to:	
Pollution degree	3
Degree of protection	IP67
Connection method	Spring connection
<b>Electrical data</b>	
Rated voltage	60 V DC
Rated current	4 A
Insulation resistance	≥ 100 MΩ
<b>Material data</b>	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU
Inflammability class according to UL 94	V0
Coding	B-coded
No. of pos.	2
<b>Temperature data</b>	
Plug/socket	-40 ... 85 [°C]

#### Spring connection

IEC 61076-2-101
3
IP67
Spring connection

#### Screw connection

IEC 61076-2-101
3
IP67
Screw connection

#### Ordering data

Description	Spring connection		Screw connection	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>				
Socket, straight	1432826	1	1507777	1
Plug, straight	1432800	1	1507764	1
Socket, angled	1432839	1	1430420	1
Plug, angled	1432813	1	1430417	1

#### Ordering data

Description	Springconnection		Screw connection	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b>				
Socket, straight	1432868	1	1507777	1
Plug, straight	1432842	1	1507764	1
Socket, angled	1432871	1	1430420	1
Plug, angled	1432855	1	1430417	1

new



PROFIBUS DP, PROFIBUS PA



CANopen®, DeviceNet™



CC-Link



Technical data	
<b>PROFIBUS DP</b>	<b>PROFIBUS PA</b>
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65/IP67	IP65/IP67
IDC connection technology	IDC connection technology
60 V DC	30 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Ni/Au
PA	PA
V0	V0
B-coded	A-coded
2	2
-40 ... 85	-40 ... 85

Technical data	
<b>Spring connection</b>	<b>Screw connection</b>
IEC 61076-2-101	IEC 61076-2-101
3	3
IP65/IP67	IP67
Spring connection	Screw connection
60 V DC	60 V DC
4 A	4 A
≥ 100 MΩ	≥ 100 MΩ
CuSn	CuSn
Ni/Au	Au
TPU	PA 66
V0	HB
A - standard	A - standard
5	5
-40 ... 85	-40 ... 85

Technical data	
<b>Spring connection</b>	
IEC 61076-2-101	
3	
IP67	
Spring connection	
60 V DC	
4 A	
≥ 100 MΩ	
CuSn	
Ni/Au	
PA 66	
V0	
A - standard	
4	
-40 ... 85	

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>PROFIBUS DP</b>		<b>PROFIBUS PA</b>	
1413932	1	1413934	1
1413931	1	1413933	1

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Spring connection</b>		<b>Screw connection</b>	
1432787	1	1508365	1
1432761	1	1508352	1
1432790	1		
1432774	1		

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Spring connection</b>			
1559770	1		
1559767	1		

### M12 flush-type connector, shielded



with 0.5 m long litz wires,  
front mounting



#### Technical data

M12 circular connector according to:	IEC 61076-2-101
Pollution degree	3
Degree of protection	IP67
Connection method	Individual wires
<b>Electrical data</b>	
Rated voltage	250 V
Rated current	4 A
Contact resistance	≤ 3 mΩ
Insulation resistance	≥ 100 MΩ
<b>Material data</b>	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA66 GF
Inflammability class according to UL 94	V0
<b>Temperature data</b>	
Plug/socket	-25 ... 85 [°C]

#### Ordering data

Description	Coding	Type	Order No.	Pcs. / Pkt.
<b>Device connectors</b>				
Socket	A - standard	SACC-E-M12FS-4CON-PG9/0,5 FFVA	<a href="#">1431429</a>	1
Plug	A - standard	SACC-E-M12MS-4CON-PG9/0,5 FFVA	<a href="#">1431432</a>	1

**Flush-type connector, with pre-assembled cable, type 900**



Rear mounting



Front mounting, can be positioned

ERC

**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 66	PA 66
V0	V0
-25 ... 85	-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 66
V0
-25 ... 85

**Ordering data**

Description	Cable length	M16 fastening thread		Pg9 fastening thread	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Flush-type connector, B-coded, with bus system cable, 6-wire, shielded, PUR halogen-free, green outer cable sheath, 3 x 2 x 0.25 mm<sup>2</sup></b>					
Socket	0.5 m	1534546	1	1437601	1
Plug	0.5 m	1534504	1	1437643	1
Socket	1 m	1534559	1	1437614	1
Plug	1 m	1534517	1	1437656	1
Socket	2 m	1534562	1	1437627	1
Plug	2 m	1534520	1	1437669	1
Socket	5 m	1534575	1	1437630	1
Plug	5 m	1534533	1	1437672	1
<b>EMC hexagonal nut with fine tothing, for all device connectors with:</b>					
M16 fastening thread		1440164	10		
Pg9 fastening thread				1440177	10

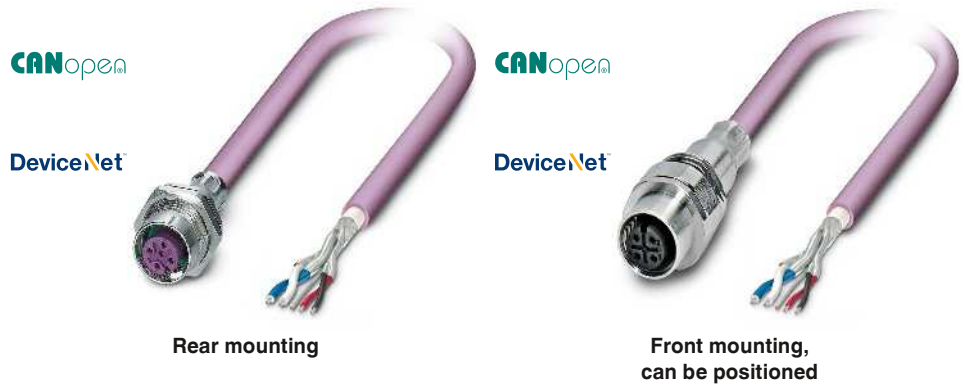
**Ordering data**

M16 fastening thread			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1529742	1	1529629	1
1529755	1	1530223	1
1529768	1	1529726	1
1529771	1	1529739	1





**Flush-type connector, with pre-assembled cable, type 920**



ERC

ERC

M12 circular connector according to:

Pollution degree	3
Degree of protection	IP67
Electrical data	
Rated voltage	60 V
Rated current	4 A
Contact resistance	≤ 3 mΩ
Insulation resistance	≥ 100 MΩ
Material data	
Material contact/contact surface	CuZn / Ni/Au
Contact carrier material	PA 66
Inflammability class according to UL 94	V0
Temperature data	
Plug/socket	[°C] -25 ... 85

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 66	PA 66
V0	V0
-25 ... 85	-25 ... 85

Technical data	
M16 fastening thread	
IEC 61076-2-101	
3	
IP67	
60 V	
4 A	
≤ 3 mΩ	
≥ 100 MΩ	
CuZn / Ni/Au	
PA 66	
V0	
-25 ... 85	

Description	Cable length
<b>Flush-type connector, A-coded, with bus system cable, 4-wire, shielded, PUR halogen-free, violet outer cable sheath, 2 x 0.34 mm<sup>2</sup>; 2 x 0.25 mm<sup>2</sup></b>	
Socket	0.5 m
Plug	0.5 m
Socket	1 m
Plug	1 m
Socket	2 m
Plug	2 m
Socket	5 m
Plug	5 m
<b>EMC hexagonal nut with fine tothing, for all device connectors with:</b>	
<b>M16 fastening thread</b>	
<b>Pg9 fastening thread</b>	

Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
M16 fastening thread		Pg9 fastening thread	
1534465	1	1437520	1
1534423	1	1437562	1
1534478	1	1437533	1
1534436	1	1437575	1
1534481	1	1437546	1
1534449	1	1437588	1
1534494	1	1437559	1
1534452	1	1437591	1
1440164	10	1440177	10

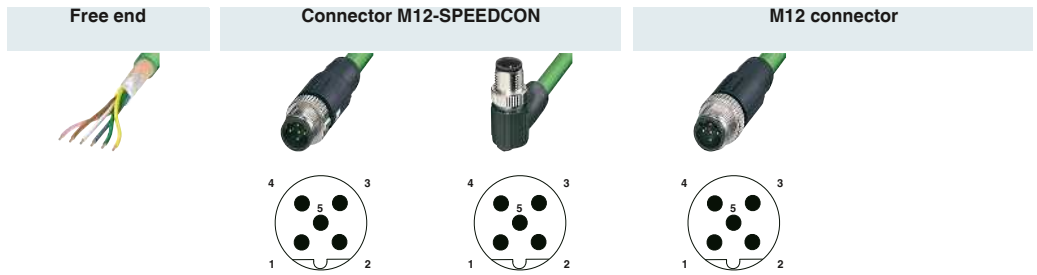
Ordering data			
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
M16 fastening thread			
1525678	1		
1525623	1		
1525681	1		
1525636	1		
1525694	1		
1525649	1		
1525704	1		
1525652	1		

# Data connectors and cables

## Fieldbus components - assembled cables

### Assembled cables, INTERBUS, M12-SPEEDCON, and M12

Notes:  
For information about the cable qualities, see page 440



	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	Variable <b>2723123</b>	2 m <b>1517877</b> 5 m <b>1517880</b> 10 m <b>1517893</b> 15 m <b>1517903</b> Variable <b>1537996</b>	Variable <b>1433184</b>	2 m <b>1507065</b> 5 m <b>1507078</b> 10 m <b>1507081</b> 15 m <b>1507094</b> Variable <b>1537983</b>	
<b>M12-SPEEDCON socket, straight</b> 	2 m <b>1517916</b> 5 m <b>1517929</b> 10 m <b>1517932</b> 15 m <b>1517945</b> Variable <b>1538018</b>	0.3 m <b>1517958</b> 0.5 m <b>1517961</b> 1 m <b>1517974</b> 2 m <b>1517987</b> 5 m <b>1517990</b> 10 m <b>1518009</b> 15 m <b>1518012</b> Variable <b>1538034</b>	Variable <b>1433210</b>		
<b>M12-SPEEDCON socket, angled</b> 	Variable <b>1433197</b>	Variable <b>1433207</b>	Variable <b>1433223</b>		
<b>M12 socket, straight</b> 	2 m <b>1507117</b> 5 m <b>1507120</b> 10 m <b>1507133</b> 15 m <b>1507146</b> Variable <b>1538005</b>			0.3 m <b>1507162</b> 0.5 m <b>1507175</b> 1 m <b>1507188</b> 2 m <b>1507191</b> 5 m <b>1507201</b> 10 m <b>1507214</b> 15 m <b>1507227</b> Variable <b>1538021</b>	

### Ordering example for cable with connector assembly:

For an INTERBUS bus cable, straight M12 socket to a straight M12 connector and a cable length of 34.5 m, the order data is as follows:

Order No.	Length [m]
<b>1538021</b>	<b>34.5</b>
	Max. 40 m
	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 a cable length of 34.5 m, the order data is as follows:

Order No.	Length [m]
<b>2723123</b>	<b>34.5</b>
	Max. 400 m
	Increments: 0.5 ... 400.0 m = 0.5 m

Technical data	
M12	
Rated voltage	[V] 60
Rated current	[A] 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	
Plug/socket	[°C] -25 ... 90

**Assembled cables, PROFIBUS DP, M12-SPEEDCON, and M12**

**Notes:**  
For information about the cable qualities, see page 440



	Ordering data	Ordering data	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	Variable <b>1511491</b>	2 m <b>1518025</b> 5 m <b>1518038</b> 10 m <b>1518041</b> 15 m <b>1518054</b> Variable <b>1538050</b>	Variable <b>1433236</b>	2 m <b>1507243</b> 5 m <b>1507256</b> 10 m <b>1507269</b> 15 m <b>1507272</b> Variable <b>1538047</b>	
<b>M12-SPEEDCON socket, straight</b> 	2 m <b>1518067</b> 5 m <b>1518070</b> 10 m <b>1518083</b> 15 m <b>1518096</b> Variable <b>1538076</b>	0.3 m <b>1518106</b> 0.5 m <b>1518119</b> 1 m <b>1518122</b> 2 m <b>1518135</b> 5 m <b>1518148</b> 10 m <b>1518151</b> 15 m <b>1518164</b> Variable <b>1538092</b>	Variable <b>1433265</b>		
<b>M12-SPEEDCON socket, angled</b> 	Variable <b>1433249</b>	Variable <b>1433252</b>	Variable <b>1433278</b>		
<b>M12 socket, straight</b> 	2 m <b>1507298</b> 5 m <b>1507308</b> 10 m <b>1507311</b> 15 m <b>1507324</b> Variable <b>1538063</b>			0.3 m <b>1507340</b> 0.5 m <b>1507353</b> 1 m <b>1507366</b> 2 m <b>1507379</b> 5 m <b>1507382</b> 10 m <b>1507395</b> 15 m <b>1507405</b> Variable <b>1538089</b>	

**Ordering example for cable with connector assembly:**

For a PROFIBUS bus cable, straight M12 socket to a straight M12 connector and the cable length of 34.5 m, the order data is as follows:

Order No.	Length [m]
<b>1538089</b>	<b>34.5</b>
	Max. 40 m
	<b>Increments:</b>
	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 a cable length of 34.5 m, the order data is as follows:

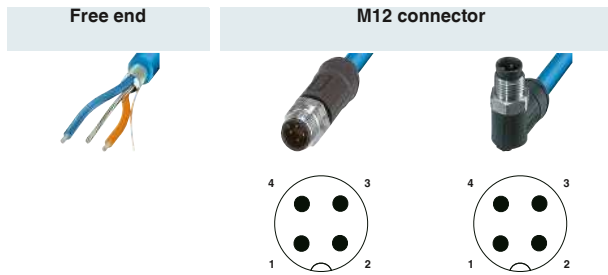
Order No.	Length [m]
<b>1511491</b>	<b>34.5</b>
	Max. 400 m
	<b>Increments:</b>
	0.5 ... 400.0 m = 0.5 m

Technical data	
M12	
Rated voltage	[V] 250
Rated current	[A] 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	
Plug/socket	[°C] -25 ... 90

## Fieldbus components - assembled cables

### Assembled cables, PROFIBUS PA, M12 stainless steel

Notes:  
For information about the cable qualities, see page 442



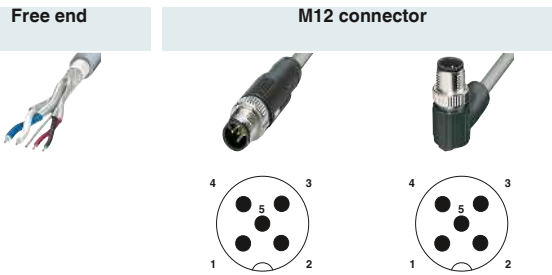
	Ordering data	Ordering data	Ordering data
Free end	Order No.	Order No.	Order No.
	2 m	1419092	2 m 1419097
	5 m	1419093	5 m 1419098
	10 m	1419094	10 m 1419099
	15 m	1419095	15 m 1419100
	20 m	1419096	20 m 1419101
<b>M12 socket, straight</b> 	0.3 m	1419102	0.3 m 1419110
	0.5 m	1419103	0.5 m 1419111
	1 m	1419104	1 m 1419112
	2 m	1419105	2 m 1419113
	5 m	1419106	5 m 1419114
	10 m	1419107	10 m 1419115
	15 m	1419108	15 m 1419116
	20 m	1419109	20 m 1419117
	<b>M12 socket, angled</b> 	0.3 m	1419118
0.5 m		1419119	0.5 m 1419127
1 m		1419120	1 m 1419128
2 m		1419121	2 m 1419129
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	[V]	60
Rated current	[A]	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 / IP68 / IP69K
Temperature data		
Plug/socket	[°C]	-25 ... 90

**Assembled cables,  
DeviceNet™/CANopen®,  
M12-SPEEDCON**

**Notes:**  
For information about the cable qualities, see page 441  
Connector, unshielded.



**Ordering data**      **Ordering data**      **Ordering data**

Free end	Order No.	Order No.	Order No.
	2 m	<a href="#">1419039</a>	2 m <a href="#">1419044</a>
	5 m	<a href="#">1419040</a>	5 m <a href="#">1419045</a>
	10 m	<a href="#">1419041</a>	10 m <a href="#">1419046</a>
	15 m	<a href="#">1419042</a>	15 m <a href="#">1419047</a>
	20 m	<a href="#">1419043</a>	20 m <a href="#">1419048</a>

M12 socket, straight	Order No.	Order No.	Order No.
	0.3 m	<a href="#">1419049</a>	0.3 m <a href="#">1419057</a>
	0.5 m	<a href="#">1419050</a>	0.5 m <a href="#">1419058</a>
	1 m	<a href="#">1419051</a>	1 m <a href="#">1419059</a>
	2 m	<a href="#">1419052</a>	2 m <a href="#">1419060</a>
	5 m	<a href="#">1419053</a>	5 m <a href="#">1419061</a>
	10 m	<a href="#">1419054</a>	10 m <a href="#">1419062</a>
15 m	<a href="#">1419055</a>	15 m <a href="#">1419063</a>	
20 m	<a href="#">1419056</a>	20 m <a href="#">1419064</a>	

M12 socket, angled	Order No.	Order No.	Order No.
	0.3 m	<a href="#">1419065</a>	0.3 m <a href="#">1419073</a>
	0.5 m	<a href="#">1419066</a>	0.5 m <a href="#">1419074</a>
	1 m	<a href="#">1419067</a>	1 m <a href="#">1419075</a>
	2 m	<a href="#">1419068</a>	2 m <a href="#">1419076</a>
	5 m	<a href="#">1419069</a>	5 m <a href="#">1419077</a>
	10 m	<a href="#">1419070</a>	10 m <a href="#">1419078</a>
	15 m	<a href="#">1419071</a>	15 m <a href="#">1419079</a>
	20 m	<a href="#">1419072</a>	20 m <a href="#">1419080</a>

Color coding	Pin assignment
	<b>M12</b>
Shield	1
RD	2
BK	3
WH	4
BU	5

Technical data	
M12	
Rated voltage	[V] 60
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	
Plug/socket	[°C] -25 ... 90

## Fieldbus components - assembled cables

### Assembled cables, DeviceNet™/CANopen®, M8

**Notes:**  
For information about the cable qualities, see page 441

Free end



M8 connector



DeviceNet™ CANopen®

	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
<b>M8 socket, straight</b> 			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		
Variable	1575819	Variable	1575893	Variable	1575932	
<b>M8 socket, angled</b> 						
	Variable	1575916	Variable	1575945	Variable	1575945

### Ordering example for cables with variable cable length:

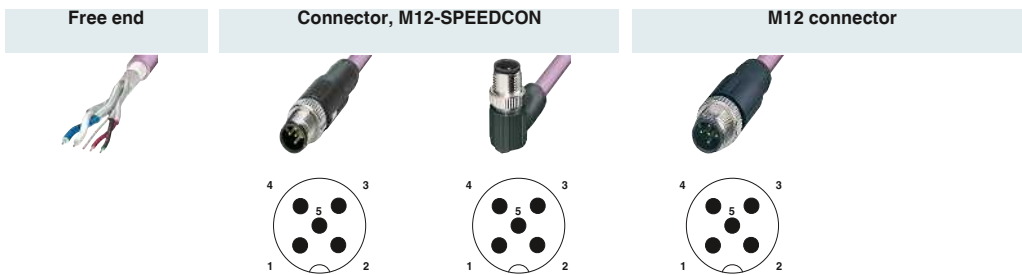
For a DeviceNet™ bus cable, straight M8 socket to a straight M8 connector and a cable length of 34.5 m, the order data is as follows:

Order No.	Length [m] Max. 40 m
1575893	34.5
<b>Increments:</b> 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m	

		Technical data	
		M8	
Rated voltage	[V]		30
Rated current	[A]		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			
Plug/socket	[°C]		-25 ... 90

**Assembled cables, DeviceNet™/CANopen®, M12-SPEEDCON and M12**

**Notes:**  
For information about the cable qualities, see page 441



**Ordering data**

Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	2 m	1518177	2 m	1507421	
	5 m	1518180	5 m	1507434	
	10 m	1518193	10 m	1507447	
	15 m	1518203	15 m	1507450	
	Variable	1511504	Variable	1538115	Variable
<b>M12 socket, SPEEDCON, straight</b>					
	0.3 m	1518258			
	0.5 m	1518261			
	1 m	1518274			
	2 m	1518287			
	5 m	1518290			
	10 m	1518300			
	15 m	1518313			
	Variable	1538131	Variable	1538157	Variable
			Variable	1433317	
<b>M12 socket, SPEEDCON, angled</b>					
	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
<b>M12 socket, straight</b>					

**Ordering example for cable with connector assembly:**

For a DeviceNet™ bus cable, straight M12 socket to a straight M12 connector and the cable length of 34.5 m, the order data is as follows:

<b>Order No.</b>	<b>Length [m]</b>
1538144	34.5
	<b>Increments:</b>
	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 a cable length of 34.5 m, the order data is as follows:

<b>Order No.</b>	<b>Length [m]</b>
1511504	34.5
	<b>Increments:</b>
	0.5 ... 400.0 m = 0.5 m

Technical data	
M12	
Rated voltage	[V] 60
Rated current	[A] 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	
Plug/socket	[°C] -25 ... 90



# Data connectors and cables

## Fieldbus components - assembled cables

### Assembled drop cable, DeviceNet™, 7/8", type 923

**Notes:**

For information about the cable qualities, see page 441






Free end



7/8" connector



**DeviceNet**

Free end	Ordering data		Ordering data		Ordering data	
	Order No.		Order No.		Order No.	
		2 m	<a href="#">1418523</a>	2 m	<a href="#">1418578</a>	
		5 m	<a href="#">1418536</a>	5 m	<a href="#">1418581</a>	
		10 m	<a href="#">1418549</a>	10 m	<a href="#">1418594</a>	
		15 m	<a href="#">1418552</a>	15 m	<a href="#">1418604</a>	
		20 m	<a href="#">1418565</a>	20 m	<a href="#">1418617</a>	
<b>7/8" socket, straight</b>  		0.3 m	<a href="#">1418620</a>	0.3 m	<a href="#">1418701</a>	
		0.5 m	<a href="#">1418633</a>	0.5 m	<a href="#">1418714</a>	
		1 m	<a href="#">1418646</a>	1 m	<a href="#">1418727</a>	
	2 m	<a href="#">1418426</a>	2 m	<a href="#">1418659</a>	2 m	<a href="#">1418730</a>
	5 m	<a href="#">1418439</a>	5 m	<a href="#">1418662</a>	5 m	<a href="#">1418743</a>
	10 m	<a href="#">1418442</a>	10 m	<a href="#">1418675</a>	10 m	<a href="#">1418756</a>
15 m	<a href="#">1418455</a>	15 m	<a href="#">1418688</a>	15 m	<a href="#">1418769</a>	
20 m	<a href="#">1418468</a>	20 m	<a href="#">1418691</a>	20 m	<a href="#">1418772</a>	
<b>7/8" socket, angled</b>  		0.3 m	<a href="#">1418785</a>	0.3 m	<a href="#">1420045</a>	
		0.5 m	<a href="#">1418798</a>	0.5 m	<a href="#">1420058</a>	
		1 m	<a href="#">1418808</a>	1 m	<a href="#">1420061</a>	
	2 m	<a href="#">1418471</a>	2 m	<a href="#">1418811</a>	2 m	<a href="#">1420074</a>
	5 m	<a href="#">1418484</a>	5 m	<a href="#">1418824</a>	5 m	<a href="#">1420087</a>
	10 m	<a href="#">1418497</a>	10 m	<a href="#">1418837</a>	10 m	<a href="#">1420090</a>
	15 m	<a href="#">1418507</a>	15 m	<a href="#">1420029</a>	15 m	<a href="#">1420100</a>
	20 m	<a href="#">1418510</a>	20 m	<a href="#">1420032</a>	20 m	<a href="#">1420113</a>

Color coding	Pin assignment 7/8"
Shield	1
RD	2
BK	3
WH	4
BU	5

		Technical data
		7/8"
Rated voltage	[V]	30
Rated current	[A]	5.2
Contact resistance		< 5 mΩ
Contact material		CuZn
Contact surface material		Au
Material of grip body		TPU
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-40 ... 80

**Assembled trunk cable,  
DeviceNet™, 7/8", type 928**

Free end

7/8" connector



**Notes:**

For information about the cable qualities, see page 441

**DeviceNet**

Ordering data      Ordering data      Ordering data

Free end	Order No.	Order No.	Order No.
	2 m	<a href="#">1417553</a>	2 m <a href="#">1417605</a>
	5 m	<a href="#">1417566</a>	5 m <a href="#">1417618</a>
	10 m	<a href="#">1417579</a>	10 m <a href="#">1417621</a>
	15 m	<a href="#">1417582</a>	15 m <a href="#">1417634</a>
	20 m	<a href="#">1417595</a>	20 m <a href="#">1417647</a>

**7/8" socket, straight**



0.3 m	<a href="#">1417650</a>	0.3 m	<a href="#">1417731</a>
0.5 m	<a href="#">1417663</a>	0.5 m	<a href="#">1417744</a>
1 m	<a href="#">1417676</a>	1 m	<a href="#">1417757</a>
2 m	<a href="#">1417456</a>	2 m	<a href="#">1417760</a>
5 m	<a href="#">1417469</a>	5 m	<a href="#">1417773</a>
10 m	<a href="#">1417472</a>	10 m	<a href="#">1417786</a>
15 m	<a href="#">1417485</a>	15 m	<a href="#">1417799</a>
20 m	<a href="#">1417498</a>	20 m	<a href="#">1417809</a>

**7/8" socket, angled**



0.3 m	<a href="#">1417812</a>	0.3 m	<a href="#">1417896</a>
0.5 m	<a href="#">1417825</a>	0.5 m	<a href="#">1417906</a>
1 m	<a href="#">1417838</a>	1 m	<a href="#">1417919</a>
2 m	<a href="#">1417841</a>	2 m	<a href="#">1417922</a>
5 m	<a href="#">1417854</a>	5 m	<a href="#">1417935</a>
10 m	<a href="#">1417524</a>	10 m	<a href="#">1417948</a>
15 m	<a href="#">1417537</a>	15 m	<a href="#">1417951</a>
20 m	<a href="#">1417540</a>	20 m	<a href="#">1417964</a>

Color coding	Pin assignment 7/8"
Shield	1
RD	2
BK	3
WH	4
BU	5

**Technical data**

		7/8"
Rated voltage	[V]	30
Rated current	[A]	5.2
Contact resistance		< 5 mΩ
Contact material		CuZn
Contact surface material		Au
Material of grip body		TPU
Degree of protection		IP65 / IP67
Temperature data		
Plug/socket	[°C]	-40 ... 80

### M12 Y distributor

<b>Notes:</b>
For information about the cable qualities, see page 441
Connector, unshielded.

DeviceNet  
CANopen



Bus system cable

DeviceNet  
CANopen



Bus system cable

ERC

#### Technical data

Electrical data	
Rated voltage	60 V
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	TPU GF
Inflammability class according to UL 94	HB
Mechanical data	
No. of pos.	5
Pollution degree	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm <sup>2</sup>
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm <sup>2</sup>
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Plug/socket	[°C] -25 ... 90
Cable, fixed installation	[°C] -40 ... 80
Cable, flexible installation	[°C] -20 ... 70

ERC

#### Technical data

Electrical data	
Rated voltage	60 V
Rated current	4 A
Contact resistance	≤ 5 mΩ
Material data	
Contact material	CuSn
Contact surface material	Ni/Au
Contact carrier material	-
Inflammability class according to UL 94	HB
Mechanical data	
No. of pos.	5
Pollution degree	3
Degree of protection	IP65/IP67
External cable diameter	6.70 mm
Conductor cross section for signal	0.2 mm <sup>2</sup>
Conductor structure signal line	19x 0.12 mm
Conductor cross section for power	0.32 mm <sup>2</sup>
Conductor structure, voltage supply	19x 0.15 mm
Temperature data	
Plug/socket	[°C] -25 ... 90
Cable, fixed installation	[°C] -40 ... 80
Cable, flexible installation	[°C] -20 ... 70

#### Ordering data

Description
<b>Bus system Y-cable</b> , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-socket to straight M12 socket 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
<b>Bus system Y-cable</b> , 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
<b>Bus system Y-cable</b> , 5-pos., shielded, PUR, halogen-free, violet, unshielded straight M12 Y-socket 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

#### 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, 7/8"**

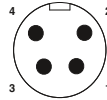
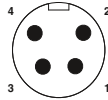
**Notes:**  
 For applications in circuits of the intrinsic safety "i" protection type.  
 For information about the cable qualities, see page 442



Free end



7/8" plug



**Ordering data**

Free end	Order No.	Order No.	Order No.		
	Variable	<b>1434620</b>			
		2 m	<b>1433964</b>	2 m	<b>1434057</b>
		5 m	<b>1433977</b>	5 m	<b>1434060</b>
		10 m	<b>1433980</b>	10 m	<b>1434073</b>
<b>7/8" socket, straight</b> 		0.3 m	<b>1434141</b>	0.3 m	<b>1434264</b>
		0.5 m	<b>1434154</b>	0.5 m	<b>1434277</b>
		1 m	<b>1434167</b>	1 m	<b>1434280</b>
		2 m	<b>1434170</b>	2 m	<b>1434293</b>
		5 m	<b>1434183</b>	5 m	<b>1434303</b>
		10 m	<b>1434196</b>	10 m	<b>1434316</b>
<b>7/8" socket, angled</b> 		0.3 m	<b>1434387</b>	0.3 m	<b>1434507</b>
		0.5 m	<b>1434390</b>	0.5 m	<b>1434510</b>
		1 m	<b>1434400</b>	1 m	<b>1434523</b>
		2 m	<b>1434413</b>	2 m	<b>1434536</b>
		5 m	<b>1434426</b>	5 m	<b>1434549</b>
		10 m	<b>1434439</b>	10 m	<b>1434552</b>

**Ordering example for products with variable cable:**

For a FOUNDATION Fieldbus cable that is 34.5 m in length, the ordering data is as follows:

<b>Order No.</b>	<b>Length [m] max. 50 m</b>
<b>1434620</b>	<b>34.5</b>
	Increment: 0.5 m



Color coding	Pin assignment	
	7/8"	M12
BU	1	1
BN	2	2
Shield	3	3
n.c.	4	4

**Technical data**

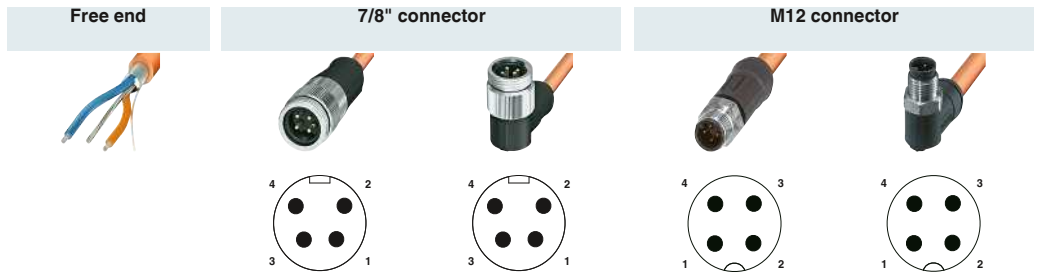
		7/8"
Rated voltage	[V]	300
Rated current	[A]	5.2
Contact resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		AU
Material of grip body		TPU
Degree of protection		IP67
Temperature data		
Plug/socket	[°C]	-40 ... 105

# Data connectors and cables

## Fieldbus components - assembled cables

### Assembled cables, FOUNDATION Fieldbus, 7/8" and M12 stainless steel

**Notes:**  
For information about the cable qualities, see page 442



	Ordering data		Ordering data		Ordering data		Ordering data		Ordering data	
Free end	Order No.		Order No.		Order No.		Order No.		Order No.	
			2 m	1429350	2 m	1429444	2 m	1431173		
			5 m	1429363	5 m	1429457	5 m	1431186		
			10 m	1429376	10 m	1429460	10 m	1431199		
			15 m	1429389	15 m	1429473	15 m	1431209		
			20 m	1429392	20 m	1429486				
			25 m	1429402	25 m	1429499				
			30 m	1429415	30 m	1429509				
			40 m	1429428	40 m	1429512				
			50 m	1429431	50 m	1429525				
	Variable	1432389					Variable	1431322	Variable	1431335
<b>7/8" socket, straight</b>										
			0.3 m	1429538	0.3 m	1429664				
			0.5 m	1429554	0.5 m	1429677				
			1 m	1429567	1 m	1429680				
			2 m	1429570	2 m	1429693				
			5 m	1429583	5 m	1429703				
			10 m	1429596	10 m	1429716				
			15 m	1429606	15 m	1429729				
			20 m	1429619	20 m	1429732				
			25 m	1429622	25 m	1429745				
			30 m	1429635	30 m	1429758				
			40 m	1429648	40 m	1429761				
			50 m	1429651	50 m	1429774				
	2 m	1429712								
	5 m	1429185								
	10 m	1429198								
	15 m	1429208								
	20 m	1429211								
	25 m	1429224								
	30 m	1429237								
	40 m	1429240								
	50 m	1429253								
<b>7/8" socket, angled</b>										
			0.3 m	1429787	0.3 m	1429907				
			0.5 m	1429790	0.5 m	1429910				
			1 m	1429800	1 m	1429923				
			2 m	1429813	2 m	1429936				
			5 m	1429826	5 m	1429949				
			10 m	1429839	10 m	1429952				
			15 m	1429842	15 m	1429965				
			20 m	1429855	20 m	1429978				
			25 m	1429868	25 m	1429981				
			30 m	1429871	30 m	1429994				
			40 m	1429884	40 m	1430006				
			50 m	1429897	50 m	1430019				
	2 m	1429266								
	5 m	1429279								
	10 m	1429282								
	15 m	1429295								
	20 m	1429305								
	25 m	1429318								
	30 m	1429321								
	40 m	1429334								
	50 m	1429347								
<b>M12 socket, straight</b>										
			0.3 m	1431254						
			0.5 m	1431267						
			1 m	1431270						
			2 m	1431283						
			5 m	1431296						
			10 m	1431306						
			15 m	1431319						
	Variable	1431348					Variable	1431364	Variable	1431377
<b>M12 socket, angled</b>										
			Variable	1431351			Variable	1431380	Variable	1431393

### Ordering example for products with variable cable:

For a FOUNDATION Fieldbus cable, fitted with a straight M12 connector at one end and an M12 socket at the other end, and 34.5 m in length, the ordering data is as follows:

Order No.	Length [m] max. 50 m
1431364	34.5
	Increment: 0.5 m

Color coding	Pin assignment	
	7/8"	M12
BU	1	1
BN	2	2
Shield	3	3
n.c.	4	4

	Technical data	
	7/8"	Connectors M12
Rated voltage [V]	300	250
Rated current [A]	5.2	4
Contact resistance	≤ 5 mΩ	≤ 5 mΩ
Contact material	CuZn	CuSn
Contact surface material	AU	Ni/Au
Material of grip body	TPU	TPU, hardly inflammable, self-extinguishing
Material, knurls	Stainless steel	Stainless steel
Degree of protection	IP67	IP65 / IP67 / IP68 / IP69K
Temperature data		
Plug/socket [°C]	-40 ... 105	-25 ... 90

### H- and T-distributors



H-distributor



T-distributor

ERC

ERC

Technical data	
Electrical data	SAC-5PH-M-F/2XF SH1 SCO
Nominal voltage $U_N$	60 V
Insulation resistance	$\geq 100 \text{ M}\Omega$
Surge voltage category/pollution degree	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
Degree of protection	IP65/IP67
Temperature data	
Plug/socket	-25 ... 90 [°C]

Technical data	
SAC-5P-M12T/2XMIN DN	SAC-5P-M12T/2XM12 VP
60 V	60 V
$\geq 100 \text{ M}\Omega$	$\geq 100 \text{ M}\Omega$
II / 3	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
Degree of protection	IP65/IP67
Temperature data	
Plug/socket	-40 ... 75      -25 ... 90

Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
Bus system <b>H-distributor</b> , for <b>DeviceNet™</b> with two mounting holes M12 connector to 3x M12 sockets	<b>SAC-5PH-M-F/2XF SH1 SCO</b>	<b>1417414</b>	1
Bus system <b>T-distributor</b> , for <b>DeviceNet™</b> , with stainless steel knurl and two mounting holes M12 socket to 7/8" connector and 7/8" socket 7/8" socket to 7/8" connector and 7/8" socket			
Bus system <b>T-distributor</b> , for <b>CANopen®</b> and <b>DeviceNet™</b> , M12 socket to M12 socket and M12 connector			
Green Black, with two mounting holes Bus system <b>T-distributor</b> , for <b>CC-Link</b> M12 socket to M12 socket and M12 connector			
Bus system <b>T-distributor</b> , for FOUNDATION Fieldbus and PROFIBUS PA (M12), with stainless steel knurl M12 socket to M12 socket and M12 connector			
7/8" socket to 7/8" connector and 7/8" socket, with two mounting holes Bus system <b>T-distributor</b> , for <b>PROFIBUS</b> M12 socket to M12 connector and M12 socket, with two mounting holes			

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>SAC-5P-M12T/2XMIN DN</b>	<b>1401028</b>	1
<b>SAC-5P-MINT/2XMIN DN</b>	<b>1401029</b>	1
<b>SAC-5P-M12T/2XM12 VP</b>	<b>1541186</b>	1
<b>SAC-M12T/2XM12 CAN</b>	<b>1507793</b>	1
<b>SAC-4P-M12T/2XM12 CCL</b>	<b>1559783</b>	5
<b>SAC-4P-M12T/2XM12 FF VA</b>	<b>1431416</b>	5
<b>SAC-4P-MIN-T/2XMIN FF VA</b>	<b>1430035</b>	1
<b>SAC-M12T/2XM12 PBDP</b>	<b>1458884</b>	1

Termination resistors



M8/M12 termination resistors



7/8" termination resistors

ERIC

ERIC

Technical data	
SAC-5P-M12MS PB TR	SAC-4P-M12MS FF TR VA
60 V	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/IP67/IP69K	IP65/IP68/IP69K
-25 ... 90	-25 ... 90

Technical data	
SAC-4P-MINMS FF-TR VA	
50 V	
≥ 10 MΩ	
II / 2	
CuZn	
AU	
PA 66	
TPU	
IP67	
-40 ... 80	

Ordering data			
Type	Order No.	Pcs. / Pkt.	
SAC-5P-M 8MS DN TR	1435988	5	
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	

Ordering data		
Type	Order No.	Pcs. / Pkt.
SAC-4P-MINMS FF-TR VA	1430023	1
SAC-5P-MINMS TR-DN	1434701	1

Electrical data	
Nominal voltage U <sub>N</sub>	
Insulation resistance	
Surge voltage category/pollution degree	
Material data	
Contact material	
Contact surface material	
Contact carrier material	
Material of grip body	
Degree of protection	
Temperature data	
Plug/socket	[°C]

Description
<b>Termination resistor</b> , M8 connector - DeviceNet™
<b>Termination resistor</b> , M12 connector - PROFIBUS - DeviceNet™/CANopen® - CC-Link
<b>Termination resistor</b> , M12 connector, stainless steel knurl  - FOUNDATION Fieldbus
<b>Termination resistor</b> , 7/8" connector, stainless steel knurl  - FOUNDATION Fieldbus
<b>Termination resistor</b> , 7/8" connector - DeviceNet™



## Fieldbus components - AS-Interface

### Flat-ribbon conductors, flat-ribbon conductor connectors, and panel feed-throughs



Flat-ribbon conductors and accessories



Flat-ribbon conductors and panel feed-throughs with QUICKON fast connection technology



		Technical data			Technical data		
		VS-ASI-FC-PVC...	VS-ASI-FC-PUR...		Q 1,5/4IDC	Q 1,5/4M20	
Mechanical data							
No. of pos.		2	2		4	4	
Degree of protection		-	-		IP65/IP67	IP65/IP67	
Cable data							
Outer sheath material		PVC	PUR		-	-	
Conductor cross section		1.5 mm <sup>2</sup>	1.5 mm <sup>2</sup>		-	-	
Connector data QUICKON connection							
Conductor cross section [mm <sup>2</sup> ]		-	-		0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]		-	-		18 ... 16	18 ... 16	
Temperature data							
Plug/socket	[°C]	-	-		-25 ... 80	-25 ... 80	
Cable, fixed installation	[°C]	-30 ... 90	-40 ... 85		-	-	
Cable, flexible installation	[°C]	-20 ... 90	-30 ... 85		-	-	
		Ordering data			Ordering data		
Description	Cable length	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>AS-Interface EPDM flat-ribbon conductor, 2 x 1.5 mm<sup>2</sup></b>							
Yellow	100 m	VS-ASI-FC-EPDM-YE 100M	1432402	1			
Yellow	1000 m	VS-ASI-FC-EPDM-YE 1000M	1434646	1			
Black	100 m	VS-ASI-FC-EPDM-BK 100M	1432415	1			
Black	1000 m	VS-ASI-FC-EPDM-BK 1000M	1434659	1			
<b>AS-Interface PVC flat-ribbon conductor to UL, 2 x 1.5 mm<sup>2</sup></b>							
Yellow	100 m	VS-ASI-FC-PVC-UL-YE 100M	1404906	1			
Yellow	1000 m	VS-ASI-FC-PVC-UL-YE/1000	1404867	1			
Black	100 m	VS-ASI-FC-PVC-UL-BK 100M	1404919	1			
Black	1000 m	VS-ASI-FC-PVC-UL-BK/1000	1404870	1			
<b>AS-Interface TPE flat-ribbon conductor to UL, 2 x 1.5 mm<sup>2</sup></b>							
Yellow	100 m	VS-ASI-FC-TPE-UL-YE 100M	1404922	1			
Yellow	1000 m	VS-ASI-FC-TPE-UL-YE 1000M	1434662	1			
Black	100 m	VS-ASI-FC-TPE-UL-BK 100M	1404935	1			
Black	1000 m	VS-ASI-FC-TPE-UL-BK 1000M	1434675	1			
<b>AS-Interface PUR flat-ribbon conductor, 2 x 1.5 mm<sup>2</sup></b>							
Yellow	100 m	VS-ASI-FC-PUR-YE 100M	1404883	1			
Yellow	1000 m	VS-ASI-FC-PUR-YE/1000	1404841	1			
Black	100 m	VS-ASI-FC-PUR-BK 100M	1404896	1			
Black	1000 m	VS-ASI-FC-PUR-BK/1000	1404854	1			
<b>Flat connector, 4-pos., for connecting one or two AS-i flat-ribbon conductors</b>							
<b>Panel feed-through, for accommodating one or two AS-i flat-ribbon conductors, on the rear side with manual solder/slip-on connection 4.8 x 0.8 mm</b>					Q 1,5/4IDC/24-24KU-KU-ASI-BK	1585058	1
<b>Panel feed-through, for accommodating one or two AS-Interface flat-ribbon conductors, on the rear side with four individual 1.5 mm<sup>2</sup> wires</b>					Q 1,5/4FL/24-M20KU-ESA-ASI BK	1437261	1
<b>Metal gland, for AS-Interface flat-ribbon conductor</b>					Q 1,5/4A50/24-M20KU-ESA-ASI BK	1437274	1
Thread type: M20	0.5 m				HC-M-KV-M20(1ASI)	1584017	10
Thread type: M25					HC-M-KV-M25(1ASI)	1584020	10

Distributor with spring connection and with round conductors



Flat-ribbon conductor distributors and distributors with spring connection



Distributor with round cable and molded M12 connector with SPEEDCON

			Technical data			Technical data		
			SAC-ASI-J-Y-B-FFKDS	SAC-ASI-J-Y-Y-N	SAC-ASI-J-Y-N...	SAC-ASI-J-Y-B...		
<b>Electrical data</b>								
Rated voltage			≤ 35 V	≤ 32 V	≤ 32 V	≤ 32 V		
Rated current			≤ 6 A	≤ 8 A	≤ 4 A	≤ 4 A		
<b>Material specifications for exit</b>								
Material of grip body			-	-	TPU	TPU		
<b>Material specifications for distributor</b>								
Housing material			PBT	PBT	PBT	PBT		
<b>Mechanical data</b>								
No. of pos.			4	4	2	4		
Degree of protection			IP20	IP65/IP67	IP65/IP67	IP65/IP67		
<b>Connection data for spring-cage terminal blocks</b>								
Conductor cross section			0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	-	-	-		
Connection cross section AWG			24 ... 16	-	-	-		
<b>Cable data</b>								
Outer sheath material			-	-	PUR	PUR		
External cable diameter			-	-	4.30 mm	4.30 mm		
Conductor cross section			-	-	4x 0.34 mm <sup>2</sup> (signal line)	4x 0.34 mm <sup>2</sup> (signal line)		
<b>Temperature data</b>								
Plug/socket		[°C]	-25 ... 75	-25 ... 75	-25 ... 75	-25 ... 75		
Cable, fixed installation		[°C]	-	-	-40 ... 80	-40 ... 80		
Cable, flexible installation		[°C]	-	-	-25 ... 80	-25 ... 80		
			Ordering data			Ordering data		
Description	Cable length		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>AS-Interface distributor with IP20 degree of protection for two flat conductors, 4-pos., with spring-cage terminal blocks</b>			SAC-ASI-J-Y-B-FFKDS	1407579	1			
<b>AS-Interface H-distributor with high degree of protection, parallel wired, for distribution from one to two flat-ribbon conductors</b>			SAC-ASI-J-Y-Y-N	1405622	1			
<b>AS-Interface distributor for 1 flat-ribbon conductor, with PUR round cable and molded, straight, A-coded, 2-pos. M12 socket with SPEEDCON</b>	1 m 2 m					SAC-ASI-J-Y-N-PUR-1,0-FS SCO SAC-ASI-J-Y-N-PUR-2,0-FS SCO	1407573 1407574	1 1
<b>AS-Interface distributor for 2 flat-ribbon conductors, with PUR round cable and molded, straight, A-coded, 4-pos. M12 socket with SPEEDCON</b>	1 m 2 m					SAC-ASI-J-Y-B-PUR-1,0-FS SCO SAC-ASI-J-Y-B-PUR-2,0-FS SCO	1407575 1407576	1 1
<b>AS-Interface distributor for 2 flat-ribbon conductors, with PUR round cable and molded, angled, A-coded, 4-pos. M12 socket with SPEEDCON</b>	1 m 2 m					SAC-ASI-J-Y-B-PUR-1,0-FR SCO SAC-ASI-J-Y-B-PUR-2,0-FR SCO	1407577 1407578	1 1
<b>AS-Interface distributor for 1 flat-ribbon conductor, with 2.0 m PUR round cable and open cable end</b>	2 m					SAC-ASI-J-Y-N-PUR-2,0-OE	1407580	1
<b>AS-Interface distributor for 2 flat-ribbon conductors, with 2.0 m PUR round cable and open cable end</b>	2 m					SAC-ASI-J-Y-B-PUR-2,0-OE	1407581	1

## Fieldbus components - AS-Interface

### Distributors with M12-socket, with screw connection, pre-assembled round cable



Distributors with M12 slot and with screw connection



PUR round conductors with molded M12-SPEEDCON connectors



	Technical data		Technical data	
Material data	SAC-ASI-J-Y-N-M12FS	VS-ASI-J-Y-N-SWA-LC	-	
Housing material	PBT	PA	-	
Material of grip body	-	-	TPU, hardly inflammable, self-extinguishing	
No. of pos.	2	2	4	
Degree of protection	IP65/IP67	IP67	IP65/IP67	
Connection data for screw connection				
Conductor cross section	-	0.14 mm <sup>2</sup> ... 1 mm <sup>2</sup> (solid)	-	
Connection cross section AWG	-	26 ... 17 (solid)	-	
Conductor cross section	-	0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> (With ferrules)	-	
Connection cross section AWG	-	26 ... 18 (With ferrules)	-	
Cable data				
Conductor cross section	-	-	0.75 mm <sup>2</sup>	
Temperature data				
Plug/socket	[°C]	-25 ... 75	-25 ... 70	-25 ... 90
Cable, fixed installation	[°C]	-	-	-25 ... 80
Cable, flexible installation	[°C]	-	-	-5 ... 80

		Ordering data			Ordering data		
Description	Cable length	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>AS-Interface distributor</b> for flat-ribbon conductors, with straight, A-coded M12 socket							
One flat conductor, 2-pos.		<b>SAC-ASI-J-Y-N-M12FS</b>	<b>1405619</b>	1			
Two flat conductors, 4-pos.		<b>SAC-ASI-J-Y-B-M12FS</b>	<b>1405621</b>	1			
<b>AS-Interface distributor</b> , with straight, A-coded M12 socket							
One flat conductor, 2-pos.		<b>VS-ASI-J-Y-N-M12FS-LC</b>	<b>1433155</b>	1			
<b>AS-Interface distributor</b> , with screw connection, angled							
One flat conductor, 2-pos.		<b>VS-ASI-J-Y-N-SWA-LC</b>	<b>1433168</b>	1			
<b>Pre-assembled round conductor</b>							
M12 pin, straight, free conductor end	2 m				<b>SAC-4P-MS/ 2,0-186 SCO</b>	<b>1555606</b>	1
	5 m				<b>SAC-4P-MS/ 5,0-186 SCO</b>	<b>1555619</b>	1
	10 m				<b>SAC-4P-MS/10,0-186 SCO</b>	<b>1555622</b>	1
	15 m				<b>SAC-4P-MS/15,0-186 SCO</b>	<b>1555635</b>	1
<b>Pre-assembled round conductor</b>							
M12 socket, straight, free conductor end	2 m				<b>SAC-4P- 2,0-186/FS SCO</b>	<b>1555648</b>	1
	5 m				<b>SAC-4P- 5,0-186/FS SCO</b>	<b>1555651</b>	1
	10 m				<b>SAC-4P-10,0-186/FS SCO</b>	<b>1555664</b>	1
	15 m				<b>SAC-4P-15,0-186/FS SCO</b>	<b>1555677</b>	1
<b>Pre-assembled round conductor</b>							
M12 pin, straight, M12 socket, straight	0.3 m				<b>SAC-4P-MS/ 0,3-186/FS SCO</b>	<b>1555680</b>	1
	0.5 m				<b>SAC-4P-MS/ 0,5-186/FS SCO</b>	<b>1555693</b>	1
	1 m				<b>SAC-4P-MS/ 1,0-186/FS SCO</b>	<b>1555703</b>	1
	2 m				<b>SAC-4P-MS/ 2,0-186/FS SCO</b>	<b>1555716</b>	1
	5 m				<b>SAC-4P-MS/ 5,0-186/FS SCO</b>	<b>1555729</b>	1
	10 m				<b>SAC-4P-MS/10,0-186/FS SCO</b>	<b>1555732</b>	1
	15 m				<b>SAC-4P-MS/15,0-186/FS SCO</b>	<b>1555745</b>	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:**

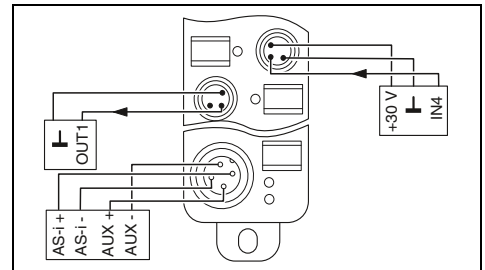
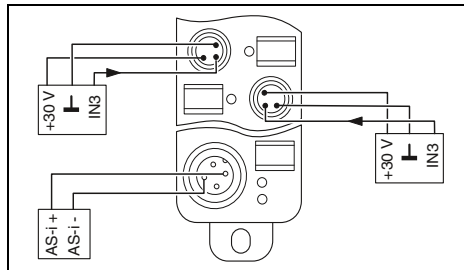
- Optimized for 30 mm mounting profile
- M12 connection method with SPEEDCON fast locking system for the AS-Interface connection
- M8 connection method for the I/Os



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	IEC 61131-2 type 2
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 30 mm / 26 mm / 103 mm
Degree of protection	IP65/IP67
Ambient temperature (operation)	-25 °C ... 70 °C
EMC note	Class A product, see page 730

**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	IEC 61131-2 type 2
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	W / H / D 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 730

**Ordering data**

Description	
<b>Fieldline Extension AS-i digital input device</b>	
- 4 inputs	
<b>Fieldline Extension AS-i digital I/O device</b>	
- 4 inputs, 4 outputs, 1 A	

Type	Order No.	Pcs. / Pkt.
FLX ASI DI 4 M8	2773403	1

**Ordering data**

Type	Order No.	Pcs. / Pkt.
FLX ASI DIO 4/4 M8-1A	2773416	1

**Accessories**

<b>M8 screw plug</b>	
Zack marker strip, flat, 10-section, without color print	
Manual addressing device, for AS-Interface devices	

Accessories	Order No.	Pcs. / Pkt.
PROT-M8	1682540	5
ZBF 8:UNBEDRUCKT	0808781	10
ASI CC ADR	2741338	1

**Accessories**

Accessories	Order No.	Pcs. / Pkt.
PROT-M8	1682540	5
ZBF 8:UNBEDRUCKT	0808781	10
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:

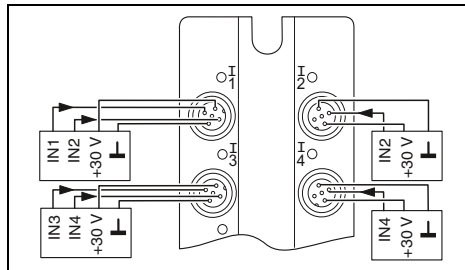
- Optimized for direct mounting and DIN rail mounting
- Tool-free connection to AS-Interface using penetration technique
- M12 connection method with SPEEDCON fast locking system for the I/Os



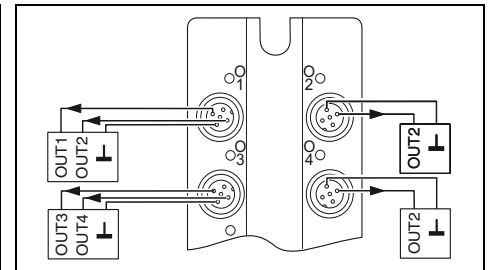
4 digital inputs



4 digital outputs



Technical data



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	IEC 61131-2 type 2
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 730

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 730

Description	
<b>Fieldline Extension AS-i digital input device</b>	
- 4 inputs	
<b>Fieldline Extension AS-i digital output device</b>	
- 4 outputs, 2 A	
<b>Fieldline Extension AS-i digital I/O device</b>	
- 2 inputs, 2 outputs, 2 A	
- 4 inputs, 3 outputs, 2 A	
- 4 inputs, 4 outputs, 2 A	

Ordering data		
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	
<b>M12 screw plug</b>	PROT-M12
<b>Label sheet</b> for laser printers, 64 x 16 mm, color: white	BMKL 64X16 WH
<b>Label sheet</b> for laser printers, 108 x 16 mm, color: white	
<b>Manual addressing device</b> , for AS-Interface devices	ASI CC ADR
<b>Programming cable</b> , for addressing the AS-i devices	ASI CC ADR CAB CINCH

Accessories		
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



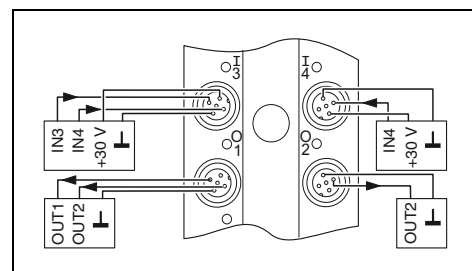
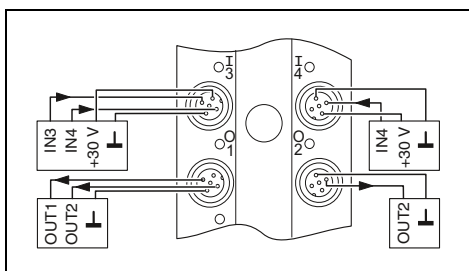
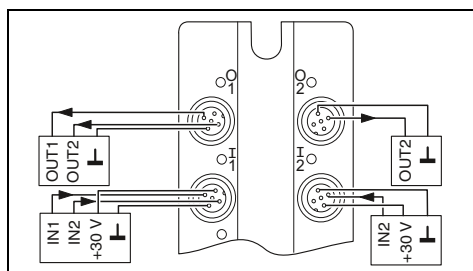
2 digital inputs  
and 2 digital outputs



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
-
IEC 61131-2 type 2
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 730

Technical data
AS-i
Flat-ribbon cable penetration technique
2.1
>= 2.0
S-7.A.2
M12 connector
2, 3-wire
-
IEC 61131-2 type 2
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 730

Technical data
AS-i
Flat-ribbon cable penetration technique
3.0
>= 3.0
S-7.A.7
M12 connector
2, 3-wire
-
IEC 61131-2 type 2
M12 connector
2-wire
-
2 A
245 g
108 mm
58 mm / 150 mm / 35 mm
IP65/IP67
-25 °C ... 70 °C
Class A product, see page 730

Ordering data		
Type	Order No.	Pcs. / Pkt.
FLX ASI DIO 2/2 M12-2A	2773432	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
FLX ASI DIO 4/3 M12-2A	2773445	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
FLX ASI 3.0 DIO 4/4 M12-2A	2773474	1

Accessories		
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 11,5 (108X16) WH	0821797	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1

Accessories		
PROT-M12	1680539	5
BMKL 11,5 (108X16) WH	0821797	2
ASI CC ADR	2741338	1
ASI CC ADR CAB CINCH	2741341	1







Screw connection  
Fixing: 2.5 mm hole



D-SUB panel mounting frame IP67,  
with integrated gender changer

ERC

	Technical data
Electrical data	
Rated voltage	60 V
Rated current	5 A
Surge voltage category	III
Material data	
Housing material	-
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PBTP
Inflammability class according to UL 94	V0
Mechanical data	
No. of pos.	9
Color	-
Pollution degree	2
Degree of protection	IP20
Connection method	Screw connection
Conductor cross section	0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Connection cross section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Temperature data	
Ambient temperature (operation)	-20 °C ... 80 °C

ERC

	Technical data	
Electrical data		
Rated voltage	125 V	125 V
Rated current	5 A	5 A
Surge voltage 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
Inflammability class according to UL 94	V0	V0
Mechanical data		
No. of pos.	9	9
Color	Gray	Gray
Pollution degree	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.
<b>D-SUB contact insert</b>			
Pin	VS-09-ST-DSUB/10-MPT-0,5	1688379	10
Socket	VS-09-BU-DSUB/9-MPT-0,5	1688395	10
<b>D-SUB panel mounting frame, with integrated gender changer, shielded</b>			
D-SUB 09, pin/pin			
D-SUB 09, socket/socket			
<b>D-SUB coupling, with integrated gender changer, shielded</b>			
D-SUB 09, pin/pin			
D-SUB 09, socket/socket			

	Ordering data		
Description	Type	Order No.	Pcs. / Pkt.
<b>D-SUB panel mounting frame, with integrated gender changer, shielded</b>			
D-SUB 09, pin/pin	VS-09-A-GC-ST/ST	1689705	5
D-SUB 09, socket/socket	VS-09-A-GC-BU/BU	1689695	5
<b>D-SUB coupling, with integrated gender changer, shielded</b>			
D-SUB 09, pin/pin	VS-09-KU-ST/ST	1689640	5
D-SUB 09, socket/socket	VS-09-KU-BU/BU	1689637	5



## D-SUB based connector

### Signal contacts



Contacts for standard D-SUB contact carriers



Contacts for high density D-SUB contact carriers

ERC

#### Technical data

AWG 28 ... 24	AWG 24 ... 20
125 V	125 V
5 A	5 A
Copper alloy	Copper alloy
Hard gold-plated over nickel	Hard gold-plated over nickel
Crimp connection	Crimp connection
0.08 mm <sup>2</sup> ... 0.2 mm <sup>2</sup>	0.2 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
28 ... 24	24 ... 20
≥ 200	≥ 200
-55 °C ... 125 °C	-55 °C ... 125 °C

#### Ordering data

Type	Order No.	Pcs. / Pkt.
VS-ST-CD-1,0/14,8/0,2	1688971	30
VS-ST-CD-1,0/14,8/0,5	1688968	30
VS-BU-CD-1,0/14,4/0,2	1688997	30
VS-BU-CD-1,0/14,4/0,5	1688984	30

#### Accessories

CRIMPFOX RC 2,5	1205448	1
VS-IET-DSUB-SIGNAL-STD	1658794	1

ERC

#### Technical data

VS-...-CD-HD-1,0/13,5/0,37
60 V
3 A
Copper alloy
Hard gold-plated over nickel
Crimp connection
0.34 mm <sup>2</sup>
22
≥ 200
-55 °C ... 125 °C

#### Ordering data

Type	Order No.	Pcs. / Pkt.
VS-ST-CD-HD-1,0/13,5/0,37	1655276	100
VS-BU-CD-HD-1,0/13,5/0,37	1655263	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
<b>Turned pin crimp contacts</b> , for D-SUB contact inserts with standard contact density, gold-plated surface
AWG 28 ... 24
AWG 24 ... 20
<b>Turned crimp contacts VS 1,0</b>
Gold-plated
<b>Turned crimp contacts</b> , for D-SUB contact inserts with high density, gold-plated surface
AWG 22, pin
AWG 22, socket

<b>Crimping pliers</b>
- For turned contacts VS...CD (D-SUB contacts); crimping tool with four mandrels
<b>Insertion/Extraction Tool</b> , for fitting and removing the D-SUB standard signal contacts
<b>Insertion/Extraction Tool</b> , 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

ERC

Technical data	
VS-.../2,6	VS-.../4,6
Electrical data	
Rated voltage	-
Rated current	20 A / 40 A
Material data	
Contact material	Copper alloy
Contact surface material	Hard gold-plated over nickel
Mechanical data	
Connection method	Solder cup
Conductor cross section	2 mm <sup>2</sup> ... 3.5 mm <sup>2</sup> / 4.5 mm <sup>2</sup> ... 8.5 mm <sup>2</sup>
Connection cross section AWG	14 ... 12 / 10 ... 8
Insertion/withdrawal cycles	≥ 500 / ≥ 500
Temperature data	
Ambient temperature (operation)	-55 °C ... 155 °C / -55 °C ... 155 °C

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 mm <sup>2</sup> ... 2 mm <sup>2</sup>
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.
<b>Power contact</b> , for D-SUB combination inserts, with straight solder cup, gold-plated surface		
Up to 20 A, pin	VS-ST-LK-3,6/22,4/2,6	1688243 30
Up to 40 A, pin	VS-ST-LK-3,6/22,4/4,6	1688269 30
Up to 20 A, socket	VS-BU-LK-3,6/22,8/2,6	1688256 30
Up to 40 A, socket	VS-BU-LK-3,6/22,8/4,6	1688272 30
<b>Power contact</b> , for D-SUB combination inserts, with angled solder pins for PCB mounting, gold-plated surface		
Up to 40 A, pin	VS-ST-LH-3,6/18/3,8	1655467 30
Up to 40 A, socket	VS-BU-LH-3,6/18/3,8	1655454 30

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>Power contact</b> , for D-SUB combination inserts, with straight screw connection, gold-plated surface		
Up to 40 A, pin	VS-ST-SC-2,6	1655483 30
Up to 40 A, socket	VS-BU-SC-2,6	1655470 30







Accessories		
HC-M4-KOAX-EWZ	1676747	1

Accessories		
HC-M4-KOAX-EWZ	1676747	1

Removal tool	
--------------	--

Shell size 1 ... 3				Signal transmission									
				Screw connection			Solder connection						
													
				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			
				D-SUB contact insert Fixing: 2.5 mm hole			D-SUB contact insert Fixing: 3 mm hole			D-SUB contact insert, high-pos. Fixing: 3 mm hole			
Type	Order No.		Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket		
	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											
	IP20 sleeve housing												
	VS-09-T-20-1-S-A	1655661					9	1688793	1688803	15	1655111	1655108	
	VS-15-T-20-1-S-A	1655687					15	1688874	1688887	26	1655179	1655166	
	VS-25-T-20-1-S-A	1655700					25	1689899	1689909	44	1655234	1655221	
	VS-09-T-20-1-S-S	1655658					9	1688793	1688803	15	1655111	1655108	
	VS-15-T-20-1-S-A	1655687					15	1688874	1688887	26	1655179	1655166	
	VS-25-T-20-1-S-S	1655690					25	1689899	1689909	44	1655234	1655221	
	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-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-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										

Note:  
The EMC inner sleeve of the IP67 sleeve housing cannot be used on the panel mounting side.

Signal transmission									Power and signal transmission						Power	
Solder connection			Crimp connection						Solder connection						Screw connection	
																
Angled solder pins			Contact carriers for crimp contacts												3/5-pos.	
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 VS-...-BU-DSUB-...P			VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			PSC 1,5/...-F	
D-SUB contact insert Fixing: 2.5 mm hole and solder metal plate			D-SUB contact carrier Fixing: 3 mm hole			D-SUB contact carrier, high-pos. Fixing: 3 mm hole			D-SUB contact carrier Fixing: 3 mm hole			D-SUB contact insert Fixing: 3 mm hole			D-SUB contact insert Fixing: 3 mm hole	
Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Socket
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	2PK	1688418	1688421	1PK-4S	1689006	1689019		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	3PK	1688201	1688214	2PK-5S	1688227	1688230		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	5PK	1689970	1689983	3PK-10S	1689996	1690008		
												4PK-5S	1655386	1655373		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124							3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182							5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247								
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124							3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182							5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247								
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	2PK	1688418	1688421	1PK-4S	1689006	1689019	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	3PK	1688201	1688214	2PK-5S	1688227	1688230	5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	5PK	1689970	1689983	3PK-10S	1689996	1690008		
												4PK-5S	1655386	1655373		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	2PK	1688418	1688421	1PK - 4S	1689006	1689019		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	2PK	1688418	1688421	1PK - 4S	1689006	1689019	3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	3PK	1688201	1688214	2PK - 5S	1688227	1688230		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	3PK	1688201	1688214	2PK - 5S	1688227	1688230	5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	5PK	1689970	1689983	3PK-10S	1689996	1690008		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	5PK	1689970	1689983	3PK-10S	1689996	1690008		
												4PK - 5S	1655386	1655373		
												4PK - 5S	1655386	1655373		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124	2PK	1688418	1688421	1PK - 4S	1689006	1689019		
9	1654785	1654798	9	1688858	1688861	15	1655137	1655124							3	1841909
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182	3PK	1688201	1688214	2PK - 5S	1688227	1688230		
15	1654808	1654811	15	1688939	1688942	26	1655195	1655182							5	1841912
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247	5PK	1689970	1689983	3PK-10S	1689996	1690008		
25	1654824	1654837	25	1689954	1689967	44	1655250	1655247								
												4PK - 5S	1655386	1655373		

# Data connectors and cables

## USB connectors

### Assembled cables, IP20/IP67

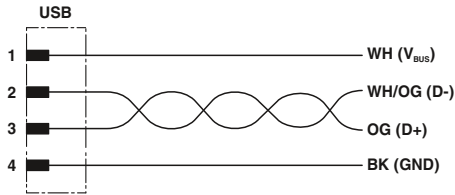
#### USB type A connector, IP20



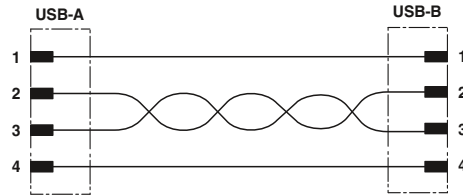
#### USB type A connector, IP67



Free end	Ordering data		Ordering data		Ordering data
		Order No.		Order No.	Order No.
	1 m	1655771	1 m	1655742	
	2 m	1655784	2 m	1655755	
	5 m	1655797	5 m	1655768	
USB type B connector, IP20	1 m	1654853	2 m	1653896	
	2 m	1653935	5 m	1653906	
	5 m	1653948			
USB type B connector, IP67	2 m	1653919	2 m	1653870	
	5 m	1653922	5 m	1653883	
M12 Mini USB, SPEEDCON	1 m	1420168			
	2 m	1420171			
	5 m	1420184			



USB cable with a free end



USB connector pin assignment

	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
No. of pos.	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 can be implemented with the IP67 panel mounting frame and the USB socket inserts. The USB memory sticks with IP67 protection enable wireless data transmission in rough industrial environments.



USB panel mounting frame

### Technical data

VS-04-BUA-BUB-F/IP67

Electrical data	
Rated voltage	30 V
Transmission speed	-
Material data	
Housing material	PC
Inflammability class according to UL 94	V0
Mechanical data	
No. of pos.	4
Degree of protection	IP67
Insertion/withdrawal cycles	-
Temperature data	
Ambient temperature (operation)	-15 °C ... 65 °C

### Ordering data

Description	Cable length	Type	Order No.	Pcs. / Pkt.
<b>Version 6, panel mounting frame with USB coupling:</b>				
Slot V6 with USB-B		CUC-V06-F1PGY-UBB/UBAB	1411905	1
Slot V6 with USB-A		CUC-V06-F1PGY-UBA/UBBB	1411904	1
<b>USB socket insert, 4-pos., socket on flat-ribbon cable terminal strip, pitch 2.54</b>				
Socket, type A		VS-04-BUA-FK-F/IP67	1653854	1
Socket, type B		VS-04-BUB-FK-F/IP67	1653867	1
<b>USB cable, assembled on one side with USB connectors</b>				
Connector type: A, length: 0.3 m	0.3 m	VS-04-C-SDA/PH/0,3	1405552	1
Connector type: B, length: 0.3 m	0.3 m	VS-04-C-SDB/PH/0,3	1405565	1
Connector type: A to B, length: 1.8 m	1.8 m	VS-04-C-SDA/SDB/1,8	1405578	1
<b>Freenet panel mounting frame, Version 6, for round mounting cutout, with seal, without mounting screws</b>				
Military gray RAL 7042		VS-A-F-IP67	1653744	5
<b>USB memory stick, USB 2.0</b>				
IP67		VS-04-MS-IP67	1402489	1
<b>Protective cover for Version 6 panel mounting frame</b>				
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



INTERBUS cable for highly flexible use in dry and humid rooms and 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 according to 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 ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
900 PVC Green	6-pos.	M12	3 x 2 x 0.25 mm <sup>2</sup> 32 x 0.1 mm		Yellow, green, white, brown, pink, gray	PE	-30°C ... 70°C	409 412

### PROFIBUS cable – type 910



PROFIBUS cable, suitable for use in drag chains 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** 10 m  
**Acceleration** 7 m/s<sup>2</sup>  
**Speed** 180 m/min.  
**Tested at** 20 ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
910 PUR Violet	2-pos.	M12	1 x 2 x 24 AWG 19 x 0.15 mm		Green, red	PE	-40°C ... 80°C	410 413

## DeviceNet™/CANopen® cable – type 920



DeviceNet™/CANopen® cable for flexible installation. The cable 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	10 m
Acceleration	7 m/s <sup>2</sup>
Speed	180 m/min.
Tested at	20 ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
920 PUR Violet	4-pos.	M12, M8	1 x 2 x 22 AWG 19 x 0.15 mm + 1 x 2 x 24 AWG 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	411 416 417 420

## DeviceNet™/CANopen® cable – type 923



DeviceNet™/CANopen® cable for flexible installation. The cable 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	10 m
Acceleration	7 m/s <sup>2</sup>
Speed	180 m/min.
Tested at	20 ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
923 PUR Gray	4-pos.	M12, 7/8"	1 x 2 x 22 AWG 19 x 0.15 mm + 1 x 2 x 24 AWG 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	415 418

## DeviceNet™ cable - type 928



DeviceNet™/CANopen® cable for fixed installation. The cable is suitable for use in harsh industrial environments. The cable is also oil resistant.

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
928 PVC Gray	4-pos.	7/8"	1 x 2 x 18 AWG 19 x 0.26 mm + 1 x 2 x 15 AWG 19 x 0.34 mm		Red, black, blue, white	PVC	Fixed: -40°C ... 80°C	419



# Data connectors and cables

## Cable range

### FOUNDATION Fieldbus cable – type 960

### FOUNDATION Fieldbus/PROFIBUS PA cable – type 961





FOUNDATION Fieldbus cable for fixed installation. The cable is UV resistant and flame-retardant according to UL 1685. This makes it suitable for use both outdoors and indoors.

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 20 AWG 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	422
961 PVC Blue	2-pos.	7/8", M12	2 x 20 AWG 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	414 421

### CC-Link cable – type 990



CC-Link cable for fixed indoor installation. The cable is flame-retardant according to 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 22 AWG 7 x 0.28 mm		White, blue, yellow	Foam PE	-30°C ... 60°C	See: phoenix contact.net/ products


### PROFINET cable – type 93A



PROFINET cable for fixed installation. The cable 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 22 AWG single-strand		White, yellow, blue, orange	PE	-25°C ... 80°C	380

## PROFINET cable – type 93B



PROFINET cable for flexible installation. The cable is oil resistant. It is UV resistant according to UL 1581 Sec. 1200 and therefore also suitable for outdoor use. The cable's transmission properties meet CAT5.

**Outer sheath material** PVC  
**Minimum bending radius** 7 x D  
**Tested at** 20 ... 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 22 AWG 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	386 380 382

## PROFINET cable – type 93C



PROFINET cable for use in drag chains. The cable is halogen-free and oil resistant. It is UV resistant and therefore also suitable for outdoor use. The cable's 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/s<sup>2</sup>  
**Speed** 4 m/s  
**Tested at** 20 ... 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 22 AWG 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	380 382

## PROFINET cable – type 93R



PROFINET cable for robot applications. The cable is oil resistant. It is UV resistant according to UL 1581 Sec. 1200 and therefore also suitable for outdoor use. The cable's 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 22 AWG 19 x 0.15 mm		White, yellow, blue, orange	PE	-40°C ... 80°C	380 382

# Data connectors and cables

## Cable range

### PROFINET cable – type 937




PROFINET cable for railway applications. The cable is oil resistant. It meets fire safety standard BS6853.

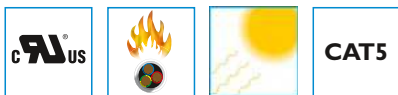
The cable's transmission properties meet CAT5.

**Outer sheath material** RADOX® GKW S

**Minimum bending radius** 6 x D

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
937 RADOX® Black	4 pos.	M12, RJ45	4 x 22 AWG 7 x 0.25 mm		White, yellow, blue, orange	RADOX®	-40°C ... 90°C	380 382


### EtherCAT® cable - type 93G



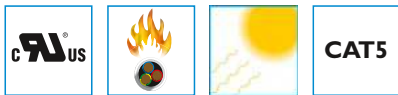
EtherCAT® cable for flexible installation. The cable is oil resistant. It is UV resistant according to UL 1581 Sec. 1200 and is therefore also suitable for use in harsh industrial environments. The cable's transmission properties meet CAT5.

**Outer sheath material** PVC

**Minimum bending radius** 7 x D  
**Tested at** 20 ... 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 22 AWG 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	384

### Sercos® cable - type 93K



Sercos® cable for flexible installation. The cable is oil resistant. It is UV resistant according to UL 1581 Sec. 1200 and is therefore also suitable for use in harsh industrial environments. The cable's transmission properties meet CAT5.

**Outer sheath material** PVC

**Minimum bending radius** 7 x D  
**Tested at** 20 ... 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 22 AWG 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	See: phoenix contact.net/ products

## Ethernet cable – type 93E



Ethernet cable 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 26 AWG 7 x 0.25 mm		White/orange-orange, white/green-green	PE	-20°C ... 80°C	381 388

## Ethernet cable – type 94A



Ethernet cable for fixed installation. The cable's transmission properties meet CAT5.

**Outer sheath material** PUR  
**Minimum bending radius** 7 x D  
**Tested at** 20 ... 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 24 AWG single-strand Twisted pair		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-20°C ... 70°C	381

## Ethernet cable – type 94B



Ethernet cable for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. The cable's 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 26 AWG 7 x 0.25 mm		White/blue-blue, white/orange-orange, white/green-green, white/brown-brown	PE	-40°C ... 80°C	381 390

## Cable range

### Ethernet cable – type 94P



Ethernet cable for flexible installation. The cable is flame-retardant and halogen-free. The cable's transmission properties meet CAT5.

**Outer sheath material** PUR  
**Minimum bending radius** 90 mm (mobile)  
 50 mm (fixed installation)

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94P PUR Blue	8-pos.	M12, RJ45	4 x 2 x 26 AWG 7 x 0.16 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 70°C	374

### Ethernet cable – type 94C



Ethernet cable for universal use in drag chains. The cable is resistant to oil and chemicals and is flame-retardant. The cable's 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 26 AWG 19 x 0.10 mm		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-20°C ... 80°C	381 390

### Ethernet cable – type 94D



Ethernet cable for flexible installation. The cable is oil resistant. It is UV resistant according to UL 1581 Sec. 1200 and therefore also suitable for outdoor use. The cable's 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 26 AWG 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-40°C ... 80°C	381

## Ethernet cable – type 94E



Ethernet cable 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 CAT6<sub>A</sub>.

**Outer sheath material** PUR

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94E PUR Blue	8-pos.	M12, PP, RJ45	4 x 2 x 23 AWG single-strand Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	381

## Ethernet cable – type 94F



Ethernet cable 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<sub>A</sub>.

**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 26 AWG 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20°C ... 80°C	392

## Ethernet hybrid cable – type 94H



Ethernet hybrid cable for drag chain application. The cable has four wires for data transmission and four wires for power supply. It is oil resistant and flame-retardant. It is also halogen-free and its transmission properties meet 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/s<sup>2</sup>

**Speed** 3 m/s

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
94H PUR Black	8-pos.	M12	1 x 4 x 26 AWG 19 x 0.15 mm 1 x 4 x 20 AWG 19 x 0.6 mm		White-orange, orange, white-green, green, white, blue, brown, black	PP	-40°C ... 90°C	395

# Data connectors and cables

## Cable range


### VARAN cable – type 970



VARAN cable for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. The cable's transmission properties meet CAT5.

**Outer sheath material** Santoprene

**Minimum bending radius** 7.5 x D  
**Tested at** 20 ... 25°C

Type	Number of positions	Use	Structure	Cross section	Wire colors	Wire insulation	Temperature range	Page
970 Santoprene Black	6-pos.	M12, PP, RJ45	1 x 2 x 22 AWG 19 x 0.1 mm + 2 x 2 x 26 AWG 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

## QPD installation system

Industrial power distribution does not have to be time-consuming or complicated. The robust IP68/IP69K installation system for capacities up to 690 V/40 A from Phoenix Contact is proof of this.

Thanks to the proven QUICKON IDC fast connection, cables up to 5 x 6.0 mm<sup>2</sup> can be connected quickly and easily, without the need for stripping or special tools.

The system, which consists of H- and T-distributors, panel feed-throughs, connectors, and cable connectors, offers a wide range of options for power distribution in industrial environments and building installation.

## 1.5 mm<sup>2</sup> installation system

H-distributor	452
T-distributor	453
Cable connectors	454
Panel feed-throughs	456
Connectors	459
Accessories	460

## 2.5 mm<sup>2</sup> installation system

H-distributor	461
T-distributor	462
Cable connectors	463
Panel feed-throughs	464
Connectors	467
Accessories	468

## 6.0 mm<sup>2</sup> installation system

H-distributor	469
T-distributor	470
Cable connectors	471
Panel feed-throughs	472
Connectors	473
Accessories	474

<b>Special solutions</b>	<b>475</b>
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# Installation system

## 1.5 mm<sup>2</sup> installation system

### H-distributor, 1.5 mm<sup>2</sup>

- 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 as gray color versions

new

new



With four QUICKON nuts



Without QUICKON nut

	Technical data			Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.	2+PE-pos.	3+PE-pos.	4+PE-pos.	
General data							
Degree of protection		IP68 / IP69K			IP68 / IP69K		
Electrical data							
Rated voltage (III/3)		690 V			690 V		
Rated surge voltage		6 kV			6 kV		
Rated current		17.5 A			17.5 A		
Surge voltage category/pollution degree		III / 3			III / 3		
Material data							
Housing material		PA			PA		
Contact material		Cu			Cu		
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded		0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>			0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>		
Conductor cross section [AWG]		20 ... 16			20 ... 16		
Temperature data							
Ambient temperature (operation)		-40 °C ... 80 °C			-40 °C ... 80 °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.	
	2+PE-pos.		3+PE-pos.		4+PE-pos.		
<b>H-distributor, with four QUICKON nuts and one sealing bolt, for cable diameters:</b>							
4 mm ... 9 mm	1414719	1	1414715	1			
8 mm ... 13 mm	1414720	1	1414716	1			
5 mm ... 10 mm					1414755	1	
9 mm ... 14 mm					1414756	1	
<b>H-distributor, without QUICKON nuts</b>							
					1414721	1	
					1414717	1	
					1414757	1	
<b>QUICKON nut, for connections up to 1.5 mm<sup>2</sup>, for cable diameter:</b>							
4 mm ... 9 mm					1415099	1	
8 mm ... 13 mm					1415100	1	
5 mm ... 10 mm					1415097	1	
9 mm ... 14 mm					1415098	1	
						1415101	1
						1415104	1

**T-distributor, 1.5 mm<sup>2</sup>**

new

new

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions



With three QUICKON nuts



With two QUICKON nuts

	Technical data			Technical data		
	2+PE-pos.	3+PE-pos.	4+PE-pos.	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data						
Degree of protection		IP68 / IP69K			IP68 / IP69K	
Electrical data						
Rated voltage (III/3)		690 V			690 V	
Rated surge voltage		6 kV			6 kV	
Rated current		17.5 A			17.5 A	
Surge voltage category/pollution degree		III / 3			III / 3	
Material data						
Housing material		PA			PA	
Contact material		Cu			Cu	
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded		0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>			0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]		20 ... 16			20 ... 16	
Temperature data						
Ambient temperature (operation)		-40 °C ... 80 °C			-40 °C ... 80 °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.
	2+PE-pos.	3+PE-pos.	4+PE-pos.	2+PE-pos.	3+PE-pos.	4+PE-pos.
<b>T-distributor</b> , for cable diameter:						
4 mm ... 9 mm	1414712	1	1414708	1	1414711	1
8 mm ... 13 mm	1414714	1	1414710	1	1414713	1
5 mm ... 10 mm						1414751
9 mm ... 14 mm				1414753	1	1414752
				1414754	1	
<b>QUICKON nut</b> , for connections up to 1.5 mm <sup>2</sup> , for cable diameter:						
4 mm ... 9 mm				1415099	1	1415101
8 mm ... 13 mm				1415100	1	1415104
5 mm ... 10 mm						
9 mm ... 14 mm						

# Installation system

## 1.5 mm<sup>2</sup> installation system

### Cable connector, 0.14 mm<sup>2</sup> ... 1.5 mm<sup>2</sup>

new

- Easy cable extension or cable repairs
- The QUICKON connections feature different position markings and mechanical coding
- Touch-proof in accordance with DIN EN 50274



Unshielded



Shielded

ERC

	Technical data			Technical data		
	0.34 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1.5 mm <sup>2</sup>	4-pos.	5-pos.	8-pos.
General data						
Degree of protection		IP65 / IP67			IP65 / IP67	
Electrical data						
Rated voltage (III/3)	125 V	250 V	500 V	250 V	60 V	30 V
Rated surge voltage	2.5 kV	4 kV	6 kV		-	
Rated current	5 A	9 A	15 A		4 A	2 A
Surge voltage category/pollution degree		III / 3			II / 3	
Material data						
Housing material		PA		Zinc die-cast, surface bronzed, and nickel-plated		
Contact material		Steel			CuSn	
Contact surface material			Tin-plated		Ni/Au	
Inflammability class according to UL 94			V0		V0	
Impact category			IK06		-	
Connector data QUICKON connection						
Core insulation		PVC/PE		PVC / PE / PP / rubber		
Structure of individual litz wire/smallest wire diameter	VDE 0295 class 1 to 6 / min. 0.10 mm	VDE 0295 class 1 to 6/min. 0.15 mm		Class 2-6 / 0.1 mm		
Connection frequency		10		10		
Conductor cross section [mm <sup>2</sup> ] solid/stranded	0.14 mm <sup>2</sup> ... 0.25 mm <sup>2</sup> / 0.14 mm <sup>2</sup> ... 0.34 mm <sup>2</sup>	0.34 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> / 0.34 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>	0.75 mm <sup>2</sup> ... 1 mm <sup>2</sup> / 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup> / 0.14 mm <sup>2</sup> ... 0.75 mm <sup>2</sup>		0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup> / 0.14 mm <sup>2</sup> ... 0.5 mm <sup>2</sup>
Conductor cross section [AWG]	26 ... 22	22 ... 18	18 ... 16	26 ... 18		26 ... 20
Temperature data						
Ambient temperature (operation)		-40 °C ... 80 °C		-40 °C ... 85 °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.
	0.34 mm <sup>2</sup>		0.75 mm <sup>2</sup>		1.5 mm <sup>2</sup>	
<b>Cable connector</b> , for connecting round cables, cable diameter: 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.	<b>1641879</b>	1	<b>1642140</b>	1	<b>1642153</b> <b>1642182</b>	1 1
<b>Cable connector</b> , shielded, color-coded terminal blocks, cable diameter: 5.0 mm ... 10.0 mm					<b>1414418</b>	1 <b>1414417</b> 1 <b>1414612</b> 1

**Cable connector,  
1.5 mm<sup>2</sup>**

new

new

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 1.5 mm<sup>2</sup> connector can be used here instead of the QUICKON nut
- Also available as 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	IP68 / IP69K					
Electrical data						
Rated voltage (III/3)	690 V				690 V	
Rated surge voltage	6 kV				6 kV	
Rated current	17.5 A				17.5 A	
Surge voltage category/pollution degree	III / 3				III / 3	
Material data						
Housing material	PA				PA	
Contact material	Cu				Cu	
Contact surface material	Silver-plated				Silver-plated	
Inflammability class according to UL 94	V0				V0	
Impact category	IK07				IK07	
Color	Black				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 <sup>2</sup> ] solid/stranded	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>				0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]	20 ... 16				20 ... 16	
Temperature data						
Ambient temperature (operation)	-40 °C ... 80 °C				-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C				-5 °C ... 50 °C	

	Ordering data					
	2+PE-pos.		3+PE-pos.		4+PE-pos.	
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector</b> , for cable diameter:						
4 mm ... 9 mm	1414700	1	1414696	1	1414699	1
8 mm ... 13 mm	1414702	1	1414698	1	1414701	1
5 mm ... 10 mm						1414739
9 mm ... 14 mm					1414740	1
					1414742	1
<b>QUICKON nut</b> , for connections up to 1.5 mm <sup>2</sup> , for cable diameter:						
4 mm ... 9 mm					1415099	1
8 mm ... 13 mm					1415100	1
5 mm ... 10 mm					1415097	1
9 mm ... 14 mm					1415098	1
						1415101
						1415104

# Installation system

## 1.5 mm<sup>2</sup> installation system

### Panel feed-throughs, 1.5 mm<sup>2</sup>

- 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/slip-on 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	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	CuZn	
Contact surface material	Tin-plated	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	0.75 mm <sup>2</sup> ... 1 mm <sup>2</sup> / 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]	18 ... 16	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	

#### 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	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	CuZn	
Contact surface material	Tin-plated	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	0.75 mm <sup>2</sup> ... 1 mm <sup>2</sup> / 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
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

Description	Cable length	3+PE-pos.		4-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through</b> , with 1.5 mm <sup>2</sup> litz wire, connecting thread: M20 x 1.5	0.1 m 0.5 m	<b>1584787</b>	10	<b>1585045</b>	10
<b>Panel feed-through</b> , with 4.8 mm x 0.8 mm manual solder/slip-on connection, connection thread: M20 x 1.5, color: black, terminal marking: L1, N, PE					
<b>Panel feed-through</b> , with 4.8 mm x 0.8 mm manual solder/slip-on connection, connecting thread: M20 x 1.5, color: black	0.05 m				

#### Ordering data

Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>1641594</b>	10		
<b>1641659</b>	10	<b>1643000</b>	10

**Panel feed-throughs, 1.5 mm<sup>2</sup>, with litz wires**

new

new

- 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 as 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	IP68 / IP69K					
Electrical data						
Rated voltage (III/3)	690 V				690 V	
Rated surge voltage	6 kV				6 kV	
Rated current	17.5 A				17.5 A	
Surge voltage category/pollution degree	III / 3				III / 3	
Material data						
Housing material	PA				PA	
Contact material	Cu				Cu	
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>				0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]	20 ... 16				20 ... 16	
Temperature data						
Ambient temperature (operation)	-40 °C ... 80 °C				-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C				-5 °C ... 50 °C	

	Ordering data						
	2+PE-pos.		3+PE-pos.		4+PE-pos.		
Description	Cable length	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameter:</b>							
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		
<b>Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>							
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		
<b>Panel feed-through, with M20 x 1.5 mounting flange, without QUICKON nut</b>							
	0.5 m					1414690	1
	1 m					1414691	1
<b>Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut</b>							
	0.5 m						1414736
	1 m						1414737
<b>QUICKON nut, for connections up to 1.5 mm<sup>2</sup>, for cable diameter:</b>							
4 mm ... 9 mm						1415099	1
8 mm ... 13 mm						1415100	1
5 mm ... 10 mm							1415101
9 mm ... 14 mm							1415104



# Installation system

## 1.5 mm<sup>2</sup> installation system

### Panel feed-throughs, 1.5 mm<sup>2</sup>, with manual solder/slip-on 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 as gray color versions
- Touch-proof in accordance with DIN EN 50274

new

new



With QUICKON nut



Without QUICKON nut

	Technical data			Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.	2+PE-pos.	3+PE-pos.	4+PE-pos.	
General data							
Degree of protection		IP68 / IP69K			IP68 / IP69K		
Electrical data							
Rated voltage (III/3)		690 V			690 V		
Rated surge voltage		6 kV			6 kV		
Rated current		17.5 A			17.5 A		
Surge voltage category/pollution degree		III / 3			III / 3		
Material data							
Housing material		PA			PA		
Contact material		Cu			Cu		
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded		0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>			0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>		
Conductor cross section [AWG]		20 ... 16			20 ... 16		
Temperature data							
Ambient temperature (operation)		-40 °C ... 80 °C			-40 °C ... 80 °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.	
	2+PE-pos.		3+PE-pos.		4+PE-pos.		
<b>Panel feed-through</b> , with M20 x 1.5 mounting flange, <b>with QUICKON nut</b> , for cable diameter:							
4 mm ... 9 mm	1414686	1	1414677	1			
8 mm ... 13 mm	1414689	1	1414680	1			
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, <b>with QUICKON nut</b> , for cable diameters:							
5 mm ... 10 mm					1414732	1	
9 mm ... 14 mm					1414735	1	
<b>Panel feed-through</b> , with M20 x 1.5 mounting flange, <b>without QUICKON nut</b>							
					1414692	1	
					1414683	1	
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, <b>without QUICKON nut</b>							
						1414738	1
<b>QUICKON nut</b> , for connections up to 1.5 mm <sup>2</sup> , for cable diameter:							
4 mm ... 9 mm					1415099	1	
8 mm ... 13 mm					1415100	1	
5 mm ... 10 mm						1415101	1
9 mm ... 14 mm						1415104	1

Connector, 1.5 mm<sup>2</sup>

new

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent incorrect connection of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions
- With SPEEDCON fast locking system



Technical data			
	2+PE-pos.	3+PE-pos.	4+PE-pos.
General data			
Degree of protection		IP68 / IP69K	
Electrical data			
Rated voltage (III/3)		690 V	
Rated surge voltage		6 kV	
Rated current		17.5 A	
Surge voltage category/pollution degree		III / 3	
Material data			
Housing material		PA	
Contact material		Cu	
Contact surface material		Silver-plated	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded		0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> / 0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>	
Conductor cross section [AWG]		20 ... 16	
Temperature data			
Ambient temperature (operation)		-40 °C ... 80 °C	
Temperature when conductor connected		-5 °C ... 50 °C	

Ordering data						
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	2+PE-pos.		3+PE-pos.		4+PE-pos.	
<b>Connectors</b> , 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

# Installation system

## 1.5 mm<sup>2</sup> installation system

### Accessories

- Plastic labels ③ can be stuck to the middle of the H-distributor
- Red sealing plugs ④ can be easily stuck into the QUICKON nuts and create a seal when screwed tight
- Protective caps with retaining cords ⑤ for closing open QUICKON domes which are going to have a connector (for example) fitted at a later date
- Locking nuts ⑥ for fixing the panel feed-throughs to thin panels that are unable to accommodate a proprietary thread
- Insulating sleeve ⑦ for 4.8 mm slip-on connections
- Transparent protective caps ⑧ for attaching to the open QUICKON dome
- Transparent protective caps ⑨ at front for attaching to the connector
- Slotted socket wrenches ⑩ enable you to tighten the QUICKON nuts easily and securely
- Red coding profiles ⑪ 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 ⑬ prevents the splicing of the braided shield and enables a clean shield connection



Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
<b>Plastic label</b> ③ For plotting and engraving Can be printed using thermal transfer printer	GPE 13X 9 WH EMLP (13X9)R	0806932 0819453	10 1
<b>Closing cap</b> , for closing unused bore holes in multiple seals and cable glands ④  Ø 10 mm Ø 14 mm	SEALING PLUG 10X16 RD SEALING PLUG 14X22 RD	1400284 1400270	10 10
<b>Protective cap</b> , captive, IP68 ⑤ Color: gray Color: gray	QPD QSK BK 3/4X1,5 FS QPD QSK BK 5X1,5 FS	1414722 1414728	1 1
<b>Counter nut</b> , (plastic), to lock the contact carrier from the inside of the device ⑥ M20/SW26/color: green M25 /SW32/color: black	Q-MU M20 Q-MU M25	1640702 1640715	25 25
<b>Insulating sleeve</b> , ⑦ as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor For 4.8 mm slip-on sleeves	PT/FS 4,8	1670497	25
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP54 ⑧	QPD QSK 3/4X1,5 QPD QSK 5X1,5	1414723 1414758	10 10
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP50 ⑨	QPD PSK 3/4X1,5 QPD PSK 5X1,5	1414724 1414759	10 10
<b>Slotted socket wrench</b> for QUICKON nuts and panel feed-throughs, for wrench size: ⑩  15 mm 19 mm 22 mm	QSS 15 QSS 19 QSS 22	1641992 1670895 1670206	1 1 1
<b>Coding profile</b> , for insertion into the connector and QUICKON dome ⑪	CP-QPD 3/4X1,5 CP-QPD 5X1,5	1414729 1414760	10 10
<b>Shielding tape</b> , for shielded QPD versions ⑬	ALU-SB	1404531	100

**H-distributor, 2.5 mm<sup>2</sup>**

- 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 as gray color versions



With four QUICKON nuts



Without QUICKON nut



	Technical data	
	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	



	Technical data	
	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	3+PE-pos.		4+PE-pos.	
<b>H-distributor, with four QUICKON nuts and one sealing bolt, for cable diameters:</b>				
6 mm ... 10 mm	1582145	1		
9 mm ... 14 mm	1582148	1		
6 mm ... 11 mm			1406368	1
9 mm ... 16 mm			1406369	1
<b>H-distributor, without QUICKON nuts</b>				
<b>QUICKON nut, for connections up to 2.5 mm<sup>2</sup>, for cable diameters:</b>				
6 mm ... 10 mm				
9 mm ... 14 mm				
6 mm ... 11 mm				
9 mm ... 16 mm				

Description	Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	3+PE-pos.		4+PE-pos.	
<b>H-distributor, with four QUICKON nuts and one sealing bolt, for cable diameters:</b>				
6 mm ... 10 mm				
9 mm ... 14 mm				
6 mm ... 11 mm				
9 mm ... 16 mm				
<b>H-distributor, without QUICKON nuts</b>				
<b>QUICKON nut, for connections up to 2.5 mm<sup>2</sup>, for cable diameters:</b>				
6 mm ... 10 mm	1582226	1		
9 mm ... 14 mm	1582229	1		
6 mm ... 11 mm			1459663	1
9 mm ... 16 mm			1459647	1

# Installation system

## 2.5 mm<sup>2</sup> installation system

### T-distributor, 2.5 mm<sup>2</sup>

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions



With three QUICKON nuts



With two QUICKON nuts



#### Technical data

4+PE-pos.

General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

IP68 / IP69K
690 V
6 kV
20 A
III / 3
PA
Cu
V0
IK07
Black
PVC/PE/TPE/rubber
VDE 0295 class 1 to 6/min. 0.15 mm
max. 10
1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
16 ... 14
-40 °C ... 80 °C
-5 °C ... 50 °C

#### Technical data

4+PE-pos.

IP68 / IP69K
690 V
6 kV
20 A
III / 3
PA
Cu
V0
IK07
Black
PVC/PE/TPE/rubber
VDE 0295 class 1 to 6/min. 0.15 mm
max. 10
1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
16 ... 14
-40 °C ... 80 °C
-5 °C ... 50 °C

#### Ordering data

Description
<b>T-distributor</b> , for cable diameter: 6 mm ... 11 mm 9 mm ... 16 mm
<b>QUICKON nut</b> , for connections up to 2.5 mm <sup>2</sup> , for cable diameters: 6 mm ... 11 mm 9 mm ... 16 mm

Type	Order No.	Pcs. / Pkt.
QPD T 4PE 3X6-11 BK	1405401	1
QPD T 4PE 3X9-16 BK	1405402	1

#### Ordering data

Type	Order No.	Pcs. / Pkt.
QPD T 4PE 2X6-11 BK	1405403	1
QPD T 4PE 2X9-16 BK	1405404	1
QPD N 4PE2,5 6-11 BK	1459663	1
QPD N 4PE2,5 9-16 BK	1459647	1

**Cable connector, 2.5 mm<sup>2</sup>**

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 2.5 mm<sup>2</sup> connector can be used here instead of the QUICKON nut
- Also available as gray color versions



With two QUICKON nuts



With one QUICKON nut



**Technical data**

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Contact surface material	Silver-plated	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	



**Technical data**

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Contact surface material	Silver-plated	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	

**Ordering data**

Description	3+PE-pos.		4+PE-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector</b> , for cable diameter:				
6 mm ... 10 mm	1582211	1		
9 mm ... 14 mm	1582214	1		
6 mm ... 11 mm			1403838	1
9 mm ... 16 mm			1403836	1
<b>QUICKON nut</b> , for connections up to 2.5 mm <sup>2</sup> , for cable diameters:				
6 mm ... 10 mm				
9 mm ... 14 mm				
6 mm ... 11 mm				
9 mm ... 16 mm				

**Ordering data**

Description	3+PE-pos.		4+PE-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Cable connector</b> , for cable diameter:				
6 mm ... 10 mm	1582220	1		
9 mm ... 14 mm	1582223	1		
6 mm ... 11 mm			1403834	1
9 mm ... 16 mm			1403831	1
<b>QUICKON nut</b> , for connections up to 2.5 mm <sup>2</sup> , for cable diameters:				
6 mm ... 10 mm	1582226	1		
9 mm ... 14 mm	1582229	1		
6 mm ... 11 mm			1459663	1
9 mm ... 16 mm			1459647	1

# Installation system

## 2.5 mm<sup>2</sup> installation system

### Panel feed-throughs, 2.5 mm<sup>2</sup>, 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 as gray color versions



With QUICKON nut



Without QUICKON nut



#### Technical data

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	

#### Technical data

	3+PE-pos.	4+PE-pos.
General data		
Degree of protection	IP68 / IP69K	
Electrical data		
Rated voltage (III/3)	690 V	
Rated surge voltage	6 kV	
Rated current	20 A	
Surge voltage category/pollution degree	III / 3	
Material data		
Housing material	PA	
Contact material	Cu	
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14	
Temperature data		
Ambient temperature (operation)	-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C	

#### Ordering data

Description	Cable length	3+PE-pos.		4+PE-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through, I<sub>N</sub>=15 A, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>					
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
<b>Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>					
6 mm ... 10 mm	0.5 m	1582163	1		
6 mm ... 10 mm	1 m	1582160	1		
9 mm ... 14 mm	0.5 m	1582175	1		
9 mm ... 14 mm	1 m	1582172	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
<b>Panel feed-through, with M20 x 1.5 mounting flange, without QUICKON nut</b>					
	0.5 m				1403737
	1 m				1403739
<b>Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut</b>					
	0.5 m			1582187	1
	1 m			1582190	1
<b>QUICKON nut, for connections up to 2.5 mm<sup>2</sup>, for cable diameters:</b>					
6 mm ... 10 mm				1582226	1
9 mm ... 14 mm				1582229	1
6 mm ... 11 mm					1459663
9 mm ... 16 mm					1459647

#### Ordering data

Description	Cable length	3+PE-pos.		4+PE-pos.	
		Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through, I<sub>N</sub>=15 A, with M20 x 1.5 mounting flange, without QUICKON nut</b>					
	0.5 m				1403737
	1 m				1403739
<b>Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut</b>					
	0.5 m			1582187	1
	1 m			1582190	1
<b>QUICKON nut, for connections up to 2.5 mm<sup>2</sup>, for cable diameters:</b>					
6 mm ... 10 mm				1582226	1
9 mm ... 14 mm				1582229	1
6 mm ... 11 mm					1459663
9 mm ... 16 mm					1459647

**Panel feed-throughs, 2.5 mm<sup>2</sup>, with manual solder/slip-on 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 as gray color versions



With QUICKON nut



Without QUICKON nut



Technical data	
3+PE-pos.	4+PE-pos.
Degree of protection IP68 / IP69K	
Rated voltage (III/3) 690 V	
Rated surge voltage 6 kV	
Rated current 20 A	15 A
Surge voltage category/pollution degree III / 3	
Housing material PA	
Contact material Cu	
Inflammability class according to UL 94 V0	
Impact category IK07	
Color Black	
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 <sup>2</sup> ] solid/stranded 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG] 16 ... 14	
Ambient temperature (operation) -40 °C ... 80 °C	
Temperature when conductor connected -5 °C ... 50 °C	



Technical data	
3+PE-pos.	4+PE-pos.
Degree of protection IP68 / IP69K	
Rated voltage (III/3) 690 V	
Rated surge voltage 6 kV	
Rated current 20 A	15 A
Surge voltage category/pollution degree III / 3	
Housing material PA	
Contact material Cu	
Inflammability class according to UL 94 V0	
Impact category IK07	
Color Black	
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 <sup>2</sup> ] solid/stranded 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG] 16 ... 14	
Ambient temperature (operation) -40 °C ... 80 °C	
Temperature when conductor connected -5 °C ... 50 °C	

Ordering data			
Description	Order No.	Pcs. / Pkt.	Order No.
	3+PE-pos.		4+PE-pos.
<b>Panel feed-through, I<sub>N</sub>=15 A, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>			
6 mm ... 11 mm			1403729 1
9 mm ... 16 mm			1403735 1
<b>Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>			
6 mm ... 10 mm	1582166	1	
9 mm ... 14 mm	1582178	1	
6 mm ... 11 mm			1582559 1
9 mm ... 16 mm			1582563 1
<b>Panel feed-through, with mounting flange, without QUICKON nut, connecting thread: M20, I<sub>N</sub>=15 A</b>			1403741 1
<b>Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut M25, I<sub>N</sub>=20 A</b>			
QUICKON nut, for connections up to 2.5 mm <sup>2</sup> , for cable diameters:			
6 mm ... 10 mm			1582226 1
9 mm ... 14 mm			1582229 1
6 mm ... 11 mm			1459663 1
9 mm ... 16 mm			1459647 1

Ordering data			
Description	Order No.	Pcs. / Pkt.	Order No.
	3+PE-pos.		4+PE-pos.
<b>Panel feed-through, I<sub>N</sub>=15 A, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>			
6 mm ... 11 mm			1403729 1
9 mm ... 16 mm			1403735 1
<b>Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>			
6 mm ... 10 mm	1582166	1	
9 mm ... 14 mm	1582178	1	
6 mm ... 11 mm			1582559 1
9 mm ... 16 mm			1582563 1
<b>Panel feed-through, with mounting flange, without QUICKON nut, connecting thread: M20, I<sub>N</sub>=15 A</b>			1403741 1
<b>Panel feed-through, with M25 x 1.5 mounting flange, without QUICKON nut M25, I<sub>N</sub>=20 A</b>			
QUICKON nut, for connections up to 2.5 mm <sup>2</sup> , for cable diameters:			
6 mm ... 10 mm			1582226 1
9 mm ... 14 mm			1582229 1
6 mm ... 11 mm			1459663 1
9 mm ... 16 mm			1459647 1



# Installation system

## 2.5 mm<sup>2</sup> installation system

### Panel feed-throughs, 2.5 mm<sup>2</sup>, with push-in 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
- For internal push-in connection, solid conductors are simply stripped and inserted in the connection
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions



With QUICKON nut



Without QUICKON nut



	Technical data		Technical data	
	3+PE-pos.	4+PE-pos.	3+PE-pos.	
General data				
Degree of protection	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	
Surge voltage category/pollution degree	III / 3		III / 3	
Material data				
Housing material	PA		PA	
Contact material	Cu		Cu	
Inflammability class according to UL 94	V0		V0	
Mechanical data				
Impact category	IK07		IK07	
Color	Black		Black	
Connector data QUICKON connection				
Core insulation	PVC/PE/rubber/TPE		PVC/PE/rubber/TPE	
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 [mm <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>		1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>	
Conductor cross section [AWG]	16 ... 14		16 ... 14	
Temperature data				
Ambient temperature (operation)	-40 °C ... 80 °C		-40 °C ... 80 °C	
Temperature when conductor connected	-5 °C ... 50 °C		-5 °C ... 50 °C	

Description	Ordering data				Ordering data			
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, <b>with QUICKON nut</b> , for cable diameters:								
6 mm ... 10 mm	1582169	1						
9 mm ... 14 mm	1582181	1						
6 mm ... 11 mm			1411432	1				
9 mm ... 16 mm			1411433	1				
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, <b>without QUICKON nut</b>					1582193	1		
<b>QUICKON nut</b> , for connections up to 2.5 mm <sup>2</sup> , for cable diameters:								
6 mm ... 10 mm					1582226	1		
9 mm ... 14 mm					1582229	1		

Connector, 2.5 mm<sup>2</sup>

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent incorrect connection of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions
- 5-pos. version with SPEEDCON fast locking system, cannot be released manually



With green screw locking



With black and gray screw locking



Technical data	
3+PE-pos.	
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Contact surface material	Silver-plated
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ordering data			
Description	3+PE-pos.		Order No.
	Order No.	Pcs. / Pkt.	
<b>Connectors</b> , for cable diameters:			
6 mm ... 10 mm	1582202	1	
9 mm ... 14 mm	1582205	1	



Technical data	
3+PE-pos.	4+PE-pos.
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Contact surface material	Silver-plated
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ordering data				
Description	3+PE-pos.		4+PE-pos.	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Connectors</b> , for cable diameters:				
6 mm ... 10 mm	1582637	1		
9 mm ... 14 mm	1582638	1		
6 mm ... 11 mm			1403784	1
9 mm ... 16 mm			1403782	1

# Installation system

## 2.5 mm<sup>2</sup> installation system

### Accessories

- Mounting clip ① for easily fixing the H-distributor in place without the need for tools
- DIN rail mounting can be achieved using two DIN-rail adapters ②
- Plastic labels ③ can be stuck to the middle of the H-distributor
- Red sealing plugs ④ can be easily stuck into the QUICKON nuts and create a seal when screwed tight
- Protective caps with retaining cords ⑤ for closing open QUICKON domes which are going to have a connector (for example) fitted at a later date
- Locking nuts ⑥ for fixing the panel feed-throughs to thin panels that are unable to accommodate a proprietary thread
- Insulating sleeve ⑦ for 4.8 mm slip-on connections
- Transparent protective caps ⑧ for attaching to the open QUICKON dome
- Transparent protective caps ⑨ at front for attaching to the connector
- Slotted socket wrenches ⑩ enable you to tighten the QUICKON nuts easily and securely
- Red coding profiles ⑪ 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-Interface seals ⑫ for connecting 1 or 2 AS-Interface cables
- Aluminum shielding tape ⑬ prevents the splicing of the braided shield and enables a clean shield connection



Description		Ordering data		
Type	Order No.	Pcs. / Pkt.		
<b>Mounting clip</b> , for H-distributor ①	<b>QPD CLIP 2,5 BK</b>	<b>1582235</b>	10	
<b>DIN rail adapter</b> ② For M5 screws	<b>USA 10/4,6</b>	<b>1202713</b>	10	
<b>Plastic label</b> ③ For plotting and engraving Can be printed using thermal transfer printer	<b>GPE 13X 9 WH</b> <b>EMLP (13X9)R</b>	<b>0806932</b> <b>0819453</b>	10 1	
<b>Closing cap</b> , for closing unused bore holes in multiple seals and cable glands ④				
Ø 10 mm	<b>SEALING PLUG 10X16 RD</b>	<b>1400284</b>	10	
Ø 14 mm	<b>SEALING PLUG 14X22 RD</b>	<b>1400270</b>	10	
<b>Protective cap</b> , captive, IP68 ⑤ Color: green Color: black Color: gray Color: black	<b>QPD QSK 2,5 FS</b> <b>QPD QSK BK 2,5 FS</b> <b>QPD QSK GY 5X2,5 FS</b> <b>QPD QSK BK 5X2,5 FS</b>	<b>1582488</b> <b>1582645</b> <b>1404526</b> <b>1404525</b>	1 1 1 1	
<b>Counter nut</b> , (plastic), ⑥ to lock the contact carrier from the inside of the device				
M16 / SW22 / color: green	<b>Q-MU M16</b>	<b>1640692</b>	25	
M20 / SW26 / color: green	<b>Q-MU M20</b>	<b>1640702</b>	25	
M25 / SW32 / color: black	<b>Q-MU M25</b>	<b>1640715</b>	25	
Pg21 / SW36 / color: black	<b>Q-MU PG 21 BK</b>	<b>1582655</b>	50	
<b>Insulating sleeve</b> , ⑦ as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor For 4.8 mm slip-on sleeves				
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP54 ⑧	<b>PT/FS 4,8</b>	<b>1670497</b>	25	
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP50 ⑨	<b>QPD QSK 2,5</b> <b>QPD QSK 5X2,5</b> <b>QPD QSK 5X6,0</b>	<b>1582150</b> <b>1404528</b> <b>1411403</b>	10 10 10	
<b>Slotted socket wrench</b> for QUICKON nuts and panel feed-throughs, for wrench size: ⑩	<b>QPD PSK 2,5</b> <b>QPD PSK 5X2,5</b> <b>QPD PSK 5X6,0</b>	<b>1582151</b> <b>1404529</b> <b>1411404</b>	10 10 10	
15 mm	<b>QSS 15</b>	<b>1641992</b>	1	
19 mm	<b>QSS 19</b>	<b>1670895</b>	1	
22 mm	<b>QSS 22</b>	<b>1670206</b>	1	
24 mm	<b>QSS 24</b>	<b>1670219</b>	1	
27 mm	<b>QSS 27</b>	<b>1670646</b>	1	
<b>Coding profile</b> , for insertion into the connector and QUICKON dome ⑪	<b>CP-QPD</b> <b>CP-QPD 5X2,5</b>	<b>1582459</b> <b>1404530</b>	10 10	
<b>Seal for 4-pos. versions</b> , NBR, black, for IP65/IP67 protection ⑫				
One AS-i cable	<b>KV-DI-PG16-1XASI</b>	<b>1582462</b>	10	
Two AS-i cables	<b>KV-DI-PG16-2XASI</b>	<b>1582464</b>	10	
<b>Shielding tape</b> , for shielded QPD versions ⑬	<b>ALU-SB</b>	<b>1404531</b>	100	

**H-distributor, 6.0 mm<sup>2</sup>**

- 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 as gray color versions



With four QUICKON nuts



Without QUICKON nut

	Technical data			Technical data		
	4+PE-pos.			4+PE-pos.		
General data						
Degree of protection	IP68 / IP69K			IP68 / IP69K		
Electrical data						
Rated voltage (III/3)	690 V			690 V		
Rated surge voltage	6 kV			6 kV		
Rated current	40 A			40 A		
Surge voltage category/pollution degree	III / 3			III / 3		
Material data						
Housing material	PA			PA		
Contact material	Cu			Cu		
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>			2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>		
Conductor cross section [AWG]	14 ... 10			14 ... 10		
Temperature data						
Ambient temperature (operation)	-40 °C ... 80 °C			-40 °C ... 80 °C		
Temperature when conductor connected	-5 °C ... 50 °C			-5 °C ... 50 °C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>H-distributor, with four QUICKON nuts and one sealing bolt,</b> for cable diameters: 9 mm ... 14 mm 12 mm ... 20 mm	<b>QPD H 4PE6,0 4X9-14 BK</b>	<b>1411422</b>	1			
	<b>QPD H 4PE6,0 4X12-20 BK</b>	<b>1411425</b>	1			
<b>H-distributor, without QUICKON nuts</b>				<b>QPD H 4PE6,0 BK</b>	<b>1411426</b>	1
<b>QUICKON nut, for connections up to 6.0 mm<sup>2</sup>,</b> for cable diameter: 9 mm ... 14 mm 12 mm ... 20 mm				<b>QPD N 4PE6,0 9-14 BK</b>	<b>1410409</b>	1
				<b>QPD N 4PE6,0 12-20 BK</b>	<b>1410406</b>	1

# Installation system

## 6.0 mm<sup>2</sup> installation system

### T-distributor, 6.0 mm<sup>2</sup>

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions



With three QUICKON nuts



With two QUICKON nuts

	Technical data			Technical data		
	4+PE-pos.			4+PE-pos.		
General data						
Degree of protection	IP68 / IP69K			IP68 / IP69K		
Electrical data						
Rated voltage (III/3)	690 V			690 V		
Rated surge voltage	6 kV			6 kV		
Rated current	40 A			40 A		
Surge voltage category/pollution degree	III / 3			III / 3		
Material data						
Housing material	PA			PA		
Contact material	Cu			Cu		
Inflammability class according to 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 [mm <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>			2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>		
Conductor cross section [AWG]	14 ... 10			14 ... 10		
Temperature data						
Ambient temperature (operation)	-40 °C ... 80 °C			-40 °C ... 80 °C		
Temperature when conductor connected	-5 °C ... 50 °C			-5 °C ... 50 °C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>T-distributor, with three QUICKON nuts,</b> for cable diameter:						
9 mm ... 14 mm	<b>QPD T 4PE6,0 3X9-14 BK</b>	<b>1411414</b>	1			
12 mm ... 20 mm	<b>QPD T 4PE6,0 3X12-20 BK</b>	<b>1411415</b>	1			
<b>T-distributor, with two QUICKON nuts,</b> for cable diameter:						
9 mm ... 14 mm				<b>QPD T 4PE6,0 2X9-14 BK</b>	<b>1411416</b>	1
12 mm ... 20 mm				<b>QPD T 4PE6,0 2X12-20 BK</b>	<b>1411417</b>	1
<b>QUICKON nut, for connections up to 6.0 mm<sup>2</sup>,</b> for cable diameter:						
9 mm ... 14 mm				<b>QPD N 4PE6,0 9-14 BK</b>	<b>1410409</b>	1
12 mm ... 20 mm				<b>QPD N 4PE6,0 12-20 BK</b>	<b>1410406</b>	1

**Cable connector, 6.0 mm<sup>2</sup>**

- Easy cable extension or cable repairs
- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- The 6.0 mm<sup>2</sup> connector can be used here instead of the QUICKON nut
- Also available as gray color versions



With two QUICKON nuts



With one QUICKON nut

Ⓜ

Technical data	
4+PE-pos.	
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section [AWG]	10 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ⓜ

Technical data	
4+PE-pos.	
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section [AWG]	10 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
<b>Cable connector, with two QUICKON nuts,</b> for cable diameters: 9 mm ... 14 mm 12 mm ... 20 mm	<b>QPD C 4PE6,0 2X9-14 BK</b>	<b>1410410</b>	1
	<b>QPD C 4PE6,0 2X12-20 BK</b>	<b>1410412</b>	1

Ordering data			
Description	Type	Order No.	Pcs. / Pkt.
<b>Cable connector, with one QUICKON nut,</b> for cable diameters: 9 mm ... 14 mm 12 mm ... 20 mm	<b>QPD C 4PE6,0 1X9-14 BK</b>	<b>1410415</b>	1
	<b>QPD C 4PE6,0 1X12-20 BK</b>	<b>1410416</b>	1
<b>QUICKON nut, for connections up to 6.0 mm<sup>2</sup>,</b> for cable diameter: 9 mm ... 14 mm 12 mm ... 20 mm	<b>QPD N 4PE6,0 9-14 BK</b>	<b>1410409</b>	1
	<b>QPD N 4PE6,0 12-20 BK</b>	<b>1410406</b>	1

# Installation system

## 6.0 mm<sup>2</sup> installation system

### Panel feed-throughs, 6.0 mm<sup>2</sup>

- 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 as gray color versions



With one QUICKON nut



Without QUICKON nut

Ⓡ

#### Technical data

4+PE-pos.

General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ⓡ

#### Technical data

4+PE-pos.

General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

#### Ordering data

Description	Cable length
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, with <b>one</b> 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
<b>Panel feed-through</b> , with M25 x 1.5 mounting flange, <b>without</b> QUICKON nut	
	0.5 m
	1 m
<b>QUICKON nut</b> , for connections up to 6.0 mm <sup>2</sup> , for cable diameter:	
9 mm ... 14 mm	
12 mm ... 20 mm	

Type	Order No.	Pcs. / Pkt.
<b>QPD W 4PE6,0 9-14 M25 0,5 BK</b>	<a href="#">1410392</a>	1
<b>QPD W 4PE6,0 9-14 M25 1,0 BK</b>	<a href="#">1410393</a>	1
<b>QPD W 4PE6,0 12-20 M25 0,5 BK</b>	<a href="#">1410394</a>	1
<b>QPD W 4PE6,0 12-20 M25 1,0 BK</b>	<a href="#">1410395</a>	1

#### Ordering data

Type	Order No.	Pcs. / Pkt.
<b>QPD W 4PE6,0 M25 0,5 BK</b>	<a href="#">1410396</a>	1
<b>QPD W 4PE6,0 M25 1,0 BK</b>	<a href="#">1410397</a>	1
<b>QPD N 4PE6,0 9-14 BK</b>	<a href="#">1410409</a>	1
<b>QPD N 4PE6,0 12-20 BK</b>	<a href="#">1410406</a>	1

Connector, 6.0 mm<sup>2</sup>

new

- With capacitive PE contact
- Compatible with QUICKON connection
- Can be coded using the two red coding profiles to prevent incorrect connection of similar connectors
- Touch-proof in accordance with DIN EN 50274
- Also available as gray color versions
- With SPEEDCON fast locking system



With gray screw locking

Technical data

4+PE-pos.

General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Contact surface material	Silver-plated
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup> / 2.5 mm <sup>2</sup> ... 6 mm <sup>2</sup>
Conductor cross section [AWG]	14 ... 10
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ordering data

Description	Type	Order No.	Pcs. / Pkt.
Connectors, for cable diameters: 9 mm ... 14 mm 12 mm ... 20 mm	QPD P 4PE6,0 9-14 BK	1410386	1
	QPD P 4PE6,0 12-20 BK	1410387	1



# Installation system

## 6.0 mm<sup>2</sup> installation system

### Accessories

- Plastic labels ③ can be stuck to the middle of the H-distributor
- Red sealing plugs ④ can be easily stuck into the QUICKON nuts and create a seal when screwed tight
- Protective caps with retaining cords ⑤ for closing open QUICKON domes which are going to have a connector (for example) fitted at a later date
- Locking nuts ⑥ for fixing the panel feed-throughs to thin panels that are unable to accommodate a proprietary thread
- Insulating sleeve ⑦ for 4.8 mm slip-on connections
- Transparent protective caps ⑧ for attaching to the open QUICKON dome
- Transparent protective caps ⑨ at front for attaching to the connector
- Aluminum shielding tape ⑩ prevents the splicing of the braided shield and enables a clean shield connection



Description	Ordering data		
	Type	Order No.	Pcs. / Pkt.
<b>Plastic label</b> ③ For plotting and engraving Can be printed using thermal transfer printer	GPE 13X 9 WH EMLP (13X9)R	0806932 0819453	10 1
<b>Closing cap</b> , for closing unused bore holes in multiple seals and cable glands ④  Ø 10 mm Ø 14 mm	SEALING PLUG 10X16 RD SEALING PLUG 14X22 RD	1400284 1400270	10 10
<b>Protective cap</b> , captive, IP68 ⑤	QPD QSK GY 5X6,0 FS QPD QSK BK 5X6,0 FS	1411401 1411400	1 1
<b>Counter nut</b> , (plastic), to lock the contact carrier from the inside of the device ⑥ M25/SW32/color: black	Q-MU M25	1640715	25
<b>Insulating sleeve</b> , as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor ⑦ For 4.8 mm slip-on sleeves	PT/FS 4,8	1670497	25
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP54 ⑧	QPD QSK 5X6,0	1411403	10
<b>Protective cap</b> , transparent plastic, for QUICKON connection, IP50 ⑨	QPD PSK 5X6,0	1411404	10
<b>Coding profile</b> , for insertion into the connector and QUICKON dome ⑩	CP-QPD 5X6,0	1411402	10
<b>Shielding tape</b> , for shielded QPD versions ⑪	ALU-SB	1404531	100

**Panel feed-throughs, 2.5 mm<sup>2</sup> for intrinsically safe circuits**

- 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/slip-on connection

**Notes:**

Intended for applications in intrinsically safe circuits according to EN 60079-11 and EN 60079-14.



Technical data	
4+PE-pos.	
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage	60 V
Rated surge voltage	6 kV
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C



Technical data	
4+PE-pos.	
General data	
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage	60 V
Rated surge voltage	6 kV
Surge voltage category/pollution degree	III / 3
Material data	
Housing material	PA
Contact material	Cu
Inflammability class according to 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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

Ordering data				
Description	Cable length	Type	Order No.	Pcs. / Pkt.
<b>Panel feed-through, with M20 x 1.5 mounting flange, with QUICKON nut, for cable diameter:</b>				
6 mm ... 11 mm	0.5 m	QPD W 4PE2,5 6-11 M20 0,5 EX	1411393	1
6 mm ... 11 mm	1 m	QPD W 4PE2,5 6-11 M20 1,0 EX	1411394	1
6 mm ... 11 mm	0.5 m	QPD W 4PE2,5 9-16 M20 0,5 EX	1411397	1
9 mm ... 16 mm	1 m	QPD W 4PE2,5 9-16 M20 1,0 EX	1411398	1
<b>Panel feed-through, with M25 x 1.5 mounting flange, with QUICKON nut, for cable diameters:</b>				
6 mm ... 11 mm	0.5 m	QPD W 4PE2,5 6-11 M25 0,5 EX	1411387	1
6 mm ... 11 mm	1 m	QPD W 4PE2,5 6-11 M25 1,0 EX	1411388	1
6 mm ... 11 mm	0.5 m	QPD W 4PE2,5 9-16 M25 0,5 EX	1411390	1
9 mm ... 16 mm	1 m	QPD W 4PE2,5 9-16 M25 1,0 EX	1411391	1

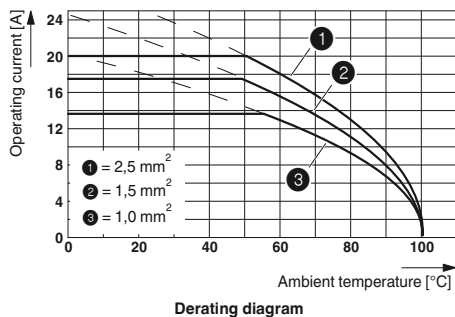
Ordering data			
Type	Order No.	Pcs. / Pkt.	
QPD W 4PE2,5 6-11 M20 FC EX	1411395	1	
QPD W 4PE2,5 9-16 M20 FC EX	1411399	1	
QPD W 4PE2,5 6-11 M25 FC EX	1411389	1	
QPD W 4PE2,5 9-16 M25 FC EX	1411392	1	



- Particularly suitable for connecting drives of up to 15 kW using wires with ring cable lugs
- Direct connection without the need to open the motor terminal box

#### Pin assignment

- Pos. 1 BK (black)
- Pos. 2 BN (brown)
- Pos. 3 GY (gray)
- Pos.  $\perp$  GNYE (green-yellow)



Panel feed-throughs with/without QUICKON nut



#### Technical data

General data	
Pollution degree	3
Degree of protection	IP68 / IP69K
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category	III
Material data	
Housing material	PA
Contact material	Cu
Contact surface material	Silver-plated
Contact carrier material	PA
Inflammability class according to UL 94	V0
Mechanical data	
Wrench size, union nut	22 mm
Tightening torque, union nut	5 Nm
Tightening torque, contact carrier	-
Impact category	IK07
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] solid/stranded	1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm²
Conductor cross section [AWG]	16 ... 14
Temperature data	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

#### Ordering data

Description	Type	Order No.	Pcs. / Pkt.
<b>Panel feed-through, 3+PE-pos., with QUICKON nut, with four welded-on 1.5 mm² cable wires, with ring cable lugs at the end, for cable diameters:</b>			
6 mm ... 10 mm	QPDW3PE1,5 6-10 M25 0,1 BKKTH	1582475	1
9 mm ... 14 mm	QPDW3PE1,5 9-14 M25 0,1 BKKTH	1582476	1
<b>Panel feed-through, 3+PE-pos., without QUICKON nut, with four welded-on 1.5 mm² cable wires, with ring cable lugs at the end</b>			
	QPD W 3PE1,5 M25 0,1 BK K TH	1577273	1

**Assembled cables, 2.5 mm<sup>2</sup>**

- 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.



**Technical data**

<b>General data</b>	
Degree of protection	IP68 / IP69K
<b>Electrical data</b>	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category/pollution degree	III / 3
<b>Material data</b>	
Housing material	PA
Contact material	Cu
Inflammability class according to UL 94	V0
<b>Mechanical data</b>	
Impact category	IK07
Color	Black
<b>Connector data QUICKON connection</b>	
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 <sup>2</sup> ] solid/stranded	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> / 1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section [AWG]	16 ... 14
<b>Temperature data</b>	
Ambient temperature (operation)	-40 °C ... 80 °C
Temperature when conductor connected	-5 °C ... 50 °C

**Ordering data**

Description	Cable length	Ordering data		
		Type	Order No.	Pcs. / Pkt.
<b>Assembled cable</b>	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

HEAVYCON are industrial connectors for harsh operating conditions. The product range consists of housings, contact inserts, cable glands, and accessories. The housings are available in versions for different ambient conditions. For contact inserts, a distinction is made between fixed, modular, and combined versions.

## Housing

The ambient conditions determine the material from which the housings are produced. With HEAVYCON EVO, for example, high-grade industrial plastics and NBR seals cover a wide range of industrial environments.

In applications where plastic cable glands have already proven themselves, there is nothing standing in the way of using plastic HEAVYCON EVO. Metal housings are essential for EMC applications, but also for applications with high cable tensile load or extreme temperatures.

For plug-in connections that are only for startup or infrequent servicing, HEAVYCON ADVANCE or HPR housings with screw locking are recommended for economic reasons. These series are characterized in particular by their stability, and excellent EMC shielding.

## Contact inserts with a fixed number of positions

Fixed contact inserts are contact carriers and contacts with different connection technologies such as screw, spring, crimp, insulation displacement, and axial screw connections.

## Modular contact inserts

Modular contact inserts allow you to combine several individual connectors, e.g., for power, data, signals, and pneumatics, in the same connector housing.

## HEAVYCON product range overview

<b>HEAVYCON cross-reference list - contact inserts and housing</b>	<b>482</b>
<b>Series D7</b>	
Contact inserts	484
Housing	490
<b>Series D</b>	
Contact inserts	494
Housing	502
<b>Series B</b>	
Contact inserts	512
Housing	570
Connector sets	622
Housing for railway applications	626
<b>Compact series</b>	
Contact inserts	630
Housing	632
<b>Accessories</b>	
Contact inserts	634
Housing	642
<b>DUPLICON stackable power distribution</b>	<b>654</b>



### 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. In addition to contact inserts with a fixed number of positions, modular contact inserts are also available.



### 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. This reduces the stored housing variance by up to 75%. The EVO housings are compatible with standard aluminum housings. They fit the standard panel cutouts of heavy-duty connectors.



### ADVANCE connectors

Space and cost savings as there is no need for panel mounting bases. The ADVANCE housings with screw locking are suitable for the most stringent requirements, such as particularly aggressive atmospheres and sensitive interfaces. In addition to contact inserts with a fixed number of positions, modular contact inserts are also available.





**Contact inserts with a fixed number of positions**

The range includes A/B/BB/BBB/D/DD/HS/HV and K series contact inserts. The B series is available with screw, crimp, push-in, and QUICKON connection.



**Modular contact inserts**

There is an increasing demand for data, control signals, and energy supply to be combined in a single connector housing. With 4 frame sizes and 25 contact inserts to choose from, individual combinations can be created.



**Housing for railway applications**

HEAVYCON HPR is specified for use in transport and transportation technology. The sleeve housings, panel mounting bases, and box mounting bases conform to the established standard for the safe transmission of signal and power circuits on rail vehicles. They offer protection class IP68/IP69K and ensure comprehensive protection in the event of electromagnetic interference fields.



**Stackable power distribution**

DUPLICON stackable connectors are designed for distributed installation with the focus on power distribution. The connectors can be easily and flexibly integrated into modular machines and systems. Thanks to this stackable design, DUPLICON offers consistent installation, from the busbar in the control cabinet to the PCB in the field device, and can be extended by simply connecting further connectors.

Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # and numbers in the search field.

#0002

Search 





# Heavy-duty connectors

## HEAVYCON cross-reference list - contact inserts and housing

The top rows describe the contact insert according to the number of positions, voltage, current, and connection method.

The markings in the columns denote the corresponding housing size.



**Configurator** for creating complete connectors can be found on our website:

**i** Your web code: #0003



Series	A					B						BB						BBB	
Number of positions	3	4	10	16	2x16	6	10	16	24	2x16	2x24	10	18	32	46	2x32	2x46	40	64
Housing size	D7	D7	D15	D25	D50	B6	B10	B16	B24	B32	B48	B6	B10	B16	B24	B32	B48	B16	B24
Rated voltage [V]	230/400		250			500						500						500	
Rated current [A]	24		20			16						16						16	

Connection method	A					B						BB						BBB	
UT = Screw	UT					UT						-						-	
CT = Crimp	-		CT			CT						CT						CT	
PT = Push-in	-					PT						-						-	
Z = Spring	-					-						-						-	
Q = QUICKON	Q	-				Q						-						-	
L = Fiber optics	-					-						-						-	
A = Axial screw	-					-						-						-	
P = Pneumatics	-					-						-						-	

Series	A					B						BB						BBB	
Number of positions	3	4	10	16	2x16	6	10	16	24	2x16	2x24	10	18	32	46	2x32	2x46	40	64
Page	484	484	494	496	496	520	522	524	526	524	526	532	532	532	532	532	532	534	534








### HEAVYCON housing

D7, D15 to D50, and EVO D housing		D7	From 490	●	●														
		D15	From 502			●													
		D25	From 506				●												
		D50	From 510					●											

STANDARD, EVO, and ADVANCE housing		B6	From 570					●					●						
		B10	From 576						●					●					
		B16	From 590							●					●			●	
		B24	From 604								●					●			●
		B32	From 618									●				●			
		B48	From 620											●				●	

HPR housing		B6	From 626						●					●					
		B10	From 627							●					●				
		B16	From 628								●					●		●	
		B24	From 629									●					●		●

HEAVYCON contact inserts

HEAVYCON contact inserts																											
																											
D										DD						HV			HS		Q				K		M
7	8	15	25	40	2x25	64	2x40	2x64	24	42	72	108	2x72	2x108	3+2	6+2	10+2	6	12	2	5	7	12	Variable	Variable		
D7	D7	D15	D25	B16	D50	B24	B32	B48	B6	B10	B16	B24	B32	B48	B10	B16	B24	B16	B32	D7	D7	D7	D7	B10 - B24	B6 - B48		
250	50	250								250						830			400/690		400	230/400	400	160 - 830		50 - 5000	
10										10						16			35		40	16	10	10 - 80		5 - 200	
-										-						-			UT		-				UT		-
CT										CT						CT			-		-				CT		CT
-										-						-			-		-				-		-
-										-						-			-		-				-		Z
-										-						-			-		-				-		-
L										L						-			-		-				L		L
-										-						-			-		A				A		A
-										-						-			-		-				-		P
D										DD						HV			HS		Q				K		M
7	8	15	25	40	2x25	64	2x40	2x64	24	42	72	108	2x72	2x108	3	6	10	6	12	2	5	7	12	Variable	Variable		
486	486	498	500	512	500	512	512	512	518	518	518	518	518	518	536	538	540	542	542	488	488	488	488	544	548		
●	●																			●	●	●	●				
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# Heavy-duty connectors

## HEAVYCON D7 - contact inserts

### A3, A4 series

230/400 V, 10 - 24 A

Connection technology:

- Screw connection
- Insulation displacement connection

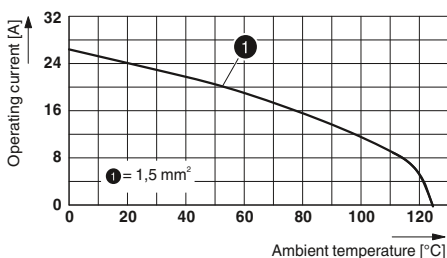
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
HC-A03-I-UT... / HC-A04-I-UT... profile gaskets made from NBR
HC-A04-I-UT... contact inserts already contain an IP65 sealing screw
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) For solid conductors and stranded wires with wire end protection

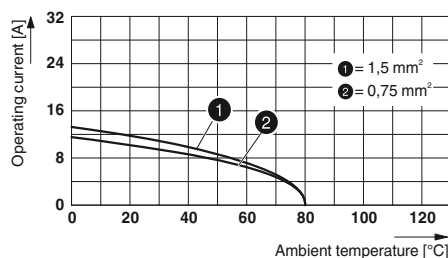


Type	Technical data			
	① HC-A03-I-UT...	② HC-A3...Q1,5-TFL-G-PA Sleeve housing	③ HC-A3...Q1,5-KML-G-PA Coupling housing	④ HC-A04-I-UT...
Approvals	-	UL US ENEC	UL US ENEC	-
IEC data				
Rated current, contacts (at 40°C)	A	10	10	24
Surge voltage category	III	III	III	III
Pollution degree	3	3	3	3
Rated voltage (III/3) contacts	V	230 / 400	230 / 400	230 / 400
Rated surge voltage, contacts	kV	4	4	4
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.75 ... 1.5	0.5 ... 2.5
UL data				
Rated voltage	V	-	600	-
Rated current	A	-	10	-
Connection cross section	AWG	-	18-16	-
CSA / cUL data				
Rated voltage	V	-	600	-
Rated current	A	-	10	-
Connection cross section	AWG	-	18-16	-
Material data				
Contact carrier material	PC	PA / PC	PA / 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	-25 ... 80	-40 ... 125
General data				
Connection method		Screw connection	QUICKON connection	QUICKON connection
Stripping length	mm	5	-	-
No. of pos.		3	3	3
Contact numbering		1 - 3	1 - 3	1 - 3
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500


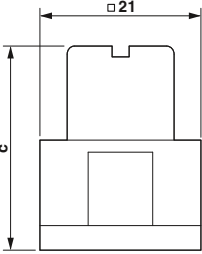


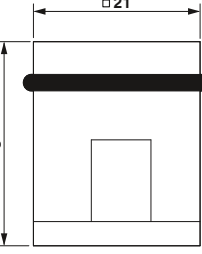

### Derating curves



HC-A03... / HC-A04...



HC-A 3...Q1,5...

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																													
					Socket	Plug																																															
<b>Screw connection<sup>1)</sup></b> 	3	1 - 3	D7	① HC-A03-I-UT-...	1585223	1585210	1	 Dimensional drawing: socket																																													
<b>Insulation displacement connection</b> 	3	1 - 3	D7	Sleeve housing ② HC-A3-...Q1,5-TFL-G-PA	1641510	1641581	1																																														
<b>Insulation displacement connection</b> 	3	1 - 3	D7	Coupling housing ③ HC-A3-...Q1,5-KML-G-PA	1641617	1641604	1	 Dimensional drawing: plug																																													
<b>Screw connection<sup>1)</sup></b> 	4	1 - 4	D7	④ HC-A04-I-UT-...	1585249	1585236	1	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>30</td> <td></td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>66</td> <td></td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>62.8</td> <td></td> </tr> <tr> <td>④ Socket</td> <td></td> <td></td> <td>30</td> <td></td> </tr> <tr> <td>① Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		a	b	c	d	① Socket			30		② Socket			66		③ Socket			62.8		④ Socket			30		① Plug					② Plug					③ Plug					④ Plug				
	a	b	c	d																																																	
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③ Plug																																																					
④ Plug																																																					

### Accessories



Sealing screw, IP65  
From page 653



Coding profile  
From page 568



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON D7 - contact inserts

### D7, D8 series

50 - 250 V, 10 A

Connection technology:

– Crimp connection

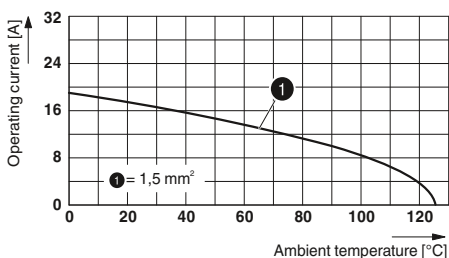
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Coding of HC-D 7-I-CT... / HC-D 8-I-CT... contact inserts using CK 1,6 ED-BB dummy sockets
HC-D 7... / HC-D 8... contact inserts already contain an IP65 sealing screw
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) For voltages > 42 V, only use with plastic housing

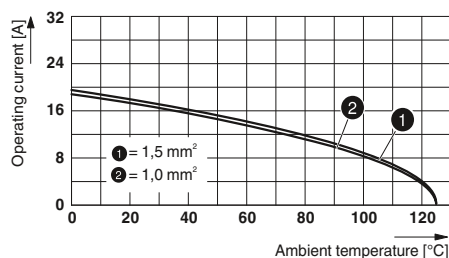


Type	Technical data	
	① HC-D 7-I-CT-...	② HC-D 8-I-CT-...
Approvals	ERC	Without PE ERC
IEC data		
Rated current, contacts (at 40°C)	A	10
Surge voltage category	III	III
Pollution degree	3	3
Rated voltage (III/3) contacts	V	250 <sup>1)</sup>
Rated surge voltage, contacts	kV	4
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5
UL data		
Rated voltage	V	600
Rated current	A	12
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	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data		
Ambient temperature range	°C	-40 ... 125
General data		
Connection method		Crimp connection
Stripping length	mm	8
No. of pos.		7
Contact numbering		1 - 7
Insertion/withdrawal cycles		≥ 500


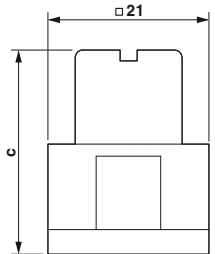
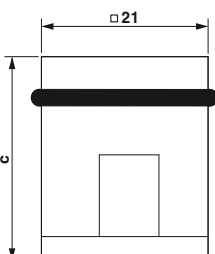



### Derating curves



HC-D 7-I-CT-...



HC-D 8-I-CT-....

Description	Pos.	Number	Size	Ordering data			Pcs. / Pkt.	Dimensions (in mm)
				Type	Socket	Plug		
<b>Crimp connection</b>								
	7	1 - 7	D7	① HC-D 7-I-CT-...	1584347	1584334	10	 <p>Dimensional drawing: socket</p>  <p>Dimensional drawing: plug</p>
<b>Crimp connection</b>								
	8	1 - 8	D7	Without PE ② HC-D 8-I-CT-...	1584363	1584350	10	
<b>Turned crimp contacts CK 1,6 Silver-plated</b>								
								
			<b>Cross section mm<sup>2</sup> / AWG</b>					
			0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100	
			0.5 / 20	CK1,6-ED-0,50... AG	1663404	1663349	100	
			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 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100	
			2.5 / 14	CK1,6-ED-2,50... AG	1663446	1663381	100	
<b>Turned crimp contacts CK 1,6 Gold-plated</b>								
								
			<b>Cross section mm<sup>2</sup> / AWG</b>					
			0.14 - 0.37 / 22 - 24	CK1,6-ED-0,37... AU	1674969	1674901	100	
			0.75 / 18	CK1,6-ED-0,75... AU	1672440	1672453	100	
			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 / 16	CK1,6-ED-1,50... AU	1674930	1674875	100	

	a	b	c	d
① Socket				
① Plug			32	
② Socket			32	
② Plug				

### Accessories



Crimping tools  
From page 636



Sealing screw, IP65  
From page 653



Dummy sockets  
[phoenixcontact.net/products](http://phoenixcontact.net/products)

# Heavy-duty connectors

## HEAVYCON D7 - contact inserts

### Q series

250 - 500 V, 10 - 40 A

Connection technology:

- Axial screw connection
- Crimp connection

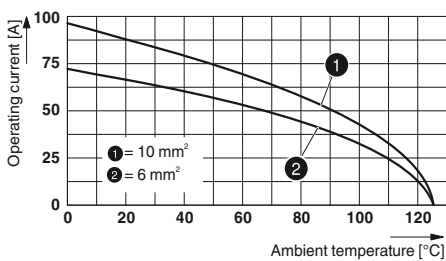
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

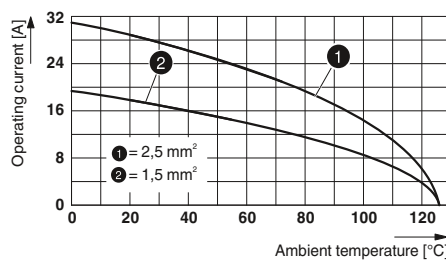


Type	Technical data			
	① HC-HS 2-D7-E...S	② HC-Q05-I-CT-...	③ HC-D 7-E...C-COD	④ HC-Q 12-I-CT-...
Approvals	UL US ENEC	ENEC UL	UL US ENEC	ENEC
IEC data				
Rated current, contacts (at 40°C)	A	40	24	10
Surge voltage category		III	III	III
Pollution degree		3	3	3
Rated voltage (III/3) contacts	V	400	230 / 400	400
Rated surge voltage, contacts	kV	6	4	6
Connection cross section	mm <sup>2</sup>	4 ... 10	0.5 ... 2.5	0.14 ... 2.5
UL data				
Rated voltage	V	400	600	600
Rated current	A	28	24	10
Connection cross section	AWG	12	14	14
CSA / cUL data				
Rated voltage	V	400	-	600
Rated current	A	26	-	10
Connection cross section	AWG	12	-	14
Material data				
Contact carrier material		PC	PA	PC
Inflammability class in acc. with UL 94		V0	V0	V0
Contact material		Copper alloy	Copper alloy	Copper alloy
Contact surface material		Ag	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method		Axial screw connection	Crimp connection	Crimp connection
Hexagonal socket	mm	2	-	-
Stripping length	mm	8	7.5	8
No. of pos.		2	5	7
Contact numbering		1 - 2	1 - 5	1 - 7
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500

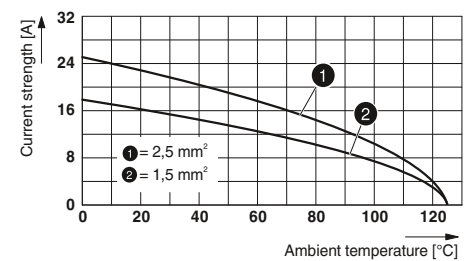
### Derating curves




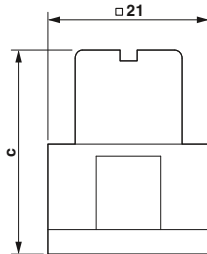

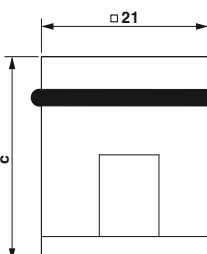




HC-HS 2-D7-E...S



HC-Q05-I-CT-...



HC-D 7-E...C-COD

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																													
					Socket	Plug																																															
<b>Axial screw connection</b>																																																					
	2	1 - 2	D7	① HC-HS 2-D7-E...S	1586264	1586277	10	 Dimensional drawing: socket																																													
<b>Crimp connection CK 2,5</b>																																																					
	5	1 - 5	D7	② HC-Q05-I-CT...	1406537	1406538	1	 Dimensional drawing: plug																																													
<b>Crimp connection CK 1,6</b>																																																					
	7	1 - 7	D7	③ HC-D 7-E...C-COD	1408588	1408575	10																																														
<b>Crimp connection CK 1,6</b>																																																					
	12	1 - 12	D7	④ HC-Q 12-I-CT...	1409419	1409422	1	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>34.8</td> <td></td> </tr> <tr> <td>① Plug</td> <td></td> <td></td> <td>40</td> <td></td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>40.1</td> <td></td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td>39.5</td> <td></td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>40.1</td> <td></td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td>39.5</td> <td></td> </tr> <tr> <td>④ Socket</td> <td></td> <td></td> <td>43.1</td> <td></td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td>40.8</td> <td></td> </tr> </tbody> </table>		a	b	c	d	① Socket			34.8		① Plug			40		② Socket			40.1		② Plug			39.5		③ Socket			40.1		③ Plug			39.5		④ Socket			43.1		④ Plug			40.8	
	a	b	c	d																																																	
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			0.75 - 1 / 18	CK1,6-ED-1,00... AG	1663420	1663365	100																																														
			1.5 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100																																														
			2.5 / 14	CK1,6-ED-2,50... AG	1663446	1663381	100																																														
<b>Turned crimp contacts CK 2,5</b> Silver-plated																																																					
																																																					
			<b>Cross section</b> mm <sup>2</sup> / AWG																																																		
			0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100																																														
			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 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100																																														
			2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100																																														

### Accessories



HC-HS 2... coding profile  
From page 638



CK 2,5 dummy socket  
From page 639



HC-D 7... coding profile  
From page 638



HC-Q 12... coding profile  
From page 638



# Heavy-duty connectors

## HEAVYCON D7 - housing

### Size D7, plastic, sleeve housing for single locking latch




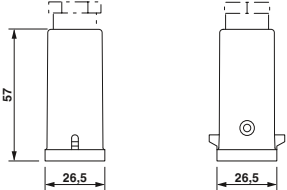

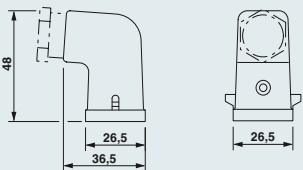
#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Polyamide  
-  
-  
-40 °C ... 125 °C  
IP54 / IP65

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 57 mm 	1x M20	Light gray, cable outlet: top <b>HC-D 7-TFL-57/O1M20G/PA</b> HC-D 7-TFL-57/O1PG11G/PA Black, cable outlet: top <b>HC-D 7-TFL-57/O1M20G/PA BK</b>	<b>1604889</b>	10	
	1x Pg11		<b>1675450</b>	10	
	1x M20		<b>1410673</b>	10	
<b>Sleeve housing</b> Height: 48 mm 	1x M20	Light gray, cable outlet: lateral <b>HC-D 7-TFL-48/O1M20S/PA</b> HC-D 7-TFL-49/O1PG11S/PA Black, cable outlet: lateral <b>HC-D 7-TFL-48/O1M20S/PA BK</b>	<b>1604890</b>	10	
	1x Pg11		<b>1675463</b>	10	
	1x M20		<b>1413510</b>	10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Replacement sealing screw, IP65  
From page 653



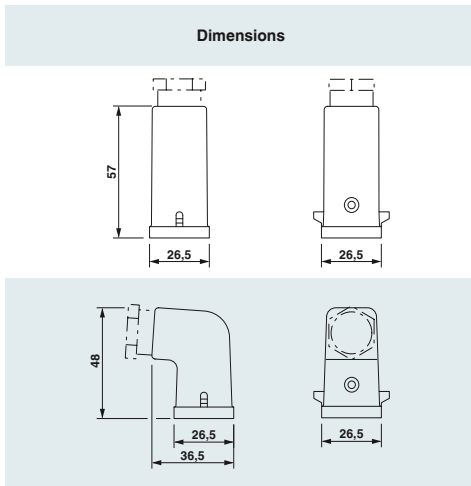
Replacement latch  
From page 652

**Size D7, metal, sleeve housing for single locking latch**



General data		Technical data	
Housing material		Zinc die-cast	
Surface material		Powder-coated, gray	
Locking latch material		-	
Sealing material		-	
Ambient temperature (operation)		-40 °C ... 125 °C	
IP degree of protection (when plugged in)		IP54 / IP65	

Description		Thread		Type		Order No.		Pcs. / Pkt.	
<b>Sleeve housing</b> Height: 57 mm 	1x M20	1x Pg11	Cable outlet: top		1604888	10	HC-D 7-TFL-57/O1M20G		
			HC-D 7-TFL-57/O1PG11G				1660627	10	
<b>Sleeve housing</b> Height: 48 mm 	1x M20	1x Pg11	Cable outlet: lateral		1604891	10	HC-D 7-TFL-48/O1M20S		
			HC-D 7-TFL-48/O1PG11S				1672932	10	



**Notes:**  
For further accessories, see page 642

**Accessories**



Cable glands  
From page 680



Replacement sealing screw, IP65  
From page 653

# Heavy-duty connectors

## HEAVYCON D7 - housing

### Size D7, plastic, supporting base element with single locking latch

#### General data


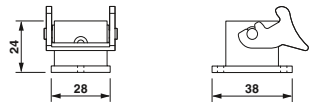

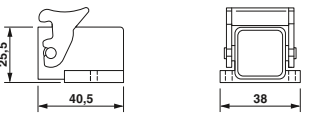

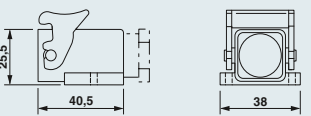

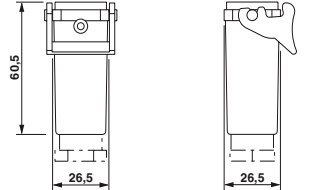

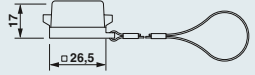
Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Polyamide  
Polyamide  
NBR  
-40 °C ... 125 °C  
IP54 / IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 24 mm 		Light gray, without cover <b>HC-D 7-AML-24/GR/PA</b> Black, without cover <b>HC-D 7-AML-24/GR/PA BK</b>	<a href="#">1772272</a> <a href="#">1413112</a>	10 10	
<b>Panel mounting base</b> Height: 25.5 mm 		Light gray, angled version <b>HC-D 7-AML-26/GW/PA</b> Black, angled version <b>HC-D 7-AML-26/GW/PA BK</b>	<a href="#">1772285</a> <a href="#">1410686</a>	10 10	
<b>Box mounting base</b> Height: 25.5 mm 	1x M20 1x Pg11 1x M20	Light gray <b>HC-D 7-SML-26/O1STM20/PA</b> <b>HC-D7-SML-57/O1STPG11/PA</b> Black <b>HC-D 7-SML-26/O1STM20/PA BK</b>	<a href="#">1674886</a> <a href="#">1416405</a> <a href="#">1413717</a>	10 10 10	
<b>Coupling housing</b> Height: 60.5 mm 	1x M20 1x Pg11 1x M20	<b>HC-D 7-KML-61/O1M20/PA</b> <b>HC-D 7-KML-51/O1PG11/PA</b> Black <b>HC-D 7-KML-61/O1M20/PA BK</b>	<a href="#">1604884</a> <a href="#">1675434</a> <a href="#">1413718</a>	10 10 10	
<b>Protective cover, plastic</b> 		Socket <b>HC-D 7-SD-FL/FS-MD</b> Plug <b>HC-D 7-SD-FL/FS</b>	<a href="#">1644300</a> <a href="#">1772573</a>	10 10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Replacement sealing screw, IP65  
From page 653



Replacement seals  
From page 651


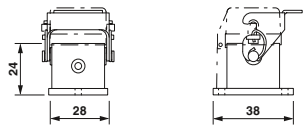

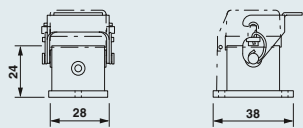

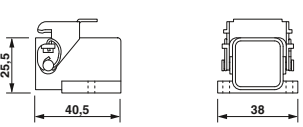

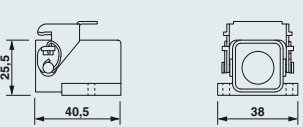

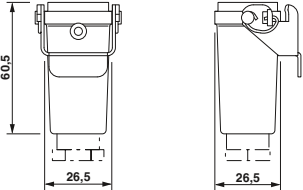

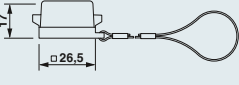


Replacement latch  
From page 652

### Size D7, metal, supporting base element with single locking latch



General data		Technical data	
Housing material		Zinc die-cast	
Surface material		Powder-coated, gray (metal housing)	
Locking latch material		Steel, galvanized and passivated	
Sealing material		NBR	
Ambient temperature (operation)		-40 °C ... 125 °C	
IP degree of protection (when plugged in)		IP54 / IP65	

Description		Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 24 mm 			Without cover HC-D 7-AML-24/GR	1773035	10	
<b>Panel mounting base</b> Height: 24 mm 			With metal cover, socket HC-D 7-AMLD-24/GR With metal cover, plug HC-D 7-AMLD-24/GR-OD	1676970 1684994	10 10	
<b>Panel mounting base</b> Height: 25.5 mm 			Angled version HC-D 7-AML-26/GW	1773022	10	
<b>Box mounting base</b> Height: 25.5 mm 		1x M20 1x Pg11	HC-D 7-SML-26/O1STM20 HC-D7-SML-26/O1STPG11	1674899 1416406	10 10	
<b>Coupling housing</b> Height: 60.5 mm 		1x M20 1x Pg11	HC-D 7-KML-61/O1M20 HC-D 7-KML-61/O1PG11	1604883 1672893	10 10	
<b>Protective cover, plastic</b> 			Socket HC-D 7-SD-FL/FS-MD Plug HC-D 7-SD-FL/FS	1644300 1772573	10 10	

**Notes:**  
For further accessories, see page 642

### Accessories



**Cable glands**  
From page 680

**Replacement sealing screw, IP65**  
From page 653

**Replacement seals**  
From page 651

# Heavy-duty connectors

## HEAVYCON D - contact inserts

### A10 series

250 V, 16 - 20 A

Connection technology:

- Screw connection
- Crimp connection

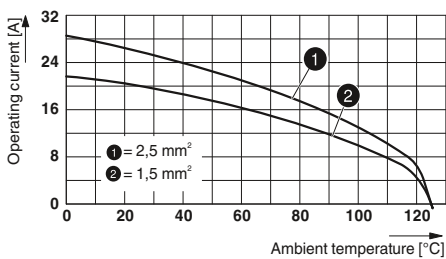
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
A10 series with wire protection
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

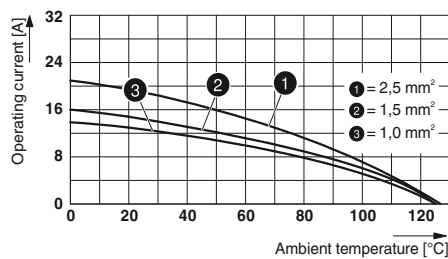


Technical data				
Type		① HC-A 10-I-UT-...	② HC-A 10-E...C	
Approvals		-	UL, VDE, IEC	
IEC data				
Rated current, contacts (at 40°C)	A	20	16	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	250	250	
Rated surge voltage, contacts	kV	4	4	
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	V	-	600	
Rated current	A	-	-	
Connection cross section	AWG	-	-	
CSA / cUL data				
Rated voltage	V	-	600	
Rated current	A	-	10	
Connection cross section	AWG	-	20-13	
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 (alternatively Au)	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Screw connection	Crimp connection	
Stripping length	mm	7	8	
No. of pos.		10	10	
Contact numbering		1 - 16	1 - 10	
Insertion/withdrawal cycles		≥ 500	≥ 500	

### Derating curves

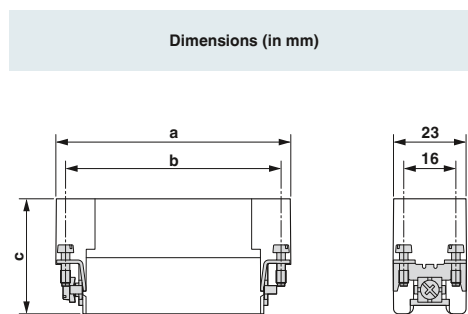


HC-A 10...-I-UT-...

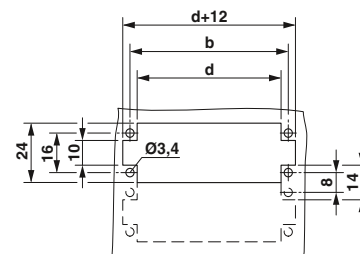


HC-A 10-E...C

Description	Pos.	Number	Size	Ordering data				
				Type	Order No. Socket	Order No. Plug	Pcs. / Pkt.	
<b>Screw connection</b>  	10	1 - 16	D15	① HC-A 10-I-UT...	1585304	1585294	1	
<b>Crimp connection</b>  	10	1 - 10	D15	② HC-A 10-E...C	1676983	1676996	10	
<b>Turned crimp contacts CK 2,5 Silver-plated</b>				<b>Cross section mm<sup>2</sup> / AWG</b> 0.5 / 20 0.75 / 18 0.75 - 1 / 16 1.5 / 16 2.5 / 14 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
<b>Turned crimp contacts CK 2,5 Gold-plated</b>				<b>Cross section mm<sup>2</sup> / AWG</b> 0.5 / 20 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket			31.5	43.5
① Plug	55.5	49.5	34.1	43.5
② Socket			30	43.5
② Plug	56.5	49.5	33	43.5

### Accessories



Crimping tools  
From page 636



Coding profiles  
From page 638



Coding elements  
From page 639



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON D - contact inserts

### A16 series

250 V, 16 - 20 A

Connection technology:

- Screw connection
- Crimp connection

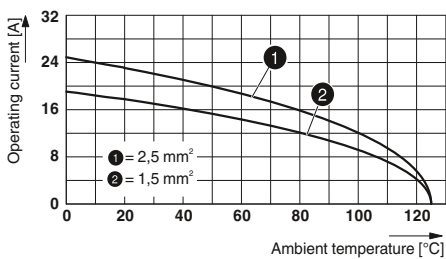
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
A16 series with wire protection
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

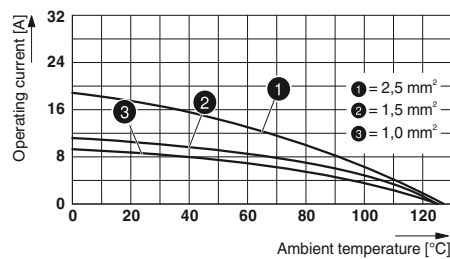


Technical data				
Type		① ② HC-A 16-I-UT-...	③ ④ HC-A 16-E-...C	
Approvals		-	UL, VDE, IEC	
IEC data				
Rated current, contacts (at 40°C)	A	20	16	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	250	250	
Rated surge voltage, contacts	kV	4	4	
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	V	-	600	
Rated current	A	-	-	
Connection cross section	AWG	-	-	
CSA / cUL data				
Rated voltage	V	-	600	
Rated current	A	-	10	
Connection cross section	AWG	-	20-13	
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 (alternatively Au)	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Screw connection	Crimp connection	
Stripping length	mm	7	8	
No. of pos.		16	16	
Contact numbering		1 - 16	1 - 16	
Insertion/withdrawal cycles		≥ 500	≥ 500	

### Derating curves

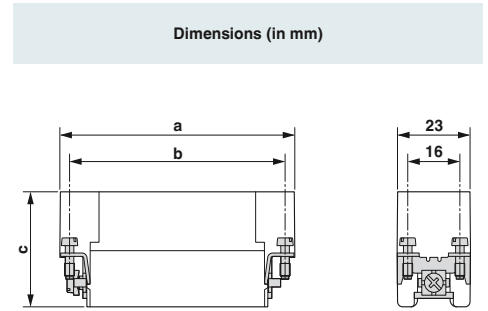


HC-A 16-I-UT-...

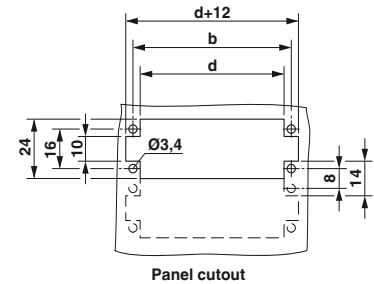


HC-A 16-E-...C

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.
					Socket	Plug	
<b>Screw connection</b>							
	16	1 - 16	D25 / D50	① HC-A 16-I-UT-...	1585320	1585317	1
	16	17 - 32	D25 / D50	② HC-A 16-I-UT-...-32	1585346	1585333	1
<b>Crimp connection</b>							
	16	1 - 16	D25 / D50	③ HC-A 16-E...C	1677018	1677034	10
	16	17 - 32	D25 / D50	④ HC-A 16-E...C-32	1677050	1677076	10
<b>Turned crimp contacts CK 2,5 Silver-plated</b>							
	Cross section mm <sup>2</sup> / AWG			CK2,5-ED-0,50... AG	1663640	1663572	100
	0.5 / 20			CK2,5-ED-0,75... AG	1663653	1663585	100
	0.75 / 18			CK2,5-ED-1,00... AG	1663666	1663598	100
	0.75 - 1 / 16			CK2,5-ED-1,50... AG	1663679	1663608	100
	1.5 / 16			CK2,5-ED-2,50... AG	1663682	1663611	100
	2.5 / 14			CK2,5-ED-4,00... AG	1663705	1663637	100
4 / 12							
<b>Turned crimp contacts CK 2,5 Gold-plated</b>							
	Cross section mm <sup>2</sup> / AWG			CK2,5-ED-0,50... AU	1674859	1674804	100
	0.5 / 20			CK2,5-ED-1,00... AU	1674833	1674781	100
	0.75 - 1 / 18			CK2,5-ED-1,50... AU	1674820	1674778	100
	1.5 / 16			CK2,5-ED-2,50... AU	1674862	1674817	100
	2.5 / 14			CK2,5-ED-4,00... AU	1674846	1674794	100
	4 / 12						



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket			31.5	
① Plug	72	66	34.1	60
② Socket			31.5	
② Plug	72	66	34.1	60
③ Socket			31.7	
③ Plug	72	66	31.8	60
④ Socket			31.7	
④ Plug	72	66	31.8	60

### Accessories





# Heavy-duty connectors

## HEAVYCON D - contact inserts

### D15 series

250 V, 10 A

Connection technology:

– Crimp connection

Coding pins and sockets are mandatory for HC-D... and HC-DD series contact inserts.

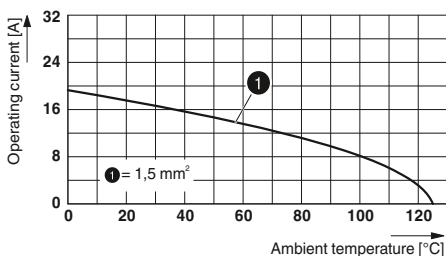
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>
For connection technologies, see page 4


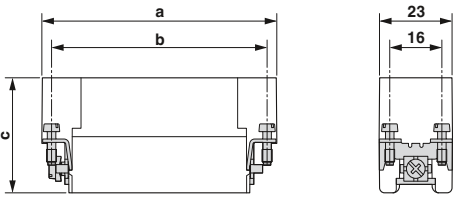
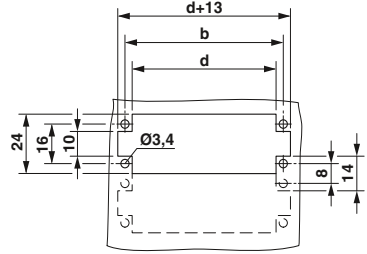




		Technical data			
Type		① HC-D 15-I-CT-...			
Approvals		ERC			
IEC data					
Rated current, contacts (at 40°C)	A	10			
Surge voltage category		III			
Pollution degree		3			
Rated voltage (III/3) contacts	V	250			
Rated surge voltage, contacts	kV	4			
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5			
UL data					
Rated voltage	V	600			
Rated current	A	10			
Connection cross section	AWG	14			
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		Ag (alternatively Au)			
Temperature data					
Ambient temperature range	°C	-40 ... 125			
General data					
Connection method		Crimp connection			
Stripping length	mm	8			
No. of pos.		15			
Contact numbering		-			
Insertion/withdrawal cycles		≥ 500			

### Derating curves



HC-D 15-I-CT-...

Description	Pos.	Number	Size	Ordering data			Pcs. / Pkt.	Dimensions (in mm)
				Type	Socket	Plug		
<b>Crimp connection</b>  	15		D15	① HC-D 15-I-CT...	1584389	1584376	10	 <p>Dimensional drawing</p>  <p>Panel cutout</p>
<b>Turned crimp contacts CK 1,6 Silver-plated</b>  			<b>Cross section mm<sup>2</sup> / AWG</b> 0.14 - 0.37 / 26 - 22 0.5 / 20 0.75 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14	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	
<b>Turned crimp contacts CK 1,6 Gold-plated</b>  			<b>Cross section mm<sup>2</sup> / AWG</b> 0.14 - 0.37 / 22 - 24 0.75 / 18 0.75 / 18 0.75 - 1 / 18 1.5 / 16	CK1,6-ED-0,37... AU CK1,6-ED-0,75... AU CK1,6-ED-0,75... AU CK1,6-ED-1,00... AU CK1,6-ED-1,50... AU	1674969 1672440 1672440 1674943 1674930	1674901 1672453 1674914 1674888 1674875	100 100 100 100 100	

	a	b	c	d
① Socket	55.4	49.5	33.5	43.5
Plug			34.2	

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 639



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON D - contact inserts

### D25 series

250 V, 10 A

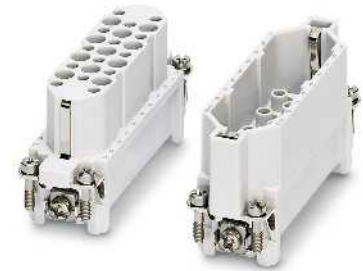
Connection technology:

– Crimp connection

Coding pins and sockets are mandatory for HC-D... and HC-DD series contact inserts.

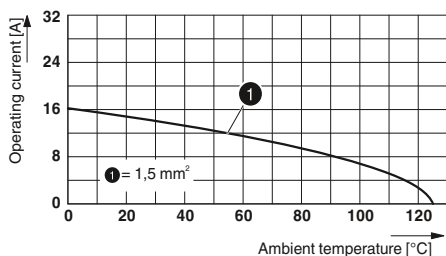
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>
For connection technologies, see page 4



		Technical data			
Type		① ② HC-D 25-I-CT-...			
Approvals		ERC			
IEC data					
Rated current, contacts (at 40°C)	A	10			
Surge voltage category		III			
Pollution degree		3			
Rated voltage (III/3) contacts	V	250			
Rated surge voltage, contacts	kV	4			
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5			
UL data					
Rated voltage	V	600			
Rated current	A	10			
Connection cross section	AWG	14			
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		Ag (alternatively Au)			
Temperature data					
Ambient temperature range	°C	-40 ... 125			
General data					
Connection method		Crimp connection			
Stripping length	mm	8			
No. of pos.		25			
Contact numbering		-			
Insertion/withdrawal cycles		≥ 500			

### Derating curves



HC-D 25-I-CT-...



# Heavy-duty connectors

## HEAVYCON D - housing

### Size D15, plastic, EVO sleeve housing for single locking latch




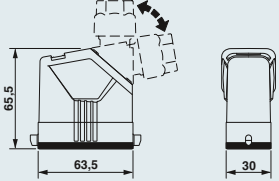

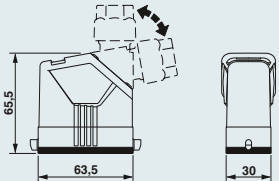

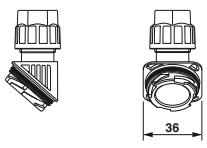

#### General data

Housing material	Polyamide
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 65.5 mm 		HC-EVO-D15-HHFS-PL-BK	1411340	1	
<b>Sleeve housing</b> Height: 65.5 mm 		HC-EVO-D15-HHFS-PL-BK	1411340	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	
<b>Connector set</b> 		Without cover, screw connection HC-EVO-A10UT-BWS-HH-M20-PLRBK With cover, screw connection HC-EVO-A10UT-BWSC-HH-M20-PLRBK	1411356 1411357	1 1	

#### Notes:

For further accessories, see page 642

Marking label: US-EMP (20X9) Order No. [0829439](#)

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643


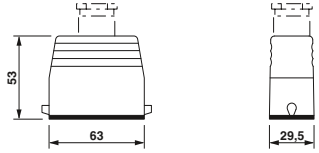

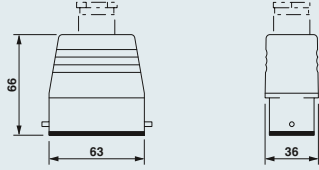

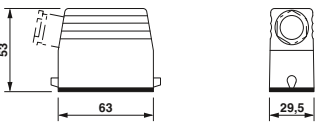

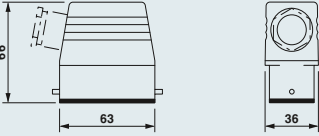
### Size D15, metal, sleeve housing for single locking latch



#### Technical data

General data	
Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP65

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 53 mm 	1x M20  1x Pg16	Cable outlet: top <b>HC-D 15-TFL-53/O1M20G</b>	<b>1416379</b>	10	
		HC-D 15-TFL-53/O1PG16G	<b>1672741</b>	10	
<b>Sleeve housing</b> Height: 66 mm 	1x M20 1x M25  1x Pg16 1x Pg21	Cable outlet: top <b>HC-D 15-TFL-66/O1STM20G</b>	<b>1645163</b>	10	
		HC-D 15-TFL-66/O1STM25G	<b>1645176</b>	10	
		HC-D15-TFL-66/O1PG16G	<b>1416384</b>	10	
		HC-D15-TFL-66/O1PG21G	<b>1416385</b>	10	
<b>Sleeve housing</b> Height: 53 mm 	1x M20  1x Pg16	Cable outlet: lateral <b>HC-D 15-TFL-53/O1M20S</b>	<b>1604896</b>	10	
		HC-D 15-TFL-53/O1PG16S	<b>1672699</b>	10	
<b>Sleeve housing</b> Height: 66 mm 	1x M20 1x M25  1x Pg16 1x Pg21	Cable outlet: lateral <b>HC-D 15-TFL-66/O1STM20S</b>	<b>1636046</b>	10	
		HC-D 15-TFL-66/O1STM25S	<b>1636059</b>	10	
		HC-D 15-TFL-66/O1PG16S	<b>1672709</b>	10	
		HC-D15-TFL-66/O1PG21S	<b>1416386</b>	10	

#### Notes:

For further accessories, see page 642

#### Accessories



**Cable glands**  
From page 680



**Cover plates**  
From page 648



**D-SUB adapter plates**  
From page 649

# Heavy-duty connectors

## HEAVYCON D - housing

### Size D15, plastic, EVO supporting base element with single locking latch

#### General data


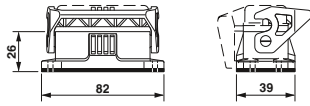

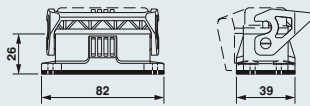

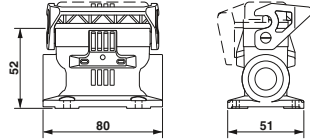

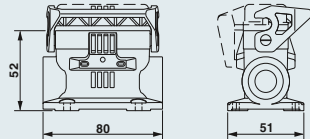

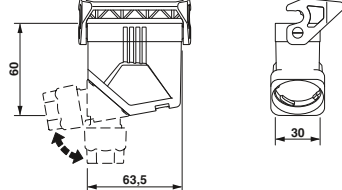

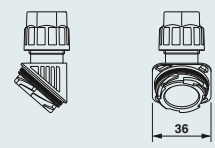
Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 26 mm 		Without cover <b>HC-EVO-D15-BWS-PLR-BK</b>	<b>1411336</b>	1	
<b>Panel mounting base</b> Height: 26 mm 		With cover <b>HC-EVO-D15-BWSC-PLR-BK</b>	<b>1411337</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 52 mm 	2x M25	Without cover <b>HC-EVO-D15-SLWS-2SSM25-PLR-BK</b>	<b>1411341</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 52 mm 	2x M25	With cover <b>HC-EVO-D15-SLWSC-2SSM25-PLR-BK</b>	<b>1411343</b>	1	
<b>Coupling housing</b> Height: 60 mm 		<b>HC-EVO-D15-CHWS-PL-BK</b>	<b>1411338</b>	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 9 mm ... 17 mm	<b>HC-D-G-M20-PLRBK</b> <b>HC-D-G-M25-PLRBK</b>	<b>1411350</b> <b>1411351</b>	1 1	

#### Notes:

For further accessories, see page 642

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



**EVO unlocking**  
From page 653



**Thread adapter**  
From page 643



**Replacement protective cover**  
From page 647



**Replacement latch**  
From page 652

### Size D15, metal, supporting base element with single locking latch

#### General data


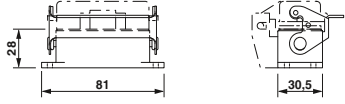

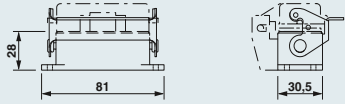

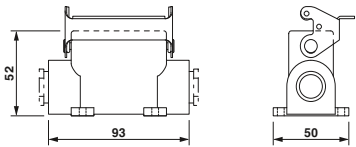

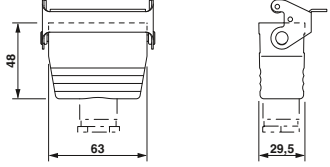

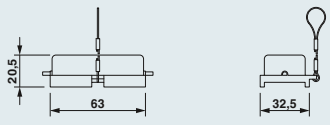
Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Aluminum die-cast  
Steel, galvanized  
CR  
-40 °C ... 125 °C  
IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 26 mm 		Without cover <b>HC-D 15-AML</b>	<b>1772379</b>	10	
<b>Panel mounting base</b> Height: 26 mm 		With cover <b>HC-D 15-AMLD</b>	<b>1678363</b>	10	
<b>Box mounting base</b> Height: 52 mm 	1x M25 1x Pg16 2x M20 2x M25 1x Pg16	Without cover <b>HC-D 15-SML-52/O1M25</b> <b>HC-D 15-SML-52/O1PG16</b> <b>HC-D 15-SML-52/O2M20</b> <b>HC-D 15-SML-52/O2M25</b> <b>HC-D 15-SML-52/O2PG16</b>	<b>1604893</b> <b>1672657</b> <b>1604894</b> <b>1604895</b> <b>1672660</b>	10 10 10 10 10	
<b>Coupling housing</b> Height: 48 mm 	1x M20 1x Pg16	<b>HC-D 15-KML-48/O1M20</b> <b>HC-D 15-KML-48/O1PG16</b>	<b>1604892</b> <b>1678266</b>	10 10	
<b>Protective cover, plastic</b> 		<b>HC-D 15-SD-FL/FS</b>	<b>1660164</b>	10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Cover plates  
From page 648



D-SUB adapter plates  
From page 649



Replacement seals  
From page 651



# Heavy-duty connectors

## HEAVYCON D - housing

### Size D25, plastic, EVO sleeve housing for single locking latch




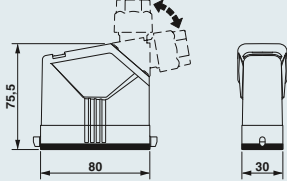

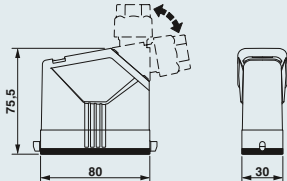

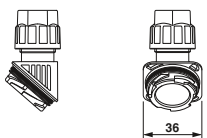

#### General data

Housing material	Polyamide
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 75.5 mm 		HC-EVO-D25-HHFS-PL-BK	1411347	1	
<b>Sleeve housing</b> Height: 75.5 mm 		HC-EVO-D25-HHFS-PL-BK	1411347	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 9 mm ... 17 mm	HC-D-G-M20-PLRBK HC-D-G-M25-PLRBK	1411350 1411351	1 1	
<b>Connector set</b> 		Without cover, screw connection HC-EVO-A16UT-BWS-HH-M25-PLRBK With cover, screw connection HC-EVO-A16UT-BWSC-HH-M25-PLRBK	1411358 1411359	1 1	

#### Notes:

For further accessories, see page 642

Marking label: US-EMP (20X9) Order No. [0829439](#)

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643


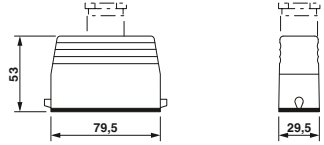

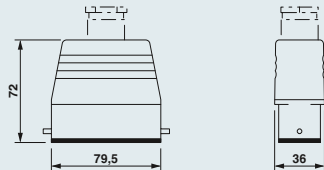

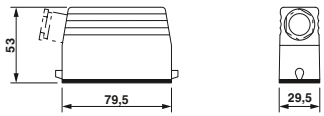

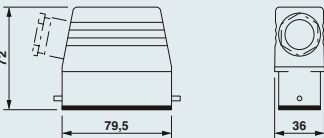
### Size D25, metal, sleeve housing for single locking latch



#### Technical data

General data	
Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP65

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 58 mm 	1x M20 1x Pg16	Cable outlet: top HC-D 25-TFL-58/O1M20G	1416380	10	
		HC-D 25-TFL-58/O1PG16G	1672819	10	
<b>Sleeve housing</b> Height: 72 mm 	1x M20 1x M25 1x Pg21	Cable outlet: top HC-D 25-TFL-72/O1STM20G	1636075	10	
		HC-D 25-TFL-72/O1STM25G	1645189	10	
		HC-D25-TFL-72/O1PG21G	1416387	10	
<b>Sleeve housing</b> Height: 58 mm 	1x M20 1x Pg16	Cable outlet: lateral HC-D 25-TFL-58/O1M20S	1416381	10	
		HC-D 25-TFL-58/O1PG16S	1672822	10	
<b>Sleeve housing</b> Height: 72 mm 	1x M20 1x M25 1x Pg16 1x Pg21	Cable outlet: lateral HC-D 25-TFL-72/O1STM20S	1636062	10	
		HC-D 25-TFL-72/O1STM25S	1645273	10	
		HC-D 25-TFL-72/O1PG16S	1672851	10	
		HC-D 25-TFL-72/O1PG21S	1672864	10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Cover plates  
From page 648

# Heavy-duty connectors

## HEAVYCON D - housing

### Size D25, plastic, EVO supporting base element with single locking latch

#### General data


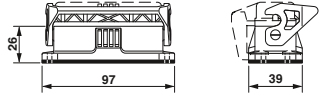

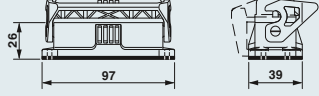

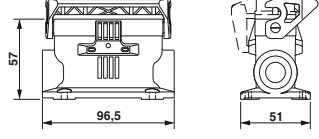

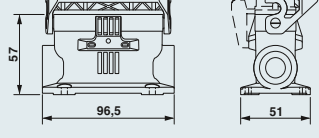

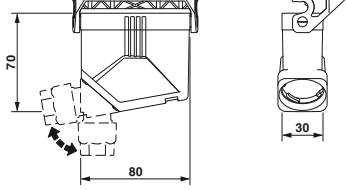

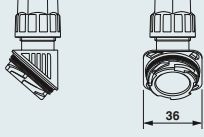
Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 26 mm 		Without cover <b>HC-EVO-D25-BWS-PLR-BK</b>	<b>1411344</b>	1	
<b>Panel mounting base</b> Height: 26 mm 		With cover <b>HC-EVO-D25-BWSC-PLR-BK</b>	<b>1411345</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 57 mm 	2x M25	Without cover <b>HC-EVO-D25-SLWS-2SSM25-PLR-BK</b>	<b>1411348</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 57 mm 	2x M25	With cover <b>HC-EVO-D25-SLWSC-2SSM25-PLR-BK</b>	<b>1411349</b>	1	
<b>Coupling housing</b> Height: 70 mm 		<b>HC-EVO-D25-CHWS-PLR-BK</b>	<b>1411346</b>	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 9 mm ... 17 mm	<b>HC-D-G-M20-PLRBK</b> <b>HC-D-G-M25-PLRBK</b>	<b>1411350</b> <b>1411351</b>	1 1	

#### Notes:

For further accessories, see page 642

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



**EVO unlocking**  
From page 653



**Thread adapter**  
From page 643



**Replacement protective cover**  
From page 647



**Replacement latch**  
From page 652

### Size D25, metal, supporting base element with single locking latch

#### General data


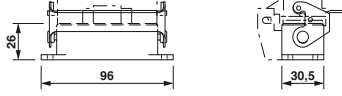

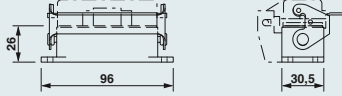

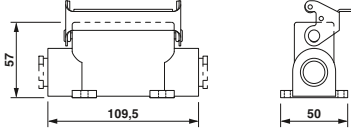

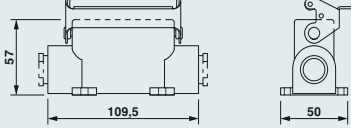

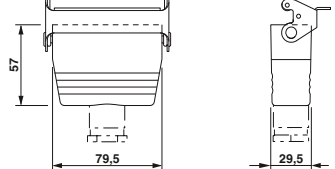

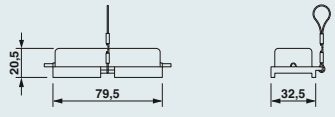
Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Aluminum die-cast  
Steel, galvanized  
CR  
-40 °C ... 125 °C  
IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 26 mm 		Without cover <b>HC-D 25-AML</b>	<b>1772463</b>	10	
<b>Panel mounting base</b> Height: 26 mm 		With cover <b>HC-D 25-AML D</b>	<b>1672754</b>	10	
<b>Box mounting base</b> Height: 57 mm 	1x M25  1x Pg16 1x Pg21  2x M20 2x M25  2x Pg16	Without cover <b>HC-D 25-SML-57/O1M25</b> <b>HC-D25-SML-57/O1PG16</b> <b>HC-D25-SML-57/O1PG21</b>  <b>HC-D 25-SML-57/O2M20</b> <b>HC-D 25-SML-57/O2M25</b> <b>HC-D 25-SML-57/O2PG16</b>	<b>1604901</b> <b>1416388</b> <b>1416390</b>  <b>1604902</b> <b>1604903</b> <b>1672783</b>	10 10 10  10 10 10	
<b>Box mounting base</b> Height: 57 mm 	1x Pg16 1x Pg21  2x M20  2x Pg16	With cover <b>HC-D 25-SMLD-57/O1PG16</b> <b>HC-D 25-SMLD-57/O1PG21</b>  <b>HC-D 25-SMLD-57/O2M20</b> <b>HC-D25-SMLD-57/O2PG16</b>	<b>1672796</b> <b>1416378</b>  <b>1416382</b> <b>1416391</b>	10 10  10 10	
<b>Coupling housing</b> Height: 57 mm 	1x M20  1x Pg16	<b>HC-D 25-KML-53/O1M20</b> <b>HC-D25-KML-53/O1PG16</b>	<b>1604900</b> <b>1416393</b>	10 10	
<b>Protective cover, plastic</b> 		<b>HC-D 25-SD-FL/FS</b>	<b>1660135</b>	10	

#### Notes:

For further accessories, see page 642

#### Accessories



**Cable glands**  
From page 680



**Cover plates**  
From page 648



**Replacement seals**  
From page 651

# Heavy-duty connectors

## HEAVYCON D - housing

### Size D50, metal, sleeve housing for double locking latch

#### General data


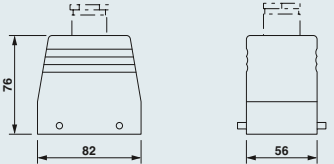

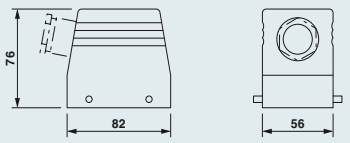
Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	-
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP65

#### Technical data

Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	-
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 76 mm 	1x M25 1x M32  1x Pg21 1x Pg29	Cable outlet: top HC-D 50-TFQ-76/O1STM25G HC-D 50-TFQ-76/O1STM32G HC-D50-TFQ-76/O1PG21G HC-D50-TFQ-76/O1PG29G	1645192 1645215 1416394 1416395	10 10 10 10	
<b>Sleeve housing</b> Height: 76 mm 	1x M25 1x M32  1x Pg21 Pg29	Cable outlet: lateral HC-D 50-TFQ-76/O1STM25S HC-D 50-TFQ-76/O1STM32S HC-D50-TFQ-76/O1PG21S HC-D50-TFQ-76/O1PG29S	1645202 1645286 1416396 1416397	10 10 10 10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680

### Size D50, metal, supporting base element with double locking latch

#### General data


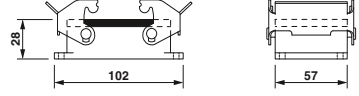

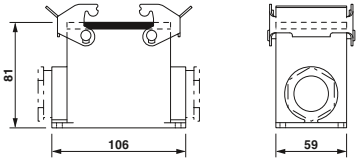

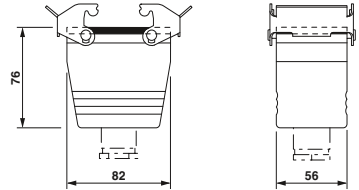


Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Aluminum die-cast  
Steel, galvanized  
NBR  
-40 °C ... 125 °C  
IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 28 mm 		Without cover HC-D 50-AMQ	1775868	10	
<b>Box mounting base</b> Height: 81 mm 	1x M25 1x M32 1x Pg21 1x Pg29 2x M25 2x M32 2x Pg21 2x Pg29	HC-D 50-SMQ-81/O1M25 HC-D 50-SMQ-81/O1M32 HC-D50-SMQ-81/O1PG21 HC-D50-SMQ-81/O1PG29 HC-D 50-SMQ-81/O2M25 HC-D 50-SMQ-81/O2M32 HC-D50-SMQ-81/O2PG21 HC-D50-SMQ-81/O2PG29	1604908 1604909 1416398 1416399 1416383 1604910 1416400 1416401	10 10 10 10 10 10 10 10	
<b>Coupling housing</b> Height: 76 mm 	1x M25 1x M32 1x Pg21 1x Pg29	HC-D 50-KMQ-76/O1M25 HC-D 50-KMQ-76/O1M32 HC-D50-KMQ-76/O1PG21 HC-D50-KMQ-76/O1PG29	1604970 1604971 1416403 1416404	10 10 10 10	
<b>Protective cover, plastic</b> 		HC-D 50-SD-FQ/FS	1660193	10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### D40, D64 series

250 V, 10 A

Connection technology:

– Crimp connection

Coding pins and sockets are mandatory for HC-D... and HC-DD series contact inserts.

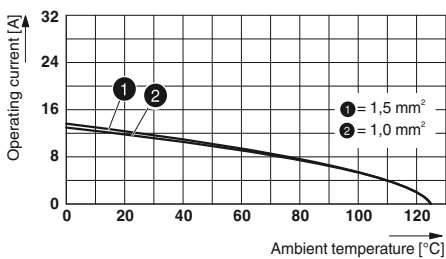
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



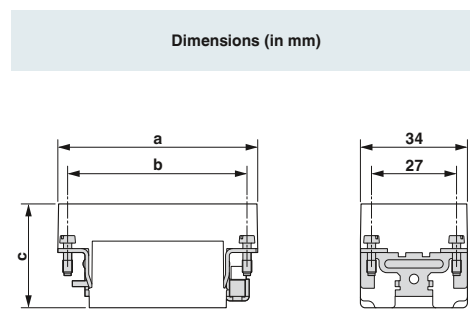
Type	Technical data			
	① HC-D 40-I-CT-...		② HC-D 64-I-CT-...	
Approvals	ERC		ERC	
IEC data				
Rated current, contacts (at 40°C)	A	10	10	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	250	250	
Rated surge voltage, contacts	kV	4	4	
Connection cross section	mm <sup>2</sup>	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	-	-	
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	8	8	
No. of pos.		40	64	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

### Derating curves

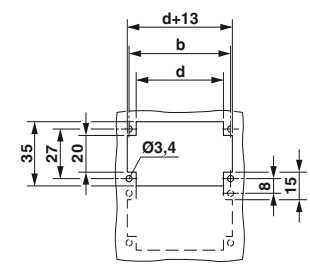


HC-D 40-I-CT-... / HC-D 64-I-CT-...

Description	Pos.	Number	Size	Ordering data		
				Type	Order No. Socket	Order No. Plug
<b>Crimp connection</b> 	40	B16 / B32	① HC-D 40-I-CT-...	1584428	1584415	10
<b>Crimp connection</b> 	64	B24 / B48	② HC-D 64-I-CT-...	1584444	1584431	10
<b>Turned crimp contacts CK 1,6</b> Silver-plated 		<b>Cross section</b> mm <sup>2</sup> / AWG 0.14 - 0.37 / 26 - 22 0.5 / 20 0.75 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14	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
<b>Turned crimp contacts CK 1,6</b> Gold-plated 		<b>Cross section</b> mm <sup>2</sup> / AWG 0.14 - 0.37 / 22 - 24 0.75 / 18 0.75 / 18 0.75 - 1 / 18 1.5 / 16	CK1,6-ED-0,37... AU CK1,6-ED-0,75... AU CK1,6-ED-0,75... AU CK1,6-ED-1,00... AU CK1,6-ED-1,50... AU	1674969 1672440 1672440 1674943 1674930	1674901 1672453 1674914 1674888 1674875	100 100 100 100 100






Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	83.5	77.5	34.2	72
① Plug			32.8	
② Socket	110.5	104.5	34.2	98
② Plug			32.8	

### Accessories

 Crimping tools From page 636	 Coding elements From page 639	 Replacement PE screws From page 640
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# Heavy-duty connectors

## HEAVYCON B - contact inserts

### D40, D64 series Terminal adapters

250 V, 10 A

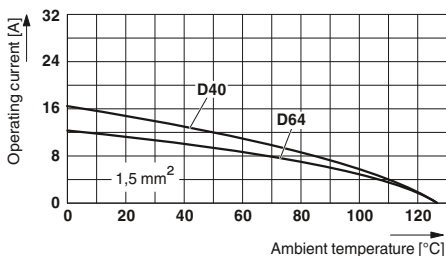
Connection technology:  
– Screw connection

Notes:
For accessories, see from page 634
Not for HC-EVO panel mounting bases
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



Type	Technical data			
	① ② HC-D 40-A-UT-PEL-...	PE left	③ ④ HC-D 64-A-UT-PEL-...	PE left
Approvals		ERC		ERC
IEC data				
Rated current, contacts (at 40°C)	A	10	10	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	250	250	
Rated surge voltage, contacts	kV	4	4	
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.2 ... 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		PA	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	10	
No. of pos.		40	64	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

## Derating curves



HC-D 40-A-UT-PER-.../HC-D 40-A-UT-PER-...



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### D40, D64 series TWIN terminal adapters

250 V, 10 A

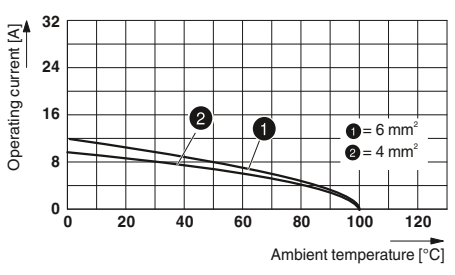
- Connection technology:
- Push-in connection
  - For 2 wires per position

Notes:
For accessories, see from page 634
Not for HC-EVO panel mounting bases
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

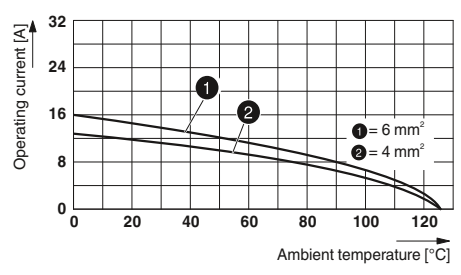


Type	Technical data			
	① ② HC-D 40-A-TWIN-PEL-...	PE left	③ ④ HC-D 64-A-TWIN-PEL-...	PE left
Approvals		ERC		ERC
IEC data				
Rated current, contacts (at 40°C)	A	10	10	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	250	250	
Rated surge voltage, contacts	kV	6	6	
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 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		PA	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		Push-in connection	Push-in connection	
Stripping length	mm	10	10	
No. of pos.		40	64	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

### Derating curves



HC-D 40-A-TWIN-PER-...



HC-D 64-A-TWIN-PER-...



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### DD24, DD42, DD72, DD108 series

250 V, 10 A

Connection technology:

– Crimp connection

Coding pins and sockets are mandatory for HC-D... and HC-DD series contact inserts.

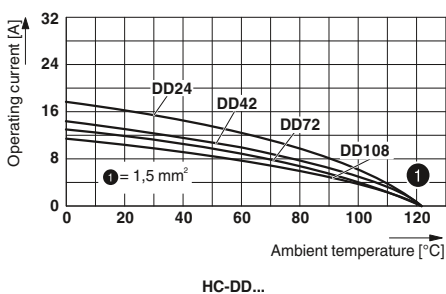
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

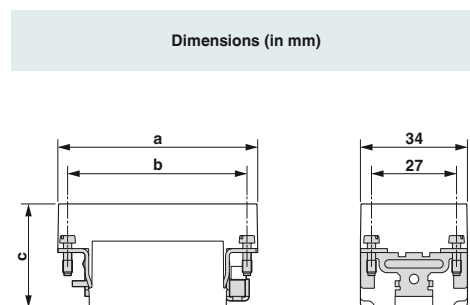


Technical data					
Type		① HC-DD24-I-CT-...	② HC-DD42-I-CT-...	③ ④ HC-DD72-I-CT-...	⑤ ⑥ HC-DD108-I-CT-...
Approvals		UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC
IEC data					
Rated current, contacts (at 40°C)	A	10	10	10	10
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	250	250	250	250
Rated surge voltage, contacts	kV	4	4	4	4
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5
UL data					
Rated voltage	V	250	250	250	250
Rated current	A	10	10	10	10
Connection cross section	AWG	14	14	14	14
CSA / cUL data					
Rated voltage	V	250	250	250	250
Rated current	A	7	7	7	7
Connection cross section	AWG	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	°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
No. of pos.		24	42	72	108
Contact numbering		1 - 24	1 - 42	1 - 72	1 - 108
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

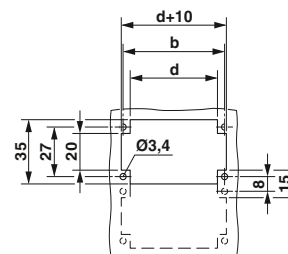
### Derating curves



Description	Pos.	Number	Size	Ordering data			
				Type	Order No. Socket	Order No. Plug	Pcs. / Pkt.
<b>Crimp connection</b> 	24	1 - 24	B6	① HC-DD24-I-CT-...	1584046	1584033	10
<b>Crimp connection</b> 	42	1 - 42	B10	② HC-DD42-I-CT-...	1584062	1584059	10
<b>Crimp connection</b> 	72	1 - 72	B16 / B32	③ HC-DD72-I-CT-...	1584091	1584075	10
	72	73 - 144	B16 / B32	④ HC-DD72-I-CT-...-144	1584101	1584088	10
<b>Crimp connection</b> 	108	1 - 108	B24 / B48	⑤ HC-DD108-I-CT-...	1584130	1584114	10
	108	109 - 216	B24 / B48	⑥ HC-DD108-I-CT-...-216	1584143	1584127	10
<b>Turned crimp contacts CK 1,6</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG				
			0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100
			0.5 / 20	CK1,6-ED-0,50... AG	1663404	1663349	100
			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 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	50.5	44	34.5	36
① Plug			32.5	
② Socket	64	57	34.5	49
② Plug			32.5	
③ Socket	84	77.5	34.5	72
③ Plug			32.5	
④ Socket	84	77.5	34.5	72
④ Plug			32.5	
⑤ Socket	111	104	34.5	98
⑤ Plug			32.5	
⑥ Socket	111	104	34.5	98
⑥ Plug			32.5	

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 639



Crimp contacts, gold-plated  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B6 series

500 V, 16 A

Connection technology:

- Screw connection
- Push-in connection
- Insulation displacement connection
- Crimp connection

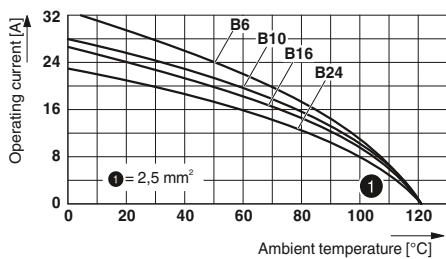
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

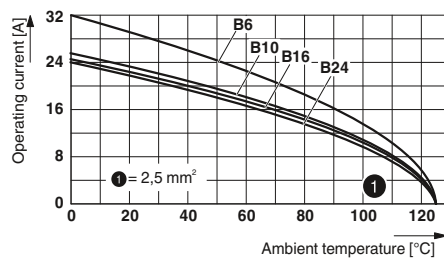


Technical data					
Type		① HC-B 6-I-UT...	② HC-B 6-I-PT...	③ HC-B 6-E...Q-2,5	④ HC-B 6-I-CT...
Approvals		UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC
IEC data					
Rated current, contacts (at 40°C)	A	16	16	16	16
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	500	500	400	500
Rated surge voltage, contacts	kV	6	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.14 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	13	10	13
Connection cross section	AWG	22-14	14	14	22-14
CSA / cUL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	13	10	20
Connection cross section	AWG	22-14	14	16	20-12
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/Sn (tarnish protection)	Ag	Ag (alternatively Au)
Temperature data					
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method		Screw connection	Push-in connection	QUICKON connection	Crimp connection
Stripping length	mm	8	8 ... 10	-	7.5
No. of pos.		6	6	6	6
Contact numbering		1 - 6	1 - 6	1 - 6	1 - 6
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

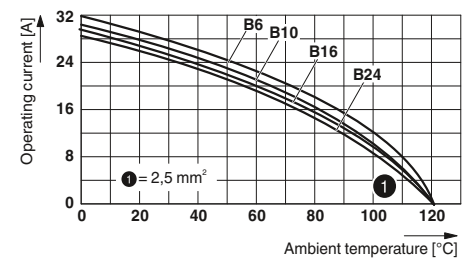
### Derating curves



HC-B 6-I-UT...



HC-B 6-E...Q-2,5



HC-B 6-I-CT...

				Ordering data			Dimensions (in mm)																																																	
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.																																																	
					Socket	Plug																																																		
<b>Screw connection</b>																																																								
	6	1 - 6	B6	① HC-B 6-I-UT...	1648128	1648115	10	<p>Dimensional drawing</p> <p>Panel cutout</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>① Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> <tr> <td>② Socket</td> <td>50.5</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>② Plug</td> <td>50.5</td> <td>44</td> <td>34.4</td> <td>36</td> </tr> <tr> <td>③ Socket</td> <td>51</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>③ Plug</td> <td>51.5</td> <td>44</td> <td>35</td> <td>36</td> </tr> <tr> <td>④ Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>④ Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> </tbody> </table>					a	b	c	d	① Socket	50.5	44	34.6	36	① Plug	50.5	44	32	36	② Socket	50.5	44	37	36	② Plug	50.5	44	34.4	36	③ Socket	51	44	37	36	③ Plug	51.5	44	35	36	④ Socket	50.5	44	34.6	36	④ Plug	50.5	44	32	36
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<b>Push-in connection</b>																																																								
	6	1 - 6	B6	② HC-B 6-I-PT...	1407727	1407728	1	<p>Dimensional drawing</p> <p>Panel cutout</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>① Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> <tr> <td>② Socket</td> <td>50.5</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>② Plug</td> <td>50.5</td> <td>44</td> <td>34.4</td> <td>36</td> </tr> <tr> <td>③ Socket</td> <td>51</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>③ Plug</td> <td>51.5</td> <td>44</td> <td>35</td> <td>36</td> </tr> <tr> <td>④ Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>④ Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> </tbody> </table>					a	b	c	d	① Socket	50.5	44	34.6	36	① Plug	50.5	44	32	36	② Socket	50.5	44	37	36	② Plug	50.5	44	34.4	36	③ Socket	51	44	37	36	③ Plug	51.5	44	35	36	④ Socket	50.5	44	34.6	36	④ Plug	50.5	44	32	36
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	6	1 - 6	B6	③ HC-B 6-E...Q-2,5	1605556	1605611	10	<p>Dimensional drawing</p> <p>Panel cutout</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>① Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> <tr> <td>② Socket</td> <td>50.5</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>② Plug</td> <td>50.5</td> <td>44</td> <td>34.4</td> <td>36</td> </tr> <tr> <td>③ Socket</td> <td>51</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>③ Plug</td> <td>51.5</td> <td>44</td> <td>35</td> <td>36</td> </tr> <tr> <td>④ Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>④ Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> </tbody> </table>					a	b	c	d	① Socket	50.5	44	34.6	36	① Plug	50.5	44	32	36	② Socket	50.5	44	37	36	② Plug	50.5	44	34.4	36	③ Socket	51	44	37	36	③ Plug	51.5	44	35	36	④ Socket	50.5	44	34.6	36	④ Plug	50.5	44	32	36
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<b>Crimp connection</b>																																																								
	6	1 - 6	B6	④ HC-B 6-I-CT...	1648160	1648157	10	<p>Dimensional drawing</p> <p>Panel cutout</p> <table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>① Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> <tr> <td>② Socket</td> <td>50.5</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>② Plug</td> <td>50.5</td> <td>44</td> <td>34.4</td> <td>36</td> </tr> <tr> <td>③ Socket</td> <td>51</td> <td>44</td> <td>37</td> <td>36</td> </tr> <tr> <td>③ Plug</td> <td>51.5</td> <td>44</td> <td>35</td> <td>36</td> </tr> <tr> <td>④ Socket</td> <td>50.5</td> <td>44</td> <td>34.6</td> <td>36</td> </tr> <tr> <td>④ Plug</td> <td>50.5</td> <td>44</td> <td>32</td> <td>36</td> </tr> </tbody> </table>					a	b	c	d	① Socket	50.5	44	34.6	36	① Plug	50.5	44	32	36	② Socket	50.5	44	37	36	② Plug	50.5	44	34.4	36	③ Socket	51	44	37	36	③ Plug	51.5	44	35	36	④ Socket	50.5	44	34.6	36	④ Plug	50.5	44	32	36
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			Cross section mm <sup>2</sup> / AWG																																																					
			0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100																																																	
			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 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100																																																	
			2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100																																																	
			4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100																																																	
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			Cross section mm <sup>2</sup> / AWG																																																					
			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 / 16	CK2,5-ED-1,50... AU	1674820	1674778	100																																																	
			2.5 / 14	CK2,5-ED-2,50... AU	1674862	1674817	100																																																	
			4 / 12	CK2,5-ED-4,00... AU	1674846	1674794	100																																																	

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 638



Replacement PE screws  
From page 640



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B10 series

500 V, 16 A

Connection technology:

- Screw connection
- Push-in connection
- Insulation displacement connection
- Crimp connection

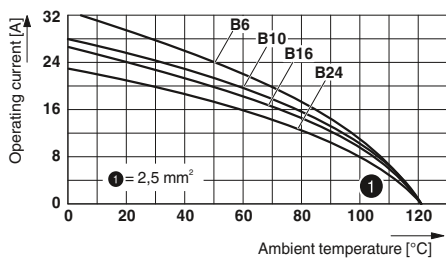
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

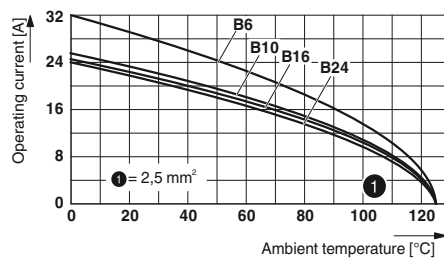


Technical data					
Type		① HC-B 10-I-UT-...	② HC-B 10-I-PT-...	③ HC-B 10-E...Q-2,5	④ HC-B 10-I-CT-...
Approvals					
IEC data					
Rated current, contacts (at 40°C)	A	16	16	16	16
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	500	500	400	500
Rated surge voltage, contacts	kV	6	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.14 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	13	10	13
Connection cross section	AWG	22-14	14	14	22-14
CSA / cUL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	10	10	20
Connection cross section	AWG	22-14	14	16	20-12
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/Sn (tarnish protection)	Ag	Ag (alternatively Au)
Temperature data					
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method		Screw connection	Push-in connection	QUICKON connection	Crimp connection
Stripping length	mm	8	8 ... 10	-	7.5
No. of pos.		10	10	10	10
Contact numbering		1 - 10	1 - 10	1 - 10	1 - 10
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

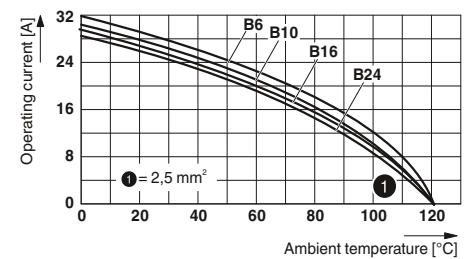
### Derating curves



HC-B 10-I-UT-...



HC-B 10-E...Q-2,5



HC-B 10-I-CT-...

				Ordering data																																																				
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.	Dimensions (in mm)																																																
					Socket	Plug		Dimensional drawing																																																
<b>Screw connection</b>																																																								
	10	1 - 10	B10	① HC-B 10-I-UT-...	1648186	1648173	10																																																	
<b>Push-in connection</b>																																																								
	10	1 - 10	B10	② HC-B 10-I-PT-...	1407729	1407730	1																																																	
<b>Insulation displacement connection</b>																																																								
	10	1 - 10	B10	③ HC-B 10-E...Q-2,5	1605569	1605624	10																																																	
<b>Crimp connection</b>								<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>① Plug</td> <td>64</td> <td>57</td> <td>32</td> <td>49</td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>37</td> <td></td> </tr> <tr> <td>② Plug</td> <td>64</td> <td>57</td> <td>34.4</td> <td>49</td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>37</td> <td></td> </tr> <tr> <td>③ Plug</td> <td>64</td> <td>57</td> <td>35</td> <td>49</td> </tr> <tr> <td>④ Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>④ Plug</td> <td>64</td> <td>57</td> <td>32</td> <td>49</td> </tr> </tbody> </table>					a	b	c	d	① Socket			34.6		① Plug	64	57	32	49	② Socket			37		② Plug	64	57	34.4	49	③ Socket			37		③ Plug	64	57	35	49	④ Socket			34.6		④ Plug	64	57	32	49
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④ Plug	64	57	32	49																																																				
	10	1 - 10	B10	④ HC-B 10-I-CT-...	1648225	1648212	10																																																	
<b>Turned crimp contacts CK 2,5 Silver-plated</b>				<b>Cross section mm<sup>2</sup> / AWG</b>																																																				
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### Accessories



Crimping tools  
From page 636



Coding elements  
From page 638



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B16 series

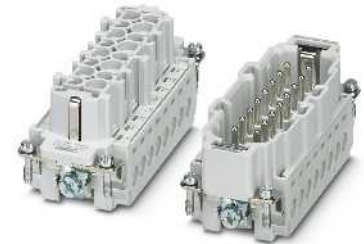
500 V, 16 A

Connection technology:

- Screw connection
- Push-in connection
- Insulation displacement connection
- Crimp connection

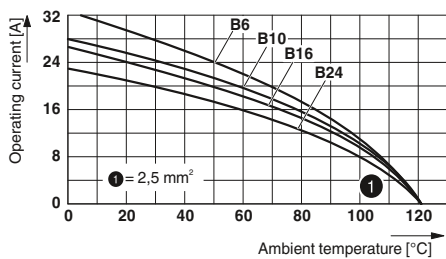
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

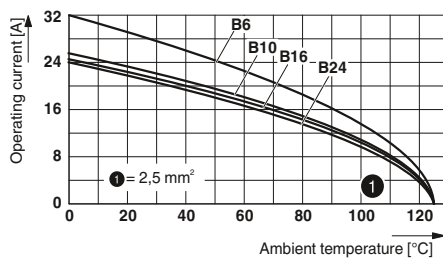


Technical data					
Type		①② HC-B 16-I-UT-...	③④ HC-B 16-I-PT-...	⑤⑥ HC-B 16-E...Q-2,5	⑦⑧ HC-B 16-I-CT-...
Approvals		UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC
IEC data					
Rated current, contacts (at 40°C)	A	16	16	16	16
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	500	500	400	500
Rated surge voltage, contacts	kV	6	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.14 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	13	10	13
Connection cross section	AWG	22-14	14	14	22-14
CSA / cUL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	10	10	20
Connection cross section	AWG	22-14	14	16	20-12
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/Sn (tarnish protection)	Ag	Ag (alternatively Au)
Temperature data					
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method		Screw connection	Push-in connection	QUICKON connection	Crimp connection
Stripping length	mm	8	8 ... 10	-	7.5
No. of pos.		16	16	16	16
Contact numbering		1 - 16	1 - 16	1 - 16	1 - 16
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

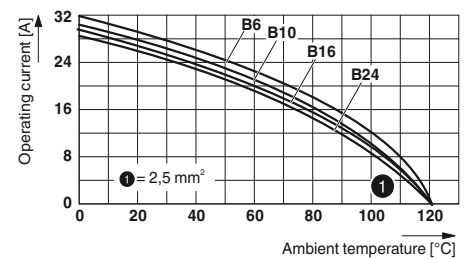
### Derating curves









HC-B 16-I-UT-...

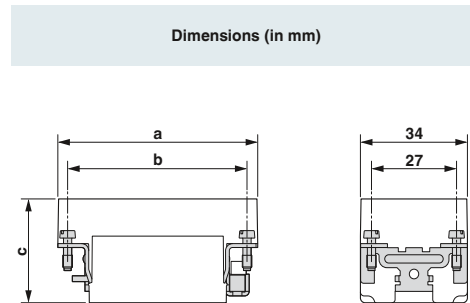


HC-B 16-E...Q-2,5

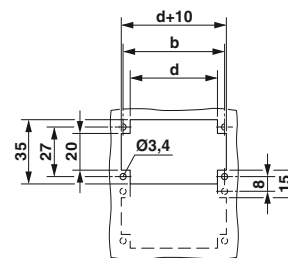


HC-B 16-I-CT-...

Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.
					Socket	Plug	
<b>Screw connection</b>							
	16	1 - 16	B16 / B32	① HC-B 16-I-UT-...	1648241	1648238	10
	16	17 - 32	B16 / B32	② HC-B 16-I-UT-...-32	1584884	1584871	10
<b>Push-in connection</b>							
	16	1 - 16	B16 / B32	③ HC-B 16-I-PT-...	1407731	1407732	1
	16	17 - 32	B16 / B32	④ HC-B 16-I-PT-...-32	1407733	1407734	1
<b>Insulation displacement connection</b>							
	16	1 - 16	B16 / B32	⑤ HC-B 16-E...Q-2,5	1605572	1605637	10
	16	17 - 32	B16 / B32	⑥ HC-B 16-E...Q-2,5-32	1605598	1605653	10
<b>Crimp connection</b>							
	16	1 - 16	B16 / B32	⑦ HC-B 16-I-CT-...	1648283	1648270	10
	16	17 - 32	B16 / B32	⑧ HC-B 16-I-CT-...-32	1584923	1584910	10
<b>Turned crimp contacts CK 2,5 Silver-plated</b>							
	Cross section mm <sup>2</sup> / AWG			CK2,5-ED-0,50... AG	1663640	1663572	100
	0.5 / 20			CK2,5-ED-0,75... AG	1663653	1663585	100
	0.75 - 1 / 18			CK2,5-ED-1,00... AG	1663666	1663598	100
	1.5 / 16			CK2,5-ED-1,50... AG	1663679	1663608	100
	2.5 / 14			CK2,5-ED-2,50... AG	1663682	1663611	100
	4 / 12			CK2,5-ED-4,00... AG	1663705	1663637	100
<b>Turned crimp contacts CK 2,5 Gold-plated</b>							
	Cross section mm <sup>2</sup> / AWG			CK2,5-ED-0,50... AU	1674859	1674804	100
	0.5 / 20			CK2,5-ED-1,00... AU	1674833	1674781	100
	0.75 - 1 / 18			CK2,5-ED-1,50... AU	1674820	1674778	100
	1.5 / 16			CK2,5-ED-2,50... AU	1674862	1674817	100
	2.5 / 14			CK2,5-ED-4,00... AU	1674846	1674794	100
	4 / 12						



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	84	77.5	34.6	72
			32	
② Socket	84	77.5	34.6	72
			32	
③ Socket	84	77.5	37	72
			34.4	
④ Socket	84	77.5	37	72
			34.4	
⑤ Socket	84.5	77.5	37	72
			35	
⑥ Socket	84.5	77.5	37	72
			35	
⑦ Socket	84	77.5	34.6	72
			32	
⑧ Socket	84	77.5	34.6	72
			32	

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 638



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B24 series

500 V, 16 A

Connection technology:

- Screw connection
- Push-in connection
- Insulation displacement connection
- Crimp connection

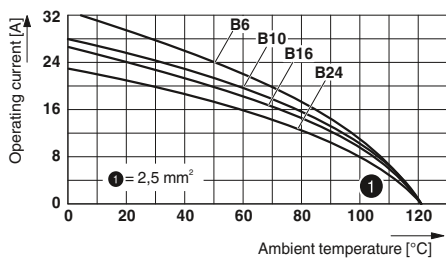
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

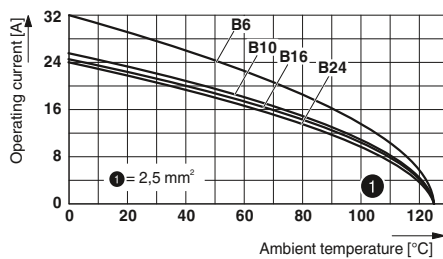


Technical data					
Type		① ② HC-B 24-I-UT-...	③ ④ HC-B 24-I-PT-...	⑤ ⑥ HC-B 24-E...Q-2,5	⑦ ⑧ HC-B 24-I-CT-...
Approvals		UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC	UL, VDE, ENEC
IEC data					
Rated current, contacts (at 40°C)	A	16	16	16	16
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	500	500	400	500
Rated surge voltage, contacts	kV	6	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.14 ... 2.5	0.34 ... 2.5	0.5 ... 4
UL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	13	10	13
Connection cross section	AWG	22-14	14	14	22-14
CSA / cUL data					
Rated voltage	V	600	600	600	600
Rated current	A	13	10	10	20
Connection cross section	AWG	22-14	14	16	20-12
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/Sn (tarnish protection)	Ag	Ag (alternatively Au)
Temperature data					
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125	-40 ... 125
General data					
Connection method		Screw connection	Push-in connection	QUICKON connection	Crimp connection
Stripping length	mm	8	8 ... 10	-	7.5
No. of pos.		24	24	24	24
Contact numbering		1 - 24	1 - 24	1 - 24	1 - 24
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

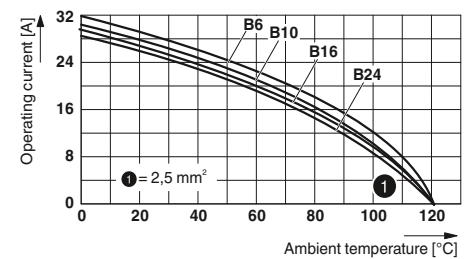
### Derating curves




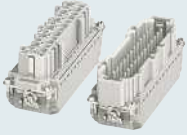



HC-B 24-I-UT-...



HC-B 24-E...Q-2,5



HC-B 24-I-CT-...

				Ordering data							
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.	Dimensions (in mm)			
					Socket	Plug		Dimensional drawing			
<b>Screw connection</b>											
	24	1 - 24	B24 / B48	① HC-B 24-I-UT-...	1648306	1648296	10				
	24	25 - 48	B24 / B48	② HC-B 24-I-UT-...-48	1584949	1584936	10				
	24	1 - 24	B24 / B48	③ HC-B 24-I-PT-...	1407735	1407736	1				
	24	25 - 48	B24 / B48	④ HC-B 24-I-PT-...-48	1407737	1407738	1				
<b>Push-in connection</b>											
	24	1 - 24	B24 / B48	⑤ HC-B 24-E...Q-2,5	1605585	1605640	10				
	24	1 - 24	B24 / B48	⑥ HC-B 24-E...Q-2,5-48	1605608	1605666	10				
<b>Insulation displacement connection</b>											
	24	1 - 24	B24 / B48	⑦ HC-B 24-I-CT-...	1648348	1648335	10				
	24	25 - 48	B24 / B48	⑧ HC-B 24-I-CT-...-48	1584981	1584978	10				
<b>Crimp connection</b>											
	24	1 - 24	B24 / B48	⑦ HC-B 24-I-CT-...	1648348	1648335	10				
	24	25 - 48	B24 / B48	⑧ HC-B 24-I-CT-...-48	1584981	1584978	10				
<b>Turned crimp contacts CK 2,5 Silver-plated</b>											
											

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B6, B10, B16, B24 series UT... terminal adapters

500 V, 16 A

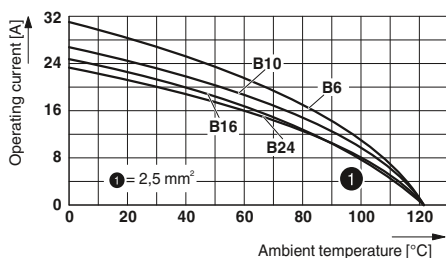
Connection technology:  
– Screw connection

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4









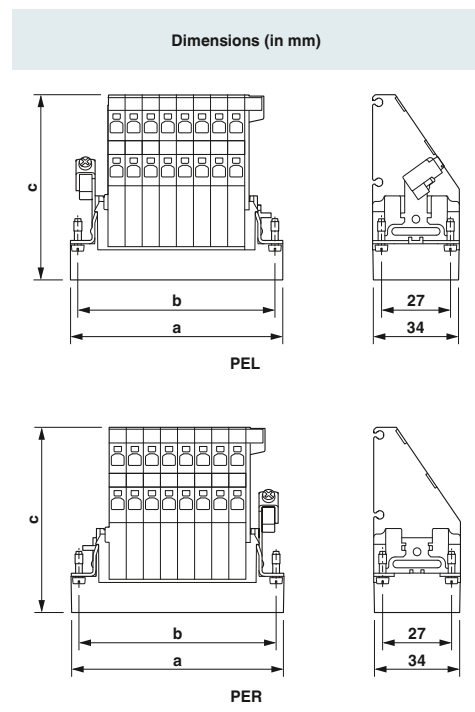
Type	Technical data			
	① ② HC-B 6-A-UT-PEL-...	③ ④ HC-B 10-A-UT-PEL-...	⑤ ⑥ HC-B 16-A-UT-PEL-...	⑦ ⑧ HC-B 24-A-UT-PEL-...
Approvals	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC
IEC data				
Rated current, contacts (at 40°C)	A	16	16	16
Surge voltage category		III	III	III
Pollution degree		3	3	3
Rated voltage (III/3) contacts	V	500	500	500
Rated surge voltage, contacts	kV	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5
UL data				
Rated voltage	V	600	600	600
Rated current	A	13	13	13
Connection cross section	AWG	22-14	22-14	22-14
CSA / cUL data				
Rated voltage	V	600	600	600
Rated current	A	13	13	13
Connection cross section	AWG	22-14	22-14	22-14
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	Ag	Ag
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method		Screw connection	Screw connection	Screw connection
Stripping length	mm	12	12	12
No. of pos.		6	10	24
Contact numbering		1 - 6	1 - 10	1 - 24
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500

## Derating curves



HC-B ...-A-UT-...

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.
					Socket	Plug	
<b>Screw connection</b> 	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
<b>Screw connection</b> 	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
<b>Screw connection</b> 	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
<b>Screw connection</b> 	24	1 - 24	B24	PE left ⑦ HC-B 24-A-UT-PEL-...	1648054	1648060	5
	24	1 - 24	B24	PE right ⑧ HC-B 24-A-UT-PER-...	1648102	1648108	5
<b>Foot element</b> 				HC-KA-FE	1775240		10
<b>Locking screw barrel</b> 				HC-VSH	1660083		10

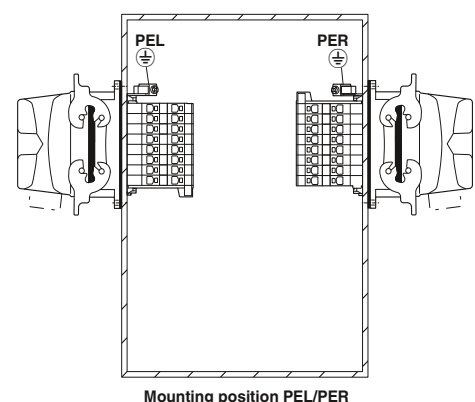


	a	b	c	d
① Socket	51	44	74.2	
① Plug	51	44	71.6	
② Socket	51	44	74.2	
② Plug	51	44	71.6	
③ Socket	64	57	74.2	
③ Plug	64	57	71.6	
④ Socket	64	57	74.2	
④ Plug	64	57	71.6	
⑤ Socket	84.5	77.5	74.2	
⑤ Plug	84.5	77.5	71.6	
⑥ Socket	84.5	77.5	74.2	
⑥ Plug	84.5	77.5	71.6	
⑦ Socket	111	104	74.2	
⑦ Plug	111	104	71.6	
⑧ Socket	111	104	74.2	
⑧ Plug	111	104	71.6	

### Accessories



Coding elements  
From page 638





# Heavy-duty connectors

## HEAVYCON B - contact inserts

### B6, B10, B16, B24 series DT terminal adapters

500 V, 16 A

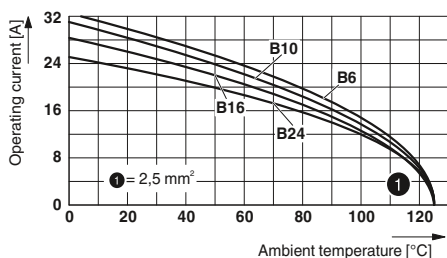
Connection technology:  
– Push-in connection

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4









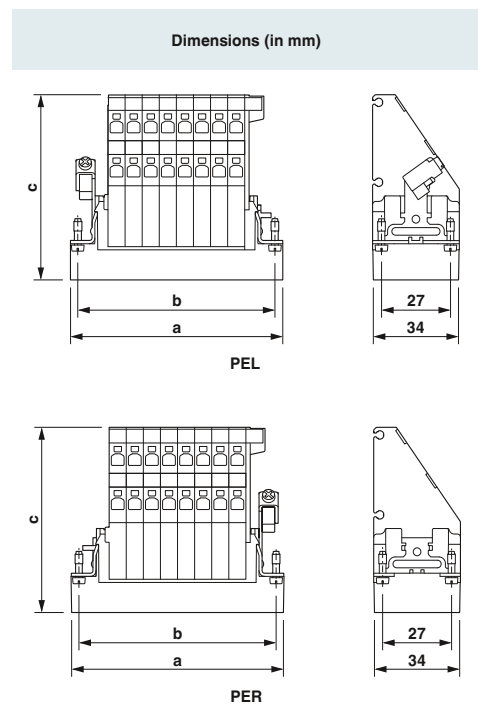
Type	Technical data			
	① ② HC-B 6-A-DT-PEL-...	③ ④ HC-B 10-A-DT-PEL-...	⑤ ⑥ HC-B 16-A-DT-PEL-...	⑦ ⑧ HC-B 24-A-DT-PEL-...
Approvals	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC	PE left UL, VDE, ENEC
IEC data				
Rated current, contacts (at 40°C)	A	16	16	16
Surge voltage category		III	III	III
Pollution degree		3	3	3
Rated voltage (III/3) contacts	V	500	500	500
Rated surge voltage, contacts	kV	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 2.5	0.5 ... 2.5	0.5 ... 2.5
UL data				
Rated voltage	V	600	600	600
Rated current	A	13	13	13
Connection cross section	AWG	22-14	22-14	22-14
CSA / cUL data				
Rated voltage	V	600	600	600
Rated current	A	13	13	13
Connection cross section	AWG	22-14	22-14	22-14
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	Ag	Ag
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	10	10	10
No. of pos.		6	10	16
Contact numbering		1 - 6	1 - 10	1 - 16
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500

## Derating curves



HC-B ...-A-DT-PER...

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.
					Socket	Plug	
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
	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

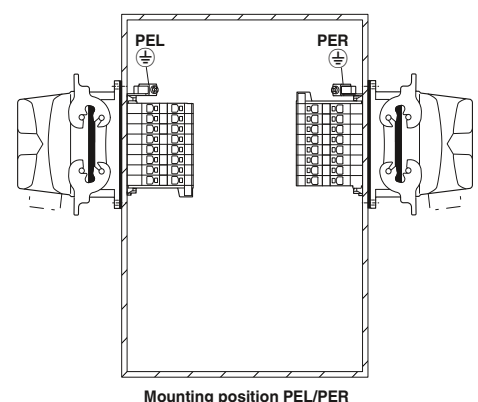


	a	b	c	d
① Socket			72.1	
① Plug	50.5	44	70.5	
② Socket			72.1	
② Plug	50.5	44	70.5	
③ Socket			72.1	
③ Plug	64	57	70.5	
④ Socket			72.1	
④ Plug	64	57	70.5	
⑤ Socket			72.1	
⑤ Plug	84	77.5	70.5	
⑥ Socket			72.1	
⑥ Plug	84	77.5	70.5	
⑦ Socket			72.1	
⑦ Plug	111	104	70.5	
⑧ Socket			72.1	
⑧ Plug	111	104	70.5	

### Accessories



Coding elements  
From page 638



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### BB10, BB18, BB32, BB46 series

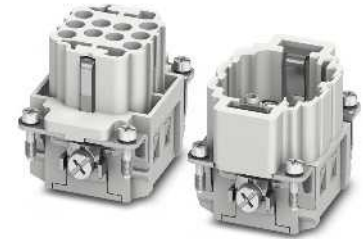
500 V, 16 A

Connection technology:

– Crimp connection

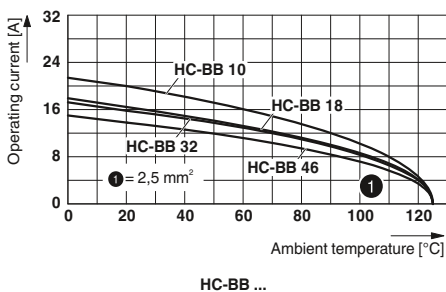
To determine the corresponding housing, see cross-reference list on page 482.


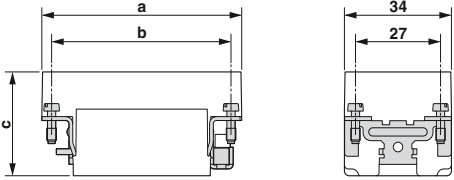

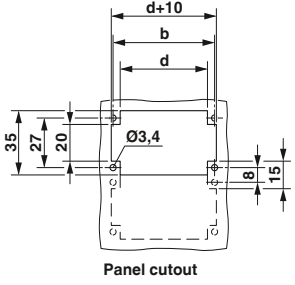

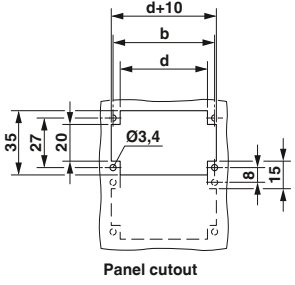



Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



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	ERC				
IEC data					
Rated current, contacts (at 40°C)	A	16	16	16	16
Surge voltage category		III	III	III	III
Pollution degree		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	mm <sup>2</sup>	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	-	-	-	-
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 (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
No. of pos.		10	18	32	46
Contact numbering		1 - 10	1 - 18	1 - 32	1 - 46
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500

## Derating curves



Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																																																	
					Socket	Plug																																																																			
<b>Crimp connection</b>																																																																									
	10	1 - 10	B6	① HC-BB 10-I-CT-...	1584703	1584774	1																																																																		
<b>Crimp connection</b>																																																																									
	18	1 - 18	B10	② HC-BB 18-I-CT-...	1584729	1584716	1																																																																		
<b>Crimp connection</b>																																																																									
	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																																																																		
<b>Crimp connection</b>																																																																									
	46	1 - 46	B24 / B48	⑤ HC-BB 46-I-CT-...	1584758	1584761	1	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>51</td> <td>44</td> <td>32.5</td> <td></td> </tr> <tr> <td>① Plug</td> <td></td> <td></td> <td>33.2</td> <td>35</td> </tr> <tr> <td>② Socket</td> <td>64</td> <td>57</td> <td>32.5</td> <td>48</td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td>33.2</td> <td></td> </tr> <tr> <td>③ Socket</td> <td>84.5</td> <td>77.5</td> <td>32.5</td> <td>68.5</td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td>33.2</td> <td></td> </tr> <tr> <td>④ Socket</td> <td>84.5</td> <td>77.5</td> <td>32.5</td> <td>68.5</td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td>33.2</td> <td></td> </tr> <tr> <td>⑤ Socket</td> <td>111</td> <td>104</td> <td>32.5</td> <td>95</td> </tr> <tr> <td>⑤ Plug</td> <td></td> <td></td> <td>33.2</td> <td></td> </tr> <tr> <td>⑥ Socket</td> <td>111</td> <td>104</td> <td>32.5</td> <td>95</td> </tr> <tr> <td>⑥ Plug</td> <td></td> <td></td> <td>33.2</td> <td></td> </tr> </tbody> </table>		a	b	c	d	① Socket	51	44	32.5		① Plug			33.2	35	② Socket	64	57	32.5	48	② Plug			33.2		③ Socket	84.5	77.5	32.5	68.5	③ Plug			33.2		④ Socket	84.5	77.5	32.5	68.5	④ Plug			33.2		⑤ Socket	111	104	32.5	95	⑤ Plug			33.2		⑥ Socket	111	104	32.5	95	⑥ Plug			33.2	
	a	b	c	d																																																																					
① Socket	51	44	32.5																																																																						
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	46	47 - 92	B24 / B48	⑥ HC-BB 46-I-CT-... 47-92	1406545	1406546	1																																																																		
<b>Turned crimp contacts CK 2,5 Silver-plated</b>			<b>Cross section mm<sup>2</sup> / AWG</b>																																																																						
			0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100																																																																		
			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 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100																																																																		
			2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100																																																																		
			4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100																																																																		
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			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 / 16	CK2,5-ED-1,50... AU	1674820	1674778	100																																																																		
			2.5 / 14	CK2,5-ED-2,50... AU	1674862	1674817	100																																																																		
			4 / 12	CK2,5-ED-4,00... AU	1674846	1674794	100																																																																		

### Accessories



Crimping tools  
From page 636



Coding profiles  
From page 638



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### BBB40, BBB64 series

500 V, 16 A

Connection technology:

– Crimp connection

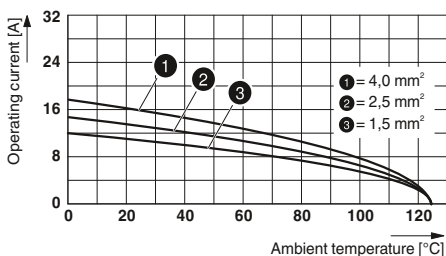
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4


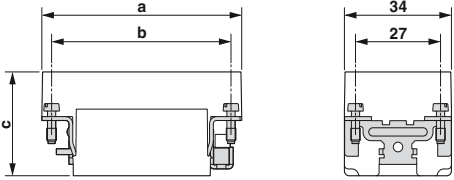

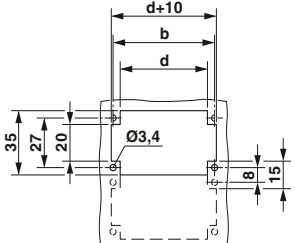




Type	Technical data		
	① HC-BBB 40-E...C	② HC-BBB 64-E...C	
Approvals			
IEC data			
Rated current, contacts (at 40°C)	A	16	16
Surge voltage category		III	III
Pollution degree		3	3
Rated voltage (III/3) contacts	V	500	500
Rated surge voltage, contacts	kV	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 4	0.5 ... 4
UL data			
Rated voltage	V	500	500
Rated current	A	-	-
Connection cross section	AWG	12	12
CSA / cUL data			
Rated voltage	V	500	500
Rated current	A	-	-
Connection cross section	AWG	12	12
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
No. of pos.		40	64
Contact numbering		1 - 40	1 - 64
Insertion/withdrawal cycles		≥ 500	≥ 500

### Derating curves



HC-BBB ...

Description	Pos.	Number	Size	Ordering data			Pcs. / Pkt.	Dimensions (in mm)																									
				Type	Order No. Socket	Order No. Plug																											
<b>Crimp connection</b>  	40	1 - 40	B16 / B32	① HC-BBB 40-E...C	1409930	1409921	1																										
<b>Crimp connection</b>  	64	1 - 64	B24 / B48	② HC-BBB 64-E...C	1409914	1409901	1																										
								 <p>Dimensional drawing</p> <p>Panel cutout</p>																									
								<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>84</td> <td>77.5</td> <td>37</td> <td>68.5</td> </tr> <tr> <td>① Plug</td> <td>84.5</td> <td>77.5</td> <td>34.4</td> <td>68.5</td> </tr> <tr> <td>② Socket</td> <td>111</td> <td>104</td> <td>39</td> <td>95</td> </tr> <tr> <td>② Plug</td> <td>111</td> <td>104</td> <td>36.4</td> <td>95</td> </tr> </tbody> </table>		a	b	c	d	① Socket	84	77.5	37	68.5	① Plug	84.5	77.5	34.4	68.5	② Socket	111	104	39	95	② Plug	111	104	36.4	95
	a	b	c	d																													
① Socket	84	77.5	37	68.5																													
① Plug	84.5	77.5	34.4	68.5																													
② Socket	111	104	39	95																													
② Plug	111	104	36.4	95																													
<b>Turned crimp contacts CK 2,5</b> Silver-plated			<b>Cross section</b> mm <sup>2</sup> / AWG																														
			0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100																										
			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 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100																										
			2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100																										
			4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100																										
<b>Turned crimp contacts CK 2,5</b> Gold-plated			<b>Cross section</b> mm <sup>2</sup> / AWG																														
			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 / 16	CK2,5-ED-1,50... AU	1674820	1674778	100																										
			2.5 / 14	CK2,5-ED-2,50... AU	1674862	1674817	100																										
			4 / 12	CK2,5-ED-4,00... AU	1674846	1674794	100																										

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 639



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### HV03 series

### High-voltage applications

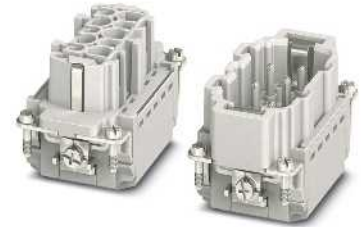
830 V, 16 - 25 A



#### Connection technology:


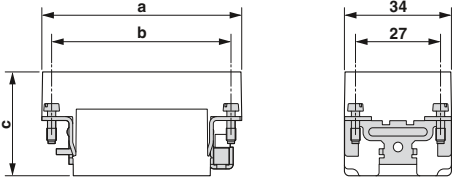

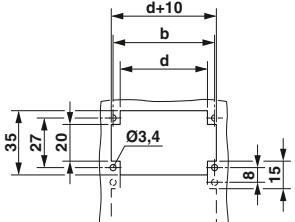



- Push-in connection
- Crimp connection
  
- With 2 lagging switch contacts
- For all size B housing

To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



Type	Technical data			
	① HC-HV03-I-PT-...	② HC-HV03-I-CT-...		
Approvals				
IEC data				
Rated current, contacts (at 40°C)	A	16	25	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	830	830	
Rated surge voltage, contacts	kV	8	8	
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
CSA / cUL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
Material data				
Contact carrier material		PA	PA	
Inflammability class in acc. with UL 94		V0	V0	
Contact material		Copper alloy	Copper alloy	
Contact surface material		-	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Push-in connection	Crimp connection	
Stripping length	mm	8 ... 10	7.5	
No. of pos.		3	3	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

				Ordering data										
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.	Dimensions (in mm)						
					Socket	Plug		Dimensional drawing						
<b>Push-in connection</b> 	3 / 2		B10	① HC-HV03-I-PT...	1407743	1407739	1							
<b>Crimp connection</b> 	3 / 2		B10	② HC-HV03-I-CT...	1405261	1405260	1	 Dimensional drawing Panel cutout						
<b>Turned crimp contacts CK 2,5</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG											
			0.5 / 20	CK2,5-ED-0,50... AG	1663640	1663572	100							
			0.75 - 1 / 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 / 16	CK2,5-ED-1,50... AG	1663679	1663608	100							
			2.5 / 14	CK2,5-ED-2,50... AG	1663682	1663611	100							
			4 / 12	CK2,5-ED-4,00... AG	1663705	1663637	100							
<b>Turned crimp contacts CK 2,5</b> Gold-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG											
			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 / 16	CK2,5-ED-1,50... AU	1674820	1674778	100							
			2.5 / 14	CK2,5-ED-2,50... AU	1674862	1674817	100							
			4 / 12	CK2,5-ED-4,00... AU	1674846	1674794	100							
<b>Turned switch contacts CK 2,5</b> Pin, silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG											
			1 / 18	CK2,5-ED-1,00ST-S AG		1663857								
			1.5 / 16	CK2,5-ED-1,50ST-S AG		1663860								
			2.5 / 14	CK2,5-ED-2,50ST-S AG		1663873								

	a	b	c	d
① Socket			34.6	
① Plug	64	57	32	49
② Socket	64	57	34.6	
② Plug			32	49

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 639



Replacement PE screws  
From page 640



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### HV06 series

### High-voltage applications

830 V, 16 - 25 A

Connection technology:


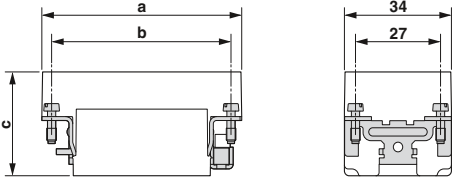

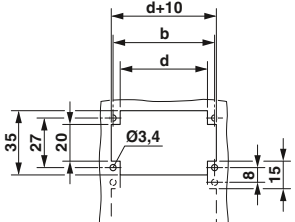



- Push-in connection
- Crimp connection
  
- With 2 lagging switch contacts
- For all size B housing

To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



Type	Technical data			
	① HC-HV06-I-PT-...	② HC-HV06-I-CT-...		
Approvals		ERC		
IEC data				
Rated current, contacts (at 40°C)	A	16	25	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	830	830	
Rated surge voltage, contacts	kV	8	8	
Connection cross section	mm²	0.14 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
CSA / cUL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
Material data				
Contact carrier material		PA	PA	
Inflammability class in acc. with UL 94		V0	V0	
Contact material		Copper alloy	Copper alloy	
Contact surface material		-	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Push-in connection	Crimp connection	
Stripping length	mm	8 ... 10	7.5	
No. of pos.		6	6	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

				Ordering data																																
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.	Dimensions (in mm)																												
					Socket	Plug		Dimensional drawing																												
<b>Push-in connection</b> 	6 / 2	B16 / B32		① HC-HV06-I-PT...	1407744	1407740	1																													
<b>Crimp connection</b> 	6 / 2	B16 / B32		② HC-HV06-I-CT...	1405263	1405262	1	 <p>Panel cutout</p>																												
<b>Turned crimp contacts CK 2,5</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.5 / 20 0.75 - 1 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>① Plug</td> <td>84</td> <td>77.5</td> <td>32</td> <td>72</td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>② Plug</td> <td>84</td> <td>77.5</td> <td>32</td> <td>72</td> </tr> </tbody> </table>					a	b	c	d	① Socket			34.6		① Plug	84	77.5	32	72	② Socket			34.6		② Plug	84	77.5	32	72
	a	b	c	d																																
① Socket			34.6																																	
① Plug	84	77.5	32	72																																
② Socket			34.6																																	
② Plug	84	77.5	32	72																																
<b>Turned crimp contacts CK 2,5</b> Gold-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.5 / 20 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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																													
<b>Turned switch contacts CK 2,5</b> Pin, silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 1 / 18 1.5 / 16 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 636



Coding elements  
From page 639



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### HV10 series

### High-voltage applications

830 V, 16 - 25 A

Connection technology:


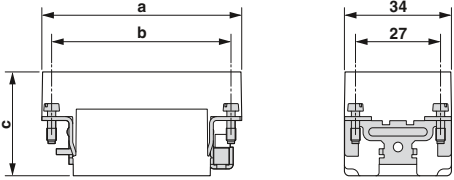

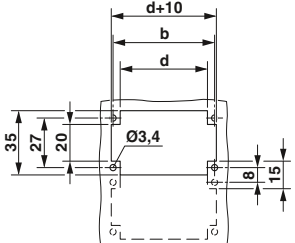



- Push-in connection
- Crimp connection
  
- With 2 lagging switch contacts
- For all size B housing

To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



Type	Technical data			
	① HC-HV10-I-PT-...	② HC-HV10-I-CT-...		
Approvals		ERC		
IEC data				
Rated current, contacts (at 40°C)	A	16	25	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	830	830	
Rated surge voltage, contacts	kV	8	8	
Connection cross section	mm²	0.14 ... 2.5	0.5 ... 4	
UL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
CSA / cUL data				
Rated voltage	V	800	-	
Rated current	A	13	-	
Connection cross section	AWG	14	-	
Material data				
Contact carrier material		PA	PA	
Inflammability class in acc. with UL 94		V0	V0	
Contact material		Copper alloy	Copper alloy	
Contact surface material		-	Ag (alternatively Au)	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Push-in connection	Crimp connection	
Stripping length	mm	8 ... 10	7.5	
No. of pos.		10	10	
Contact numbering		-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

				Ordering data																																
Description	Pos.	Number	Size	Type	Order No.		Pcs. / Pkt.	Dimensions (in mm)																												
					Socket	Plug		Dimensional drawing																												
<b>Push-in connection</b> 	10 / 2	B24 / B48		① HC-HV10-I-PT...	1407745	1407741	1																													
<b>Crimp connection</b> 	10 / 2	B24 / B48		② HC-HV10-I-CT...	1405265	1405264	1	 <p>Panel cutout</p>																												
<b>Turned crimp contacts CK 2,5</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.5 / 20 0.75 - 1 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>① Plug</td> <td>111</td> <td>104</td> <td>32</td> <td>98</td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>34.6</td> <td></td> </tr> <tr> <td>② Plug</td> <td>111</td> <td>104</td> <td>32</td> <td>98</td> </tr> </tbody> </table>					a	b	c	d	① Socket			34.6		① Plug	111	104	32	98	② Socket			34.6		② Plug	111	104	32	98
	a	b	c	d																																
① Socket			34.6																																	
① Plug	111	104	32	98																																
② Socket			34.6																																	
② Plug	111	104	32	98																																
<b>Turned crimp contacts CK 2,5</b> Gold-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.5 / 20 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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																													
<b>Turned switch contacts CK 2,5</b> Pin, silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 1 / 18 1.5 / 16 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 636



Coding elements  
From page 639



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### HS series

### High-current applications

400/690 V, 41A  
1000 V, 80 A

Connection technology:

– Screw connection

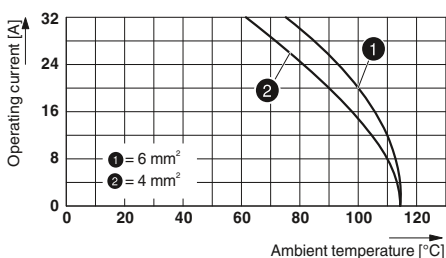
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) For solid conductors and stranded wires with wire end protection

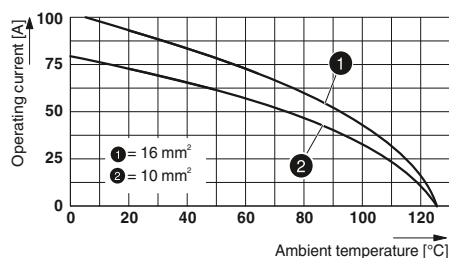


Technical data				
Type		① ② HC-HS06-I-UT-...	③ HC-K 6/0-E...S	
Approvals		ERC	ERC	
IEC data				
Rated current, contacts (at 40°C)	A	41	80	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	400 / 690	1000	
Rated surge voltage, contacts	kV	6	8	
Connection cross section	mm <sup>2</sup>	0.5 ... 6	6 ... 16	
UL data				
Rated voltage	V	600	600	
Rated current	A	35	-	
Connection cross section	AWG	10	10-6	
CSA / cUL data				
Rated voltage	V	-	-	
Rated current	A	-	-	
Connection cross section	AWG	-	-	
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	-	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Screw connection	Screw connection	
Stripping length	mm	10	15	
No. of pos.		6	6	
Contact numbering		1 - 6	1-6	
Insertion/withdrawal cycles		≥ 500	≥ 500	

## Derating curves

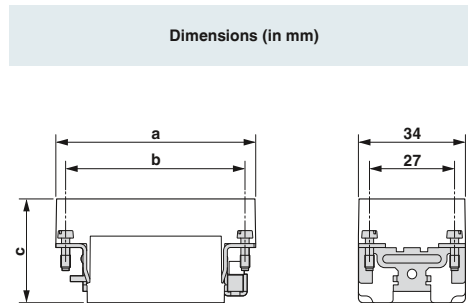


HC-HS06-I-UT-...

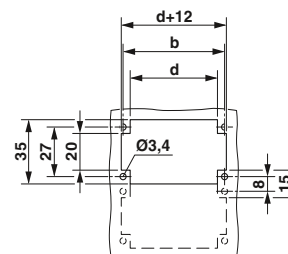


HC-K 6/0-E...S

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.
					Socket	Plug	
<b>Screw connection</b>  	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
<b>Screw connection<sup>1)</sup></b>  	6	1 - 6	B16 / B32	③ HC-K 6/0-E...S	1580537	1580538	10



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	84.5	77.5	34	72
① Plug	84.5	77.5	34	72
② Socket	84.5	77.5	34	72
② Plug	84.5	77.5	34	72
③ Socket	84	77.4	49.7	72
③ Plug	84	77.4	46.3	72

### Accessories



Coding profiles  
From page 638



Replacement PE screws  
From page 640



Replacement PE terminal block base  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### K series

#### Combination applications

400 - 830 V, 40 - 80 A

Connection technology:

- Power and control contacts
- Screw connection

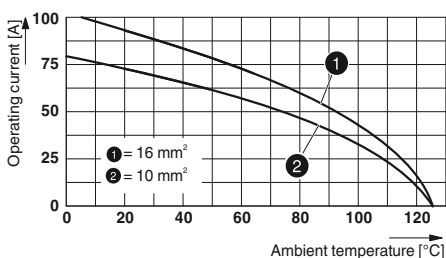
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) For solid conductors and stranded wires with wire end protection

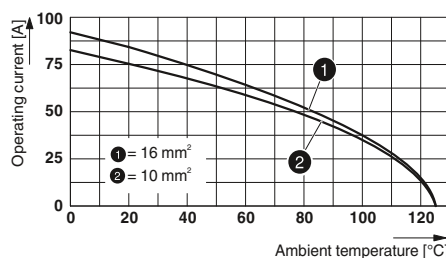


Type	Technical data						
	① HC-K 4/0-E...S		② HC-K 4/8-E...S		③ HC-K 6/12-E...S		
	Power contacts	Control contacts	Power contacts	Control contacts	Power contacts	Control contacts	
Approvals	CE ENEC 94		CE ENEC 94		CE ENEC 94		
IEC data							
Rated current	A	80	-	80	16	40	10
Surge voltage category			III		III		III
Pollution degree		3		3		3	
Rated voltage (III/3) contacts	V	830	-	400	400	690	230 / 400
Rated surge voltage, contacts	kV	8	-	6	6	8	4
Connection cross section	mm <sup>2</sup>	1.5 ... 16	-	1.5 ... 16	0.5 ... 2.5	2.5 ... 8	0.2 ... 2.5
UL data							
Rated voltage	V	600	-	600	-	600	-
Rated current	A	-	-	-	-	-	-
Connection cross section	AWG	-	-	-	-	-	-
CSA / cUL data							
Rated voltage	V	600	-	600	-	600	-
Rated current	A	80	-	80	-	40	-
Connection cross section	AWG	5	-	16-4	-	13-7	-
Material data							
Contact carrier material		PC		PA		PC	
Inflammability class in acc. with UL 94		V0		HB		V0	
Contact material		Cu alloy		Cu alloy		Cu alloy	
Contact surface material		Ag	-	Ag	Ag	Ag	Ag
Temperature data							
Ambient temperature range	°C	-40 ... 125		-40 ... 125		-40 ... 125	
General data							
Connection method		Screw connection	-	Screw connection	Screw connection	Axial screw connection	Screw connection
Hexagonal socket	mm	-	-	-	-	2	-
Stripping length	mm	-	-	14	7	8	10
No. of pos.		4	-	4	8	6	12
Contact numbering		1 - 4	-	1 - 4	1 - 8	1 - 6	1 - 12
Insertion/withdrawal cycles		≥ 500		≥ 500		≥ 500	

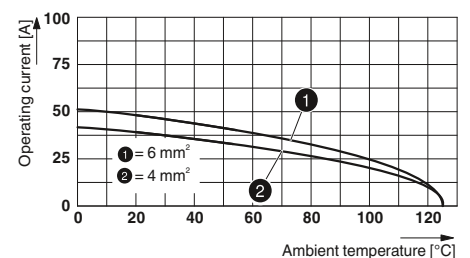
### Derating curves



HC-K 4/0-E...S

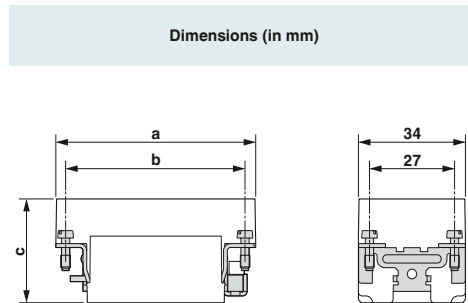


HC-K 4/8-E...S

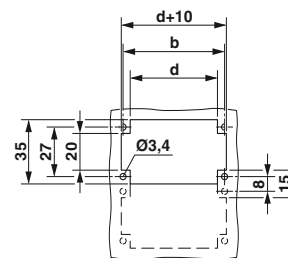


HC-K 6/12-E...S

Description	Pos.	Number	Size	Type	Ordering data		Pcs. / Pkt.
					Socket	Plug	
Screw connection <sup>1)</sup> 	4	1 - 4	B16 / B32	① HC-K 4/0-E...S	1679427	1679414	1
Screw connection <sup>1)</sup> 	4 / 8	1 - 4	B24 / B48	② HC-K 4/8-E...S	1679320	1679333	1
Axial screw connection 	6 / 12	1 - 6	B16 / B32	③ HC-K 6/12-E...S	1636363	1636350	1



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	84.5	77.5	44.2	72
① Plug			42	
② Socket	111	104	44.2	98
② Plug			42	
③ Socket	84.1	77.5	47	68.5
③ Plug	84.5		47.2	

### Accessories



Coding elements  
From page 639



Replacement PE screws  
From page 640



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### K series

#### Combination applications

400 - 690 V, 16 - 40 A

Connection technology:

- Power and control contacts
- Crimp connection

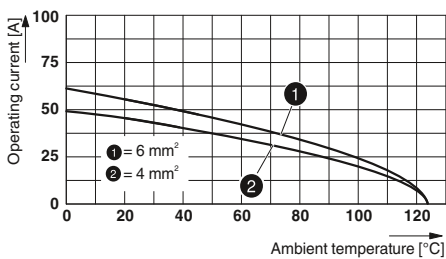
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

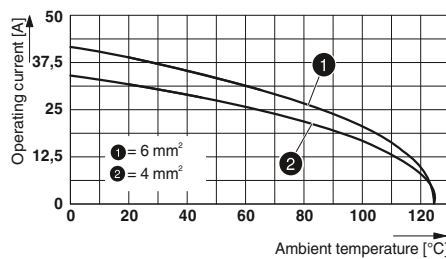


Type	Technical data						
	① HC-K 6/36-E...C		② HC-K12/ 2-E...C		③ HC-K 8/24-E...C		
	Power contacts	Control contacts	Power contacts	Control contacts	Power contacts	Control contacts	
Approvals	☉ ENEC 94		☉ ENEC 94		☉ ENEC 94		
IEC data							
Rated current	A	40	10	40	10	16	10
Surge voltage category		III		III		III	
Pollution degree		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	mm <sup>2</sup>	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	-	-	-	-	-	-
Connection cross section	AWG	-	-	-	-	-	-
CSA / cUL data							
Rated voltage	V	600	-	600	-	600	-
Rated current	A	40	-	40	-	16	-
Connection cross section	AWG	13-9	-	13-8	-	20-12	-
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 (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	Crimp connection	Crimp connection	Crimp connection
Stripping length	mm	9	8	9	8	7.5	8
No. of pos.		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	

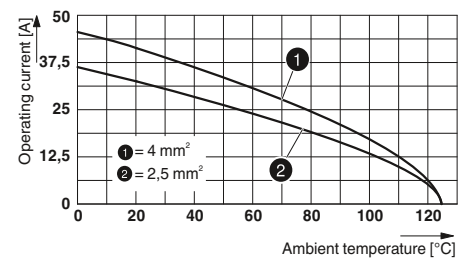
### Derating curves





HC-K 6/36 E...C

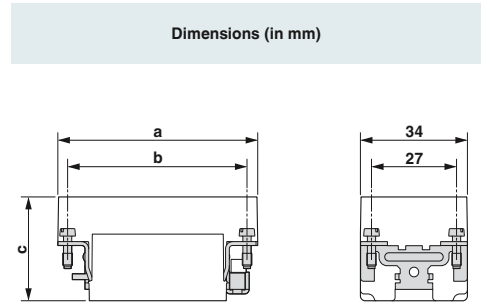


HC-K 12/2 E...C

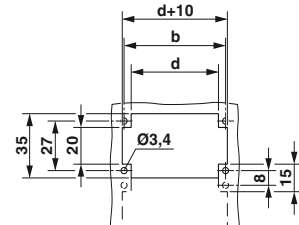


HC-K 8/24 E...C

Description	Pos.	Number	Size	Ordering data					
				Type	Order No. Socket      Plug	Pcs. / Pkt.			
<b>Crimp connection CK 4,0/CK 1,6</b>  	6 / 36	1 - 6	B16 / B32	① HC-K 6/36-E...C	1663389	1663376	1		
<b>Crimp connection CK 4,0/CK 1,6</b>  	12 / 2	1 - 12	B16 / B32	② HC-K12/ 2-E...C	1663347	1663334	1		
<b>Crimp connection CK 2,5/CK 1,6</b>  	8 / 24	1 - 8	B10	③ HC-K 8/24-E...C	1663321	1663318	1		
<b>Turned crimp contacts CK 1,6</b> Silver-plated  	Cross section mm <sup>2</sup> / AWG				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
					0.14 - 0.37 / 26 - 22				
0.5 / 20									
0.75 / 18									
0.75 - 1 / 18									
1.5 / 16									
2.5 / 14									
<b>Turned crimp contacts CK 2,5</b> Silver-plated  	Cross section mm <sup>2</sup> / AWG				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
					0.5 / 20				
0.75 / 18									
0.75 - 1 / 18									
1.5 / 16									
2.5 / 14									
4 / 12									
<b>Turned crimp contacts CK 4,0</b> Silver-plated  	Cross section mm <sup>2</sup> / AWG				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
					1.5 / 16				
2.5 / 14									
4 / 12									
6 / 10									
10 / 8									



Dimensional drawing



Panel cutout

	a	b	c	d
① Socket	84.5	77.5	41.5	68.5
① Plug			39	
② Socket	84.5	77.5	41.5	72
② Plug			39.6	
③ Socket	64	57	38	49
③ Plug			36	

### Accessories



Crimping tools  
From page 636



Coding elements  
From page 639



Crimp contacts, gold-plated  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



Replacement PE screws  
From page 640

# Heavy-duty connectors

## HEAVYCON B - contact inserts



HEAVYCON modular offers space and cost savings by combining several connectors into one. The modular inserts fit in HC-B size housings (HC-EVO, HC-STA, HC-ADV, etc.). Pin and socket modules can be freely combined and are polarized to prevent mismatching.

Lower and uppercase letters on the frames (A, B, .../a, b, ...) enable assignment on the cable and mounting side. The frames are available for 2 to 6 single modules. A double module requires the space of two single modules.



TYPE	HC-M-HS200/40-MOD...	HC-M-HS200/70-MOD...	HC-M-HS-MOD...	HC-M-02-HS-70/...-MOD...
Comments	200 A axial connection module	200 A axial connection module	100 A axial connection module	70 A axial connection module
Number of positions	1	1	2	2
Rated current [A]	200	200	100	70
Rated voltage [V]	1000	1000	1000	1000
Conductor cross section	25 ... 40 mm <sup>2</sup>	40 ... 70 mm <sup>2</sup>	16 ... 35 mm <sup>2</sup>	6 ... 22 mm <sup>2</sup>
Connection method	Axial screw connection	Axial screw connection	Axial screw connection	Axial screw connection
Number of module slots	2	2	2	1
Page	550	550	552	552



TYPE	HC-M-02-MOD...	HC-M-02-MOD...C	HC-M-03-MOD...C	HC-M-04-MOD...C
Comments	40 A axial connection module	Crimp connection module	Crimp connection module	Crimp connection module
Number of positions	2	2	3	4
Rated current [A]	70	40	40	40
Rated voltage [V]	1000	1000	500	830
Conductor cross section	2.5 ... 8 mm <sup>2</sup>	1.5 ... 10 mm <sup>2</sup>	1.5 ... 6 mm <sup>2</sup>	1.5 ... 6 mm <sup>2</sup>
Connection method	Axial screw connection	Crimp connection CK 4,0	Crimp connection CK 4,0	Crimp connection CK 4,0
Number of module slots	1	1	1	1
Page	552	554	554	554



TYPE	HC-M-03/04-MOD...C	HC-M-HV-MOD...	HC-M-06P-MOD...	HC-M-06-MOD...
Comments	Crimp connection module	High-voltage module	Crimp connection module	Crimp connection module
Number of positions	3 power contacts	2	6	6
Rated current [A]	40/10	16	16	16
Rated voltage [V]	830/830	2900/5000	830	500
Conductor cross section	1.5 ... 6 mm <sup>2</sup> /0.14 ... 2.5 mm <sup>2</sup>	0.5 ... 4 mm <sup>2</sup>	0.5 ... 4 mm <sup>2</sup>	0.5 ... 4 mm <sup>2</sup>
Connection method	Crimp connection CK 1,6	Crimp connection CK 2,5	Crimp connection CK 2,5	Crimp connection CK 2,5
Number of module slots	1	2	1	1
Page	554	556	556	556



TYPE	HC-M-08-MOD...	HC-M-20-MOD...	HC-M-12-MOD...	HC-M-17-MOD...
Comments	Crimp connection module	Crimp connection module	Crimp connection module	Crimp connection module
Number of positions	8	20	12	17
Rated current	[A] 16	16	10	10
Rated voltage	[V] 400	500	250	160
Conductor cross section	0.5 ... 4 mm <sup>2</sup>	0.5 ... 4 mm <sup>2</sup>	0.14 ... 2.5 mm <sup>2</sup>	0.14 ... 2.5 mm <sup>2</sup>
Connection method	Crimp connection CK 2,5	Crimp connection CK 2,5	Crimp connection CK 1,6	Crimp connection CK 1,6
Number of module slots	1	2	1	1
Page	556	556	558	558



TYPE	HC-M-EMV-MOD...	HC-M-EMV-.../3-9,5	HC-M-25-MOD...	HC-M-08-GBIT-MOD...C
Comments	EMC bus module	EMC connector	Crimp connection module	Crimp connection module
Number of positions	-	2 x 4	25	8
Rated current	[A] -	16	5	5
Rated voltage	[V] -	42	50	50
Conductor cross section	-	0.14 ... 2.5 mm <sup>2</sup>	0.08 ... 0.5 mm <sup>2</sup>	0.08 ... 0.5 mm <sup>2</sup>
Connection method	-	Crimp connection CK 1,6	Crimp connection VS 1,0	Crimp connection VS 1,0
Number of module slots	2	-	1	1
Page	558	558	560	560



TYPE	HC-M-DSUB09/02T-MOD...	HC-M-DSUB09/02T-MOD...	HC-M-PN2-MOD...	HC-M-PN3-MOD...
Comments	PROFIBUS module	PROFIBUS module	Pneumatic module	Pneumatic module
Number of positions	2	2	2	3
Rated current	[A] 5	5	-	-
Rated voltage	[V] 50	50	-	-
Conductor cross section	0.09 ... 0.5 mm <sup>2</sup>	0.09 ... 0.5 mm <sup>2</sup>	-	-
Connection method	Screw connection	Screw connection	Pneumatic hose connection	Pneumatic hose connection
Number of module slots	1	1	1	1
Page	560	560	564	564



TYPE	HC-M-05-MOD...	HC-M-04-MOD...	HC-M-BM	HC-M-MHR...
Comments	Spring connection module	Coaxial module	Dummy module	Hinged retaining frame
Number of positions	5	1.5	-	-
Rated current	[A] 16	16	-	-
Rated voltage	[V] 400	50	-	-
Conductor cross section	0.14 ... 2.5 mm <sup>2</sup>	-	-	-
Connection method	Spring connection	Solder and crimp connection	-	-
Number of module slots	1	1	1	-
Page	562	562	569	566

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts, high-current modules

1000 V, 200 A

Connection technology:  
– Axial screw connection

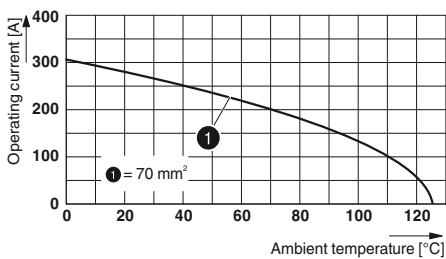
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) Housing height $\geq 72$ mm

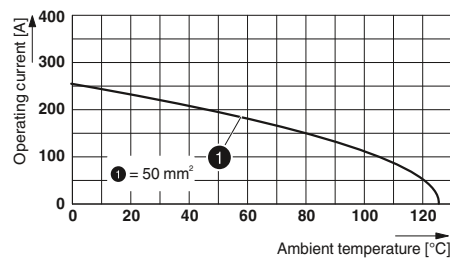


Type	Technical data			
	① HC-M-HS 200/70-MOD-...	② HC-M-HS 200/70-MOD-...-PE	③ HC-M-HS 200/40-MOD-...	④ HC-M-HS 200/40-MOD-...-PE
Approvals	ERC	ERC	ERC	ERC
IEC data				
Rated current, contacts (at 40°C)	A	200	200	200
Surge voltage category		III	-	III
Pollution degree		3	-	3
Rated voltage (III/3) contacts	V	1000	-	1000
Rated surge voltage, contacts	kV	8	-	8
Connection cross section	mm <sup>2</sup>	40 ... 70	40 ... 70	25 ... 40
UL data				
Rated voltage	V	600	600	600
Rated current	A	200	200	200
Connection cross section	AWG	2	2	2
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	Ag	Ag
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 125
General data				
Connection method		Axial screw connection	Axial screw connection	Axial screw connection
Hexagonal socket	mm	5	5	5
Stripping length	mm	16	16	16
No. of pos.		1	1	1
Contact numbering		-	-	-
Insertion/withdrawal cycles		$\geq 500$	$\geq 500$	$\geq 500$


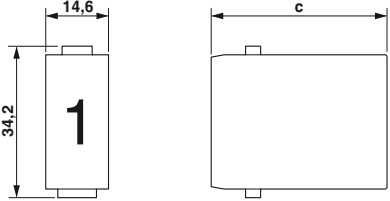

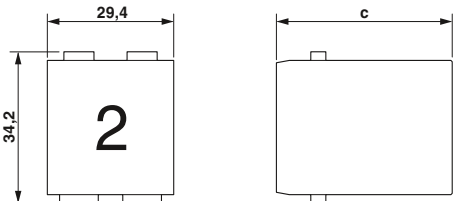

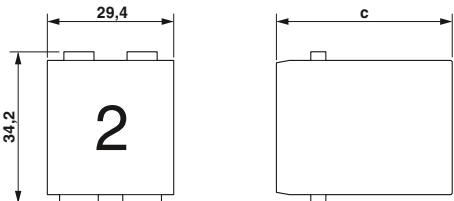

### Derating curves



HC-M-HS 200/70-MOD-...



HC-M-HS 200/40-MOD-...

Description	Pos.	Number	Slots	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																																
					Socket	Plug																																																		
Axial screw connection <sup>1)</sup> 	1		2	① HC-M-HS 200/70-MOD-...	1636897	1636884	1	 <p>1 module slot</p>																																																
Axial screw connection <sup>1)</sup> 	1		2	② HC-M-HS 200/70-MOD-...-PE	1636910	1636907	1	 <p>2 module slots</p>																																																
Axial screw connection <sup>1)</sup> 	1		2	③ HC-M-HS 200/40-MOD-...	1637171	1637168	1	 <p>2 module slots</p>																																																
Axial screw connection <sup>1)</sup> 	1		2	④ HC-M-HS 200/40-MOD-...-PE	1637197	1637184	1	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>60</td> <td></td> </tr> <tr> <td>① Plug</td> <td>29.4</td> <td></td> <td>54.5</td> <td></td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>54.3</td> <td></td> </tr> <tr> <td>② Plug</td> <td>29.4</td> <td></td> <td>54.5</td> <td></td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>60</td> <td></td> </tr> <tr> <td>③ Plug</td> <td>29.4</td> <td></td> <td>54.5</td> <td></td> </tr> <tr> <td>④ Socket</td> <td></td> <td></td> <td>54.3</td> <td></td> </tr> <tr> <td>④ Plug</td> <td>29.4</td> <td></td> <td>54.5</td> <td></td> </tr> </tbody> </table>					a	b	c	d	① Socket			60		① Plug	29.4		54.5		② Socket			54.3		② Plug	29.4		54.5		③ Socket			60		③ Plug	29.4		54.5		④ Socket			54.3		④ Plug	29.4		54.5	
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### Accessories



Hinged retaining frames  
From page 566



Dummy module  
From page 569

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts, 2-pos. modules

1000 V, 40 - 100 A

Connection technology:  
– Axial screw connection

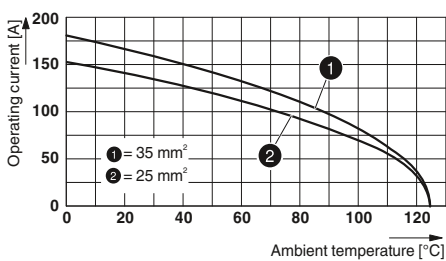
To determine the corresponding housing,  
see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) Housing height $\geq 72$ mm

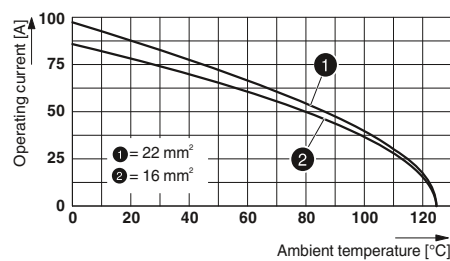


Type	Technical data				
	① HC-M-HS-MOD-...	② HC-M-02-HS-70/22-MOD-...	③ HC-M-02-HS-70/16-MOD-...	④ HC-M-02-MOD-...	
Approvals	UL vs ENEC	ENEC UL	ENEC UL	UL vs ENEC	
IEC data					
Rated current, contacts (at 40°C)	A	100	70	70	40
Surge voltage category		III	III	III	III
Pollution degree		3	3	3	3
Rated voltage (III/3) contacts	V	1000	1000	1000	1000
Rated surge voltage, contacts	kV	8	8	8	8
Connection cross section	mm <sup>2</sup>	16 ... 35	14 ... 22	6 ... 16	2.5 ... 8
UL data					
Rated voltage	V	600	600	600	600
Rated current	A	100	70	70	40
Connection cross section	AWG	2	4	4	8
CSA / cUL data					
Rated voltage	V	600	-	-	600
Rated current	A	100	-	-	40
Connection cross section	AWG	2	-	-	8
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	Axial screw connection	Axial screw connection	Axial screw connection
Hexagonal socket	mm	4	2.5	2.5	2
Stripping length	mm	13	11	11	8
No. of pos.		2	2	2	2
Contact numbering		1 - 2	1 - 2	1 - 2	1 - 2
Insertion/withdrawal cycles		$\geq 500$	$\geq 500$	$\geq 500$	$\geq 500$

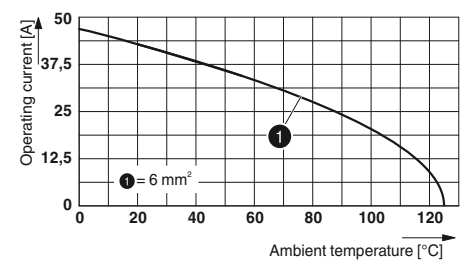
### Derating curves



HC-M-HS-MOD-...



HC-M-02-HS- 70/...-MOD-...



HC-M-02-MOD-...

Description	Pos.	Number	Slots	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																																
					Socket	Plug																																																		
Axial screw connection <sup>1)</sup> 	2	1 - 2	2	① HC-M-HS-MOD-...	1605001	1605000	1																																																	
Axial screw connection <sup>1)</sup> 	2	1 - 2	1	② HC-M-02-HS-70/22-MOD-...	1585731	1585728	2																																																	
Axial screw connection <sup>1)</sup> 	2	1 - 2	1	③ HC-M-02-HS-70/16-MOD-...	1585715	1585702	2																																																	
Axial screw connection <sup>1)</sup> 	2	1 - 2	1	④ HC-M-02-MOD-...	1679359	1679346	2	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>50.3</td> <td></td> </tr> <tr> <td>① Plug</td> <td>29.4</td> <td></td> <td>49</td> <td></td> </tr> <tr> <td>② Socket</td> <td>14.6</td> <td></td> <td>46.5</td> <td></td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td>45</td> <td></td> </tr> <tr> <td>③ Socket</td> <td>14.6</td> <td></td> <td>46.5</td> <td></td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td>45</td> <td></td> </tr> <tr> <td>④ Socket</td> <td>14.6</td> <td></td> <td>40.6</td> <td></td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td>41.8</td> <td></td> </tr> </tbody> </table>					a	b	c	d	① Socket			50.3		① Plug	29.4		49		② Socket	14.6		46.5		② Plug			45		③ Socket	14.6		46.5		③ Plug			45		④ Socket	14.6		40.6		④ Plug			41.8	
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### Accessories



Hinged retaining frames  
From page 566



Dummy module  
From page 569



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts

500 - 1000 V, 40 A

Connection technology:

– Crimp connection CK 4,0

To determine the corresponding housing, see cross-reference list on page 482.

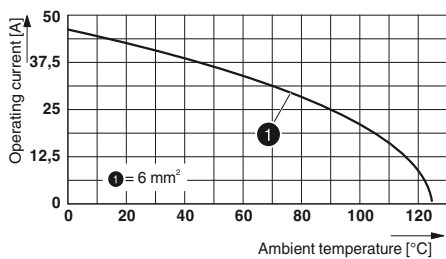
Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



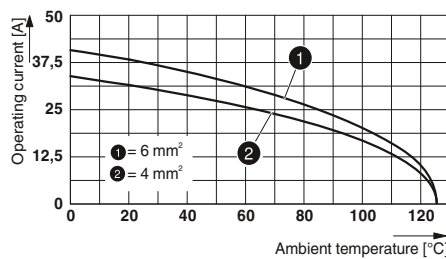
### Technical data

Type	① HC-M-02-MOD-...C	② HC-M-03-MOD-...C	③ HC-M-04-MOD-...C	④ HC-M-03/04-MOD-...C
Approvals	ERC	ERC	ERC	ERC
IEC data				
Rated current, contacts (at 40°C)	A 40	40	40	40
Surge voltage category	III	III	III	III
Pollution degree	3	3	3	3
Rated voltage (III/3) contacts	V 1000	500	830	830
Rated surge voltage, contacts	kV 8	6	8	8
Connection cross section	mm <sup>2</sup> 1.5 ... 10	1.5 ... 10	1.5 ... 6	1.5 ... 6
UL data				
Rated voltage	V 600	600	600	600
Rated current	A 40	40	40	-
Connection cross section	AWG 12-8	8	10	18-10
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	-
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
No. of pos.	2	3	4	-
Contact numbering	1 - 2	1 - 3	1 - 4	1-3
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500

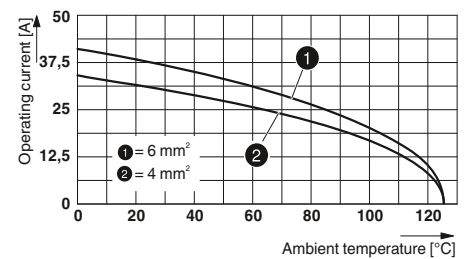
### Derating curves




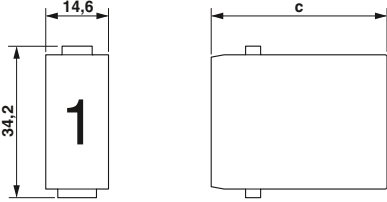

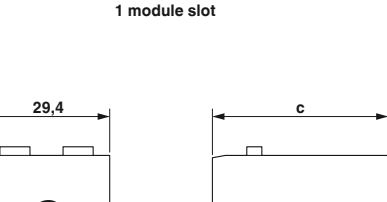

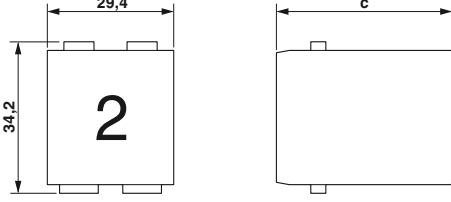



HC-M-02-MOD-...C



HC-M-03-MOD-...C



HC-M-04-MOD-...C

Description	Pos.	Number	Slots	Ordering data			Pcs. / Pkt.	Dimensions (in mm)																																																	
				Type	Socket	Plug																																																			
<b>Crimp connection CK 4,0</b> 	2	1 - 2	1	① HC-M-02-MOD-...C	1587519	1587506	2																																																		
<b>Crimp connection CK 4,0</b> 	3	1 - 3	1	② HC-M-03-MOD-...C	1645972	1645969	2																																																		
<b>Crimp connection CK 4,0</b> 	4	1 - 4	1	③ HC-M-04-MOD-...C	1585605	1585618	2																																																		
<b>Crimp connection CK 4,0/CK 1,6</b> 	3 / 4	1 - 3	1	④ HC-M-03/04-MOD-...C	1585786	1585799	2	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>14.6</td> <td></td> <td>42.4</td> <td></td> </tr> <tr> <td>① Plug</td> <td>14.6</td> <td></td> <td>43.7</td> <td></td> </tr> <tr> <td>② Socket</td> <td>14.6</td> <td></td> <td>44.7</td> <td></td> </tr> <tr> <td>② Plug</td> <td>14.6</td> <td></td> <td>43.1</td> <td></td> </tr> <tr> <td>③ Socket</td> <td>14.6</td> <td></td> <td>40.9</td> <td></td> </tr> <tr> <td>③ Plug</td> <td>14.6</td> <td></td> <td>44.6</td> <td></td> </tr> <tr> <td>④ Socket</td> <td>14.6</td> <td></td> <td>39.1</td> <td></td> </tr> <tr> <td>④ Plug</td> <td>14.6</td> <td></td> <td>44.3</td> <td></td> </tr> </tbody> </table>						a	b	c	d	① Socket	14.6		42.4		① Plug	14.6		43.7		② Socket	14.6		44.7		② Plug	14.6		43.1		③ Socket	14.6		40.9		③ Plug	14.6		44.6		④ Socket	14.6		39.1		④ Plug	14.6		44.3	
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<b>Turned crimp contacts CK 1,6</b> Silver-plated 								<table border="1"> <thead> <tr> <th>Cross section</th> <th>Type</th> <th>Socket</th> <th>Plug</th> <th>Pcs.</th> </tr> </thead> <tbody> <tr> <td>0.14 - 0.37 / 26 - 22</td> <td>CK1,6-ED-0,37... AG</td> <td>1663394</td> <td>1663336</td> <td>100</td> </tr> <tr> <td>0.5 / 20</td> <td>CK1,6-ED-0,50... AG</td> <td>1663404</td> <td>1663349</td> <td>100</td> </tr> <tr> <td>0.75 / 18</td> <td>CK1,6-ED-0,75... AG</td> <td>1663417</td> <td>1663352</td> <td>100</td> </tr> <tr> <td>0.75 - 1 / 18</td> <td>CK1,6-ED-1,00... AG</td> <td>1663420</td> <td>1663365</td> <td>100</td> </tr> <tr> <td>1.5 / 16</td> <td>CK1,6-ED-1,50... AG</td> <td>1663433</td> <td>1663378</td> <td>100</td> </tr> <tr> <td>2.5 / 14</td> <td>CK1,6-ED-2,50... AG</td> <td>1663446</td> <td>1663381</td> <td>100</td> </tr> </tbody> </table>					Cross section	Type	Socket	Plug	Pcs.	0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100	0.5 / 20	CK1,6-ED-0,50... AG	1663404	1663349	100	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 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100	2.5 / 14	CK1,6-ED-2,50... AG	1663446	1663381	100										
Cross section	Type	Socket	Plug	Pcs.																																																					
0.14 - 0.37 / 26 - 22	CK1,6-ED-0,37... AG	1663394	1663336	100																																																					
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0.75 - 1 / 18	CK1,6-ED-1,00... AG	1663420	1663365	100																																																					
1.5 / 16	CK1,6-ED-1,50... AG	1663433	1663378	100																																																					
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<b>Turned crimp contacts CK 4,0</b> Silver-plated 								<table border="1"> <thead> <tr> <th>Cross section</th> <th>Type</th> <th>Socket</th> <th>Plug</th> <th>Pcs.</th> </tr> </thead> <tbody> <tr> <td>1.5 / 16</td> <td>CK4,0-ED-1,50... AG</td> <td>1663271</td> <td>1663239</td> <td>25</td> </tr> <tr> <td>2.5 / 14</td> <td>CK4,0-ED-2,50... AG</td> <td>1663284</td> <td>1663242</td> <td>25</td> </tr> <tr> <td>4 / 12</td> <td>CK4,0-ED-4,00... AG</td> <td>1663297</td> <td>1663255</td> <td>25</td> </tr> <tr> <td>6 / 10</td> <td>CK4,0-ED-6,00... AG</td> <td>1663307</td> <td>1663268</td> <td>25</td> </tr> <tr> <td>10 / 8</td> <td>CK4,0-ED-10,00... AG</td> <td>1586183</td> <td>1586198</td> <td>25</td> </tr> </tbody> </table>					Cross section	Type	Socket	Plug	Pcs.	1.5 / 16	CK4,0-ED-1,50... AG	1663271	1663239	25	2.5 / 14	CK4,0-ED-2,50... AG	1663284	1663242	25	4 / 12	CK4,0-ED-4,00... AG	1663297	1663255	25	6 / 10	CK4,0-ED-6,00... AG	1663307	1663268	25	10 / 8	CK4,0-ED-10,00... AG	1586183	1586198	25															
Cross section	Type	Socket	Plug	Pcs.																																																					
1.5 / 16	CK4,0-ED-1,50... AG	1663271	1663239	25																																																					
2.5 / 14	CK4,0-ED-2,50... AG	1663284	1663242	25																																																					
4 / 12	CK4,0-ED-4,00... AG	1663297	1663255	25																																																					
6 / 10	CK4,0-ED-6,00... AG	1663307	1663268	25																																																					
10 / 8	CK4,0-ED-10,00... AG	1586183	1586198	25																																																					

### Accessories



Hinged retaining frames  
From page 566



Crimping tools  
From page 636



Crimp contacts, gold-plated  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



Dummy module  
From page 569

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts

400 - 830 V, 16 A

Connection technology:

– Crimp connection CK 2,5

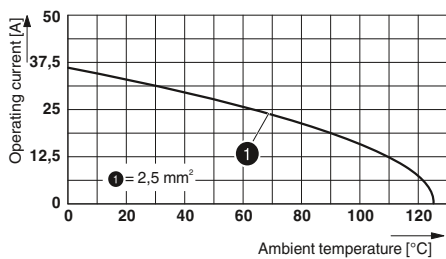
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) Housing height $\geq 72$ mm

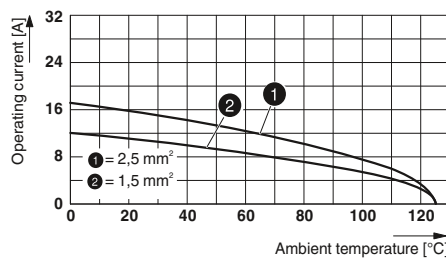


Technical data						
Type		① HC-M-HV-MOD-...	② HC-M-06P-MOD-...	③ HC-M-06-MOD-...	④ HC-M-08-MOD-...	⑤ HC-M-20-MOD-...
Approvals		ERE	ERE	ERE	ERE	ERE
IEC data						
Rated current, contacts (at 40°C)	A	16	16	16	16	16
Surge voltage category		III	III	III	III	III
Pollution degree		3	3	3	3	3
Rated voltage (III/3) contacts	V	2900 / 5000	830	500	400	500
Rated surge voltage, contacts	kV	15	8	6	6	6
Connection cross section	mm <sup>2</sup>	0.5 ... 4	0.5 ... 4	0.5 ... 4	0.5 ... 4	0.5 ... 4
UL data						
Rated voltage	V	-	600	600	600	600
Rated current	A	-	16	-	16	16
Connection cross section	AWG	-	12	-	12	12
CSA / cUL data						
Rated voltage	V	-	-	600	-	-
Rated current	A	-	-	32	-	-
Connection cross section	AWG	-	-	16-10	-	-
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
No. of pos.		2	6	6	8	20
Contact numbering		I, II	1 - 6	1 - 6	1 - 8	1 - 20
Insertion/withdrawal cycles		$\geq 500$	$\geq 500$	$\geq 500$	$\geq 500$	$\geq 500$

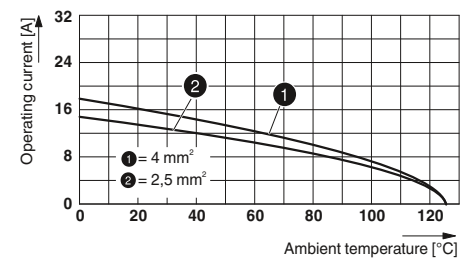
### Derating curves




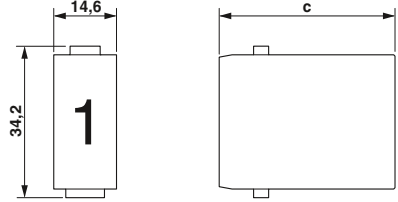

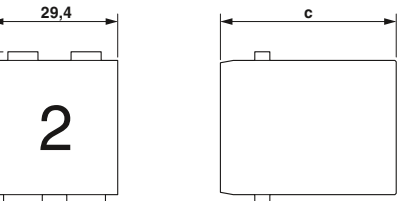

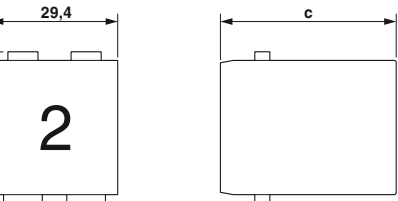

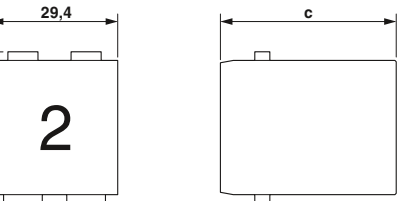

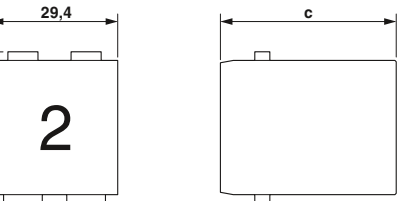

HC-M-HV-MOD-...



HC-M-06-MOD-...



HC-M-20-MOD-...

Description	Pos.	Number	Slots	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)	
					Socket	Plug			
<b>Crimp connection CK 2,5<sup>1)</sup></b> 	2	I, II	2	① HC-M-HV-MOD-...	1604999	1604998	1		1 module slot
<b>Crimp connection CK 2,5</b> 	6	1 - 6	1	② HC-M-06P-MOD-...	1636460	1636457	2		1 module slot
<b>Crimp connection CK 2,5</b> 	6	1 - 6	1	③ HC-M-06-MOD-...	1663462	1663459	2		2 module slots
<b>Crimp connection CK 2,5</b> 	8	1 - 8	1	④ HC-M-08-MOD-...	1605003	1605002	2		2 module slots
<b>Crimp connection CK 2,5</b> 	20	1 - 20	2	⑤ HC-M-20-MOD-...	1636936	1636923	1		2 module slots
<b>Turned crimp contacts CK 2,5 Silver-plated</b> 									
			<b>Cross section mm<sup>2</sup> / AWG</b> 0.5 / 20 0.75 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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		

	a	b	c	d
① Socket			62	
① Plug	29.4		59	
② Socket	14.6		37.4	
② Plug	14.6		39.2	
③ Socket	14.6		35.8	
③ Plug	14.6		34	
④ Socket	14.6		35.8	
④ Plug	14.6		34.5	
⑤ Socket	29.4		39.95	
⑤ Plug	29.4		37.6	

### Accessories



Hinged retaining frames  
From page 566



Crimping tools  
From page 636



Crimp contacts, gold-plated  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



Dummy module  
From page 569

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts

50 - 250 V, 10 A

Connection technology:

– Crimp connection CK 1,6

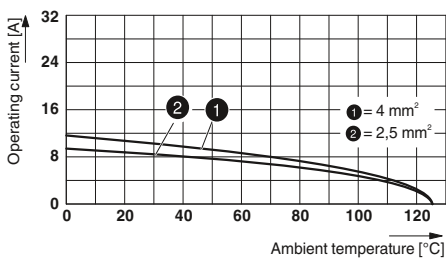
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4
1) Housing height $\geq 72$ mm

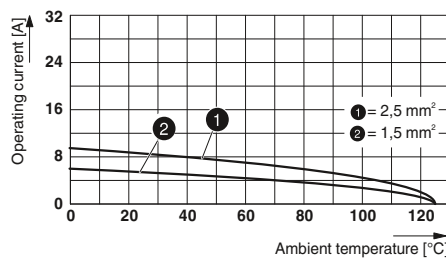


Type	Technical data			
	① HC-M-12-MOD-...	② HC-M-17-MOD-...	③ HC-M-EMV-MOD-...	④ HC-M-EMV-.../3-9,5
Approvals	ERC EAC	ERC EAC	UL US EAC	UL US EAC
IEC data				
Rated current, contacts (at 40°C)	A	10	10	10
Surge voltage category		III	III	III
Pollution degree		3	3	3
Rated voltage (III/3) contacts	V	250	160	50
Rated surge voltage, contacts	kV	3	2.5	0.8
Connection cross section	mm <sup>2</sup>	0.14 ... 2.5	0.14 ... 2.5	0.14 ... 2.5
UL data				
Rated voltage	V	600	250	42
Rated current	A	-	10	10
Connection cross section	AWG	-	14	16
CSA / cUL data				
Rated voltage	V	600	-	42
Rated current	A	12	-	9
Connection cross section	AWG	26-14	-	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 (alternatively Au)	Ag (alternatively Au)	Ag (alternatively Au)
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	-40 ... 85
General data				
Connection method		Crimp connection	Crimp connection	Crimp connection
Stripping length	mm	8	8	8
No. of pos.		12	17	4
Contact numbering		1 - 12	1 - 17	1 - 4
Insertion/withdrawal cycles		$\geq 500$	$\geq 500$	$\geq 500$


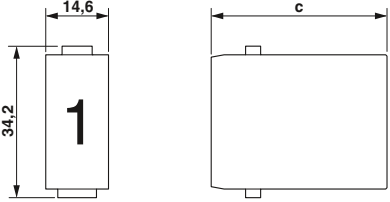

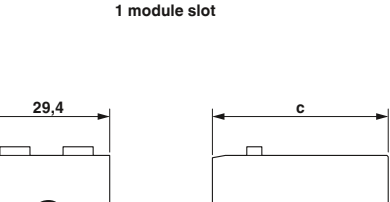

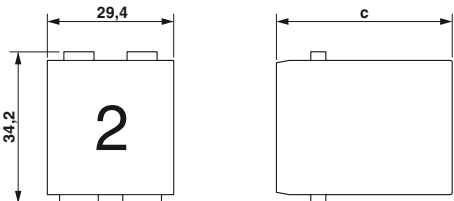


### Derating curves



HC-M-12-MOD-...



HC-M-17-MOD-...

Description	Pos.	Number	Slots	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																																
					Socket	Plug																																																		
<b>Crimp connection CK 1,6</b> 	12	1 - 12	1	① HC-M-12-MOD-...	1663323	1663310	2																																																	
<b>Crimp connection CK 1,6</b> 	17	1 - 17	1	② HC-M-17-MOD-...	1636486	1636473	2																																																	
<b>EMC module<sup>1)</sup></b> 			2	③ HC-M-EMV-MOD-...	1678570	1678567	2																																																	
<b>EMC connector, crimp connection CK 1,6</b> 	4	1 - 4		④ HC-M-EMV-.../3-9,5	1636091	1636088	1	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>14,6</td> <td></td> <td>34</td> <td></td> </tr> <tr> <td>② Socket</td> <td>14,6</td> <td></td> <td>34</td> <td></td> </tr> <tr> <td>③ Socket</td> <td>29,4</td> <td></td> <td>34</td> <td></td> </tr> <tr> <td>④ Socket</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>① Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					a	b	c	d	① Socket	14,6		34		② Socket	14,6		34		③ Socket	29,4		34		④ Socket					① Plug					② Plug					③ Plug					④ Plug				
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# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts, Ethernet and D-SUB 09

50 V, 1 - 5 A

Connection technology:

- Crimp connection VS 1,0
- Screw connection

Coding pins and sockets are mandatory when using HC-M-25-MOD-... and HC-M-DSUB 09-MOD-... modules.

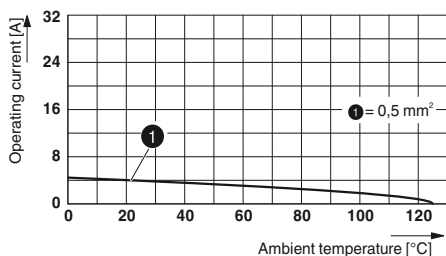
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4



Technical data						
Type		① HC-M-25-MOD-...	② HC-M-08-GBIT-...C	③ HC-M-08-GBIT-MOD-...	④ HC-M-DSUB 09/O2T-MOD-... 2-pos.	⑤ HC-M-DSUB 09-MOD-...
Approvals		ERC	ERC	ERC	ERC	ERC
IEC data						
Rated current, contacts (at 40°C)	A	4	5	-	5	1
Surge voltage category		III	III	-	III	III
Pollution degree		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	mm <sup>2</sup>	0.08 ... 0.5	0.08 ... 0.5	-	0.09 ... 0.5	0.08 ... 0.5
UL data						
Rated voltage	V	30	30	30	-	-
Rated current	A	-	5	5	-	-
Connection cross section	AWG	28-20	22-20	22-20	-	-
CSA / cUL data						
Rated voltage	V	-	-	-	-	-
Rated current	A	-	-	-	-	-
Connection cross section	AWG	-	-	-	-	-
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
Contact surface material		Au	Au	-	Au	Au
Ambient conditions						
Ambient temperature range	°C	-40 ... 125	-40 ... 85	-40 ... 85	-40 ... 125	-40 ... 125
General data						
Connection method		Crimp connection	Crimp connection	-	Screw connection	Crimp connection
Stripping length	mm	4.2	4.2	-	3.8	4.2
No. of pos.		25	8	-	2	9
Contact numbering		1 - 25	1 - 8	-	A,B	1 - 9
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	≥ 500	≥ 500

## Derating curves



HC-M-25-MOD-...

Description	Pos.	Number	Slots	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																																																								
				Type	Order No.																																																										
				Socket	Plug																																																										
<b>Crimp connection VS 1,0</b>	25	1 - 25	1	① HC-M-25-MOD-...	1605005	1605004	2																																																								
<b>Ethernet connector, crimp connection VS 1,0</b>	8	1 - 8	1	② HC-M-08-GBIT-...C	1587726	1587713	1																																																								
								1 module slot																																																							
<b>Module, Ethernet connector</b>			1	③ HC-M-08-GBIT-MOD-...	1587700	1587690	1																																																								
								2 module slots																																																							
<b>D-SUB 09 module, screw connection</b>	2	A,B	1	2-pos. ④ HC-M-DSUB 09/O2T-MOD-...	1636444		2	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td>30.65</td> <td></td> </tr> <tr> <td>① Plug</td> <td>14.6</td> <td></td> <td>34</td> <td></td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>40.3</td> <td></td> </tr> <tr> <td>② Plug</td> <td>13.9</td> <td></td> <td>41.4</td> <td></td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>28.1</td> <td></td> </tr> <tr> <td>③ Plug</td> <td>14.6</td> <td></td> <td>40.85</td> <td></td> </tr> <tr> <td>④ Socket</td> <td>14.6</td> <td></td> <td>35.2</td> <td></td> </tr> <tr> <td>④ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>⑤ Socket</td> <td>14.6</td> <td></td> <td>35.2</td> <td></td> </tr> <tr> <td>⑤ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		a	b	c	d	① Socket			30.65		① Plug	14.6		34		② Socket			40.3		② Plug	13.9		41.4		③ Socket			28.1		③ Plug	14.6		40.85		④ Socket	14.6		35.2		④ Plug					⑤ Socket	14.6		35.2		⑤ Plug				
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<b>D-SUB 09 module, crimp connection VS 1,0</b>	9	1 - 9	1	⑤ HC-M-DSUB 09-MOD-...	1647543	1647530	2																																																								
<b>Turned crimp contacts VS 1,0 Gold-plated</b>				VS-...-CD-1,0/14,4/0,2 VS-...-CD-1,0/14,4/0,5	1688997 1688984	1688971 1688968	30 30																																																								

### Accessories



Hinged retaining frames  
From page 566



Crimping tools  
From page 636



Dummy module  
From page 569



# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts

50 - 400 V, 1.5 - 16 A

Connection technology:

- Spring connection
- Coaxial contacts

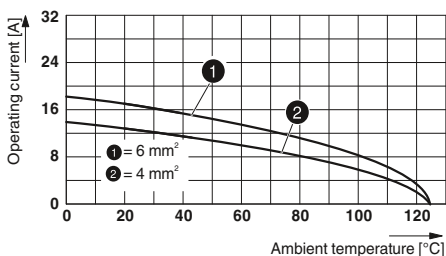
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>
Coaxial module with coding pin and coding socket
For connection technologies, see page 4


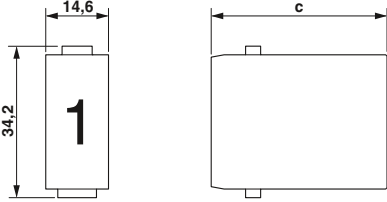
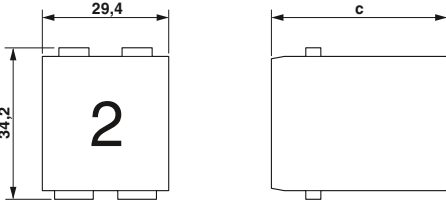





Technical data				
Type		① HC-M-05-MOD-...Z	② HC-M-04-MOD-...	
Approvals		ERC	ERC	
IEC data				
Rated current, contacts (at 40°C)	A	16	1.5	
Surge voltage category		III	III	
Pollution degree		3	3	
Rated voltage (III/3) contacts	V	400	50	
Rated surge voltage, contacts	kV	6	3	
Connection cross section	mm <sup>2</sup>	0.14 ... 1.5	-	
UL data				
Rated voltage	V	600	600	
Rated current	A	16	-	
Connection cross section	AWG	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	AU	
Temperature data				
Ambient temperature range	°C	-40 ... 125	-40 ... 125	
General data				
Connection method		Spring connection	Soldering and crimp connection	
Stripping length	mm	8	-	
No. of pos.		5	4	
Contact numbering		1 - 5	1 - 4	
Insulation resistance	GΩ	-	≥ 10	
Contact resistance	mΩ	-	-	
Insertion/withdrawal cycles		≥ 500	≥ 500	

### Derating curves



HC-M-05-MOD-...Z

Description	Pos.	Number	Slots	Type	Ordering data		Pcs. / Pkt.	Dimensions (in mm)	
					Socket	Plug			
<b>Spring connection</b> 	5	1 - 5	1	① HC-M-05-MOD-...Z	1647721	1647718	2	 <p>1 module slot</p>	 <p>2 module slots</p>
<b>Coaxial module</b> 	4	1 - 4	1	② HC-M-04-MOD-...	1676789	1676792	2		
<b>Coaxial contacts, 50 Ω</b> 				HC-M-04-...-KOAX-50	1676815	1676802	10		
<b>Coaxial contacts, 75 Ω</b> 				HC-M-04-...-KOAX-75	1686245	1686258	10		

	a	b	c	d
① Socket			34	
① Plug	14.6		35.5	
② Socket	14.6		32.6	
② Plug			31.5	

### Accessories



Hinged retaining frames  
From page 566



Crimping tools  
From page 637



Removal tool  
From page 637



Dummy module  
From page 569

# Heavy-duty connectors

## HEAVYCON B - contact inserts

### Modular contact inserts, pneumatic modules

Connection technology:

- Pneumatic contact with valve
- Pneumatic contact without valve

To determine the corresponding housing, see cross-reference list on page 482.

Notes:
For accessories, see from page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>



Type	Technical data					
	① HC-M-PN2-MOD-...	② HC-M-PN2-6,00-...-V With valve	③ HC-M-PN2-6,00-... Without valve	④ HC-M-PN3-MOD-...	⑤ ⑥ ⑦ HC-M-PN3-1,60-BU-V With valve	⑧ ⑨ ⑩ HC-M-PN3-1,60-... Without valve
Approvals	ERC	ERC	ERC	ERC	ERC	ERC
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						
No. of pos.	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	4 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 ... 125	-40 ... 125	-40 ... 80	-40 ... 125	-40 ... 125

Description	Pos.	Number	Slots	Ordering data		Pcs. / Pkt.	Dimensions (in mm)																			
				Type	Order No. Socket		Order No. Plug																			
<b>PN2 pneumatic module</b> 	2	1 - 2	1	① HC-M-PN2-MOD-...	1674998	1674998	2																			
<b>PN2 pneumatic contact</b> 				With valve ② HC-M-PN2-6,00-...-V	1676776		10																			
<b>PN2 pneumatic contact</b> 				Without valve ③ HC-M-PN2-6,00-...	1676763	1676750	10																			
<b>PN3 pneumatic module</b> 	3	1 - 3	1	④ HC-M-PN3-MOD-...	1663475	1663475	2	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td>14.6</td> <td></td> <td>27.2</td> <td></td> </tr> <tr> <td>④ Socket</td> <td>14.6</td> <td></td> <td>27.2</td> <td></td> </tr> </tbody> </table>					a	b	c	d	① Socket	14.6		27.2		④ Socket	14.6		27.2	
	a	b	c	d																						
① Socket	14.6		27.2																							
④ Socket	14.6		27.2																							
<b>PN3 pneumatic contact</b> 				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																			
<b>PN3 pneumatic contact</b> 				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																			

### Accessories



Hinged retaining frames  
From page 566



Dummy module  
From page 569

# Heavy-duty connectors


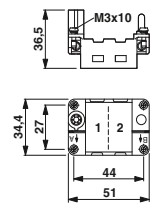

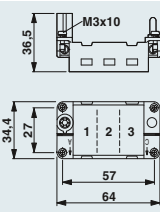

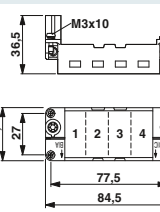

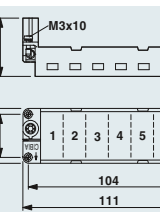


## HEAVYCON B - contact inserts

### Modular contact inserts, hinged retaining frames

General data		Technical data
Hinged retaining frame material		Die-cast zinc alloy
Connection cross section	[mm <sup>2</sup> ]	4 mm <sup>2</sup> ... 6 mm <sup>2</sup> (for PE conductor – power side)
Connection cross section	[mm <sup>2</sup> ]	1 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (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.	Dimensions
<b>Hinged retaining frames<sup>1)</sup></b> 	B6	For sleeve housing (A, B, C, etc.) <b>HC-M-MHR-T2-N</b>	<b>1679249</b>	2	
	B6	For panel mounting base (a, b, c, etc.) <b>HC-M-MHR-A2-N</b>	<b>1679281</b>	2	
<b>Hinged retaining frames<sup>1)</sup></b> 	B10	For sleeve housing (A, B, C, etc.) <b>HC-M-MHR-T3-N</b>	<b>1679252</b>	2	
	B10	For panel mounting base (a, b, c, etc.) <b>HC-M-MHR-A3-N</b>	<b>1679294</b>	2	
<b>Hinged retaining frames<sup>1)</sup></b> 	B16 / B32	For sleeve housing (A, B, C, etc.) <b>HC-M-MHR-T4-N</b>	<b>1679265</b>	2	
	B16 / B32	For panel mounting base (a, b, c, etc.) <b>HC-M-MHR-A4-N</b>	<b>1679304</b>	2	
<b>Hinged retaining frames<sup>1)</sup></b> 	B24/B48	For sleeve housing (A, B, C, etc.) <b>HC-M-MHR-T6-N</b>	<b>1679278</b>	2	
	B24/B48	For panel mounting base (a, b, c, etc.) <b>HC-M-MHR-A6-N</b>	<b>1679317</b>	2	
<b>Fixing wedges</b> 		20 in the block <b>HC-M-MHR-FIX</b>	<b>1585155</b>	2	
<b>Cable lug</b> 		PE extension to 16 mm <sup>2</sup> <b>HC-M-MHR-PE16</b>	<b>1636981</b>	50	

**Notes:**  
 For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)  
<sup>1)</sup> For solid conductors and stranded wires with wire end protection

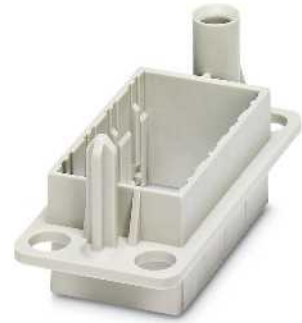
### Accessories



Dummy module  
From page 569

### Modular contact inserts, docking frames

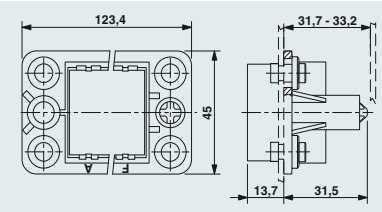
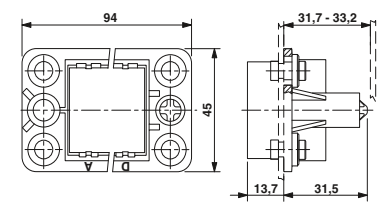
General data		Technical data
Material		PC
Inflammability class in acc. with UL 94		V0
Insertion/withdrawal cycles		≥ 500
Ambient temperature (operation)		-40 °C ... 125 °C
IP degree of protection (when plugged in)		-



### Ordering data

Description	Size	Type	Order No.	Pcs. / Pkt.
<b>Docking frame</b> 	B16	Floating (A, B, C, etc.) <b>HC-B 16-ANDOCK-MOD-T</b>	<b>1587454</b>	2
	B16	Fixed (a, b, c, etc.) <b>HC-B 16-ANDOCK-MOD-A</b>	<b>1587467</b>	2
<b>Docking frame</b> 	B24	Floating (A, B, C, etc.) <b>HC-B 24-ANDOCK-MOD-T</b>	<b>1587470</b>	2
	B24	Fixed (a, b, c, etc.) <b>HC-B 24-ANDOCK-MOD-A</b>	<b>1587483</b>	2
<b>Washer, floating</b> 		For M4 cylinder head screws <b>HC-MOD-ANDOCK-USCH</b>	<b>1587496</b>	20

### Dimensions



**Notes:**

- Use of docking frames, e.g., in the back panel of control cabinet racks.
- A metal mounting panel must be grounded separately, as the plastic frame does not have a PE connection.
- Docking frames ensure correct contacting of plug and socket modules

### Accessories



Dummy module  
From page 569



Metal docking frame  
From page 641


# Heavy-duty connectors

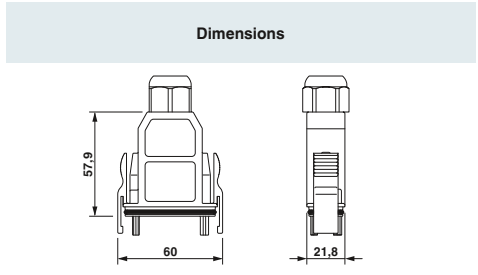
## HEAVYCON B - contact inserts


### Modular contact inserts, accessories

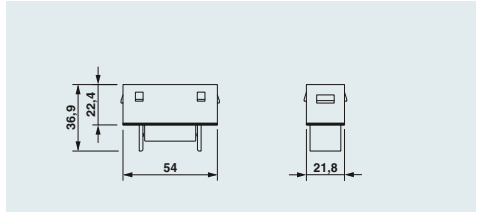



General data		Technical data	
Housing material		Polycarbonate	
Lock material		-	
Inflammability class in acc. with UL 94		V0	
External cable diameter		6 mm ... 13 mm	
Ambient temperature (operation)		-40 °C ... 85 °C	
IP degree of protection (when plugged in)		IP65	

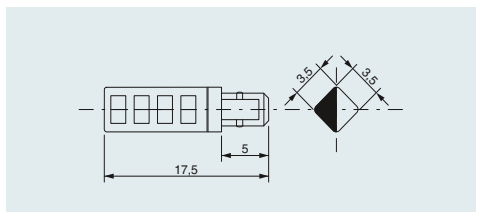
Description		Thread	Type	Order No.	Pcs. / Pkt.
<b>Sleeve housing</b> Height: 57.9 mm 		1x M20	For one module, with PE marking <b>HC-MOD-K-TMS-M1M20-G-PE</b>	<b>1408520</b>	2
		1x M20	For one module, without PE marking <b>HC-MOD-K-TMS-M1M20-G-OPE</b>	<b>1408546</b>	2



<b>Panel mounting base</b> Height: 22.4 mm 			For one module, without PE marking <b>HC-MOD-K-AFS-PE</b>	<b>1408533</b>	2
			For one module, without PE marking <b>HC-MOD-K-AFS-OPE</b>	<b>1408559</b>	2



<b>Coding profile</b> 			<b>HC-MOD-K-CP</b>	<b>1408562</b>	1
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**Notes:**  
For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)


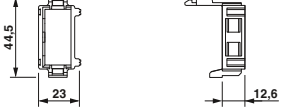

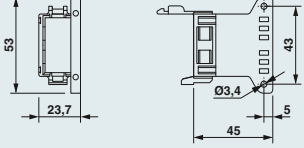


Modular contact inserts,  
accessories

Technical data

General data	
Material	PC
Inflammability class in acc. with UL 94	-
Ambient temperature (operation)	-40 °C ... 125 °C



Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
 <p>Contact insert frame</p>		Without strain relief <b>HC-M-MHOZ</b>	<b>1676844</b>	2	
 <p>Contact insert frame</p>		With strain relief <b>HC-M-MHMZ</b>	<b>1676831</b>	2	
 <p>Dummy module</p>		For unused slots <b>HC-M-BM</b>	<b>1676828</b>	2	

Notes:

For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B6, plastic, ADVANCE sleeve housing with cable gland

#### General data


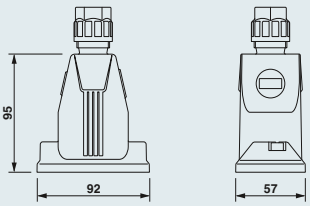

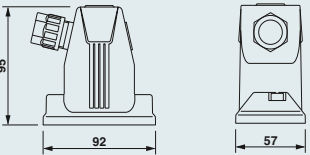

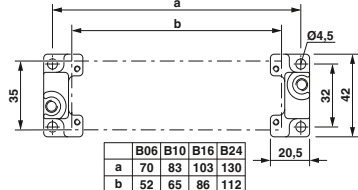

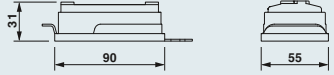
Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Polyamide  
Stainless steel  
NBR  
-40 °C ... 100 °C  
IP66 / IP68 (0.2 bar/24 h)  
4 / 4X / 6P / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing</b> Height: 93.7 mm 	1x M20 1x M25	Cable outlet: top <b>HC-ADV-B06-HHWH-1TGM20-PL</b> <b>HC-ADV-B06-HHWH-1TGM25-PL</b>	<b>1404222</b> <b>1404225</b>	1 1																
<b>Sleeve housing</b> Height: 93.7 mm 	1x M20 1x M25	Cable outlet: lateral <b>HC-ADV-B06-HHWH-1SGM20-PL</b> <b>HC-ADV-B06-HHWH-1SGM25-PL</b>	<b>1404224</b> <b>1404226</b>	1 1																
<b>Panel mounting flange<sup>1)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	 <table border="1" data-bbox="1204 1533 1356 1585"> <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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 6-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 6-TMS-SD-IP66</b>	<b>1690736</b> <b>1411494</b>	10 10																

#### Notes:

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> Bore hole Ø 4.5 mm when using M4 screws, bore hole Ø 3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories



**Box mounting base**  
phoenixcontact.net/products



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651

### Size B6, metal, ADVANCE sleeve housing, Offshore/EMC




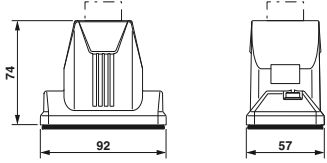

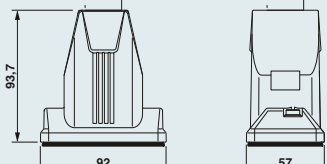

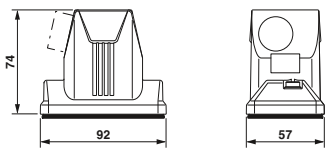

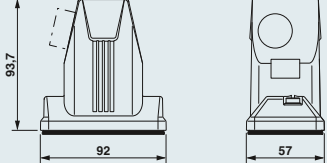

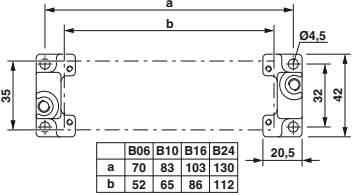

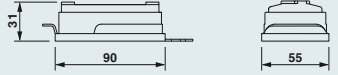
#### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Stainless steel  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP68 (0.2 bar/24 h) / IP69K (ISO 20653:2013-02)  
4 / 4X / 6P / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M20 1x M25	Cable outlet: top	<b>HC-ADV-B06-HLWH-1TTM20-EMC-AL</b>	1413362																
		HC-ADV-B06-HLWH-1TTM25-EMC-AL	1413364	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32	Cable outlet: top	<b>HC-ADV-B06-HHWH-1TTM25-EMC-AL</b>	1413374																
		HC-ADV-B06-HHWH-1TTM32-EMC-AL	1413376	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M20 1x M25	Cable outlet: lateral	<b>HC-ADV-B06-HLWH-1STM20-EMC-AL</b>	1413363																
		HC-ADV-B06-HLWH-1STM25-EMC-AL	1413365	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32	Cable outlet: lateral	<b>HC-ADV-B06-HHWH-1STM25-EMC-AL</b>	1413375																
		HC-ADV-B06-HHWH-1STM32-EMC-AL	1413377	1																
<b>Panel mounting flange<sup>2)</sup></b> 		2 pcs. per housing	<b>HC-B-AF</b>	1686533	 <table border="1" style="margin-top: 10px;"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
HC-B-AF-SET	1604638	1																		
<b>Protective cover</b> 		For sleeve side, IP50	<b>HC-B 6-TMS-SD-IP50</b>	1690736																
	For panel mounting side, IP66	<b>HC-B 6-TMS-SD-IP66</b>	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

<sup>1)</sup> Screw locking with M6 Allen screws

<sup>2)</sup> Bore hole  $\varnothing$  4.5 mm when using M4 screws, bore hole  $\varnothing$  3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories



**Cable glands**  
From page 680



**Box mounting base**  
phoenixcontact.net/products



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B6, plastic, EVO housing, single locking latch

#### General data


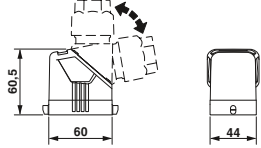

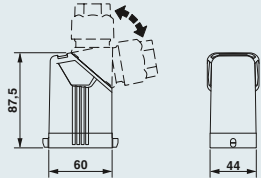



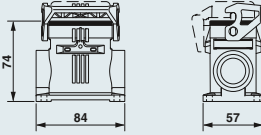

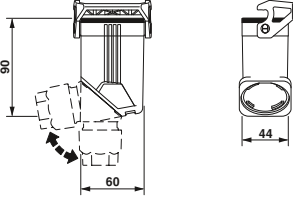

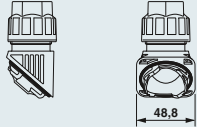
Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12



#### 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	
Panel mounting base Height: 30.5 mm 		Without cover HC-EVO-B06-BWS-PLRBK	1407621	1	
		With cover HC-EVO-B06-BWSC-PLRBK	1407622	1	
Box mounting base <sup>1)</sup> Height: 74 mm 	2x M32	Without cover HC-EVO-B06-SHWS-2SSM32-PLRBK	1407623	1	
	2x M32	With cover HC-EVO-B06-SHWSC-2SSM32-PLRBK	1407624	1	
Coupling housing Height: 90 mm 		HC-EVO-B06-CHWS-PLRBK	1407625	1	
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	1407669	1	
		HC-B-G-M25-PLRBK	1407670	1	
		HC-B-G-M32-PLRBK	1407671	1	
		HC-B-G-M40-PLRBK	1407672	1	

#### Notes:

For further accessories, see page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622

### Size B6, metal, EVO housing, single locking latch




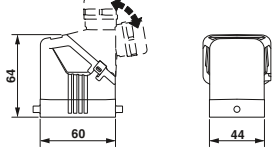

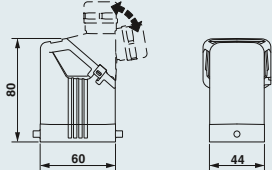



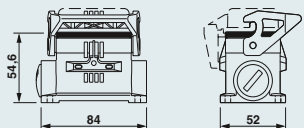

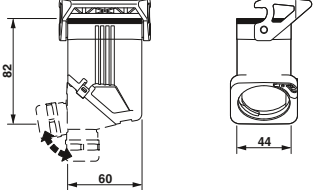

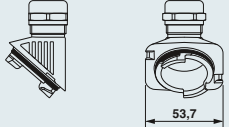
#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Polyamide  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP69K (ISO 20653:2013-02)  
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60.5 mm 		HC-EVO-B06-HLFS-EL-AL	1411448	1	
<b>Sleeve housing</b> Height: 80 mm 		HC-EVO-B06-HHFS-EL-AL	1411447	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B06-BWS-ELC-AL	1411318	1	
		With cover HC-STA-B06-BWSC-ELC-AL	1411319	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20	Without cover HC-STA-B06-SLWS-2SSM20-ELC-AL	1412821	1	
	2x M25	HC-STA-B06-SLWS-2SSM25-ELC-AL	1412822	1	
	2x Pg16	HC-STA-B06-SLWS-2SSP16-ELC-AL	1412823	1	
	2x M20	With cover HC-STA-B06-SLWSC-2SSM20-ELC-AL	1412825	1	
	2x M25	HC-STA-B06-SLWSC-2SSM25-ELC-AL	1412826	1	
	2x Pg16	HC-STA-B06-SLWSC-2SSP16-ELC-AL	1412827	1	
<b>Coupling housing</b> Height: 82 mm 		HC-EVO-B06-CHWS-ELC-AL	1411450	1	
<b>Cable gland</b> 	<b>Clamping area</b>	HC-B-G-M20-ER-AL	1411442	1	
	7 mm ... 13 mm	HC-B-G-M25-ER-AL	1411443	1	
	11 mm ... 16 mm	HC-B-G-M32-ER-AL	1411444	1	
	14 mm ... 21 mm	HC-B-G-M40-ER-AL	1411445	1	
19 mm ... 27 mm					

#### Notes:

For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989  
<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B6, metal, STANDARD sleeve housing for single locking latch

new


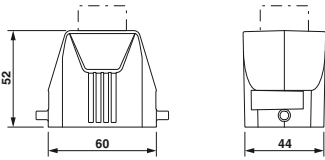

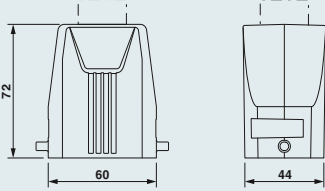

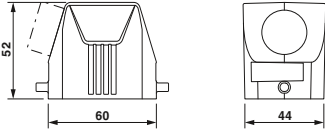

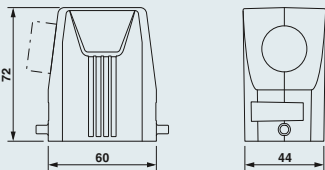


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 52 mm 	1x M20 1x M25	Cable outlet: top HC-STA-B06-HLFS-1TTM20-EL-AL	1412574	1	
		HC-STA-B06-HLFS-1TTM25-EL-AL	1412575	1	
	1x Pg13.5 1x Pg16	HC-STA-B06-HLFS-1TTP13-EL-AL	1412576	1	
		HC-STA-B06-HLFS-1TTP16-EL-AL	1412577	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B06-HHFS-1TTM25-EL-AL	1412566	1	
		HC-STA-B06-HHFS-1TTM32-EL-AL	1412567	1	
	1x Pg21 1x Pg29	HC-STA-B06-HHFS-1TTP21-EL-AL	1412568	1	
		HC-STA-B06-HHFS-1TTP29-EL-AL	1412569	1	
<b>Sleeve housing</b> Height: 52 mm 	1x M20 1x M25	Cable outlet: lateral HC-STA-B06-HLFS-1STM20-EL-AL	1412570	1	
		HC-STA-B06-HLFS-1STM25-EL-AL	1412571	1	
	1x Pg13.5 1x Pg16	HC-STA-B06-HLFS-1STP13-EL-AL	1412572	1	
		HC-STA-B06-HLFS-1STP16-EL-AL	1412573	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B06-HHFS-1STM25-EL-AL	1412562	1	
		HC-STA-B06-HHFS-1STM32-EL-AL	1412563	1	
	1x Pg21 1x Pg29	HC-STA-B06-HHFS-1STP21-EL-AL	1412564	1	
		HC-STA-B06-HHFS-1STP29-EL-AL	1412565	1	

**Notes:**  
For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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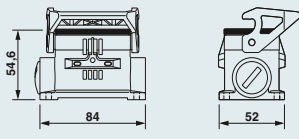

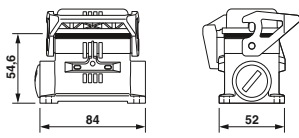

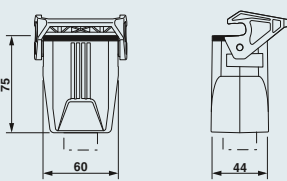
### Size B6, metal, STANDARD supporting base element with single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B06-BWS-ELC-AL	1411318	1	
		With cover HC-STA-B06-BWSC-ELC-AL	1411319	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20 2x M25  2x Pg16	Without cover HC-STA-B06-SLWS-2SSM20-ELC-AL	1412821	1	
		HC-STA-B06-SLWS-2SSM25-ELC-AL	1412822	1	
		HC-STA-B06-SLWS-2SSP16-ELC-AL	1412823	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20 2x M25  2x Pg16	With cover HC-STA-B06-SLWSC-2SSM20-ELC-AL	1412825	1	
		HC-STA-B06-SLWSC-2SSM25-ELC-AL	1412826	1	
		HC-STA-B06-SLWSC-2SSP16-ELC-AL	1412827	1	
<b>Coupling housing</b> 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	1412555	1	
		HC-STA-B06-CHWS-1TTM25-ELC-AL	1412556	1	
		HC-STA-B06-CHWS-1TTM32-ELC-AL	1412557	1	
		HC-STA-B06-CHWS-1TTP13-ELC-AL	1412558	1	
		HC-STA-B06-CHWS-1TTP21-ELC-AL	1412559	1	
		HC-STA-B06-CHWS-1TTP29-ELC-AL	1412560	1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, plastic, ADVANCE sleeve housing with cable gland


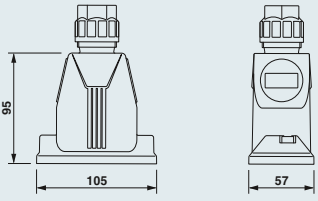

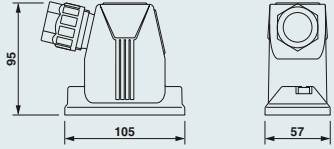

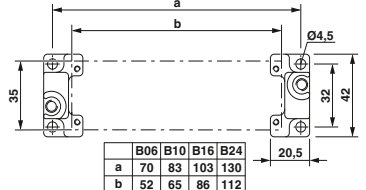


#### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data	
Housing material	Polyamide
Lock material	Stainless steel
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 100 °C
IP degree of protection (when plugged in)	IP66 / IP68 (0.2 bar/24 h)
NEMA degree of protection (when plugged in)	4 / 4X / 6P / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing</b> Height: 95 mm 	1x M25 1x M32	Cable outlet: top <b>HC-ADV-B10-HHWH-1TGM25-PL</b> <b>HC-ADV-B10-HHWH-1TGM32-PL</b>	1404227 1404229	1 1																
<b>Sleeve housing</b> Height: 95 mm 	1x M25 1x M32	Cable outlet: lateral <b>HC-ADV-B10-HHWH-1SGM25-PL</b> <b>HC-ADV-B10-HHWH-1SGM32-PL</b>	1404228 1404230	1 1																
<b>Panel mounting flange<sup>1)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	1686533 1604638	20 1	 <table border="1" data-bbox="1204 1533 1356 1585"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 10-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 10-TMS-SD-IP66</b>	1690749 1411504	10 10																

**Notes:**  
 Marking label: US-EMP (20X9) Order No. 0829439  
<sup>1)</sup> Bore hole Ø 4.5 mm when using M4 screws, bore hole Ø 3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories

 <b>Box mounting base</b> <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	 <b>Allen key</b> See Catalog 5	 <b>Replacement seals</b> From page 651
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### Size B10, metal, ADVANCE sleeve housing, Offshore/EMC


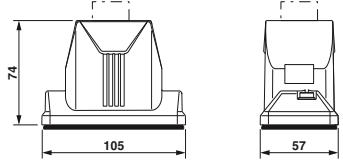

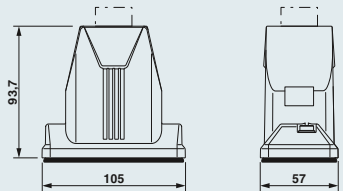

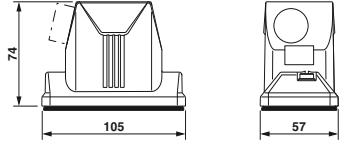

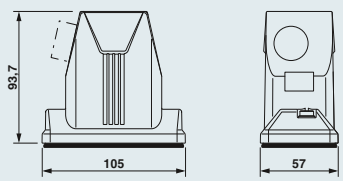

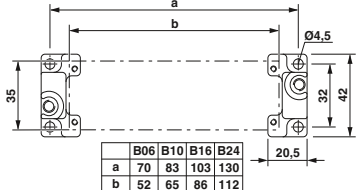


#### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Stainless steel  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP68 (0.2 bar/24 h) / IP69K (ISO 20653:2013-02)  
4 / 4X / 6P / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M20 1x M25	Cable outlet: top <b>HC-ADV-B10-HLWH-1TTM20-EMC-AL</b>	<b>1413388</b>	1																
		HC-ADV-B10-HLWH-1TTM25-EMC-AL	<b>1413390</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32	Cable outlet: top <b>HC-ADV-B10-HHWH-1TTM25-EMC-AL</b>	<b>1413400</b>	1																
		HC-ADV-B10-HHWH-1TTM32-EMC-AL	<b>1413402</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M20 1x M25	Cable outlet: lateral <b>HC-ADV-B10-HLWH-1STM20-EMC-AL</b>	<b>1413389</b>	1																
		HC-ADV-B10-HLWH-1STM25-EMC-AL	<b>1413391</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32	Cable outlet: lateral <b>HC-ADV-B10-HHWH-1STM25-EMC-AL</b>	<b>1413401</b>	1																
		HC-ADV-B10-HHWH-1STM32-EMC-AL	<b>1413403</b>	1																
<b>Panel mounting flange<sup>2)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	 <table border="1" style="margin-top: 10px;"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 10-TMS-SD-IP50</b>	<b>1690749</b>	10																
		For panel mounting side, IP66 <b>HC-B 10-TMS-SD-IP66</b>	<b>1411504</b>	10																

#### Notes:

In order to achieve optimum shielding results, the mounting surface must be conductive

Marking label: US-EMLP-HA (20X9), Order No. **0830989**

<sup>1)</sup> Screw locking with M6 Allen screws

<sup>2)</sup> Bore hole  $\varnothing$  4.5 mm when using M4 screws, bore hole  $\varnothing$  3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories



**Screw connections**  
From page 680



**Box mounting base**  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, plastic, EVO housing, single locking latch

#### General data


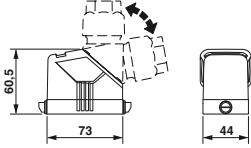
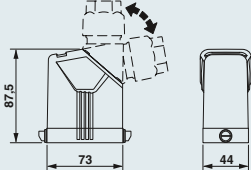
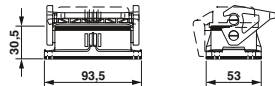

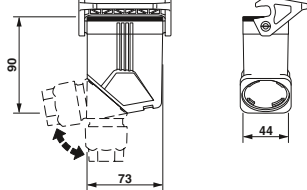
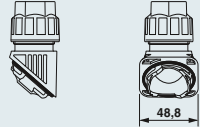
Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
Sleeve housing Height: 60.5 mm 		HC-EVO-B10-HLFS-PLBK	1407626	1	
Sleeve housing Height: 87.5 mm 		HC-EVO-B10-HHFS-PLBK	1407627	1	
Panel mounting base Height: 30.5 mm 		Without cover HC-EVO-B10-BWS-PLRBK	1407632	1	
		With cover HC-EVO-B10-BWSC-PLRBK	1407633	1	
Box mounting base <sup>1)</sup> Height: 74 mm 	2x M32	Without cover HC-EVO-B10-SHWS-2SSM32-PLRBK	1407636	1	
	2x M32	With cover HC-EVO-B10-SHWSC-2SSM32-PLRBK	1407637	1	
Coupling housing Height: 90 mm 		HC-EVO-B10-CHWS-PLRBK	1407640	1	
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	1407669	1	
		HC-B-G-M25-PLRBK	1407670	1	
		HC-B-G-M32-PLRBK	1407671	1	
		HC-B-G-M40-PLRBK	1407672	1	

#### Notes:

For further accessories, see page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622

### Size B10, metal, EVO housing, single locking latch


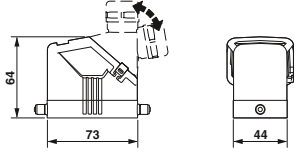

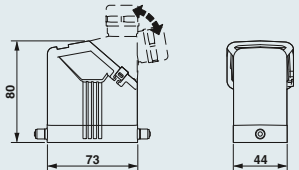

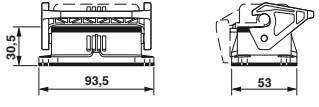

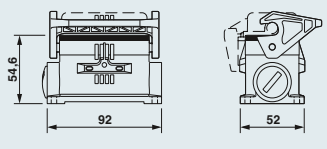

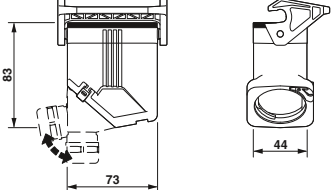

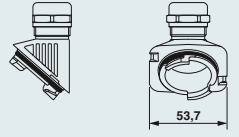


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data	
Die-cast aluminum, corrosion resistant	
Polyamide	
NBR, conductive	
-40 °C ... 125 °C	
IP66 / IP69K (ISO 20653:2013-02)	
4 / 4X / 12	

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 64 mm 		HC-EVO-B10-HLFS-EL-AL	1411456	1	
<b>Sleeve housing</b> Height: 80 mm 		HC-EVO-B10-HHFS-EL-AL	1411453	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B10-BWS-ELC-AL	1411320	1	
		With cover HC-STA-B10-BWSC-ELC-AL	1411321	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20	Without cover HC-STA-B10-SLWS-2SSM20-ELC-AL	1412839	1	
	2x M25	HC-STA-B10-SLWS-2SSM25-ELC-AL	1412840	1	
	2x Pg16	HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	1	
	2x M20	With cover HC-STA-B10-SLWSC-2SSM20-ELC-AL	1412844	1	
	2x M25	HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	1	
	2x Pg16	HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	1	
<b>Coupling housing</b> Height: 83 mm 		HC-EVO-B10-CHWS-ELC-AL	1411459	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL	1411442	1	
		HC-B-G-M25-ER-AL	1411443	1	
		HC-B-G-M32-ER-AL	1411444	1	
		HC-B-G-M40-ER-AL	1411445	1	

**Notes:**  
 Marking label: US-EMLP-HA (20X9), Order No. 0830989  
<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories

 <b>Thread adapter</b> From page 643	 <b>EMC cable gland</b> From page 642	 <b>Replacement seals</b> From page 650	 <b>Connector set</b> From page 623
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# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, metal, STANDARD sleeve housing for single locking latch

new


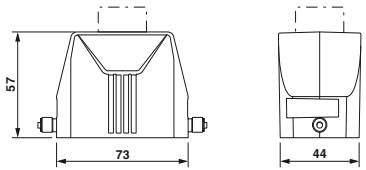

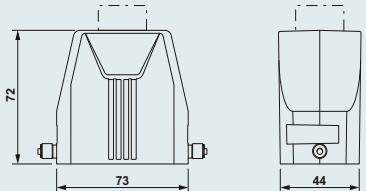

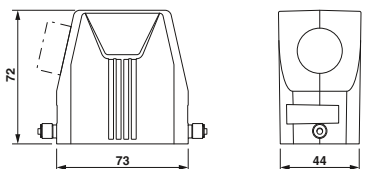

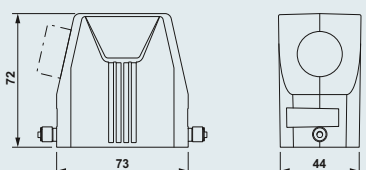


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: top HC-STA-B10-HLFS-1TTM20-EL-AL	1412629	1	
		HC-STA-B10-HLFS-1TTM25-EL-AL	1412630	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLFS-1TTP16-EL-AL	1412631	1	
		HC-STA-B10-HLFS-1TTP21-EL-AL	1412632	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B10-HHFS-1TTM25-EL-AL	1412604	1	
		HC-STA-B10-HHFS-1TTM32-EL-AL	1412605	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHFS-1TTP21-EL-AL	1412606	1	
		HC-STA-B10-HHFS-1TTP29-EL-AL	1412607	1	
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: lateral HC-STA-B10-HLFS-1STM20-EL-AL	1412624	1	
		HC-STA-B10-HLFS-1STM25-EL-AL	1412625	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLFS-1STP16-EL-AL	1412627	1	
		HC-STA-B10-HLFS-1STP21-EL-AL	1412628	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B10-HHFS-1STM25-EL-AL	1412600	1	
		HC-STA-B10-HHFS-1STM32-EL-AL	1412601	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHFS-1STP21-EL-AL	1412602	1	
		HC-STA-B10-HHFS-1STP29-EL-AL	1412603	1	

**Notes:**  
For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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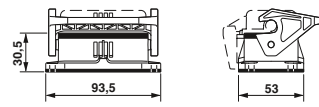

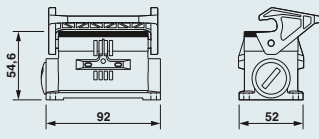

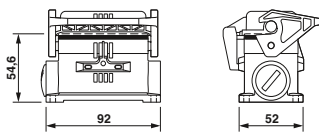

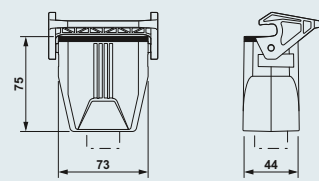
### Size B10, metal, STANDARD supporting base element with single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B10-BWS-ELC-AL	1411320	1	
		With cover HC-STA-B10-BWSC-ELC-AL	1411321	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20 2x M25  2x Pg16	Without cover HC-STA-B10-SLWS-2SSM20-ELC-AL	1412839	1	
		HC-STA-B10-SLWS-2SSM25-ELC-AL	1412840	1	
		HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M20 2x M25  2x Pg16	With cover HC-STA-B10-SLWSC-2SSM20-ELC-AL	1412844	1	
		HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	1	
		HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	1	
<b>Coupling housing</b> 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	1412584	1	
		HC-STA-B10-CHWS-1TTM25-ELC-AL	1412585	1	
		HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	1	
		HC-STA-B10-CHWS-1TTP16-ELC-AL	1412587	1	
		HC-STA-B10-CHWS-1TTP21-ELC-AL	1412588	1	
		HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



**Cable glands**  
From page 680



**Replacement seals**  
From page 651



**Replacement protective cover**  
From page 647



**Replacement latch**  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, plastic, EVO housing, double locking latch


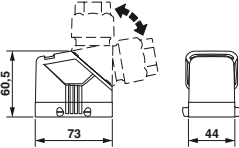

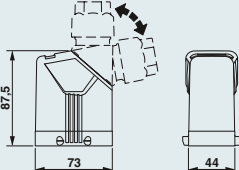

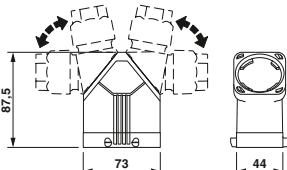

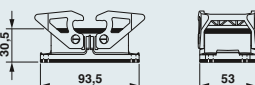

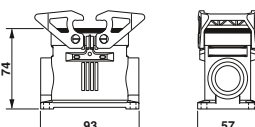

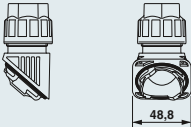


#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60.5 mm 		HC-EVO-B10-HLFD-PLBK	1407628	1	
<b>Sleeve housing</b> Height: 87.5 mm 		HC-EVO-B10-HHFD-PLBK	1407629	1	
<b>Double sleeve housing</b> Height: 87.5 mm 		HC-EVO-B10-HHFD-2B-PL-BK	1411495	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-EVO-B10-BWD-PLRBK	1407634	1	
<b>Box mounting base<sup>1)</sup></b> Height: 74 mm 	2x M32	Without cover HC-EVO-B10-SHWD-2SSM32-PLRBK	1407638	1	
<b>Cable gland</b> 	<b>Clamping area</b> 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 page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622

### Size B10, metal, EVO housing, double locking latch




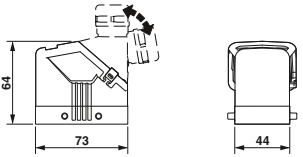

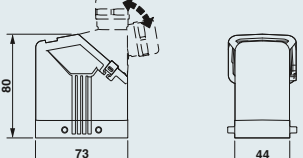

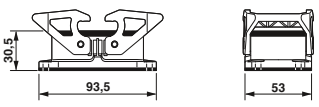

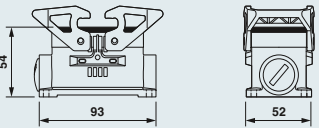

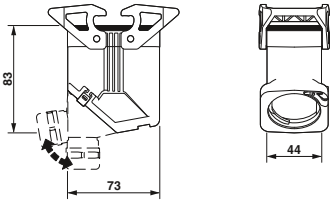

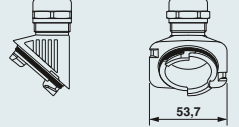
#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Polyamide  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP69K (ISO 20653:2013-02)  
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 64 mm 		HC-EVO-B10-HLFD-EL-AL	1411455	1	
<b>Sleeve housing</b> Height: 80 mm 		HC-EVO-B10-HHFD-EL-AL	1411451	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B10-BWD-ELC-AL	1411322	1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Coupling housing</b> Height: 83 mm 		HC-EVO-B10-CHWD-ELC-AL	1411458	1	
<b>Cable gland</b> 	Clamping area 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989  
<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, metal, STANDARD sleeve housing for double locking latch

new


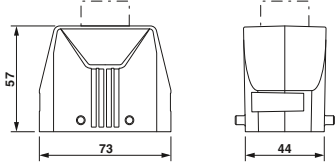

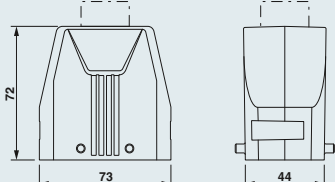

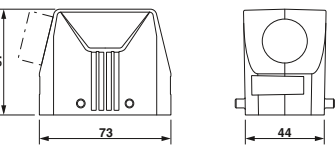

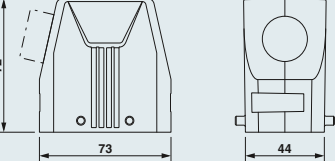


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: top HC-STA-B10-HLFD-1TTM20-EL-AL	1412620	1	
		HC-STA-B10-HLFD-1TTM25-EL-AL	1412621	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLFD-1TTP16-EL-AL	1412622	1	
		HC-STA-B10-HLFD-1TTP21-EL-AL	1412623	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B10-HHFD-1TTM25-EL-AL	1412596	1	
		HC-STA-B10-HHFD-1TTM32-EL-AL	1412597	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHFD-1TTP21-EL-AL	1412598	1	
		HC-STA-B10-HHFD-1TTP29-EL-AL	1412599	1	
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: lateral HC-STA-B10-HLFD-1STM20-EL-AL	1412616	1	
		HC-STA-B10-HLFD-1STM25-EL-AL	1412617	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLFD-1STP16-EL-AL	1412618	1	
		HC-STA-B10-HLFD-1STP21-EL-AL	1412619	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B10-HHFD-1STM25-EL-AL	1412592	1	
		HC-STA-B10-HHFD-1STM32-EL-AL	1412593	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHFD-1STP21-EL-AL	1412594	1	
		HC-STA-B10-HHFD-1STP29-EL-AL	1412595	1	

**Notes:**  
For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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new



### Size B10, metal, STANDARD supporting base element with double locking latch




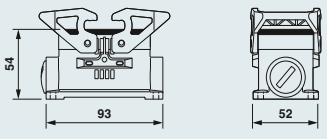

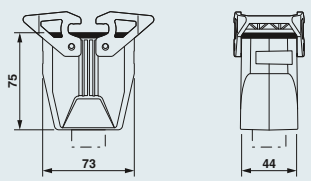
#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Polyamide  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP69K (ISO 20653:2013-02)  
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover <b>HC-STA-B10-BWD-ELC-AL</b>	<b>1411322</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54 mm 	2x M20 2x M25  2x Pg16	Without cover <b>HC-STA-B10-SLWD-2SSM20-ELC-AL</b> <b>HC-STA-B10-SLWD-2SSM25-ELC-AL</b>  <b>HC-STA-B10-SLWD-2SSP16-ELC-AL</b>	<b>1412835</b> <b>1412836</b>  <b>1412837</b>	1 1 1	
<b>Coupling housing</b> Height: 73 mm 	1x M20 1x M25 1x M32  1x Pg16 1x Pg21 1x Pg29	Cable outlet: top <b>HC-STA-B10-CHWD-1TTM20-ELC-AL</b> <b>HC-STA-B10-CHWD-1TTM25-ELC-AL</b> <b>HC-STA-B10-CHWD-1TTM32-ELC-AL</b>  <b>HC-STA-B10-CHWD-1TTP16-ELC-AL</b> <b>HC-STA-B10-CHWD-1TTP21-ELC-AL</b> <b>HC-STA-B10-CHWD-1TTP29-ELC-AL</b>	<b>1412578</b> <b>1412579</b> <b>1412580</b>  <b>1412581</b> <b>1412582</b> <b>1412583</b>	1 1 1  1 1 1	

#### Notes:

For further accessories, see page 642  
<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, plastic, EVO housing, double locking latch




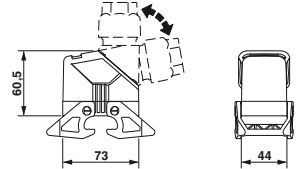

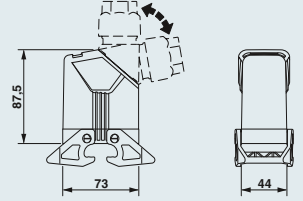

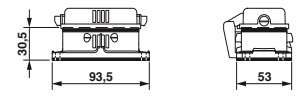

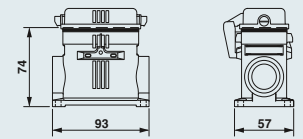

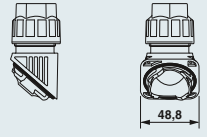
#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60.5 mm 		HC-EVO-B10-HLWD-PLBK	1407630	1	
<b>Sleeve housing</b> Height: 87.5 mm 		HC-EVO-B10-HHWD-PLBK	1407631	1	
<b>Panel mounting base</b> Height: 30.5 mm 		With cover HC-EVO-B10-BFDC-PLRBK	1407635	1	
<b>Box mounting base<sup>1)</sup></b> Height: 74 mm 	2x M32	With cover HC-EVO-B10-SHFDC-2SSM32-PLRBK	1407639	1	
<b>Cable gland</b> 	<b>Clamping area</b> 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:

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Replacement latch  
From page 652


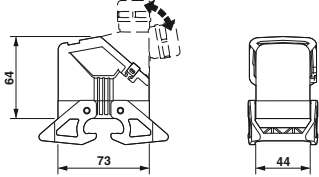

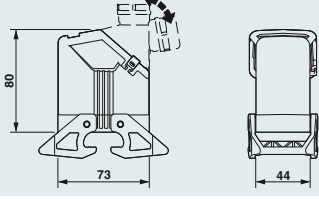

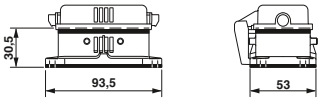

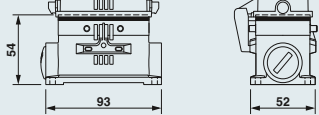

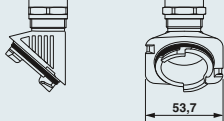
### Size B10, metal, EVO housing, double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 64 mm 		HC-EVO-B10-HLWD-EL-AL	1411457	1	
<b>Sleeve housing</b> Height: 80 mm 		HC-EVO-B10-HHWD-EL-AL	1411454	1	
<b>Panel mounting base</b> Height: 30.5 mm 		With cover HC-STA-B10-BFDC-ELC-AL	1411323	1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B10, metal, STANDARD sleeve housing with double locking latch

new


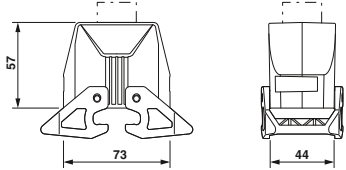

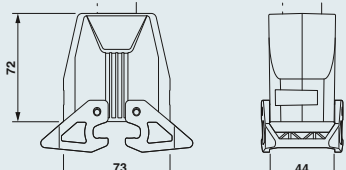

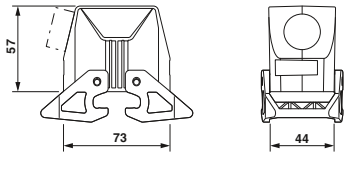

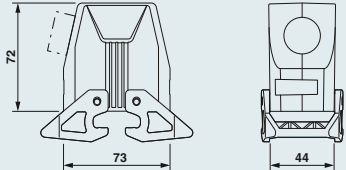


#### General data

Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	PA
Sealing material	-
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: top HC-STA-B10-HLWD-1TTM20-EL-AL	1412637	1	
		HC-STA-B10-HLWD-1TTM25-EL-AL	1412638	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLWD-1TTP16-EL-AL	1412639	1	
		HC-STA-B10-HLWD-1TTP21-EL-AL	1412640	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B10-HHWD-1TTM25-EL-AL	1412612	1	
		HC-STA-B10-HHWD-1TTM32-EL-AL	1412613	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHWD-1TTP21-EL-AL	1412614	1	
		HC-STA-B10-HHWD-1TTP29-EL-AL	1412615	1	
<b>Sleeve housing</b> Height: 57 mm 	1x M20 1x M25	Cable outlet: lateral HC-STA-B10-HLWD-1STM20-EL-AL	1412633	1	
		HC-STA-B10-HLWD-1STM25-EL-AL	1412634	1	
	1x Pg16 1x Pg21	HC-STA-B10-HLWD-1STP16-EL-AL	1412635	1	
		HC-STA-B10-HLWD-1STP21-EL-AL	1412636	1	
<b>Sleeve housing</b> Height: 72 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B10-HHWD-1STM25-EL-AL	1412608	1	
		HC-STA-B10-HHWD-1STM32-EL-AL	1412609	1	
	1x Pg21 1x Pg29	HC-STA-B10-HHWD-1STP21-EL-AL	1412610	1	
		HC-STA-B10-HHWD-1STP29-EL-AL	1412611	1	

#### Notes:

For further accessories, see page 642  
 Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories



Cable glands  
From page 680



Replacement latch  
From page 652



Protective cover  
From page 646


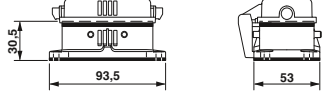

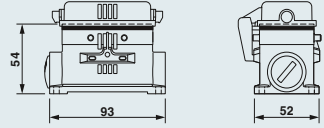
### Size B10, metal, STANDARD supporting base element for double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	-
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		With cover <b>HC-STA-B10-BFDC-ELC-AL</b>	<b>1411323</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54 mm 	2x M20	With cover <b>HC-STA-B10-SLFDC-2SSM20-ELC-AL</b>	<b>1412830</b>	1	
	2x M25	<b>HC-STA-B10-SLFDC-2SSM25-ELC-AL</b>	<b>1412831</b>	1	
	2x Pg16	<b>HC-STA-B10-SLFDC-2SSP16-ELC-AL</b>	<b>1412832</b>	1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



**Cable glands**  
From page 680



**Replacement seals**  
From page 651



**Replacement protective cover**  
From page 647



**Cover plates**  
From page 648

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, plastic, ADVANCE sleeve housing with cable gland


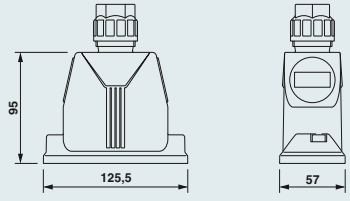

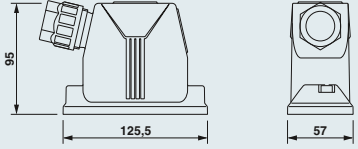

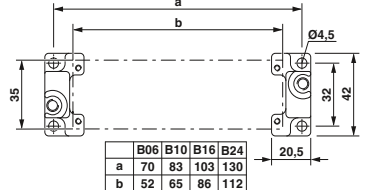

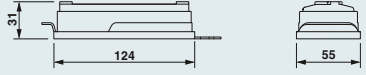
#### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data	
Housing material	Polyamide
Lock material	Stainless steel
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 100 °C
IP degree of protection (when plugged in)	IP66 / IP68 (0.2 bar/24 h)
NEMA degree of protection (when plugged in)	4 / 4X / 6P / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing</b> Height: 95 mm 	1x M32 1x M40	Cable outlet: top <b>HC-ADV-B16-HHWH-1TGM32-PL</b> <b>HC-ADV-B16-HHWH-1TGM40-PL</b>	<b>1404231</b> <b>1404233</b>	1 1																
<b>Sleeve housing</b> Height: 95 mm 	1x M32 1x M40	Cable outlet: lateral <b>HC-ADV-B16-HHWH-1SGM32-PL</b> <b>HC-ADV-B16-HHWH-1SGM40-PL</b>	<b>1404232</b> <b>1404234</b>	1 1																
<b>Panel mounting flange<sup>1)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	 <table border="1" data-bbox="1204 1533 1356 1585"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 16-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 16-TMS-SD-IP66</b>	<b>1690752</b> <b>1411517</b>	10 10																

**Notes:**  
 Marking label: US-EMP (20X9) Order No. 0829439  
<sup>1)</sup> Bore hole Ø 4.5 mm when using M4 screws, bore hole Ø 3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories

 <b>Box mounting base</b> <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	 <b>Allen key</b> See Catalog 5	 <b>Replacement seals</b> From page 651
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new



### Size B16, metal, ADVANCE sleeve housing, Offshore/EMC


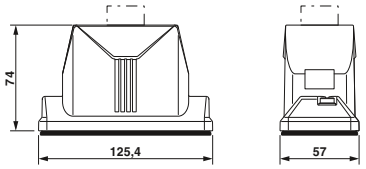

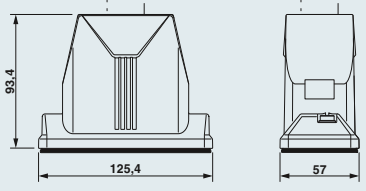

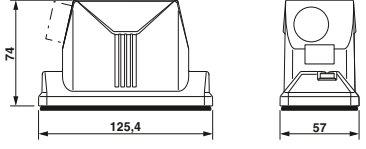

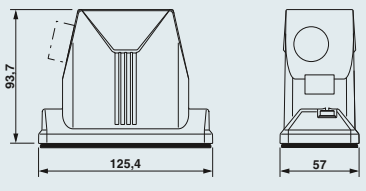

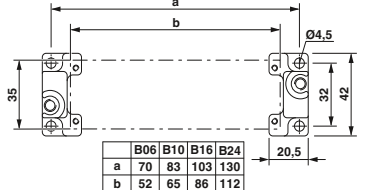

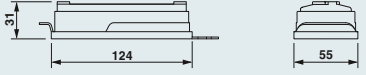
#### Technical data

##### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Die-cast aluminum, corrosion resistant  
Stainless steel  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP68 (0.2 bar/24 h) / IP69K (ISO 20653:2013-02)  
4 / 4X / 6P / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M25	Cable outlet: top <b>HC-ADV-B16-HLWH-1TTM25-EMC-AL</b>	<b>1414975</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32 1x M40	Cable outlet: top <b>HC-ADV-B16-HHWH-1TTM25-EMC-AL</b> <b>HC-ADV-B16-HHWH-1TTM32-EMC-AL</b> <b>HC-ADV-B16-HHWH-1TTM40-EMC-AL</b>	<b>1414977</b> <b>1413416</b> <b>1413418</b>	1 1 1																
<b>Cable entry: lateral<sup>1)</sup></b> Height: 74 mm 	1x M25	Cable outlet: lateral <b>HC-ADV-B16-HLWH-1STM25-EMC-AL</b>	<b>1414976</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32 1x M40	Cable outlet: lateral <b>HC-ADV-B16-HHWH-1STM25-EMC-AL</b> <b>HC-ADV-B16-HHWH-1STM32-EMC-AL</b> <b>HC-ADV-B16-HHWH-1STM40-EMC-AL</b>	<b>1414978</b> <b>1413417</b> <b>1413419</b>	1 1 1																
<b>Panel mounting flange<sup>2)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	 <table border="1" data-bbox="1189 1533 1340 1585"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 16-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 16-TMS-SD-IP66</b>	<b>1690752</b> <b>1411517</b>	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**

<sup>1)</sup> Screw locking with M6 Allen screws

<sup>2)</sup> Bore hole  $\varnothing$  4.5 mm when using M4 screws, bore hole  $\varnothing$  3.6 mm when using self-tapping M4 screws (Torx<sup>®</sup>)

#### Accessories



**Cable glands**  
From page 680



**Box mounting base**  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, plastic, EVO housing, single locking latch



#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

#### Description

#### Thread

#### Type

#### Order No.

#### Pcs. / Pkt.

#### Dimensions

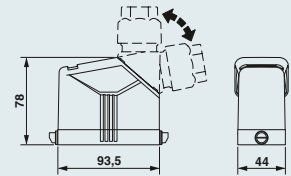
#### Sleeve housing Height: 78 mm



HC-EVO-B16-HHFS-PLBK

1407642

1



#### Panel mounting base Height: 30.5 mm



Without cover  
HC-EVO-B16-BWS-PLRBK

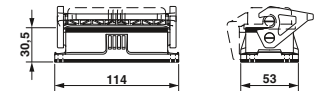
1407646

1

With cover  
HC-EVO-B16-BWSC-PLRBK

1407647

1



#### Box mounting base<sup>1)</sup> Height: 84 mm



2x M40

Without cover  
HC-EVO-B16-SHWS-2SSM40-PLRBK

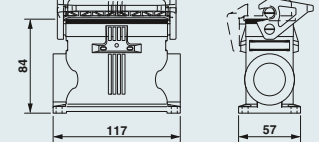
1407650

1

With cover  
HC-EVO-B16-SHWSC-2SSM40-PLRBK

1407651

1



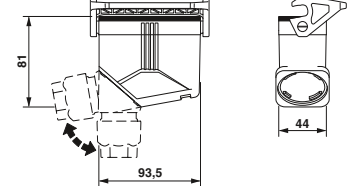
#### Coupling housing Height: 81 mm



HC-EVO-B16-CHWS-PLRBK

1407654

1



#### 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

1407669

1

HC-B-G-M25-PLRBK

1407670

1

HC-B-G-M32-PLRBK

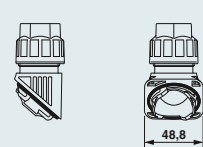
1407671

1

HC-B-G-M40-PLRBK

1407672

1



#### Notes:

For further accessories, see page 642

Marking label: US-EMP (20X9) Order No. [0829439](#)

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622




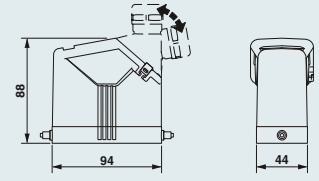

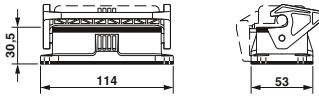

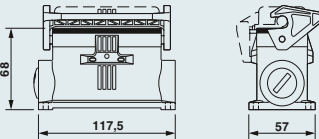

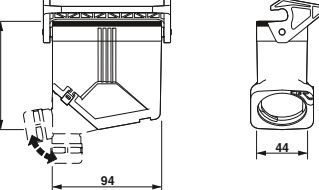

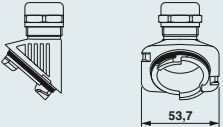
### Size B16, metal, EVO housing, single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B16-HHFS-EL-AL	1411461	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B16-BWS-ELC-AL With cover HC-STA-B16-BWSC-ELC-AL	1411324 1411325	1 1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Coupling housing</b> Height: 90.5 mm 		HC-EVO-B16-CHWS-ELC-AL	1411464	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, metal, STANDARD sleeve housing for single locking latch

new


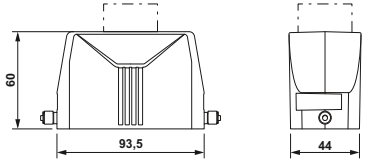

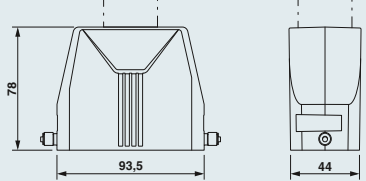

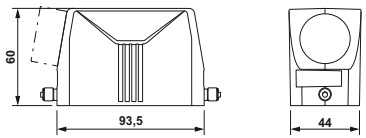

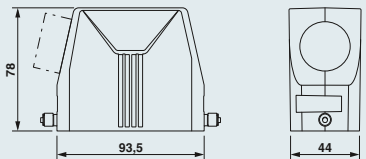


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data	
Die-cast aluminum, corrosion resistant	
-	
-	
-40 °C ... 125 °C	
IP66 / IP69K (ISO 20653:2013-02)	
4 / 4X / 12	

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B16-HLFS-1TTM25-EL-AL	1412729	1	
		HC-STA-B16-HLFS-1TTM32-EL-AL	1412730	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLFS-1TTP16-EL-AL	1412731	1	
		HC-STA-B16-HLFS-1TTP21-EL-AL	1412732	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B16-HHFS-1TTM32-EL-AL	1412689	1	
		HC-STA-B16-HHFS-1TTM40-EL-AL	1412700	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHFS-1TTP21-EL-AL	1412701	1	
		HC-STA-B16-HHFS-1TTP29-EL-AL	1412702	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B16-HLFS-1STM25-EL-AL	1412725	1	
		HC-STA-B16-HLFS-1STM32-EL-AL	1412726	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLFS-1STP16-EL-AL	1412727	1	
		HC-STA-B16-HLFS-1STP21-EL-AL	1412728	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B16-HHFS-1STM32-EL-AL	1412679	1	
		HC-STA-B16-HHFS-1STM40-EL-AL	1412682	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHFS-1STP21-EL-AL	1412683	1	
		HC-STA-B16-HHFS-1STP29-EL-AL	1412684	1	

**Notes:**  
For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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new


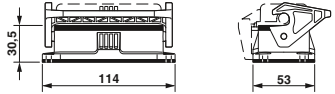

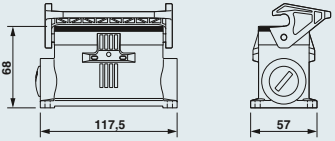

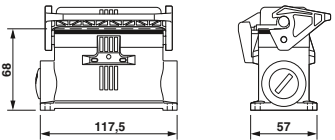

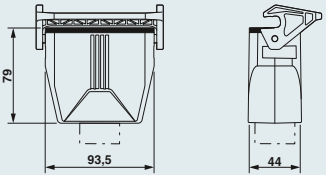
### Size B16, metal, STANDARD supporting base element with single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B16-BWS-ELC-AL	1411324	1	
		With cover HC-STA-B16-BWSC-ELC-AL	1411325	1	
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 	2x M25 2x M32  2x Pg21	Without cover HC-STA-B16-SLWS-2SSM25-ELC-AL	1412861	1	
		Without cover HC-STA-B16-SLWS-2SSM32-ELC-AL	1412862	1	
		Without cover HC-STA-B16-SLWS-2SSP21-ELC-AL	1412863	1	
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 	2x M25 2x M32  2x Pg21	With cover HC-STA-B16-SLWSC-2SSM25-ELC-AL	1412865	1	
		With cover HC-STA-B16-SLWSC-2SSM32-ELC-AL	1412866	1	
		With cover HC-STA-B16-SLWSC-2SSP21-ELC-AL	1412867	1	
<b>Coupling housing</b> Height: 79 mm 	1x M25 1x M32  1x Pg21 1x Pg29	Cable outlet: top HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	1	
		HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	1	
		HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	1	
		HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, plastic, EVO housing, double locking latch


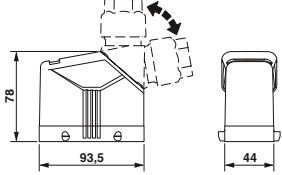

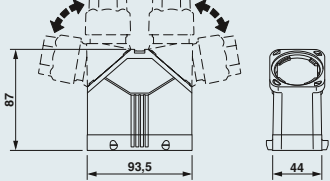

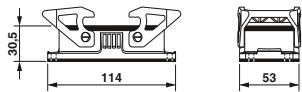

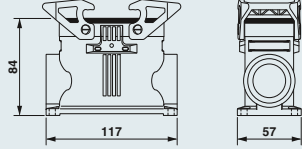

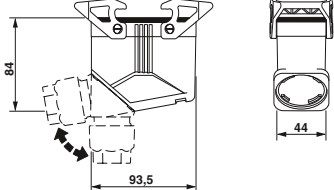

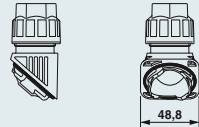


#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 78 mm 		HC-EVO-B16-HHFD-PLBK	1407643	1	
<b>Double sleeve housing</b> Height: 78 mm 		HC-EVO-B16-HHFD-2B-PL-BK	1411496	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-EVO-B16-BWD-PLRBK	1407648	1	
<b>Box mounting base<sup>1)</sup></b> Height: 84 mm 	2x M40	Without cover HC-EVO-B16-SHWD-2SSM40-PLRBK	1407652	1	
<b>Coupling housing</b> Height: 84 mm 		HC-EVO-B16-CHWD-PLRBK	1407655	1	
<b>Cable gland</b> 	<b>Clamping area</b> 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 page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622


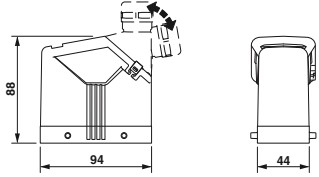

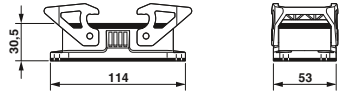

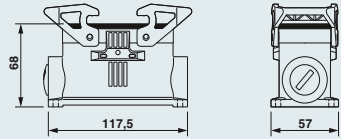

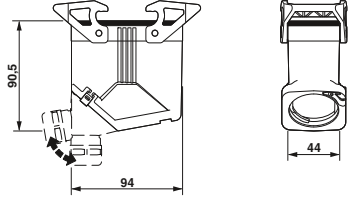

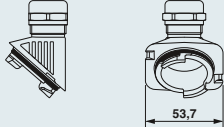
### Size B16, metal, EVO housing, double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B16-HHFD-EL-AL	1411460	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B16-BWD-ELC-AL	1411327	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 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	
<b>Coupling housing</b> Height: 90.5 mm 		HC-EVO-B16-CHWD-ELC-AL	1411463	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, metal, STANDARD sleeve housing for double locking latch

new


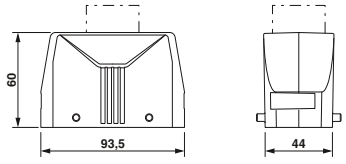

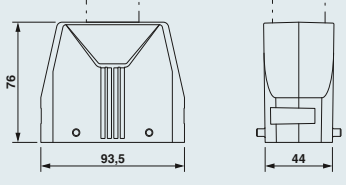

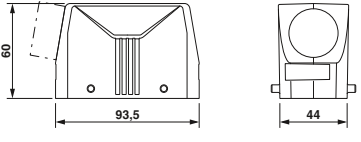

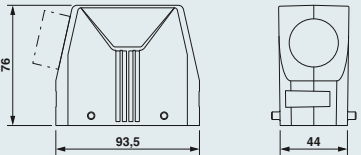


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B16-HLFD-1TTM25-EL-AL	1412721	1	
		HC-STA-B16-HLFD-1TTM32-EL-AL	1412722	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLFD-1TTP16-EL-AL	1412723	1	
		HC-STA-B16-HLFD-1TTP21-EL-AL	1412724	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B16-HHFD-1TTM32-EL-AL	1412653	1	
		HC-STA-B16-HHFD-1TTM40-EL-AL	1412654	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHFD-1TTP21-EL-AL	1412669	1	
		HC-STA-B16-HHFD-1TTP29-EL-AL	1412678	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B16-HLFD-1STM25-EL-AL	1412717	1	
		HC-STA-B16-HLFD-1STM32-EL-AL	1412718	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLFD-1STP16-EL-AL	1412719	1	
		HC-STA-B16-HLFD-1STP21-EL-AL	1412720	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B16-HHFD-1STM32-EL-AL	1412649	1	
		HC-STA-B16-HHFD-1STM40-EL-AL	1412650	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHFD-1STP21-EL-AL	1412651	1	
		HC-STA-B16-HHFD-1STP29-EL-AL	1412652	1	

**Notes:**  
 For further accessories, see page 642  
 Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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new



### Size B16, metal, STANDARD supporting base element with double locking latch




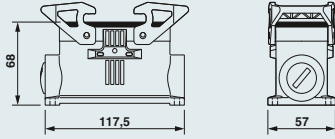

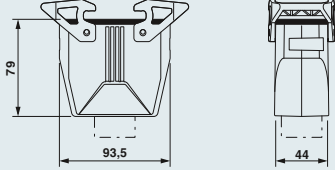
#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Polyamide  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP69K (ISO 20653:2013-02)  
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover <b>HC-STA-B16-BWD-ELC-AL</b>	<b>1411327</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 54.6 mm 	2x M25 2x M32  2x Pg21	Without cover <b>HC-STA-B16-SLWD-2SSM25-ELC-AL</b> <b>HC-STA-B16-SLWD-2SSM32-ELC-AL</b>  <b>HC-STA-B16-SLWD-2SSP21-ELC-AL</b>	<b>1412855</b> <b>1412856</b>  <b>1412857</b>	1 1 1	
<b>Coupling housing</b> Height: 79 mm 	1x M25 1x M32  1x Pg21 1x Pg29	Cable outlet: top <b>HC-STA-B16-CHWD-1TTM25-ELC-AL</b> <b>HC-STA-B16-CHWD-1TTM32-ELC-AL</b>  <b>HC-STA-B16-CHWD-1TTP21-ELC-AL</b> <b>HC-STA-B16-CHWD-1TTP29-ELC-AL</b>	<b>1412641</b> <b>1412642</b>  <b>1412643</b> <b>1412644</b>	1 1 1 1	

#### Notes:

For further accessories, see page 642  
<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, plastic, EVO housing, double locking latch



#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

#### Description

#### Thread

#### Type

#### Order No.

Pcs. / Pkt.

#### Dimensions

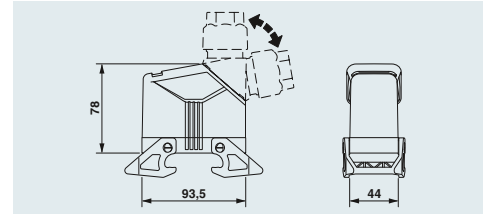
#### Sleeve housing Height: 78 mm



HC-EVO-B16-HHWD-PLBK

1407644

1



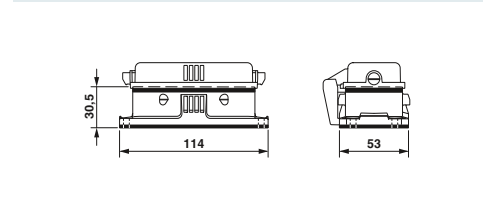
#### Panel mounting base Height: 30.5 mm



With cover  
HC-EVO-B16-BFDC-PLRBK

1407649

1



#### Box mounting base<sup>1)</sup> Height: 84 mm

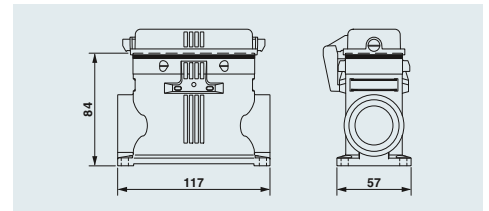
2x M40



With cover  
HC-EVO-B16-SHFDC-2SSM40-PLRBK

1407653

1



#### Cable gland

#### Clamping area

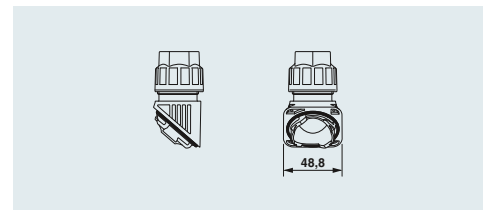
7 mm ... 13 mm  
9 mm ... 17 mm  
11 mm ... 21 mm  
19 mm ... 28 mm



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:

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Replacement latch  
From page 652




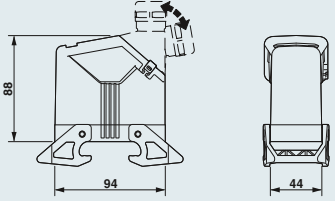

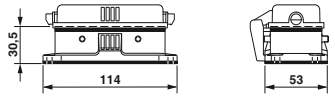

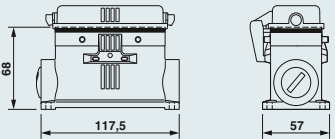

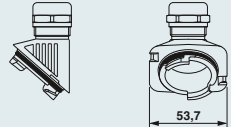
### Size B16, metal, EVO housing, double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B16-HHWD-EL-AL	1411462	1	
<b>Panel mounting base</b> Height: 30.5 mm 		With cover HC-STA-B16-BFDC-ELC-AL	1411328	1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

For further accessories, see page 642

<sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Replacement latch  
From page 652



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B16, metal, STANDARD sleeve housing with double locking latch

new


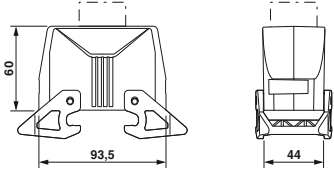

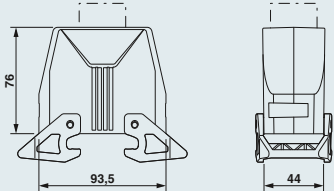

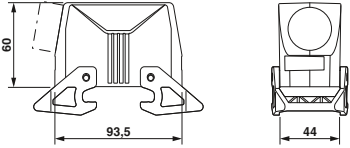

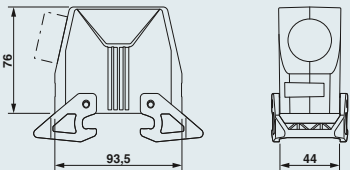


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
PA
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B16-HLWD-1TTM25-EL-AL	1412738	1	
		HC-STA-B16-HLWD-1TTM32-EL-AL	1412739	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLWD-1TTP16-EL-AL	1412740	1	
		HC-STA-B16-HLWD-1TTP21-EL-AL	1412741	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B16-HHWD-1TTM32-EL-AL	1412708	1	
		HC-STA-B16-HHWD-1TTM40-EL-AL	1412709	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHWD-1TTP21-EL-AL	1412715	1	
		HC-STA-B16-HHWD-1TTP29-EL-AL	1412716	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B16-HLWD-1STM25-EL-AL	1412733	1	
		HC-STA-B16-HLWD-1STM32-EL-AL	1412734	1	
	1x Pg16 1x Pg21	HC-STA-B16-HLWD-1STP16-EL-AL	1412735	1	
		HC-STA-B16-HLWD-1STP21-EL-AL	1412737	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B16-HHWD-1STM32-EL-AL	1412703	1	
		HC-STA-B16-HHWD-1STM40-EL-AL	1412704	1	
	1x Pg21 1x Pg29	HC-STA-B16-HHWD-1STP21-EL-AL	1412705	1	
		HC-STA-B16-HHWD-1STP29-EL-AL	1412706	1	

#### Notes:

For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories



Cable glands  
From page 680



Protective cover  
From page 646



Replacement latch  
From page 652

**Size B16, metal,  
STANDARD supporting base element  
for double locking latch**



General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	-
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

Technical data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	-
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

Description		Thread	Type	Order No.	Pcs. / Pkt.
Panel mounting base Height: 30.5 mm			With cover HC-STA-B16-BFDC-ELC-AL	1411328	1
Box mounting base <sup>1)</sup> Height: 68 mm		2x M25 2x M32	With cover HC-STA-B16-SLFDC-2SSM25-ELC-AL HC-STA-B16-SLFDC-2SSM32-ELC-AL	1412849 1412850	1 1
		2x Pg16 2x Pg21	HC-STA-B16-SLFDC-2SSP16-ELC-AL HC-STA-B16-SLFDC-2SSP21-ELC-AL	1412852 1412853	1 1

Dimensions	

Notes:
For further accessories, see page 642
<sup>1)</sup> Supplied with a plastic sealing cap

**Accessories**

Cable glands From page 680	Replacement seals From page 651	Replacement protective cover From page 647	Cover plates From page 648

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, plastic, ADVANCE sleeve housing with cable gland

#### General data


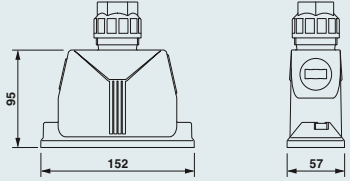

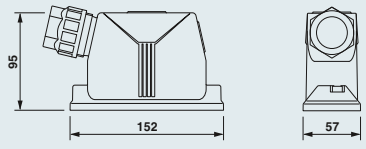

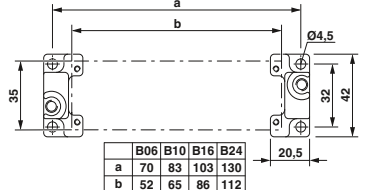

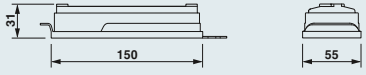
Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Polyamide  
Stainless steel  
NBR  
-40 °C ... 100 °C  
IP66 / IP68 (0.2 bar/24 h)  
4 / 4X / 6P / 12



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 95 mm 	1x M32 1x M40	Cable outlet: top <b>HC-ADV-B24-HHWH-1TGM32-PL</b> <b>HC-ADV-B24-HHWH-1TGM40-PL</b>	<b>1404235</b> <b>1404238</b>	1 1	
<b>Sleeve housing</b> Height: 95 mm 	1x M32 1x M40	Cable outlet: lateral <b>HC-ADV-B24-HHWH-1SGM32-PL</b> <b>HC-ADV-B24-HHWH-1SGM40-PL</b>	<b>1404237</b> <b>1404239</b>	1 1	
<b>Panel mounting flange<sup>1)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 24-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 24-TMS-SD-IP66</b>	<b>1690765</b> <b>1411520</b>	10 10	

#### Notes:

Marking label: US-EMP (20X9) Order No. **0829439**

<sup>1)</sup> Bore hole Ø 4.5 mm when using M4 screws, bore hole Ø 3.6 mm when using self-tapping M4 screws (Torx®)

#### Accessories



**Box mounting base**  
[phoenixcontact.net/products](http://phoenixcontact.net/products)



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651

new



### Size B24, metal, ADVANCE sleeve housing, Offshore/EMC


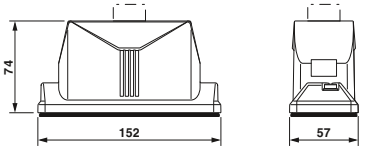

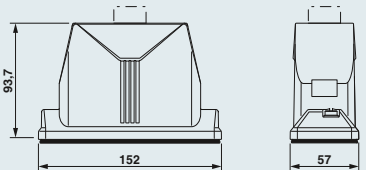

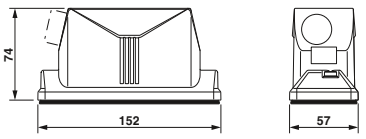

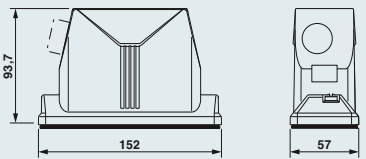

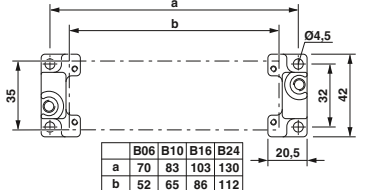

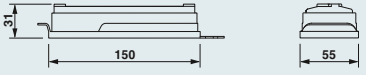
#### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
Stainless steel  
NBR, conductive  
-40 °C ... 125 °C  
IP66 / IP68 (0.2 bar/24 h) / IP69K (ISO 20653:2013-02)  
4 / 4X / 6P / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions															
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M25	Cable outlet: top <b>HC-ADV-B24-HLWH-1TTM25-EMC-AL</b>	<b>1414982</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32 1x M40	Cable outlet: top <b>HC-ADV-B24-HHWH-1TTM25-EMC-AL</b> <b>HC-ADV-B24-HHWH-1TTM32-EMC-AL</b> <b>HC-ADV-B24-HHWH-1TTM40-EMC-AL</b>	<b>1414980</b> <b>1413430</b> <b>1413432</b>	1 1 1																
<b>Sleeve housing<sup>1)</sup></b> Height: 74 mm 	1x M25	Cable outlet: lateral <b>HC-ADV-B24-HLWH-1STM25-EMC-AL</b>	<b>1414983</b>	1																
<b>Sleeve housing<sup>1)</sup></b> Height: 93.7 mm 	1x M25 1x M32 1x M40	Cable outlet: lateral <b>HC-ADV-B24-HHWH-1STM25-EMC-AL</b> <b>HC-ADV-B24-HHWH-1STM32-EMC-AL</b> <b>HC-ADV-B24-HHWH-1STM40-EMC-AL</b>	<b>1414981</b> <b>1413431</b> <b>1413433</b>	1 1 1																
<b>Panel mounting flange<sup>2)</sup></b> 		2 pcs. per housing <b>HC-B-AF</b> Set with 2 panel mounting flanges <b>HC-B-AF-SET</b>	<b>1686533</b> <b>1604638</b>	20 1	 <table border="1" data-bbox="1189 1533 1348 1585"> <thead> <tr> <th></th> <th>B06</th> <th>B10</th> <th>B16</th> <th>B24</th> </tr> </thead> <tbody> <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> </tbody> </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																
<b>Protective cover</b> 		For sleeve side, IP50 <b>HC-B 24-TMS-SD-IP50</b> For panel mounting side, IP66 <b>HC-B 24-TMS-SD-IP66</b>	<b>1690765</b> <b>1411520</b>	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

<sup>1)</sup> Screw locking with M6 Allen screws

<sup>2)</sup> Bore hole  $\varnothing$  4.5 mm when using M4 screws, bore hole  $\varnothing$  3.6 mm when using self-tapping M4 screws (Torx<sup>®</sup>)

#### Accessories



**Cable glands**  
From page 680



**Box mounting base**  
phoenixcontact.net/products



**Allen key**  
See Catalog 5



**Replacement seals**  
From page 651

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, plastic, EVO housing, single locking latch


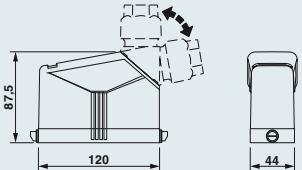

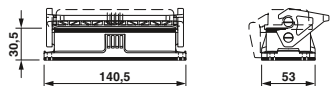

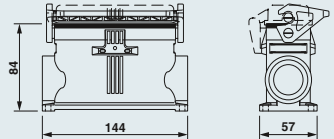

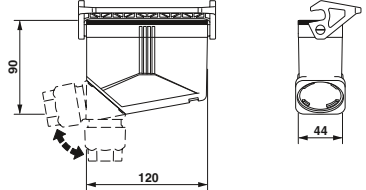

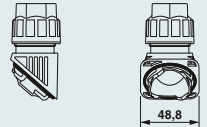


#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 87.5 mm 		HC-EVO-B24-HHFS-PLBK	1407656	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-EVO-B24-BWS-PLRBK With cover HC-EVO-B24-BWSC-PLRBK	1407659 1407660	1 1	
<b>Box mounting base<sup>1)</sup></b> Height: 84 mm 	2x M40 2x M40	Without cover HC-EVO-B24-SHWS-2SSM40-PLRBK With cover HC-EVO-B24-SHWSC-2SSM40-PLRBK	1407663 1407664	1 1	
<b>Coupling housing</b> Height: 90 mm 		HC-EVO-B24-CHWS-PLRBK	1407667	1	
<b>Cable gland</b> 	<b>Clamping area</b> 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 page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622


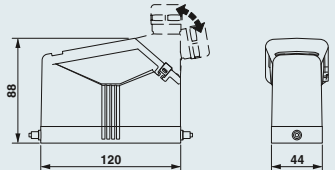

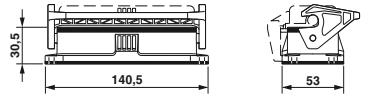

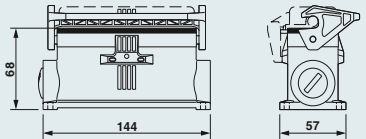

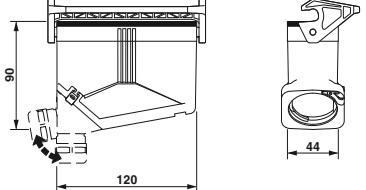

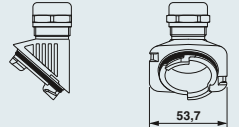
### Size B24, metal, EVO housing, single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B24-HHFS-EL-AL	1411473	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B24-BWS-ELC-AL With cover HC-STA-B24-BWSC-ELC-AL	1411329 1411330	1 1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Coupling housing</b> Height: 90 mm 		HC-EVO-B24-CHWS-ELC-AL	1411476	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, metal, STANDARD sleeve housing for single locking latch

new







#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B24-HLFS-1TTM25-EL-AL	1412788	1	
		HC-STA-B24-HLFS-1TTM32-EL-AL	1412789	1	
	1x Pg16 1x Pg21 1x Pg29	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	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B24-HHFS-1TTM32-EL-AL	1412761	1	
		HC-STA-B24-HHFS-1TTM40-EL-AL	1412098	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHFS-1TTP21-EL-AL	1412762	1	
		HC-STA-B24-HHFS-1TTP29-EL-AL	1412763	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B24-HLFS-1STM25-EL-AL	1412783	1	
		HC-STA-B24-HLFS-1STM32-EL-AL	1412784	1	
	1x Pg16 1x Pg21	HC-STA-B24-HLFS-1STP16-EL-AL	1412785	1	
		HC-STA-B24-HLFS-1STP21-EL-AL	1412786	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B24-HHFS-1STM32-EL-AL	1412757	1	
		HC-STA-B24-HHFS-1STM40-EL-AL	1412758	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHFS-1STP21-EL-AL	1412759	1	
		HC-STA-B24-HHFS-1STP29-EL-AL	1412760	1	

**Notes:**  
For further accessories, see page 642  
Marking label: US-EMLP-HA (20X9), Order No. 0830989

#### Accessories

 <b>Cable glands</b> From page 600	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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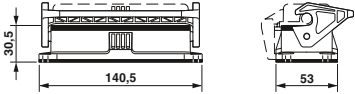

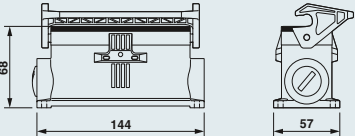

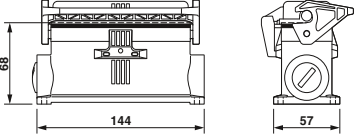

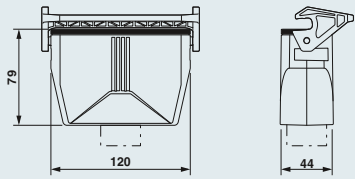
### Size B24, metal, STANDARD supporting base element with single locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B24-BWS-ELC-AL	1411329	1	
		With cover HC-STA-B24-BWSC-ELC-AL	1411330	1	
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 	2x M25 2x M32  2x Pg21	Without cover HC-STA-B24-SLWS-2SSM25-ELC-AL	1412877	1	
		HC-STA-B24-SLWS-2SSM32-ELC-AL	1412878	1	
		HC-STA-B24-SLWS-2SSP21-ELC-AL	1412879	1	
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 	2x M25 2x M32  2x Pg21	With cover HC-STA-B24-SLWSC-2SSM25-ELC-AL	1412881	1	
		HC-STA-B24-SLWSC-2SSM32-ELC-AL	1412882	1	
		HC-STA-B24-SLWSC-2SSP21-ELC-AL	1412883	1	
<b>Coupling housing</b> Height: 77 mm 	1x M32 1x M40  1x Pg21 1x Pg29	Cable outlet: top HC-STA-B24-CHWS-1TTM32-ELC-AL	1412746	1	
		HC-STA-B24-CHWS-1TTM40-ELC-AL	1412747	1	
		HC-STA-B24-CHWS-1TTP21-ELC-AL	1412748	1	
		HC-STA-B24-CHWS-1TTP29-ELC-AL	1412749	1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652



# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, plastic, EVO housing, double locking latch


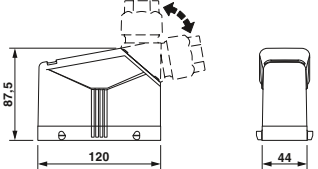

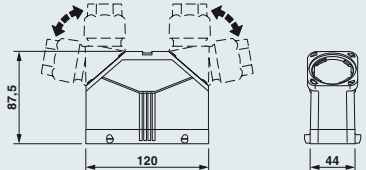

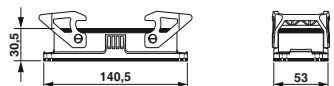

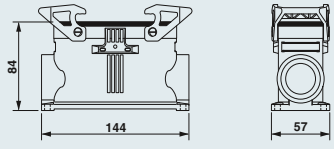

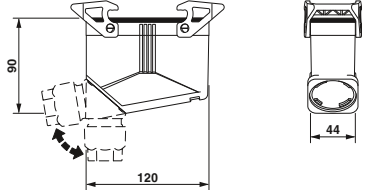

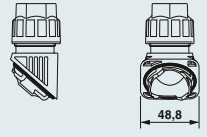


#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 87.5 mm 		HC-EVO-B24-HHFD-PLBK	1407657	1	
<b>Double sleeve housing</b> Height: 87.5 mm 		HC-EVO-B24-HHFD-2B-PL-BK	1411497	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-EVO-B24-BWD-PLRBK	1407661	1	
<b>Box mounting base<sup>1)</sup></b> Height: 84 mm 	2x M40	Without cover HC-EVO-B24-SHWD-2SSM40-PLRBK	1407665	1	
<b>Coupling housing</b> Height: 90 mm 		HC-EVO-B24-CHWD-PLRBK	1407668	1	
<b>Cable gland</b> 	<b>Clamping area</b> 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 page 642

Marking label: US-EMP (20X9) Order No. 0829439

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Connector set  
From page 622


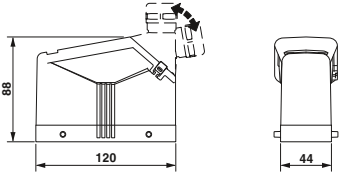

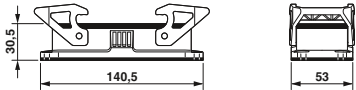

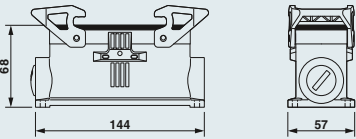

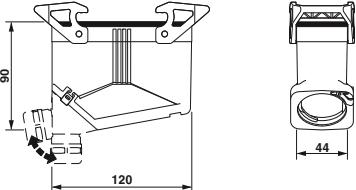

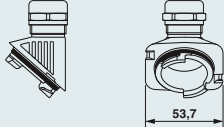
### Size B24, metal, EVO housing, double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B24-HHFD-EL-AL	1411472	1	
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover HC-STA-B24-BWD-ELC-AL	1411331	1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Coupling housing</b> Height: 90 mm 		HC-EVO-B24-CHWD-ELC-AL	1411475	1	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Connector set  
From page 623

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, metal, STANDARD sleeve housing for double locking latch

new


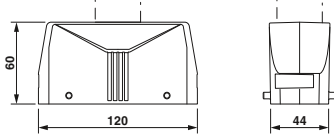

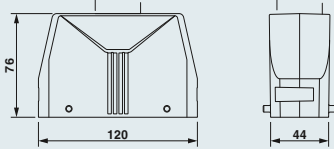

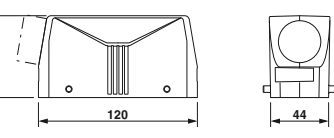

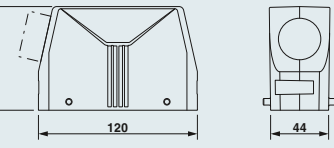


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
-
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B24-HLFD-1TTM25-EL-AL	1412778	1	
		HC-STA-B24-HLFD-1TTM32-EL-AL	1412779	1	
	1x Pg16 1x Pg21 1x Pg29	HC-STA-B24-HLFD-1TTP16-EL-AL	1412780	1	
		HC-STA-B24-HLFD-1TTP21-EL-AL	1412781	1	
		HC-STA-B24-HLFD-1TTP29-EL-AL	1412782	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B24-HHFD-1TTM32-EL-AL	1412754	1	
		HC-STA-B24-HHFD-1TTM40-EL-AL	1412099	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHFD-1TTP21-EL-AL	1412755	1	
		HC-STA-B24-HHFD-1TTP29-EL-AL	1412756	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B24-HLFD-1STM25-EL-AL	1412773	1	
		HC-STA-B24-HLFD-1STM32-EL-AL	1412774	1	
	1x Pg16 1x Pg21	HC-STA-B24-HLFD-1STP16-EL-AL	1412775	1	
		HC-STA-B24-HLFD-1STP21-EL-AL	1412776	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B24-HHFD-1STM32-EL-AL	1412750	1	
		HC-STA-B24-HHFD-1STM40-EL-AL	1412751	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHFD-1STP21-EL-AL	1412752	1	
		HC-STA-B24-HHFD-1STP29-EL-AL	1412753	1	

Notes:
For further accessories, see page 642
Marking label: US-EMLP-HA (20X9), Order No. <a href="#">0830989</a>

#### Accessories

 <b>Cable glands</b> From page 680	 <b>Protective cover</b> From page 646	 <b>Cover plates</b> From page 648	 <b>Connector set</b> From page 624
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new


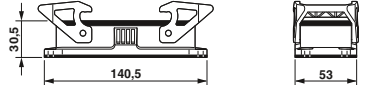

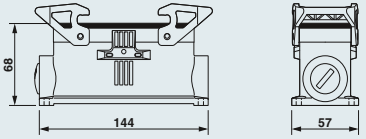

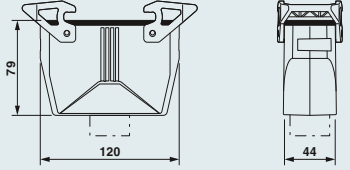
### Size B24, metal, STANDARD base element with double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 30.5 mm 		Without cover <b>HC-STA-B24-BWD-ELC-AL</b>	<b>1411331</b>	1	
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 	2x M25 2x M32  2x Pg21	Without cover <b>HC-STA-B24-SLWD-2SSM25-ELC-AL</b> <b>HC-STA-B24-SLWD-2SSM32-ELC-AL</b> <b>HC-STA-B24-SLWD-2SSP21-ELC-AL</b>	<b>1412873</b> <b>1412874</b> <b>1412875</b>	1 1 1	
<b>Coupling housing</b> Height: 77 mm 	1x M32 1x M40  1x Pg21 1x Pg29	Cable outlet: top <b>HC-STA-B24-CHWD-1TTM32-ELC-AL</b> <b>HC-STA-B24-CHWD-1TTM40-ELC-AL</b> <b>HC-STA-B24-CHWD-1TTP21-ELC-AL</b> <b>HC-STA-B24-CHWD-1TTP29-ELC-AL</b>	<b>1412742</b> <b>1412743</b> <b>1412744</b> <b>1412745</b>	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Cable glands  
From page 680



Replacement seals  
From page 651



Replacement protective cover  
From page 647



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, plastic, EVO housing, double locking latch



#### General data

Housing material	Polyamide
Locking latch material	Polyamide
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Technical data

#### Ordering data

#### Description

#### Thread

#### Type

#### Order No.

Pcs. / Pkt.

#### Dimensions

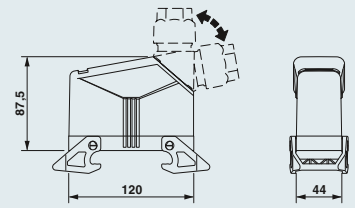
#### Sleeve housing Height: 87.5 mm



HC-EVO-B24-HHWD-PLBK

1407658

1



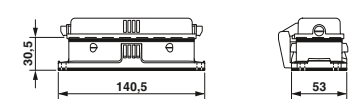
#### Panel mounting base Height: 30.5 mm



With cover  
HC-EVO-B24-BFDC-PLRBK

1407662

1



#### Box mounting base<sup>1)</sup> Height: 84 mm

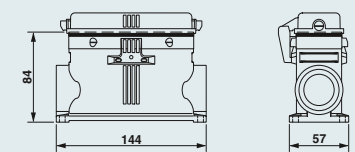
2x M40



With cover  
HC-EVO-B24-SHFDC-2SSM40-PLRBK

1407666

1



#### Cable gland

#### Clamping area

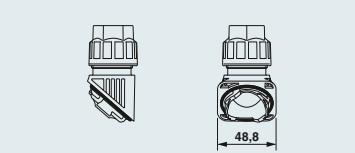
7 mm ... 13 mm  
9 mm ... 17 mm  
11 mm ... 21 mm  
19 mm ... 28 mm



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 642

Marking label: US-EMP (20X9) Order No. [0829439](#)

<sup>1)</sup> One cable entry is sealed with a knockout cover

#### Accessories



EVO unlocking  
From page 653



Thread adapter  
From page 643



Replacement seals  
From page 650



Replacement latch  
From page 652


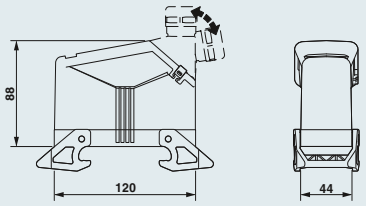

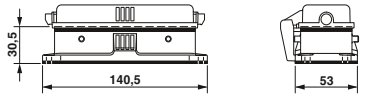

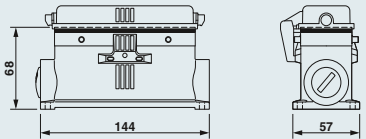

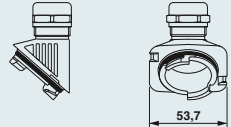
### Size B24, metal, EVO housing, double locking latch



#### Technical data

General data	
Housing material	Die-cast aluminum, corrosion resistant
Locking latch material	Polyamide
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 88 mm 		HC-EVO-B24-HHWD-EL-AL	1411474	1	
<b>Panel mounting base</b> Height: 30.5 mm 		With cover HC-STA-B24-BFDC-ELC-AL	1411332	1	
<b>Box mounting base<sup>1)</sup></b> 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	
<b>Cable gland</b> 	<b>Clamping area</b> 7 mm ... 13 mm 11 mm ... 16 mm 14 mm ... 21 mm 19 mm ... 27 mm	HC-B-G-M20-ER-AL HC-B-G-M25-ER-AL HC-B-G-M32-ER-AL HC-B-G-M40-ER-AL	1411442 1411443 1411444 1411445	1 1 1 1	

#### Notes:

- For further accessories, see page 642
- Marking label: US-EMLP-HA (20X9), Order No. 0830989
- <sup>1)</sup> Supplied with a plastic sealing cap

#### Accessories



Thread adapter  
From page 643



EMC cable gland  
From page 642



Replacement seals  
From page 650



Replacement latch  
From page 652

# Heavy-duty connectors

## HEAVYCON B - housing

### Size B24, metal, STANDARD sleeve housing with double locking latch

new


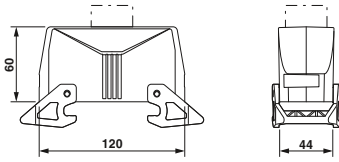

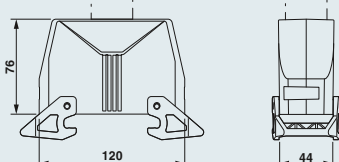

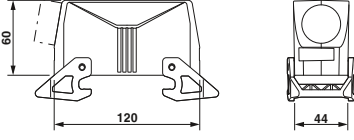

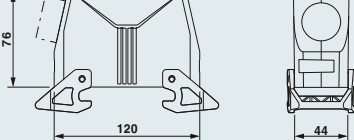


#### General data

Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, corrosion resistant
PA
-
-40 °C ... 125 °C
IP66 / IP69K (ISO 20653:2013-02)
4 / 4X / 12

#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: top HC-STA-B24-HLWD-1TTM25-EL-AL	1412799	1	
		HC-STA-B24-HLWD-1TTM32-EL-AL	1412800	1	
	1x Pg16 1x Pg21 1x Pg29	HC-STA-B24-HLWD-1TTP16-EL-AL	1412801	1	
		HC-STA-B24-HLWD-1TTP21-EL-AL	1412802	1	
		HC-STA-B24-HLWD-1TTP29-EL-AL	1412803	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: top HC-STA-B24-HHWD-1TTM32-EL-AL	1412769	1	
		HC-STA-B24-HHWD-1TTM40-EL-AL	1412770	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHWD-1TTP21-EL-AL	1412771	1	
		HC-STA-B24-HHWD-1TTP29-EL-AL	1412772	1	
<b>Sleeve housing</b> Height: 60 mm 	1x M25 1x M32	Cable outlet: lateral HC-STA-B24-HLWD-1STM25-EL-AL	1412793	1	
		HC-STA-B24-HLWD-1STM32-EL-AL	1412795	1	
	1x Pg16 1x Pg21	HC-STA-B24-HLWD-1STP16-EL-AL	1412796	1	
		HC-STA-B24-HLWD-1STP21-EL-AL	1412797	1	
<b>Sleeve housing</b> Height: 76 mm 	1x M32 1x M40	Cable outlet: lateral HC-STA-B24-HHWD-1STM32-EL-AL	1412764	1	
		HC-STA-B24-HHWD-1STM40-EL-AL	1412766	1	
	1x Pg21 1x Pg29	HC-STA-B24-HHWD-1STP21-EL-AL	1412767	1	
		HC-STA-B24-HHWD-1STP29-EL-AL	1412768	1	

Notes:
For further accessories, see page 642
Marking label: US-EMLP-HA (20X9), Order No. <a href="#">0830989</a>

#### Accessories



**Cable glands**  
From page 680



**Protective cover**  
From page 646





**Replacement latch**  
From page 652

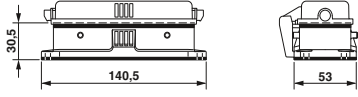
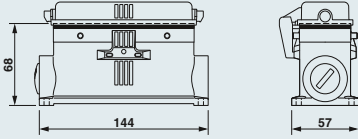
**Size B24, metal,  
STANDARD supporting base element  
for double locking latch**



General data	
Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

Technical data	
Housing material	Aluminum die-cast
Locking latch material	-
Sealing material	NBR, conductive
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

Description		Thread	Type	Order No.	Pcs. / Pkt.
<b>Panel mounting base</b> Height: 30.5 mm 			With cover <b>HC-STA-B24-BFDC-ELC-AL</b>	<b>1411332</b>	1
<b>Box mounting base<sup>1)</sup></b> Height: 68 mm 		2x M25 2x M32  2x Pg21	With cover <b>HC-STA-B24-SLFDC-2SSM25-ELC-AL</b> <b>HC-STA-B24-SLFDC-2SSM32-ELC-AL</b> <b>HC-STA-B24-SLFDC-2SSP21-ELC-AL</b>	<b>1412869</b> <b>1412870</b> <b>1412871</b>	1 1 1

Dimensions	
	

Notes:
For further accessories, see page 642
<sup>1)</sup> Supplied with a plastic sealing cap

**Accessories**

 Cable glands From page 680	 Replacement seals From page 651	 Replacement protective cover From page 647	 Cover plates From page 648
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# Heavy-duty connectors

## HEAVYCON B - housing

Size B32, metal,  
ADVANCE sleeve housing,  
Offshore/EMC


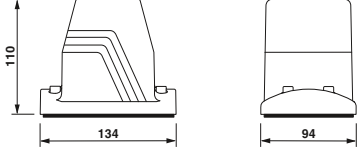

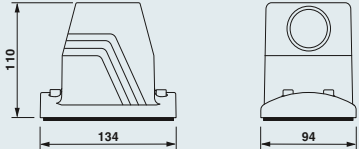

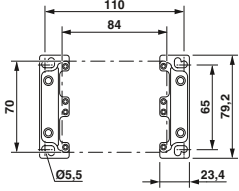




### General data

Housing material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

Technical data
Die-cast aluminum, salt water resistant
Stainless steel
NBR, conductive
-40 °C ... 125 °C
IP66 / IP68 (0.2 bar 24 h) / IP69K
4 / 4X / 6P / 12

### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing<sup>1)</sup></b> Height: 110 mm 	1x M32 1x M40 1x M50	Cable outlet: top <b>HC-B 32-TMS-100-O1STM32G-EEE</b> <b>HC-B 32-TMS-100-O1STM40G-EEE</b> <b>HC-B 32-TMS-100-O1STM50G-EEE</b>	1580516 1580518 1580522	6 6 6	
<b>Sleeve housing<sup>1)</sup></b> Height: 110 mm 	1x M32 1x M40 1x M50	Cable outlet: lateral <b>HC-B 32-TMS-100-O1STM32S-EEE</b> <b>HC-B 32-TMS-100-O1STM40S-EEE</b> <b>HC-B 32-TMS-100-O1STM50S-EEE</b>	1580517 1580519 1580521	6 6 6	
<b>Panel mounting flange<sup>2)</sup></b> 		2 pcs. per housing <b>HC-B 32/48-AF</b> Set with 2 panel mounting flanges <b>HC-B 32/48-AF-SET</b>	1580524 1580523	20 1	
<b>IP65 protective cover</b> 		<b>HC-B 32-TMS-SD-IP65</b>	1580539	6	

**Notes:**  
 In order to achieve optimum shielding results, the mounting surface must be conductive  
 Marking label: US-EMLP-HA (20X9), Order No. 0830989  
<sup>1)</sup> Screw locking with M6 Allen screws  
<sup>2)</sup> Bore hole Ø 5.5 mm when using M4 screws, bore hole Ø 4.5 mm when using self-tapping M5 screws (Torx®)

### Accessories

 <b>Cable glands</b> From page 680	 <b>Box mounting base</b> <a href="http://phoenixcontact.net/products">phoenixcontact.net/products</a>	 <b>Allen key</b> See Catalog 5
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### Size B32, metal, housing, double locking latch

#### General data


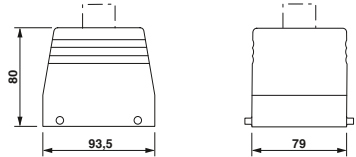

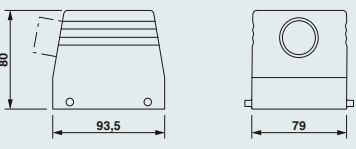

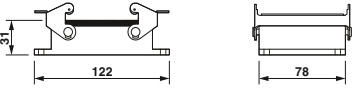

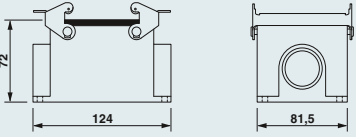

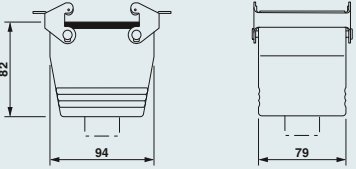
Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

#### Technical data

Aluminum die-cast  
Steel, galvanized  
NBR  
-40 °C ... 125 °C  
IP65



#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 80 mm 	1x M32 1x M40 1x M50  1x Pg29 1x Pg36	Cable outlet: top HC-B 32-TFQ-80/O1STM32G HC-B 32-TFQ-80/O1STM40G HC-B 32-TFQ-80/O1STM50G HC-B 32-TFQ-80/O1PG29G HC-B 32-TFQ-80/O1PG36G	1645383 1647307 1460197 1675081 1460138	10 10 10 10 10	
<b>Sleeve housing</b> Height: 80 mm 	1x M32 1x M40 1x M50  1x Pg29 1x Pg36	Cable outlet: lateral HC-B 32-TFQ-80/O1STM32S HC-B 32-TFQ-80/O1STM40S HC-B 32-TFQ-80/O1STM50S HC-B 32-TFQ-80/O1PG29S HC-B 32-TFQ-80/O1PG36S	1645150 1645451 1585980 1675094 1644818	10 10 10 10 10	
<b>Panel mounting base</b> Height: 31 mm 		Without cover HC-B 32-AMQ	1775693	10	
<b>Box mounting base</b> Height: 72 mm 	1x M32 2x M32 2x M40  1x Pg29 2x Pg29	Without cover HC-B 32-SMQ-72/O1M32 HC-B 32-SMQ-72/O1PG29 HC-B 32-SMQ-72/O2M32 HC-B 32-SMQ-72/O2M40 HC-B 32-SMQ-72/O2PG29	1604867 1675036 1604868 1604869 1675049	10 10 10 10 10	
<b>Coupling housing</b> Height: 82 mm 	1x M32 1x M40  1x Pg21 1x Pg29	Cable outlet: top HC-B 32-KMQ-82/O1STM32 HC-B 32-KMQ-82/O1STM40 HC-B 32-KMQ-82/O1PG21 HC-B 32-KMQ-82/O1PG29	1647284 1647297 1675010 1675023	10 10 10 10	

#### Notes:

For further accessories, see page 642

#### Accessories



Cable glands  
From page 680



Flat gaskets  
From page 651



Cover plates  
From page 648

# Heavy-duty connectors

## HEAVYCON B - housing

**Size B48, metal, housing, single locking latch**

### General data


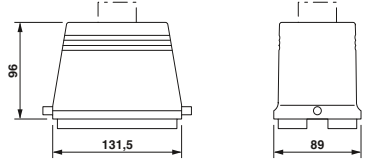

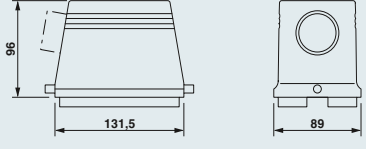

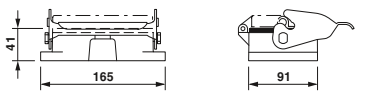

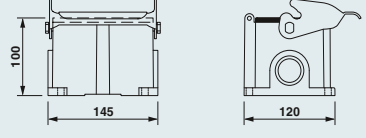

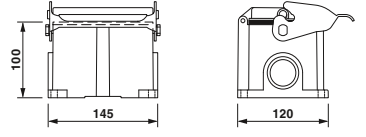
Housing material  
Locking latch material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

### Technical data

Aluminum die-cast  
Steel, galvanized  
NBR  
-40 °C ... 125 °C  
IP65



### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions	
<b>Sleeve housing</b> Height: 96 mm 	1x M32	Cable outlet: top	<b>1647349</b>	1		
	1x M40	<b>HC-B 48-TFL-96/O1STM32G</b>	<b>1647310</b>	1		
	1x M50	<b>HC-B 48-TFL-96/O1STM40G</b>	<b>1460337</b>	10		
		1x Pg29	<b>HC-B 48-TFL-96/O1STM50G</b>	<b>1675159</b>		1
		1x Pg36	<b>HC-B 48-TFL-96/O1PG29G</b>	<b>1675175</b>		1
			<b>HC-B 48-TFL-96/O1PG36G</b>			
<b>Sleeve housing</b> Height: 96 mm 	1x M32	Cable outlet: lateral	<b>1647336</b>	1		
	1x M40	<b>HC-B 48-TFL-96/O1STM32S</b>	<b>1647323</b>	1		
	1x M50	<b>HC-B 48-TFL-96/O1STM40S</b>	<b>1460351</b>	10		
		1x Pg29	<b>HC-B 48-TFL-96/O1STM50S</b>	<b>1675162</b>		1
		1x Pg36	<b>HC-B 48-TFL-96/O1PG29S</b>	<b>1675188</b>		1
			<b>HC-B 48-TFL-96/O1PG36S</b>			
<b>Panel mounting base</b> Height: 41 mm 		Without cover	<b>1772175</b>	1		
		With cover	<b>1772188</b>	1		
<b>Box mounting base</b> Height: 100 mm 	1x M32	Without cover	<b>1604875</b>	1		
		<b>HC-B 48-SML-100/O1M32</b>	<b>1675117</b>	1		
	2x M32	1x Pg29	<b>HC-B 48-SML-100/O1PG29</b>	<b>1460228</b>		10
	2x M40		<b>HC-B 48-SML-100/O2M32</b>	<b>1604876</b>		1
		2x Pg29	<b>HC-B 48-SML-100/O2PG29</b>	<b>1675120</b>		1
		2x Pg36	<b>HC-B 48-SML-100/O2PG36</b>	<b>1460248</b>		10
<b>Box mounting base</b> Height: 100 mm 	1x M32	With cover	<b>1604877</b>	1		
	2x M40	<b>HC-B 48-SMLD-100/O1M32</b>	<b>1604878</b>	1		
		2x Pg36	<b>HC-B 48-SMLD-100/O2M40</b>	<b>1460037</b>		10
			<b>HC-B 48-SMLD-100/O2PG36</b>			

### Notes:

For further accessories, see page 642

### Accessories



Cable glands  
From page 680



Flat gaskets  
From page 651



Cover plates  
From page 648



# Heavy-duty connectors

## HEAVYCON B - housing

### Connector sets, EVO housing, plastic, push-in connection

#### General data




Housing material  
Sealing material  
Inflammability class in acc. with UL 94  
Insertion/withdrawal cycles  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Polyamide  
NBR  
V0  
≥ 500  
-40 °C ... 125 °C  
IP66  
4 / 4X / 12



#### Ordering data

Description	Pos.	Size	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Connector set</b> 	6	B6	Single locking latch, with cover <b>HC-EVO-B06PT-BWSC-HL-M20-PLRBK</b>	<b>1407710</b>	1	
<b>Connector set</b> 	10	B10	Single locking latch, with cover <b>HC-EVO-B10PT-BWSC-HL-M25-PLRBK</b>	<b>1408791</b>	1	
	10	B10	Double locking latch, without cover <b>HC-EVO-B10PT-BWD-HL-M25-PLRBK</b>	<b>1407711</b>	1	
<b>Connector set</b> 	16	B16	Single locking latch, with cover <b>HC-EVO-B16PT-BWSC-HH-M25-PLRBK</b>	<b>1408793</b>	1	
	16	B16	Double locking latch, without cover <b>HC-EVO-B16PT-BWD-HH-M25-PLRBK</b>	<b>1407712</b>	1	
<b>Connector set</b> 	24	B24	Single locking latch, with cover <b>HC-EVO-B24PT-BWSC-HH-M32-PLRBK</b>	<b>1408794</b>	1	
	24	B24	Double locking latch, without cover <b>HC-EVO-B24PT-BWD-HH-M32-PLRBK</b>	<b>1407713</b>	1	
<b>Sample kit</b> 			<b>CASE HC EVO OVERVIEW</b>	<b>5053053</b>	1	

#### Notes:

For further accessories, see page 634

Only operate connectors when there is no load/the power is switched off

For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)

#### Accessories



**EVO unlocking**  
From page 653



**Replacement latch**  
From page 652



**Replacement seals**  
From page 650

new

### Connector sets, EVO housing, metal, push-in connection



**General data**  
 Housing material  
 Sealing material  
 Inflammability class in acc. with UL 94  
 Insertion/withdrawal cycles  
 Ambient temperature (operation)  
 IP degree of protection (when plugged in)  
 NEMA degree of protection (when plugged in)

#### Technical data

Die-cast aluminum, corrosion resistant  
 NBR, conductive  
 V0  
 ≥ 500  
 -40 °C ... 125 °C  
 IP66 / IP69K (ISO 20653:2013-02)  
 4 / 4X / 12

#### Ordering data

Description	Pos.	Size	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Connector set</b> 	6	B6	Single locking latch, with cover <b>HC-EVO-B06PT-BWSC-HL-M20ELC-AL</b>	<b>1411487</b>	1	
<b>Connector set</b> 	10	B10	Single locking latch, with cover <b>HC-EVO-B10PT-BWSC-HL-M25ELC-AL</b>	<b>1411491</b>	1	
	10	B10	Double locking latch, without cover <b>HC-EVO-B10PT-BWD-HL-M25ELC-AL</b>	<b>1411488</b>	1	
<b>Connector set</b> 	16	B16	Single locking latch, with cover <b>HC-EVO-B16PT-BWSC-HH-M25ELC-AL</b>	<b>1411492</b>	1	
	16	B16	Double locking latch, without cover <b>HC-EVO-B16PT-BWD-HH-M25ELC-AL</b>	<b>1411489</b>	1	
<b>Connector set</b> 	24	B24	Single locking latch, with cover <b>HC-EVO-B24PT-BWSC-HH-M32ELC-AL</b>	<b>1411493</b>	1	
	24	B24	Double locking latch, without cover <b>HC-EVO-B24PT-BWD-HH-M32ELC-AL</b>	<b>1411490</b>	1	
<b>Sample kit</b> 			<b>CASE HC EVO OVERVIEW</b>	<b>5053053</b>	1	

#### Notes:

For further accessories, see page 634  
 Only operate connectors when there is no load/the power is switched off  
 For assembly instructions, see phoenixcontact.net/products

#### Accessories



**Replacement latch**  
From page 652



**Replacement seals**  
From page 650

# Heavy-duty connectors

## HEAVYCON B - housing

### Connector sets, STANDARD housing, metal, push-in connection

new







#### General data

Housing material  
Sealing material  
Inflammability class in acc. with UL 94  
Insertion/withdrawal cycles  
Ambient temperature (operation)  
IP degree of protection (when plugged in)  
NEMA degree of protection (when plugged in)

#### Technical data

Aluminum, corrosion resistant  
NBR  
V0  
≥ 500  
-40 °C ... 125 °C  
IP66 / IP69K (ISO 20653:2013-02)  
4 / 4X / 12

#### Ordering data

Description	Pos.	Size	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Connector set, cable outlet: top</b> 	6	B6	Single locking latch, with cover <b>HC-STA-B06PT-BWSC-LT-M20-ELCAL</b>	<b>1416344</b>	1	
<b>Connector set, cable outlet: top</b> 	10	B10	Single locking latch, with cover <b>HC-STA-B10PT-BWSC-LT-M25-ELCAL</b>	<b>1416345</b>	1	
	10	B10	Double locking latch, without cover <b>HC-STA-B10PT-BWD-LT-M25-ELCAL</b>	<b>1416346</b>	1	
<b>Connector set, cable outlet: top</b> 	16	B16	Single locking latch, with cover <b>HC-STA-B16PT-BWSC-LT-M25-ELCAL</b>	<b>1416348</b>	1	
	16	B16	Double locking latch, without cover <b>HC-STA-B16PT-BWD-LT-M25-ELCAL</b>	<b>1416349</b>	1	
<b>Connector set, cable outlet: top</b> 	24	B24	Single locking latch, with cover <b>HC-STA-B24PT-BWSC-LT-M32-ELCAL</b>	<b>1416351</b>	1	
	24	B24	Double locking latch, without cover <b>HC-STA-B24PT-BWD-LT-M32-ELCAL</b>	<b>1416352</b>	1	

**Notes:**  
For further accessories, see page 634  
Only operate connectors when there is no load/the power is switched off  
For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)

#### Accessories



Replacement latch  
From page 652



Replacement seals  
From page 650

**Connector sets,  
STANDARD housing, metal,  
push-in connection**



General data	
Housing material	Die-cast aluminum, corrosion resistant
Sealing material	NBR
Inflammability class in acc. with UL 94	V0
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12








**Technical data**

Housing material	Die-cast aluminum, corrosion resistant
Sealing material	NBR
Inflammability class in acc. with UL 94	V0
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP66 / IP69K (ISO 20653:2013-02)
NEMA degree of protection (when plugged in)	4 / 4X / 12

**Ordering data**

Type	Order No.	Pcs. / Pkt.
Single locking latch, with cover <b>HC-STA-B06PT-BWSC-LS-M20-ELCAL</b>	<b>1416353</b>	1
Single locking latch, with cover <b>HC-STA-B10PT-BWSC-LS-M25-ELCAL</b>	<b>1416354</b>	1
Double locking latch, without cover <b>HC-STA-B10PT-BWD-LS-M25-ELCAL</b>	<b>1416355</b>	1
Single locking latch, with cover <b>HC-STA-B16PT-BWSC-LS-M25-ELCAL</b>	<b>1416356</b>	1
Double locking latch, without cover <b>HC-STA-B16PT-BWD-LS-M25-ELCAL</b>	<b>1416357</b>	1
Single locking latch, with cover <b>HC-STA-B24PT-BWSC-LS-M32-ELCAL</b>	<b>1416358</b>	1
Double locking latch, without cover <b>HC-STA-B24PT-BWD-LS-M32-ELCAL</b>	<b>1416359</b>	1

**Dimensions**

Description	Pos.	Size
<b>Connector set, cable outlet: lateral</b>		
	6	B6
<b>Connector set, cable outlet: lateral</b>		
	10	B10
	10	B10
<b>Connector set, cable outlet: lateral</b>		
	16	B16
	16	B16
<b>Connector set, cable outlet: lateral</b>		
	24	B24
	24	B24

Notes:
For further accessories, see page 634
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products

**Accessories**



**Replacement latch**  
From page 652



**Replacement seals**  
From page 650



# Heavy-duty connectors

## HEAVYCON B - housing

**Size B6, metal,  
housing for railway applications,  
screw locking**


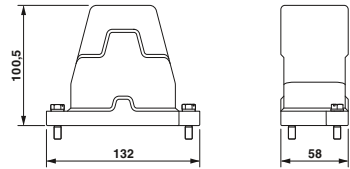

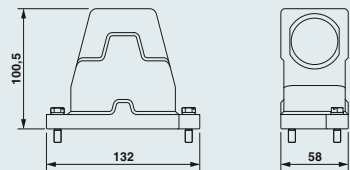

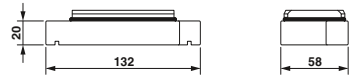

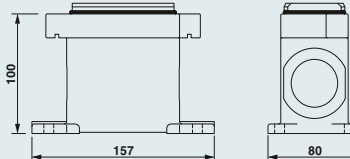


### General data

Housing material  
Surface material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

Technical data
Aluminum die-cast
Powder-coated, black
Stainless steel
NBR
-40 °C ... 125 °C
IP68 (0.5 bar, 24 h) / IP69K

### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 100.5 mm 	1x M20 1x M25	Cable outlet: top	<b>1411879</b>	1	
		<b>HC-HPR-B06-HHWH-1TTM20-EM-BK</b> <b>HC-HPR-B06-HHWH-1TTM25-EM-BK</b>	<b>1411106</b>	1	
<b>Sleeve housing</b> Height: 100.5 mm 	1x M20 1x M25	Cable outlet: lateral	<b>1411878</b>	1	
		<b>HC-HPR-B06-HHWH-1STM20-EM-BK</b> <b>HC-HPR-B06-HHWH-1STM25-EM-BK</b>	<b>1411119</b>	1	
<b>Panel mounting base</b> Height: 20 mm 		Without cover <b>HC-HPR-B06-BFH-EMR-BK</b>	<b>1411122</b>	1	
<b>Box mounting base</b> Height: 100 mm 	2x M20 2x M25	Without cover	<b>1411880</b>	1	
		<b>HC-HPR-B06-SHFH-2SSM20-EMR-BK</b> <b>HC-HPR-B06-SHFH-2SSM25-EMR-BK</b>	<b>1411135</b>	1	

### Accessories



Cable glands  
From page 680


**Size B10, metal,  
housing for railway applications,  
screw locking**

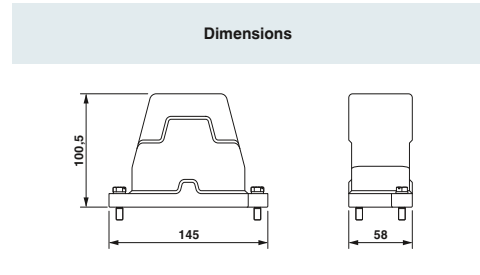



General data	
Housing material	Aluminum die-cast
Surface material	Powder-coated, black
Lock material	Stainless steel
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP68 (0.5 bar, 24 h) / IP69K

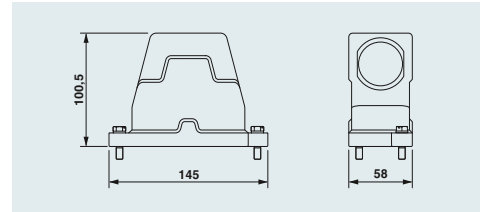
Technical data	
Housing material	Aluminum die-cast
Surface material	Powder-coated, black
Lock material	Stainless steel
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP68 (0.5 bar, 24 h) / IP69K


Ordering data				
Description	Thread	Type	Order No.	Pcs. / Pkt.

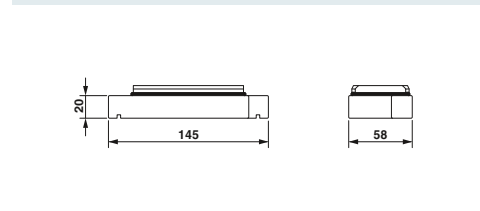
<b>Sleeve housing</b> Height: 100.5 mm 	1x M25 1x M32	Cable outlet: top	<b>1411882</b>	1
		HC-HPR-B10-HHWH-1TTM25-EM-BK HC-HPR-B10-HHWH-1TTM32-EM-BK	<b>1411067</b>	1




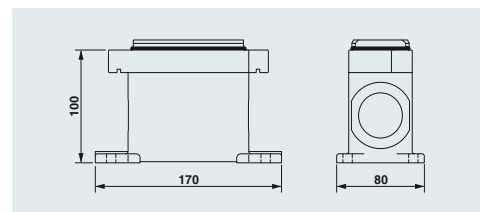
<b>Sleeve housing</b> Height: 100.5 mm 	1x M25 1x M32	Cable outlet: lateral	<b>1411881</b>	1
		HC-HPR-B10-HHWH-1STM25EM-BK HC-HPR-B10-HHWH-1STM32-EM-BK	<b>1411070</b>	1



<b>Panel mounting base</b> Height: 20 mm 		Without cover	<b>1411083</b>	1
		HC-HPR-B10-BFH-EMR-BK		



<b>Box mounting base</b> Height: 100 mm 	2x M25 2x M32	Without cover	<b>1411883</b>	1
		HC-HPR-B10-SHFH-2SSM25-EMR-BK HC-HPR-B10-SHFH-2SSM32-EMR-BK	<b>1411096</b>	1



**Accessories**



Cable glands  
From page 680

# Heavy-duty connectors

## HEAVYCON B - housing

**Size B16, metal, housing for railway applications, screw locking**


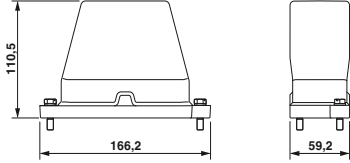

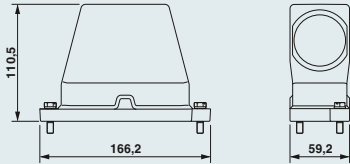

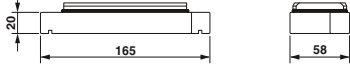

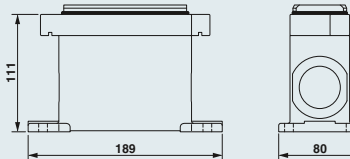


### General data

Housing material  
Surface material  
Lock material  
Sealing material  
Ambient temperature (operation)  
IP degree of protection (when plugged in)

Technical data	
Housing material	Aluminum die-cast
Surface material	Powder-coated, black
Lock material	Stainless steel
Sealing material	NBR
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP68 (0.5 bar, 24 h) / IP69K

### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 110.5 mm 	1x M32 1x M40	Cable outlet: top <b>HC-HPR-B16-HHWH-1TTM32-EM-BK</b> <b>HC-HPR-B16-HHWH-1TTM40-EM-BK</b>	<b>1411059</b>	1	
			<b>1411885</b>	1	
<b>Sleeve housing</b> Height: 110.5 mm 	1x M32 1x M40	Cable outlet: lateral <b>HC-HPR-B16-HHWH-1STM32-EM-BK</b> <b>HC-HPR-B16-HHWH-1STM40-EM-BK</b>	<b>1411058</b>	1	
			<b>1411884</b>	1	
<b>Panel mounting base</b> Height: 20 mm 		Without cover <b>HC-HPR-B16-BFH-EMR-BK</b>	<b>1411060</b>	1	
<b>Box mounting base</b> Height: 111 mm 	2x M32 2x M40	Without cover <b>HC-HPR-B16-SHFH-2SSM32-EMR-BK</b> <b>HC-HPR-B16-SHFH-2SSM40-EMR-BK</b>	<b>1411054</b> <b>1411886</b>	1 1	

### Accessories


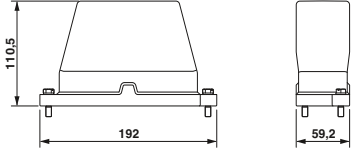

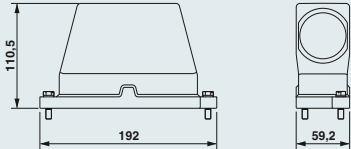

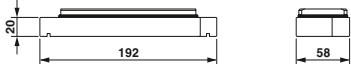

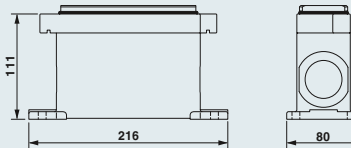


Cable glands  
From page 680

**Size B24, metal,  
housing for railway applications,  
screw locking**



General data		Technical data	
Housing material		Aluminum die-cast	
Surface material		Powder-coated, black	
Lock material		Stainless steel	
Sealing material		NBR	
Ambient temperature (operation)		-40 °C ... 125 °C	
IP degree of protection (when plugged in)		IP68 (0.5 bar, 24 h) / IP69K	

Description		Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 110.5 mm 	1x M32 1x M40	Cable outlet: top <b>HC-HPR-B24-HHWH-1TTM32-EM-BK</b> <b>HC-HPR-B24-HHWH-1TTM40-EM-BK</b>	1411888	1		
			1411062	1		
<b>Sleeve housing</b> Height: 110.5 mm 	1x M32 1x M40	Cable outlet: lateral <b>HC-HPR-B24-HHWH-1STM32-EM-BK</b> <b>HC-HPR-B24-HHWH-1STM40-EM-BK</b>	1411887	1		
			1411061	1		
<b>Panel mounting base</b> Height: 20 mm 		Without cover <b>HC-HPR-B24-BFH-EMR-BK</b>	1411055	1		
<b>Box mounting base</b> Height: 111 mm 	2x M32 2x M40	Without cover <b>HC-HPR-B24-SHFH-2SSM32-EMR-BK</b> <b>HC-HPR-B24-SHFH-2SSM40-EMR-BK</b>	1411889	1		
			1411063	1		

Accessories



Cable glands  
From page 680

# Heavy-duty connectors

## HEAVYCON Compact - contact inserts

### Compact series

200 - 690 V, 10 - 40 A

Connection technology:

– Crimp connection

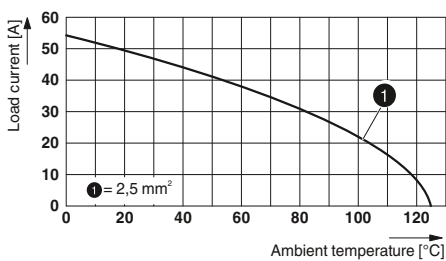
To determine the corresponding housing, see cross-reference list on page 482.

Notes:
Order crimp contacts separately
Only operate connectors when there is no load/the power is switched off
For assembly instructions, see phoenixcontact.net/products
For connection technologies, see page 4

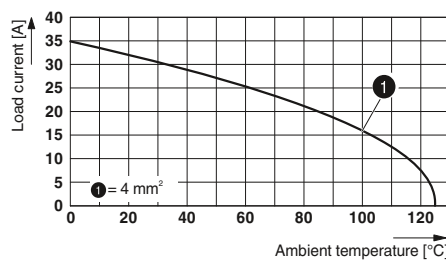


Type	Technical data				
	① HC-COM- 8- E...C	② HC-COM- 17- E...C	③ HC-COM- 4/2- E...C		
			Power contacts	Control contacts	
Approvals					
IEC data					
Rated current, contacts (at 40°C)	A	16	10	40	10
Surge voltage category		III	III		III
Pollution degree		3	3		3
Rated voltage (III/3) contacts	V	500	200	400 / 690	250
Rated surge voltage, contacts	kV	6	4	6	4
Connection cross section	mm <sup>2</sup>	0.5 ... 4	0.14 ... 2.5	1.5 ... 6	0.14 ... 2.5
UL data					
Rated voltage	V	600	600	600	-
Rated current	A	-	19.5	40	-
Connection cross section	AWG	20-12	22-14	16-10	-
CSA / cUL data					
Rated voltage	V	600	600	600	-
Rated current	A	-	10.5	30	-
Connection cross section	AWG	20-12	22-14	16-10	-
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 (alternatively Au)	Ag (alternatively Au)	Ag	Ag (alternatively Au)
Temperature data					
Ambient temperature range	°C	-40 ... 100	-40 ... 100	-40 ... 100	
General data					
Connection method		Crimp connection	Crimp connection	Crimp connection	Crimp connection
Stripping length	mm	7.5	8	9	8
				9.6	6
No. of pos.		8	17	4	2
Contact numbering		1 - 8	1 - 17	1 - 4	1 - 2
Insertion/withdrawal cycles		≥ 500	≥ 500	≥ 500	

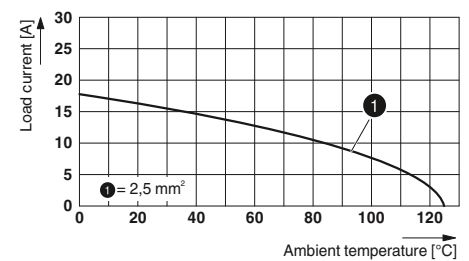
### Derating curves




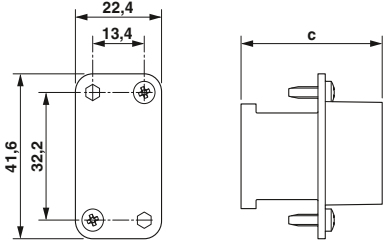
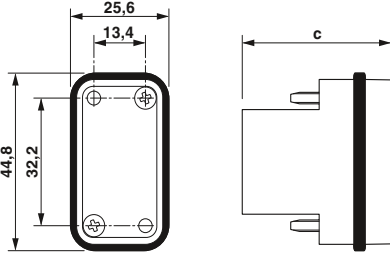





HC-COM- 4/2-E...C



HC-COM- 8-E...C



HC-COM- 17-E...C

Description	Pos.	Number	Size	Ordering data			Pcs. / Pkt.	Dimensions (in mm)																																			
				Type	Socket	Plug																																					
<b>Crimp connection CK 2,5</b> 	8	1 - 8	COM	① HC-COM- 8-E...C	1408494	1408481	2	 <p>Dimensional drawing: socket</p>  <p>Dimensional drawing: plug</p>																																			
<b>Crimp connection CK 1,6</b> 	17	1 - 17	COM	② HC-COM- 17-E...C	1408478	1408465	2																																				
<b>Crimp connection CK 4,0/CK 1,6</b> 	4 / 2	1 - 4	COM	③ HC-COM- 4/2-E...C	1408517	1408504	2																																				
<b>Turned crimp contacts CK 1,6</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.14 - 0.37 / 26 - 22 0.5 / 20 0.75 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14	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	<table border="1"> <thead> <tr> <th></th> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>① Socket</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>① Plug</td> <td></td> <td></td> <td>38.5</td> <td></td> </tr> <tr> <td>② Socket</td> <td></td> <td></td> <td>36.7</td> <td></td> </tr> <tr> <td>② Plug</td> <td></td> <td></td> <td>38.7</td> <td></td> </tr> <tr> <td>③ Socket</td> <td></td> <td></td> <td>48.05</td> <td></td> </tr> <tr> <td>③ Plug</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		a	b	c	d	① Socket					① Plug			38.5		② Socket			36.7		② Plug			38.7		③ Socket			48.05		③ Plug				
	a	b	c	d																																							
① Socket																																											
① Plug			38.5																																								
② Socket			36.7																																								
② Plug			38.7																																								
③ Socket			48.05																																								
③ Plug																																											
<b>Turned crimp contacts CK 2,5</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 0.5 / 20 0.75 / 18 0.75 - 1 / 18 1.5 / 16 2.5 / 14 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																																				
<b>Turned crimp contacts CK 4,0</b> Silver-plated 			<b>Cross section</b> mm <sup>2</sup> / AWG 1.5 / 16 2.5 / 14 4 / 12 6 / 10	CK4,0-ED-1,50... AG CK4,0-ED-2,50... AG CK4,0-ED-4,00... AG CK4,0-ED-6,00... AG	1663271 1663284 1663297 1663307	1663239 1663242 1663255 1663268	25 25 25 25																																				

### Accessories



Dummy sockets  
From page 639



Crimping tools  
From page 636



Crimp contacts, gold-plated  
[phoenixcontact.net/products](http://phoenixcontact.net/products)

# Heavy-duty connectors

## HEAVYCON Compact - housing


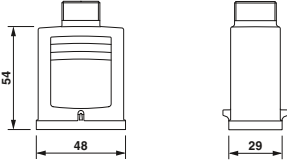

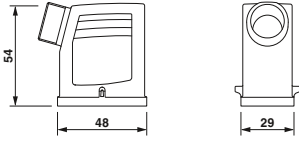

### Compact series, plastic, sleeve housing



#### Technical data

General data	
Housing material	Polycarbonate
Lock material	-
Sealing material	-
Ambient temperature (operation)	-40 °C ... 125 °C
IP degree of protection (when plugged in)	IP65 / IP66


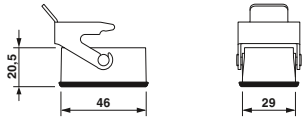

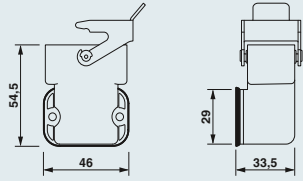

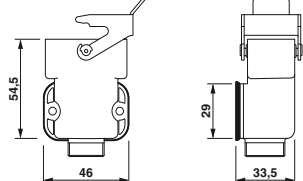

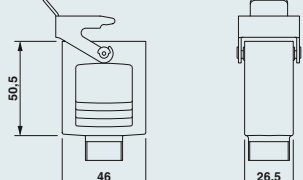


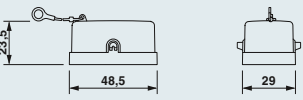
#### Ordering data

Description	Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Sleeve housing</b> Height: 54 mm 	1x Pg16	Cable outlet: top <b>HC-COM-K-TFL-O1PG16-G</b>	<b>1408342</b>	2	
<b>Sleeve housing</b> Height: 54 mm 	1x Pg16	Cable outlet: lateral <b>HC-COM-K-TFL-O1PG16-S</b>	<b>1408339</b>	2	
<b>Pg16 cable gland</b> 		<b>VC-K-KV-PG16( 9-13)</b> <b>VC-K-KV-PG16(11,5-15,5)</b>	<b>1853764</b> <b>1854844</b>	5 5	

### Compact series, plastic, supporting base element

General data		Technical data
Housing material		Polycarbonate
Lock material		Stainless steel
Sealing material		NBR
Ambient temperature (operation)		-40 °C ... 125 °C
IP degree of protection (when plugged in)		IP65 / IP66



Description		Thread	Type	Order No.	Pcs. / Pkt.	Dimensions
<b>Panel mounting base</b> Height: 20.5 mm 			Straight version HC-COM-K-AML-GR	1408355	2	
<b>Panel mounting base</b> Height: 33.5 mm 			Angled version HC-COM-K-AML-GW	1408368	2	
<b>Box mounting base</b> Height: 33.5 mm 		1x Pg16	HC-COM-K-SML-O1PG16	1408371	2	
<b>Coupling housing</b> Height: 50.5 mm 		1x Pg16	HC-COM-K-KML-O1PG16	1408384	2	
<b>Pg16 cable gland</b> 			HC-COM-K-KV-PG16(9-12) SML HC-COM-K-KV-PG16(11,5-15) SML	1409286 1409299	2 2	
<b>Protective cover, plastic</b> 			Socket HC-COM-K-SD-FLU-BU/FS Plug HC-COM-K-SD-FLU-ST/FS	1408397 1408407	2 2	

**Notes:**  
Box mounting base with open bottom



# Heavy-duty connectors

## HEAVYCON accessories, contact inserts

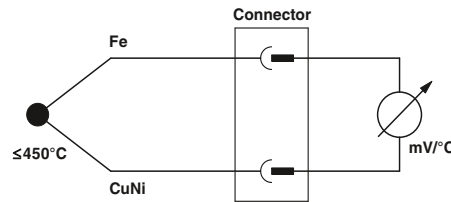
### Type J iron and constantan crimp contacts

In hot runner injection molding machines, temperatures are often measured using iron/constantan thermocouples. Iron/constantan elements are used for temperatures up to around 450°C.

When measuring the temperatures using iron/constantan elements, the control system is connected with iron/constantan conductors. The connection point of the iron or constantan conductor to a brass crimp contact of a connector would result in thermoelectric voltages that can falsify the measuring result. We therefore recommend using iron/constantan crimp contacts.

Iron/constantan crimp contacts can be used in contact inserts of the A / B / BB / HV series and in the HC-M-HV..., HC-M-06..., HC-M-08..., HC-M-20-... modules.

A combination (standard contacts/thermo contacts) of crimp contact inserts is also possible.



Material data
Contact material
Contact surface material
Stripping length of the individual wire
Insertion/withdrawal cycles
Temperature data
Ambient temperature (operation)

Description
<b>Turned socket contacts, 0.5 mm<sup>2</sup></b> iron (Fe), Au surface Constants (CuNi), uncoated
<b>Turned pin contacts, 0.5 mm<sup>2</sup></b> iron (Fe), Au surface Constants (CuNi), uncoated



Turned crimp contacts, for contact inserts:  
HC-M-06, HC-M-HV, HC-M-08, HC-M-20, HC-B, HC-BB, HC-A, HC-HV

Technical data	
<b>CK2,5-ED...FE</b>	<b>CK2,5-ED...CUNI</b>
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.
<b>CK2,5-ED-0,5BU FE</b>	<b>1585773</b>	25
<b>CK2,5-ED-0,5BU CUNI</b>	<b>1585757</b>	25
<b>CK2,5-ED-0,5ST FE</b>	<b>1585760</b>	25
<b>CK2,5-ED-0,5ST CUNI</b>	<b>1585744</b>	25

### FO crimp contacts

Fiber optics crimp contacts (980/1000 μm) are suitable for coupling fiber optic cables (polymer fiber optic cable). These can be used in the 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.

Notes:
For crimping pliers, assembly and removal tools, see 637

Material data
Contact material
Insertion/withdrawal cycles

Description
<b>Fiber optic contact POF, turned, for VC-D contact carriers</b>
Socket
Plug
<b>Polisher, metal, for CK1,6-...POF contacts, POF conductor diameter: 2.2 mm</b>
<b>Stripping tool for FO cables</b> - <b>stripping pliers</b> for individual elements
<b>Polishing foil</b>
<b>Polishing paper</b>



Crimp contacts for fiber optic cables, polymer optic fibers (POF)

Technical data	
Nickel silver	≥ 500

Ordering data		
Type	Order No.	Pcs. / Pkt.
<b>CK1,6-ED-BU-POF</b>	<b>1885004</b>	50
<b>CK1,6-ED-ST-POF</b>	<b>1884995</b>	50
<b>POLISHER-POF</b>	<b>1686122</b>	1
<b>PSM-FO-STRIP</b>	<b>2744199</b>	1
<b>POLFOL 1 MIC-POF</b>	<b>1636800</b>	10
<b>POLPAP 1500-POF</b>	<b>1636813</b>	10



# Heavy-duty connectors

## HEAVYCON accessories, contact inserts

### 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:**  
For replacement dies and retaining springs, go to the product area on the website at [phoenixcontact.net/products](http://phoenixcontact.net/products).



Conductor cross section of 0.5 - 4 mm<sup>2</sup>

Conductor cross section of 6 - 10 mm<sup>2</sup>

Application range	
Conductor	mm <sup>2</sup> / AWG
Compression	

Description	<p><b>Crimping pliers</b>, for turned contacts with a pin diameter of 1.6 / 2.5 / 4.0 mm</p> <ul style="list-style-type: none"> <li>- For CK1,6-ED ... , CK2,5-ED...</li> <li>CK4,0-E D... 0.5-4 mm<sup>2</sup> turned contacts</li> <li>- For CK4,0-ED...6 - 10 mm<sup>2</sup> turned contacts</li> </ul>
-------------	--

Removal tool	<ul style="list-style-type: none"> <li>- For CK1,6-ED.../CK1,6-ER.../CK1,6...POF contacts</li> <li>- For CK2,5-ED... contacts</li> <li>- For CK4,0-ED... contacts</li> </ul>
--------------	--

Technical data		
0.5 ... 4 / 22 ... 12		
Square crimp		

Ordering data		
Type	Order No.	Pcs. / Pkt.
CRIMPFOX-TC 4	1212113	1

Accessories		
Type	Order No.	Pcs. / Pkt.
VC-EW 1,6	1884869	1
CK2,5-EWZ	1662722	1
CK4,0-EWZ	1662735	1

Technical data		
6 ... 10 / 10 ... 8		
Square crimp		

Ordering data		
Type	Order No.	Pcs. / Pkt.
CRIMPFOX-TC 10	1212114	1

Accessories		
Type	Order No.	Pcs. / Pkt.
CK4,0-EWZ	1662735	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 connectors, visit [phoenixcontact.net/products](http://phoenixcontact.net/products)



Basic pliers

Application range	
Compression	

Description	<p><b>Basic pliers</b>, for accommodating dies for various contact types, pressure lock can be unlocked, lateral entry</p>
-------------	--

Die,	<ul style="list-style-type: none"> <li>For turned contacts with pin diameters 2.5 mm and 4.0 mm (CK 2,5...CK 4,0), cross section 0.14 - 4 mm<sup>2</sup></li> <li>For turned contacts with pin diameter 4 mm (CK 4,0...), cross section 6 - 10 mm<sup>2</sup></li> </ul>
------	--

Technical data		
Universal		

Ordering data		
Type	Order No.	Pcs. / Pkt.
CRIMPFOX-M	1212072	1

Accessories		
Type	Order No.	Pcs. / Pkt.
CRIMPFOX-M TC 4/DIE	1212075	1
CRIMPFOX-M TC 10/DIE	1212076	1

**CRIMPFOX crimping pliers for rolled contacts**

- For processing rolled contacts for fiber optics (POF)



Conductor cross section of 0.5 - 1.5 mm<sup>2</sup>

Technical data	
Application range	mm <sup>2</sup> / AWG
Conductor	0.5 ... 1.5 / -
Compression	Universal
Ordering data	
Description	Type
<b>Crimping pliers</b> - For rolled CK1,6-ER... contacts	<b>CRIMPFOX-1,6-ER-1,50-AT</b>
	Order No. <b>1884843</b>
	Pcs. / Pkt. <b>1</b>
Accessories	
<b>Assembly tool</b> - For CK1,6-ED.../CK2,5-ED.../CK1,6-ER... contacts	<b>CK1,6/2,5-MWZ</b>
	Order No. <b>1676734</b>
	Pcs. / Pkt. <b>1</b>
<b>Removal tool</b> - For CK1,6-ED.../CK1,6-ER.../CK1,6...POF contacts	<b>VC-EW 1,6</b>
	Order No. <b>1884869</b>
	Pcs. / Pkt. <b>1</b>

**CRIMPFOX crimping pliers for coaxial connectors**

- CRIMPFOX-CX... are crimping pliers for processing coaxial connectors
- Unlockable pressure lock
- Lateral conductor entry



For coaxial connectors



Conductor cross section of 0.14 - 2.5 mm<sup>2</sup>

**Notes:**  
For replacement dies and retaining springs, go to the product area on the website at [phoenixcontact.net/products](http://phoenixcontact.net/products).

Technical data	
Application range	mm <sup>2</sup> / AWG
Compression	HEX crimp
Ordering data	
Description	Type
<b>Crimp pliers, for:</b> - for coaxial connectors, 1.69 mm, 3.25 mm, 4.52 mm, three marked die stations, unlockable pressure lock, lateral entry, hex crimp  - For turned VS...CD contacts (D-SUB contacts) ; crimping tool with four mandrels	<b>CRIMPFOX-CX 4,52</b>
	Order No. <b>1212094</b>
	Pcs. / Pkt. <b>1</b>
Accessories	
<b>Removal tool</b> - For coax HC-M-04...KOAX... contacts - For D-SUB VS...CD... contacts	<b>HC-M4-KOAX-EWZ</b>
	Order No. <b>1676747</b>
	Pcs. / Pkt. <b>1</b>

Technical data	
Application range	mm <sup>2</sup> / AWG
Compression	Indent crimp
Ordering data	
Description	Type
	<b>CRIMPFOX RC 2,5</b>
	Order No. <b>1205448</b>
	Pcs. / Pkt. <b>1</b>
Accessories	
<b>Removal tool</b> - For coax HC-M-04...KOAX... contacts - For D-SUB VS...CD... contacts	<b>EWR</b>
	Order No. <b>1665075</b>
	Pcs. / Pkt. <b>1</b>

# Heavy-duty connectors

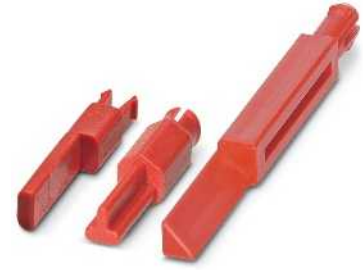
## HEAVYCON accessories, contact inserts

### Coding profiles

– Can be coded in seconds, thanks to the coding profiles



HC/HC-S coding profile



HS2/D7/Q12 coding profile

	Technical data			Technical data		
Material data						
Material	PA			PA		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Coding profiles</b> , for contact inserts in series:						
HC-B... and HC-B...A-UT... terminal adapter	CP-HC	1686478	10			
HC-B...A-DT...						
HC-A10..., HC-BB...	CP-HC-S	1410916	10			
<b>Coding profiles</b> , for contact inserts in series:						
HC-HS2-D7-E...S				HC-HS 2-CP	1586280	50
HC-D 7-EBUC-COD				HC-D 7-CD-BU	1408601	50
HC-D 7-ESTC-COD				HC-D 7-CD-ST	1408591	50
HC-Q12...				HC-Q 12-COD	1409435	10

### Coding bolts

– Up to 6 plug-in connections can be protected against mismatching

**Notes:**  
For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)



Coded bolts

	Technical data		
Material data			
Material	Steel		
	Ordering data		
Description	Type	Order No.	Pcs. / Pkt.
<b>Coding bolt</b> , for contact inserts in series:			
HC-B...	HC-CB	1772722	10

**Coding pins, sockets**

- Up to 16 plug-in connections can be protected against mismatching
- Mandatory for HC-D..., HC-DD... as well as HC-M-25-MOD..., HC-M-04MOD..., and HC-M-DSUB09...

**Notes:**  
For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)



Coding pin/socket



Coding pin/socket

Material data
Material

**Technical data**

Steel, galvanized

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-CST	1676857	10
HC-CBU	1676860	10

Description
-------------

**Coding sockets and pins**, for coding to protect against mismatching and as a guide to prevent accidentally jamming the connector in at an angle, cannot be used with HC-Modular and HC-D7 ...

Coding pin  
Coding socket

**Coding sockets and pins**, for coding to protect against mismatching and as a guide to prevent accidentally jamming the connector in at an angle, for HC-Modular

Coding pin  
Coding socket

**Technical data**

Steel, galvanized

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-CST-MOD	1636127	10
HC-CBU-MOD	1636130	10

**Dummy sockets**

Dummy sockets prevent plugging of a plug-in connection if a pin is mounted at the coding position in the pin insert. Identical connectors can thus be protected against being plugged in incorrectly.

**Notes:**  
For assembly instructions, see [phoenixcontact.net/products](http://phoenixcontact.net/products)



Dummy socket



Dummy socket

Material data
Material

**Technical data**

PA

**Ordering data**

Type	Order No.	Pcs. / Pkt.
CK2,5-ED-BB	1584693	100

Description
-------------

**Dummy sockets**, for contact inserts with turned socket contacts of type:

CK-2,5-ED...  
CK-1,6-ED...

**Technical data**

Copper alloy

**Ordering data**

Type	Order No.	Pcs. / Pkt.
CK1,6-ED-BB	1645888	50

# Heavy-duty connectors

## HEAVYCON accessories, contact inserts

### PE screws, PE multiplier

If several PE conductors are led via one contact insert, additional PE connections are required. This is done using additional PE screws or the PE multiplier.



PE screw



PE multiplier

			Technical data			Technical data		
Material data								
Material			Steel, galvanized			Brass, nickel-plated		
Application range								
Connection cross section			mm <sup>2</sup>			0,5 ... 2,5		
Connection cross section			AWG			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	100			
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

### PE terminal block base

If two PE conductors are led via one contact insert, additional PE connections are required. For HC-K6/0... this is done using a PE terminal block base.



PE terminal block base

		Technical data		
Material data				
Material		Brass		
		Ordering data		
Description		Type	Order No.	Pcs. / Pkt.
PE terminal block base, PE extension for HC-K6/0... contact inserts				
Socket		HC-K 6 PE 16 QMM F	1583869	25
Plug		HC-K 6 PE 16 QMM M	1583870	25

**Strain relief clamps**

Cable trees with crimp contacts must not put a strain on the engaged contacts with their weight.

This is avoided by the use of strain relief clamps.



Lateral cable outlet



Straight cable outlet

Material data
Material
Description
<b>Strain relief clamps</b> , clamping area of 9 - 19 mm, for contact inserts in series: HC-B..., HC-BB..., HC-D40..., HC-D64..., HC-DD..., HC-HV...

Technical data		
Steel, galvanized		
Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B-ZS	1685330	10

Technical data		
Steel, galvanized		
Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B-ZG	1685327	10

**Docking frame**

Docking frames ensure that socket and pin inserts are located in insert systems and contact is made reliably.

<b>Notes:</b>
Due to the floating frame, the mounting panel must be grounded.



Docking frames

Material data	
Material	
Insertion/withdrawal cycles	
Temperature data	
Ambient temperature (operation)	°C
Description	
<b>Docking frame</b> , with 4 flat headed screws with shoulder, for contact inserts in series: B6, DD24, BB10, K, M B10, DD42, BB18, K, M B16, D40, DD72, BB32, K, M B24, D64, DD108, BB46, K, M	

Technical data		
Stainless steel		
≥ 500		
Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B 6-ANDOCK	1586112	1
HC-B 10-ANDOCK	1586125	1
HC-B 16-ANDOCK	1586138	1
HC-B 24-ANDOCK	1586141	1



# Heavy-duty connectors

## HEAVYCON accessories - housing

### Plastic cable glands for EVO B series housing



Plastic cable gland

#### Technical data

General data	
Material	PA
Ambient temperature (operation)	-40 ... 100 °C

#### Ordering data

Description	Thread type	Type	Order No.	Pcs. / Pkt.
<b>Cable gland</b> , for HEAVYCON EVO B series plastic housing, for cable diameter:				
7 mm ... 13 mm	M20	HC-B-G-M20-PLRBK	1407669	1
9 mm ... 17 mm	M25	HC-B-G-M25-PLRBK	1407670	1
11 mm ... 21 mm	M32	HC-B-G-M32-PLRBK	1407671	1
19 mm ... 28 mm	M40	HC-B-G-M40-PLRBK	1407672	1

### Metal cable glands for EVO B series housing



Metal cable gland for EMC applications



Metal cable gland for higher strain relief

#### Technical data

General data	
Material	Die-cast aluminum, corrosion-resistant
Ambient temperature (operation)	-40 ... 125 °C

#### Ordering data

Description	Thread type	Type	Order No.	Pcs. / Pkt.
<b>Cable gland</b> , for HEAVYCON EVO B series metal housing, for EMC applications, for cable diameter:				
7 mm ... 13 mm	M20	HC-B-G-M20-EC-AL	1411439	1
11 mm ... 16 mm	M25	HC-B-G-M25-EC-AL	1411446	1
14 mm ... 21 mm	M32	HC-B-G-M32-EC-AL	1411440	1
19 mm ... 27 mm	M40	HC-B-G-M40-EC-AL	1411441	1

#### Technical data

General data	
Material	Die-cast aluminum, corrosion-resistant
Ambient temperature (operation)	-40 ... 125 °C

#### Ordering data

Description	Thread type	Type	Order No.	Pcs. / Pkt.
<b>Cable gland</b> , for HEAVYCON EVO metal housing, for higher strain relief, with NBR seal, for cable diameter:				
7 mm ... 13 mm	M20	HC-B-G-M20-ER-AL	1411442	1
11 mm ... 16 mm	M25	HC-B-G-M25-ER-AL	1411443	1
14 mm ... 21 mm	M32	HC-B-G-M32-ER-AL	1411444	1
19 mm ... 27 mm	M40	HC-B-G-M40-ER-AL	1411445	1

Plastic cable glands and thread adapters for EVO D series housing



Plastic cable gland



Plastic thread adapter

		Technical data			Technical data		
General data							
Material		PA			PA		
Ambient temperature (operation) °C		-40 ... 100			-40 ... 125		
		Ordering data			Ordering data		
Description	Thread type	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Cable gland</b> , for HEAVYCON EVO D series plastic housing, for cable diameter:							
7 mm ... 13 mm	M20	HC-D-G-M20-PLRBK	1411350	1			
9 mm ... 17 mm	M25	HC-D-G-M25-PLRBK	1411351	1			
<b>Thread adapter</b> , for HEAVYCON EVO D series plastic housing							
	M25				HC-D-TA-M25-PLRBK	1411352	1
	Pg16				HC-D-TA-PG16-PLR-BK	1411353	1
	3/4 inch NPT				HC-D-TA-NPT-3/4-PLR-BK	1411354	1

Thread adapters for EVO B series housing

new

new



Plastic thread adapter



Metal thread adapter

		Technical data			Technical data		
General data							
Material		Polyamide			Die-cast aluminum, corrosion-resistant		
Ambient temperature (operation) °C		-40 ... 100			-40 ... 125		
		Ordering data			Ordering data		
Description	Thread type	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Thread adapter</b> , for HEAVYCON EVO B series housing							
	M20	HC-B-TA-M20-PLR-BK	1414243	1	HC-B-TA-M20-ER-AL	1414256	1
	M25	HC-B-TA-M25-PLR-BK	1414244	1	HC-B-TA-M25-ER-AL	1414257	1
	M32	HC-B-TA-M32-PLR-BK	1414245	1	HC-B-TA-M32-ER-AL	1414258	1
	M40	HC-B-TA-M40-PLR-BK	1414246	1	HC-B-TA-M40-ER-AL	1414259	1
	Pg13.5	HC-B-TA-PG13-PLR-BK	1414247	1	HC-B-TA-PG13-ER-AL	1414260	1
	Pg16	HC-B-TA-PG16-PLR-BK	1414248	1	HC-B-TA-PG16-ER-AL	1414261	1
	Pg21	HC-B-TA-PG21-PLR-BK	1414249	1	HC-B-TA-PG21-ER-AL	1414262	1
	Pg29	HC-B-TA-PG29-PLR-BK	1414250	1	HC-B-TA-PG29-ER-AL	1414263	1
	1/2-inch NPT	HC-B-TA-NPT-1/2-PLR-BK	1414251	1	HC-B-TA-NPT-1/2-ER-AL	1414264	1
	3/4 inch NPT	HC-B-TA-NPT-3/4-PLR-BK	1414252	1	HC-B-TA-NPT-3/4-ER-AL	1414265	1
	1/1 inch NPT	HC-B-TA-NPT-1/1-PLR-BK	1414253	1	HC-B-TA-NPT-1/1-ER-AL	1414266	1
	1 1/4 in. NPT	HC-B-TA-NPT-1 1/4-PLR-BK	1414254	1	HC-B-TA-NPT-1 1/4-ER-AL	1414267	1

# Heavy-duty connectors

## HEAVYCON accessories - housing

### Corrugated pipe adapter for EVO B series housing

new

**Notes:**  
For protective hoses for corrugated pipe adapters, see Catalog 5



Plastic corrugated pipe adapter

General data		Technical data		
Material		PA		
Ambient temperature (operation)	°C	-40 ... 115		
Description		Ordering data		
Description	Thread type	Type	Order No.	Pcs. / Pkt.
<b>Corrugated pipe adapter</b> , for HEAVYCON EVO B series plastic housing, for protective hose outside diameter:				
21.2 mm	M20	HC-B-GCA-M20-PLRBK	1412021	1
28.5 mm	M25	HC-B-GCA-M25-PLRBK	1411973	1
34.5 mm	M32	HC-B-GCA-M32-PLRBK	1412022	1
42.5 mm	M40	HC-B-GCA-M40-PLRBK	1412023	1

### Screw connection for multiple cables for EVO B series housing

new

new



Plastic cable gland for multiple cables



Metal cable gland for multiple cables

General data		Technical data			Technical data		
Material		PA		Die-cast aluminum, corrosion-resistant			
Ambient temperature (operation)	°C	-30 ... 100		-30 ... 100			
Description		Ordering data			Ordering data		
Description	Thread type	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Cable gland</b> , for HEAVYCON EVO B series housing, with seal insert for cable diameter:							
Without bore hole	M40	HC-B-GM0-M40-PLTBK	1414643	1	HC-B-GM0-M40-ET-AL	1414647	1
4x 10 mm	M40	HC-B-GM4X10-M40-PLTBK	1414644	1	HC-B-GM4X10-M40-ET-AL	1414648	1
5x 8.5 mm	M40	HC-B-GM5X8,5-M40-PLTBK	1414645	1	HC-B-GM5X8,5-M40-ET-AL	1414649	1
8x 6.5 mm	M40	HC-B-GM8X6,5-M40-PLTBK	1414646	1	HC-B-GM8X6,5-M40-ET-AL	1414650	1

**Screw connection  
with bend protection  
for EVO B series housing**

new

new



**Plastic cable gland  
with bend protection**

**Metal cable gland  
with bend protection**

**Technical data**

**Technical data**

General data	
Material	Polyamide
Ambient temperature (operation)	°C -40 ... 100

General data	
Material	-
Ambient temperature (operation)	°C -40 ... 100

**Ordering data**

**Ordering data**

Description	Thread type
<b>Cable gland</b> , for HEAVYCON EVO B series housing, for cable diameter:	
6 mm ... 13 mm	M20
9 mm ... 17 mm	M25
13 mm ... 21 mm	M32
16 mm ... 28 mm	M40

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

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

**Screw connection  
with bend protection and strain relief  
for EVO B series housing**

new

new



**Plastic cable gland  
with strain relief**

**Metal cable gland  
with strain relief**

**Technical data**

**Technical data**

General data	
Material	Polyamide
Ambient temperature (operation)	°C -40 ... 100

General data	
Material	-
Ambient temperature (operation)	°C -40 ... 100

**Ordering data**

**Ordering data**

Description	Thread type
<b>Cable gland</b> , for HEAVYCON EVO B series housing, for cable diameter:	
6 mm ... 13 mm	M20
9 mm ... 17 mm	M25
13 mm ... 21 mm	M32
16 mm ... 28 mm	M40

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

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

# Heavy-duty connectors

## HEAVYCON accessories - housing

### Protective cover for sleeve housing



Protective cover with single locking latch

#### Technical data

General data	Technical data		
	Plastic, gray	Plastic, black	Metal
Degree of protection	IP54	IP54	IP65
Material	PA	PA	Aluminum, die-cast
Inflammability class according to UL 94	HB	HB	-
Ambient temperature (operation) °C	-20 ... 100	-20 ... 100	-40 ... 125

#### Ordering data

Description	Ordering data					
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Protective cover, for sleeve housing without locking latch, with retaining cord, with seal, for housing sizes:</b>						
B6	1678282	10	1414634	1	1644546	10
B10	1678295	10	1414635	1	1584512	10
B16	1678318	10	1414636	1	1584525	10
B24	1678334	10	1414637	1	1584538	10



Protective cover with double locking latch

#### Technical data

General data	Technical data		
	Plastic, gray	Plastic, black	Metal
Degree of protection	IP54	IP54	IP65
Material	PA	PA	Aluminum, die-cast
Inflammability class according to UL 94	HB	HB	-
Ambient temperature (operation) °C	-20 ... 100	-20 ... 100	-40 ... 125

#### Ordering data

Description	Ordering data					
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Protective cover, for sleeve housing without locking latch, with retaining cord, with seal, for housing sizes:</b>						
B6	1678305	10	1414638	1	1584541	10
B10	1678321	10	1414639	1	1584554	10
B16	1678347	10	1414640	1	1584567	10

### Protective cover for sleeve housing



Protective cover without double locking latch

#### Technical data

General data	Technical data		
	Plastic, gray	Plastic, black	Metal
Degree of protection	IP54	IP54	IP65
Material	PA	PA	Aluminum, die-cast
Inflammability class according to UL 94	HB	HB	-
Ambient temperature (operation) °C	-20 ... 100	-20 ... 100	-40 ... 125

#### Ordering data

Description	Ordering data					
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>Protective cover, for sleeve housing with double locking latch, with retaining cord, with seal, for housing sizes:</b>						
B10	1687260	10	1414631	10	1647750	10
B16	1687273	10	1414632	10	1647763	10
B24	1687286	10	1414633	10	1647776	10

**Protective cover  
for panel mounting base**



**Protective cover  
without single locking latch**



**Protective cover  
without double locking latch**

General data	
Degree of protection	
Material	
Inflammability class according to UL 94	
Ambient temperature (operation)	°C

Technical data		
Plastic, gray	Plastic, black	Metal
IP54	IP54	IP65
PA	PA	Aluminum, die-cast
HB	HB	-
-20 ... 100	-20 ... 100	-40 ... 125

Technical data		
Plastic, gray	Plastic, black	Metal
IP54	IP54	IP65
PA	PA	Aluminum, die-cast
HB	HB	-
-20 ... 100	-20 ... 100	-40 ... 125

Description	
<b>Protective cover</b> , for panel mounting base, box mounting base, and coupling housing <b>with locking latch</b> , with retaining cord, <b>without seal</b> , for housing sizes:	
B6	
B10	
B16	
B24	
B32	
D15	
D25	

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1660180	10	1414623	10	1644559	10
1660177	10	1414625	10	1644562	10
1660151	10	1414626	10	1644588	10
1660148	10	1414627	10	1644601	10
		1414641	10		
		1414642	10		

Ordering data					
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
1772586	10	1414628	10	1644575	10
1772599	10	1414629	10	1644591	10
1772609	10	1414630	10	1644614	10
1646120	10				

**Replacement protective cover  
for EVO supporting base elements**



**Hinged protective cover**

General data	
Degree of protection	
Material	
Inflammability class according to UL 94	
Ambient temperature (operation)	°C

Technical data	
IP65 / IP66	
PA	
V0	
-40 ... 100	

Description	
<b>Replacement protective cover</b> , hinged, for HEAVYCON EVO supporting base element, for housing sizes:	
B6	
B10	
B16	
B24	
D15	
D25	

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B06-BC-HI-PLBK	1407692	1
HC-B10-BC-HI-PLBK	1407693	1
HC-B16-BC-HI-PLBK	1407694	1
HC-B24-BC-HI-PLBK	1407695	1
HC-D15-BC-HI-PLBK	1414673	1
HC-D25-BC-HI-PLBK	1414674	1

# Heavy-duty connectors

## HEAVYCON accessories - housing

### 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	Light gray
Degree of protection	IP54
Inflammability class according to UL 94	HB
Ambient temperature (operation)	-20 ... 100 °C

Technical data		
Material	PA	
Color	Light gray	
Degree of protection	IP54	
Inflammability class according to UL 94	HB	
Ambient temperature (operation)	-20 ... 100 °C	

Technical data		
Material	PA	
Color	Gray	
Degree of protection	IP54	
Inflammability class according to UL 94	HB	
Ambient temperature (operation)	-20 ... 100 °C	

Ordering data	
Description	
<b>Cover plate</b> , 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)	

Ordering data		
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

Ordering data		
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	Light gray
Degree of protection	IP54
Inflammability class according to UL 94	HB
Ambient temperature (operation)	-20 ... 100 °C

Technical data		
Material	PA	
Color	Light gray	
Degree of protection	IP54	
Inflammability class according to UL 94	HB	
Ambient temperature (operation)	-20 ... 100 °C	

Technical data		
Material	PA	
Color	Light gray	
Degree of protection	IP54	
Inflammability class according to UL 94	HB	
Ambient temperature (operation)	-20 ... 100 °C	

Ordering data	
Description	
<b>Adapter plate</b> , for reduction from a B24 panel cutout to:	
B16 (cutout: 35 mm x 86 mm)	
B10 (cutout: 35 mm x 65 mm)	
B6 (cutout: 35 mm x 52 mm)	
<b>Adapter plate</b> , for reduction from a B24 panel cutout to:	
3 x D7 (cutout: 21.5 mm x 21.5 mm)	
3 x circular connector cutouts (Ø 21 mm)	

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B 24-ADP-B 16-GY	1660449	10
HC-B 24-ADP-B 10-GY	1660436	10
HC-B 24-ADP-B 6-GY	1660407	10

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B 24-ADP-3D 7-GY	1661448	10
HC-B 24-ADP-3RST-GY	1662175	10

**D-SUB adapter plates, B series**

For installing D-SUB connectors in HEAVYCON B series housing.  
 – IP65 with HEAVYCON standard housing  
 – IP66 with HEAVYCON EVO housing  
 – IP69K with HEAVYCON ADVANCE EEE housing

<b>Notes:</b>
Order D-SUB connectors separately
D-SUB assembly in the adapter plate: front mounting



Adapter plate for a D-SUB connector



Adapter plate for two D-SUB connectors

<b>General data</b>	
Material	PA
Color	Gray
Inflammability class according to UL 94	HB
Ambient temperature (operation)	°C -20 ... 100

**Technical data**

Material	PA
Color	Gray
Inflammability class according to UL 94	HB
Ambient temperature (operation)	°C -20 ... 100

**Technical data**

Material	PA
Color	Gray
Inflammability class according to UL 94	HB
Ambient temperature (operation)	°C -20 ... 100

<b>Description</b>
<b>D-SUB adapter plate</b> , for mounting HEAVYCON housings with D-SUB connector, for housing size / D-SUB type: B6 / D-SUB 09 B6 / D-SUB 15 B10 / D-SUB 25 B16 / D-SUB 37 B16 / D-SUB 50

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B 6-ADP/1 DSUB 9	1775457	2
HC-B 6-ADP/1 DSUB 15	1775473	2
HC-B 10-ADP/1 DSUB 25	1775499	2
HC-B 16-ADP/1 DSUB 37	1775512	2
HC-B 16-ADP/1 DSUB 50	1775538	2

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B 6-ADP/2 DSUB 9	1775460	2
HC-B 6-ADP/2 DSUB 15	1775486	2
HC-B 10-ADP/2 DSUB 25	1775509	2
HC-B 16-ADP/2 DSUB 37	1775525	2
HC-B 16-ADP/2 DSUB 50	1775541	2

**D-SUB adapter plates, D series**

For installing D-SUB connectors in HEAVYCON D series housing.  
 – IP65 with HEAVYCON standard housing  
 – IP66 with HEAVYCON EVO housing

<b>Notes:</b>
Order D-SUB connectors separately
D-SUB assembly in the adapter plate: front mounting



Adapter plate for a D-SUB connector

<b>General data</b>	
Material	PA
Color	Gray
Ambient temperature (operation)	°C -20 ... 100

**Technical data**

Material	PA
Color	Gray
Ambient temperature (operation)	°C -20 ... 100

<b>Description</b>
<b>D-SUB adapter plate</b> , for equipping HC-D15... housings with one D-SUB connector, D-SUB type: D-SUB 09 D-SUB 15 D-SUB 25

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-D 15-ADP/1 DSUB 9	1661312	2
HC-D 15-ADP/1 DSUB 15	1775253	2
HC-D 15-ADP/1 DSUB 25	1775266	2



# Heavy-duty connectors

## HEAVYCON accessories - housing

### Replacement seals for EVO housing

**Notes:**

Bond the replacement profile gaskets to the housing, adhesive: Loctite® 454.



Replacement flat gasket for EVO panel mounting bases



Replacement profile gasket for EVO supporting base elements

**General data**

Material NBR  
Ambient temperature (operation) °C -40 ... 125

**Description**

Replacement seal, for HEAVYCON EVO plastic housing in size:

B6
B10
B16
B24
D15
D25

**Technical data**

NBR  
-40 ... 125

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B06-SG-RBK	1407702	10
HC-B10-SG-RBK	1407703	10
HC-B16-SG-RBK	1407704	10
HC-B24-SG-RBK	1407705	10
HC-D15-SG-RBK	1414669	1
HC-D25-SG-RBK	1414670	1

**Technical data**

NBR  
-40 ... 125

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B06-SP-RBK	1407706	10
HC-B10-SP-RBK	1407707	10
HC-B16-SP-RBK	1407708	10
HC-B24-SP-RBK	1407709	10
HC-D15-SP-RBK	1414671	1
HC-D25-SP-RBK	1414672	1

### Replacement seals for STANDARD housing



**Notes:**

Bond the replacement profile gaskets to the housing, adhesive: Loctite® 454.



Replacement flat gasket for STANDARD panel mounting bases



Replacement profile gasket for STANDARD supporting base elements

**General data**

Material NBR, conductive  
Ambient temperature (operation) °C -40 ... 125

**Description**

Replacement seal, for HEAVYCON STANDARD metal housing in size:

B6
B10
B16
B24

**Technical data**

NBR, conductive  
-40 ... 125

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B06-SG-CBK	1411483	10
HC-B10-SG-CBK	1411484	10
HC-B16-SG-CBK	1411485	10
HC-B24-SG-CBK	1411486	10

**Technical data**

NBR, conductive  
-40 ... 125

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-B06-SP-CBK	1411477	10
HC-B10-SP-CBK	1411479	10
HC-B16-SP-CBK	1411480	10
HC-B24-SP-CBK	1411482	10

**Replacement seals  
for HC-B/D housing**

**Notes:**

Bond the replacement profile gaskets to the housing, adhesive: Loctite® 454.



**Replacement flat gasket  
for HC-B/D panel mounting bases**



**Replacement profile gasket  
for HC-D supporting base elements**

**Technical data**

General data	
Material	CR
Ambient temperature (operation)	°C -40 ... 125

**Ordering data**

Description	
<b>Replacement seal</b> , for HEAVYCON HC-B/D metal housing in size:	
B32	HC-B 32-FL-DI
B48	HC-B 48-FL-DI
D7	HC-D 7-FL-DI
D15	HC-D 15-FL-DI
D25	HC-D 25-FL-DI

Type	Order No.	Pcs. / Pkt.
HC-B 32-FL-DI	1687778	10
HC-B 48-FL-DI	1774678	10
HC-D 7-FL-DI	1645503	10
HC-D 15-FL-DI	1679582	10
HC-D 25-FL-DI	1679595	10

**Technical data**

General data	
Material	NBR
Ambient temperature (operation)	°C -40 ... 125

**Ordering data**

Type	Order No.	Pcs. / Pkt.
HC-D 15-PR-DI	1661189	10
HC-D 25-PR-DI	1408054	10

**Replacement seals  
for ADVANCE housing**



**Notes:**

Bond the replacement profile gaskets to the housing, adhesive: Loctite® 454.



**Replacement profile gasket  
for ADVANCE sleeve housing**

**Technical data**

General data	
Material	NBR, conductive
Ambient temperature (operation)	°C -40 ... 125

**Ordering data**

Description	
<b>Replacement profile gasket</b> , conductive, for uneven mounting panels, for HEAVYCON ADVANCE sleeve housing in size:	
B6	HC-B 6-TMS-EEE-PR-DI
B10	HC-B 10-TMS-EEE-PR-DI
B16	HC-B 16-TMS-EEE-PR-DI
B24	HC-B 24-TMS-EEE-PR-DI

Type	Order No.	Pcs. / Pkt.
HC-B 6-TMS-EEE-PR-DI	1409794	10
HC-B 10-TMS-EEE-PR-DI	1409804	10
HC-B 16-TMS-EEE-PR-DI	1409817	10
HC-B 24-TMS-EEE-PR-DI	1409820	10

# Heavy-duty connectors

## HEAVYCON accessories - housing

### Replacement latch for EVO B and D series plastic housing



Replacement latch  
for EVO B series housing



Replacement latch  
for EVO D series housing

Material data
Material

Technical data		
PA		

Technical data		
PA		

Description
-------------

**Replacement single locking latch**, plastic, for HEAVYCON EVO plastic housing in sizes:

- B6
- B10
- B16
- B24

**Replacement double locking latch**, plastic, for HEAVYCON EVO plastic housing in sizes:

- B10 ... B24

**Replacement single locking latch**, plastic, for HEAVYCON EVO plastic housing in sizes:

- D15
- D25

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-B06-SL-PLBK	1407697	10
HC-B10-SL-PLBK	1407698	10
HC-B16-SL-PLBK	1407700	10
HC-B24-SL-PLBK	1407701	10
HC-B10-24-DL-PLBK	1407696	10

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-D15-SL-PLBK	1414667	1
HC-D25-SL-PLBK	1414668	1

### Replacement latch for STANDARD and EVO B and D7 series metal housing



Replacement latch  
for STANDARD and EVO B series metal housing



Replacement latch  
for D7 series housing

Material data
Material

Technical data		
PA		

Technical data		
PA		

Description
-------------

**Replacement single locking latch**, plastic, for HEAVYCON STANDARD and EVO metal housing in sizes:

- B6
- B10
- B16
- B24

**Replacement double locking latch**, plastic, for HEAVYCON STANDARD and EVO metal housing in sizes:

- B6 ... B24

**Replacement latch**, plastic, for HEAVYCON housing in sizes:

- D7

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-STA-B06-SL-PLBK	1412591	1
HC-STA-B10-SL-PLBK	1412804	1
HC-STA-B16-SL-PLBK	1412284	1
HC-STA-B24-SL-PLBK	1412885	1
HC-STA-B10-24-DL-PLBK	1412886	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-D 7-LB-KU	1584680	10

Replacement bolt and sealing screw



Replacement bolt



Sealing screw

	Technical data			Technical data		
Material data						
Material	Steel, galvanized			Steel, galvanized		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Replacement bolt</b> , steel, for HEAVYCON HC-B...-TFL... sleeve housing (not EMC housing) in size: B48 <b>M3 sealing screw</b> , IP65, for HEAVYCON standard housing in size: D7	<b>HC-B 48-LB ERSBOLZ</b>	<b>1636114</b>	10	<b>HC-D 7-DS-IP65</b>	<b>1686229</b>	100

EVO unlocking for EVO plastic housing



Water pump pliers

	Technical data		
Material data			
Material	-		
	Ordering data		
Description	Type	Order No.	Pcs. / Pkt.
<b>Water pump pliers</b> , with groove joint, gripping surfaces with dual notching, acc. to VDE ISO 8976, size: 240 mm	<b>UNIFOX-WP</b>	<b>1212365</b>	1

# Heavy-duty connectors

## DUPLICON stackable power distribution



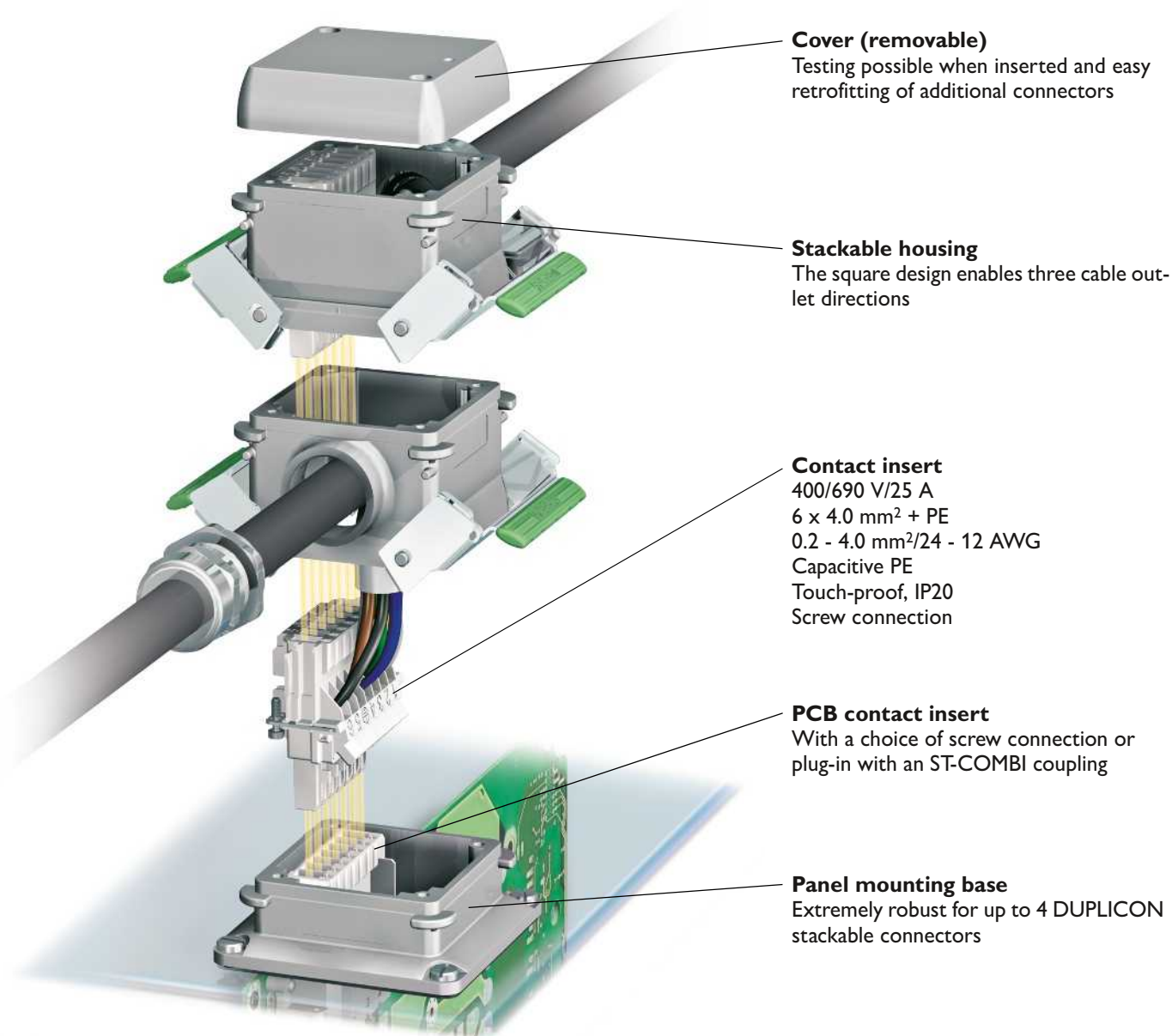
DUPLICON is a consistent power distributor system for 6 x 4 mm<sup>2</sup> + PE conductors (25 A/400/690 V), from the busbar to ST-COMBI in the control cabinet right up to the PCB or plug-in connection on the power load. The system has a minimum of components and handling is extremely flexible. The robust metal housings with vibration-resistant locking latches means that DUPLICON is qualified for the harshest operating conditions.

The design meets the requirements for IP67 protection. The contact inserts have a capacitive PE contact and the screw connections can be assembled using standard tools. DUPLICON acts as an interface between the control cabinet and the device or actuators/drives. With additional connection options of 24 V or two-wire bus lines for AS-i or PROFIBUS,

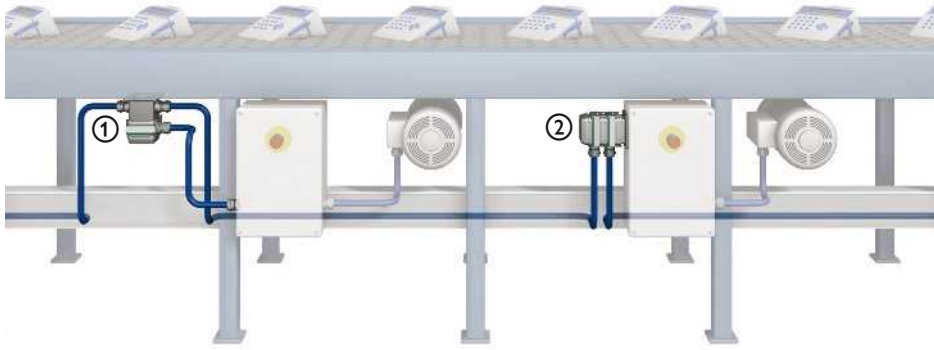
DUPLICON also provides a connection to the signal world, which opens up a broad range of possible applications.

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 according to DIN VDE 0105 and meet the requirements of BGV A2 accident prevention regulations.

**i** Your web code: #0004



**Stationary power distribution**

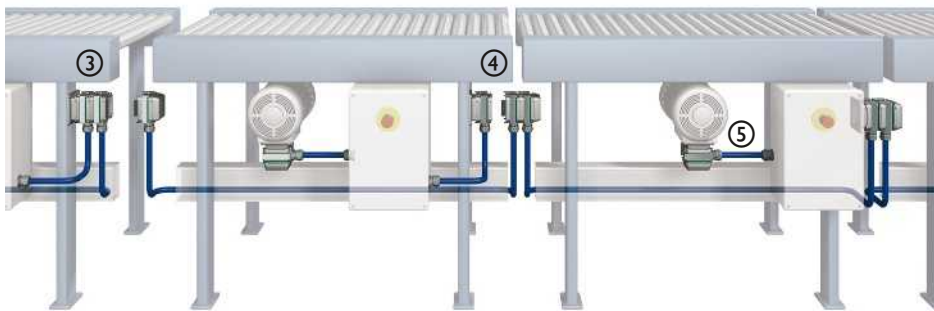


There are essentially two DUPLICON options for stationary power distribution:  
 ① Using the T-box, which is installed permanently next to the power load and has a plug-in cable outlet.  
 ② Using a stackable device connection. Direct device connection is always the best

option, but this requires design-based integration.

The main advantages are separate plug-in capability of the cables during startup and uninterrupted device replacement during future servicing.

**Modular power distribution**



③ Your power distribution can be configured in advance, thanks the stackable design. Plug and Play ensures quick and reliable startup.  
 ④ During servicing, the main power cable is disconnected from the load without causing any interruption and the system continues running.

⑤ DUPLICON is also suitable for use as a motor connector. The square design enables different cable outlet directions and the vibration-resistant locking mechanism can withstand the harshest operating conditions.

The modular contact inserts offer a wide range of possible applications.

**Cable routing options**



**With hybrid cables**

In the classic and simplest case, one cable is introduced 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 holes allow thin power and 24 V cables to be routed separately into 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.



# Heavy-duty connectors

## DUPLICON stackable power distribution

### Connector sets

Suitable standard and EMC cable glands can be found in the Installation and mounting material section.

<b>Notes:</b>
Cable glands, see starting with page 680
For accessories, refer to page: 664



**Stackable connector set  
(stackable housing, contact insert)**



**Panel feed-through set  
(panel mounting base, stackable housing,  
2 contact inserts, housing cover)**



#### Technical data

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage (III/3)	400 V (L-PE) / 690 V (L-L)
Rated surge voltage	6 kV
Rated current	25 A
Surge voltage category/pollution degree	III / 3
Contact resistance	1.5 mΩ
Material data	
Housing material	Aluminum die-cast
Housing surface material	EMC-conductive
Seal material	NBR
Locking latch material	Stainless steel
Contact material	Cu
Contact surface material	Ag
Contact carrier material	PA
Material grip body interlock	PA
Inflammability class according to UL 94	V0
Mechanical data	
Degree of protection	IP65/IP66/IP67
Insertion/withdrawal cycles	≥ 100
Connection data	
Connection method	Screw connection
Stripping length of the individual wire	10 mm
Conductor cross section	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule)
Connection cross section AWG	24 ... 12 (AWG 10 without ferrule)
Tightening torque	0.5 Nm ... 0.6 Nm
Temperature data	
Ambient temperature (operation)	-40 °C ... 100 °C



#### Technical data

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage (L-PE) / 690 V (L-L)	400 V (L-PE) / 690 V (L-L)
Rated surge voltage	6 kV
Rated current	25 A
Surge voltage category/pollution degree	III / 3
Contact resistance	1.5 mΩ
Material data	
Housing material	Aluminum die-cast
Housing surface material	EMC-conductive
Seal material	NBR
Locking latch material	Stainless steel
Contact material	Cu
Contact surface material	Ag
Contact carrier material	PA
Material grip body interlock	PA
Inflammability class according to UL 94	V0
Mechanical data	
Degree of protection	IP65/IP66/IP67
Insertion/withdrawal cycles	≥ 100
Connection data	
Connection method	Screw connection
Stripping length of the individual wire	10 mm
Conductor cross section	0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule)
Connection cross section AWG	24 ... 12 (AWG 10 without ferrule)
Tightening torque	0.5 Nm ... 0.6 Nm
Temperature data	
Ambient temperature (operation)	-40 °C ... 100 °C

#### Ordering data

Description	
<b>DUPLICON sets</b> , stackable housing without cable screw connection	
With M20 thread	
With M25 thread	

Type	Order No.	Pcs. / Pkt.
DC-B 6-SET-HD-M20-M-7X4-UT	1602216	1
DC-B 6-SET-HD-M25-M-7X4-UT	1602229	1

#### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-SET-WF-M20R-M-7X4-UT	1602232	1
DC-B 6-SET-WF-M25R-M-7X4-UT	1602258	1

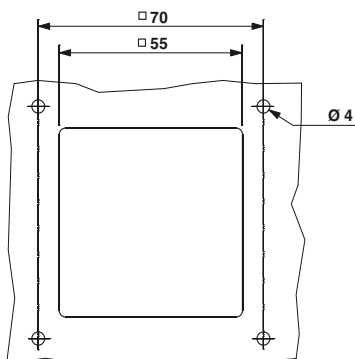
#### Accessories

<b>Special cable screw connection M25</b> , brass	
With 10 mm and 11 mm hole	

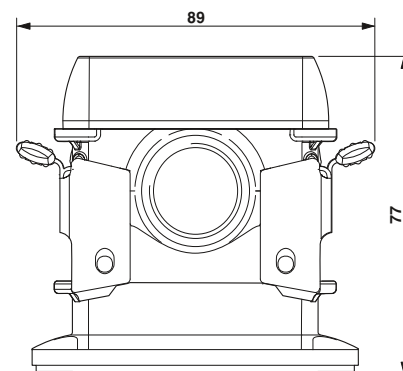
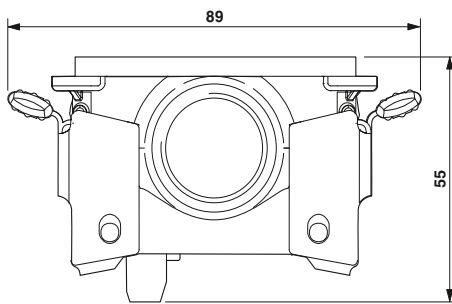
HC-M-KV-M25(1X10/1X11)	1580228	10
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#### Accessories

HC-M-KV-M25(1X10/1X11)	1580228	10
------------------------	---------	----



Panel cutout: DC-B 6-SET-WF...





**Coupling set**  
(basic housing, 2 stackable housings,  
2 contact inserts, housing cover)



**Distributor set**  
(basic housing, 3 stackable housings,  
3 contact inserts, housing cover)



**T-box set**  
(T-box with contact insert, stackable housing  
with contact insert, housing cover)



### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
1.5 mΩ
Aluminum die-cast
EMC-conductive
NBR
Stainless steel
Cu
Ag
PA
PA
V0
IP65/IP66/IP67
≥ 100
Screw connection
10 mm
0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule)
24 ... 12 (AWG 10 without ferrule)
0.5 Nm ... 0.6 Nm
-40 °C ... 100 °C

### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
1.5 mΩ
Aluminum die-cast
EMC-conductive
NBR
Stainless steel
Cu
Ag
PA
PA
V0
IP65/IP66/IP67
≥ 100
Screw connection
10 mm
0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule)
24 ... 12 (AWG 10 without ferrule)
0.5 Nm ... 0.6 Nm
-40 °C ... 100 °C

### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
- / 3
1.5 mΩ
Aluminum die-cast
EMC-conductive
NBR
Stainless steel
Cu
Ag
PA
PA
V0
IP65/IP66/IP67
≥ 100
Screw connection
10 mm
0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule)
24 ... 12
0.5 Nm ... 0.6 Nm
-40 °C ... 100 °C

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-SET-CO-M20-M-7X4-UT	1602274	1
DC-B 6-SET-CO-M25-M-7X4-UT	1602287	1

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-SET-3D-M20-M-7X4-UT	1602290	1
DC-B 6-SET-3D-M25-M-7X4-UT	1602300	1

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-SET-TB-M20-M-7X4-UT	1581023	1
DC-B 6-SET-TB-M25-M-7X4-UT	1581036	1

### Accessories

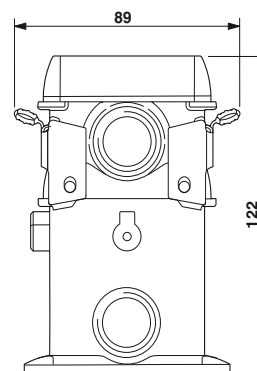
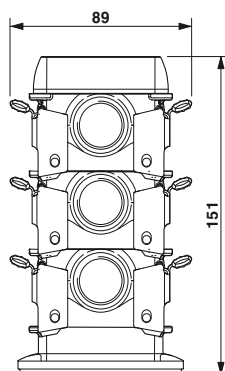
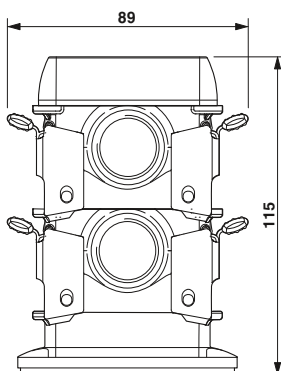
HC-M-KV-M25(1X10/1X11)	1580228	10
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### Accessories

HC-M-KV-M25(1X10/1X11)	1580228	10
------------------------	---------	----

### Accessories

HC-M-KV-M25(1X10/1X11)	1580228	10
------------------------	---------	----





# Heavy-duty connectors

## DUPLICON stackable power distribution

### Contact inserts



With the stackable contact inserts, the power conductors for modular mechanical and plant engineering can be pre-assembled and combined on-site to form power distributors quickly, easily and reliably.

The T-Box contact insert is predestined for stationary installations. With two connections per position, it serves to loop through power conductors on site.

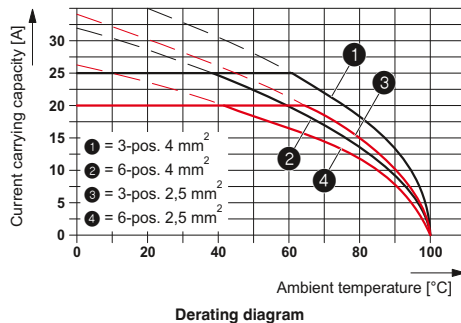
Compared to the DUPLICON 3-way distributor, the T-Box connectors save 20% on height and permit one to dispense with a full set of stackable connectors.

DUPLICON is the first IP67 connector that can be tested from the outside while it is plugged in. All that is necessary is to unscrew both screws in the cover, after which all the contacts will be immediately accessible to conventional testing devices. For safety reasons, all the contacts are IP20 touch proof in acc. with DIN VDE 0105.

#### Note:

Coding stars with 4 coding branches are available for the purpose of coding several connectors of the same kind against being plugged in incorrectly, Order No. **3040588**.

EB 2-6 dual insertion bridges with a 2 mm pitch (Order No. **0201155**) are available for bridging two adjacent connections.



#### Technical data

Electrical data in acc. with IEC 61076-2-101

Rated voltage (III/3)  
Rated surge voltage  
Rated current  
Surge voltage category/pollution degree  
No. of pos.

#### Material data

Contact material  
Contact surface material  
Contact carrier material  
Inflammability class according to UL 94

#### Mechanical data

Degree of protection  
Insertion/withdrawal cycles

#### Connection data

Connection method  
Stripping length of the individual wire  
Conductor cross section  
Connection cross section AWG  
Tightening torque

#### Temperature data

Ambient temperature (operation)



Stacked contact insert

#### Technical data

400 V (L-PE) / 690 V (L-L)  
6 kV  
25 A  
III / 3  
6

Cu  
Ag  
PA  
V0

IP20, touch proof  
≥ 100

Screw connection  
10 mm  
0,2 mm<sup>2</sup> ... 4 mm<sup>2</sup> (6 mm<sup>2</sup> without ferrule)  
24 ... 12 (AWG 10 without ferrule)  
0,5 Nm ... 0,6 Nm

-40 °C ... 100 °C

#### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-ID-7X4-UT	1602203	10

#### Accessories

PC	3040588	50
EB 2-6	0201155	100

#### Description

**Stacked contact insert**, 6 x 4 mm<sup>2</sup> + PE

Screw connection

**T-Box contact insert**, 6 x 4 mm<sup>2</sup> + PE

With two screw connections per position

**Panel mounting contact insert**, 6 x 4 mm<sup>2</sup> + PE

180° PCB connection

**Panel mounting contact insert**, 6 x 4 mm<sup>2</sup> + PE

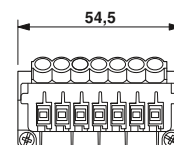
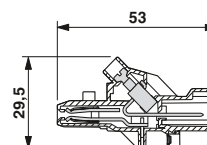
90° PCB connection

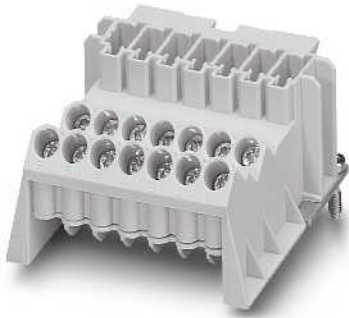
**Coding star**, with four coding branches, to code the connector

**Insertion bridge**, insulated

**Replacement screws**

**M3 screw**, V2A, for fixing the contact inserts for PCB connection in the panel mounting base





T-Box contact insert



Panel mounting contact insert,  
180° PCB connection



Panel mounting contact insert,  
90° PCB connection



### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
6
Cu
Ag
PA
V0
IP20, touch proof ≥ 100
Screw connection 10 mm 0.2 mm <sup>2</sup> ... 4 mm <sup>2</sup> (6 mm <sup>2</sup> without ferrule) 24 ... 12 (AWG 10 without ferrule) 0.5 Nm ... 0.6 Nm
-40 °C ... 100 °C

### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
6
Cu
Ag
PA
V0
IP20, touch proof ≥ 100
Solder connection - - -
-40 °C ... 100 °C

### Technical data

400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
6
Cu
Ag
PA
V0
IP20, touch proof ≥ 100
Solder connection - - -
-40 °C ... 100 °C

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-IBT-7X4-UT	1581065	10

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-IB-7X4-PCB-180	1602177	10

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-IB-7X4-PCB- 90	1602180	10

### Accessories

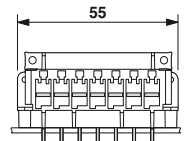
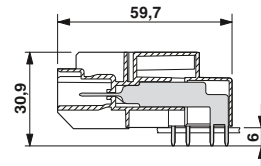
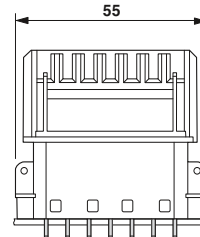
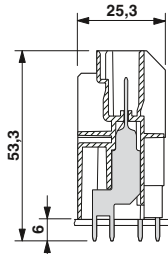
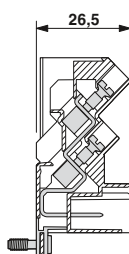
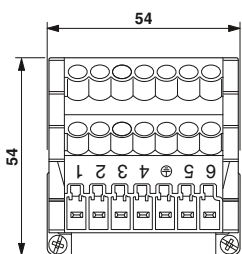
PC	3040588	50
EB 2- 6	0201155	100

### Accessories

PC	3040588	50
VC-TR-S	1607826	50
DC-PCB-M3X20	1602407	100

### Accessories

PC	3040588	50
VC-TR-S	1607826	50
DC-PCB-M3X20	1602407	100



# Heavy-duty connectors

## DUPLICON stackable power distribution

### Housing

**Notes:**

Cable glands, see from page 680



Housing cover



Panel mounting base with open bottom



**Technical data**

Technical data
Material data
Housing material
Housing surface material
Seal material
Locking latch material
Material grip body interlock
Mechanical data
Degree of protection
Temperature data
Ambient temperature (operation)

Aluminum die-cast
EMC-conductive
NBR
-
-
IP65/IP66/IP67
-40 °C ... 125 °C



**Technical data**

Aluminum die-cast
EMC-conductive
NBR
-
-
IP65/IP66/IP67
-40 °C ... 125 °C

**Ordering data**

Description
<b>Aluminum housing cover</b>
<b>Aluminum panel mounting base, with open base</b>
<b>Aluminum basic housing with enclosed base</b>
<b>Aluminum stackable housing</b>
With 2 x M20 thread
With 2 x M25 thread
With 1 x M20 thread
With 1 x M25 thread
<b>T-Box housing</b>
With 2 x M20 thread
With 2 x M25 thread

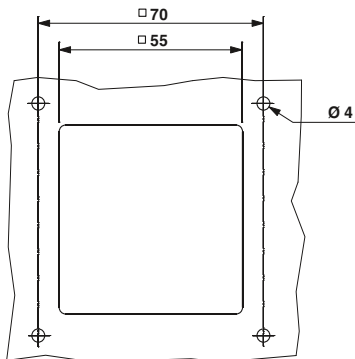
Type	Order No.	Pcs. / Pkt.
DC-B 6-CT-M	1602025	10

**Ordering data**

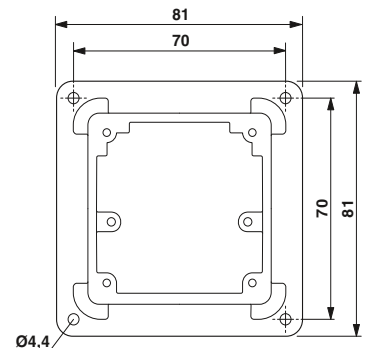
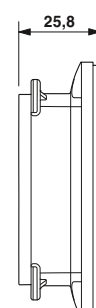
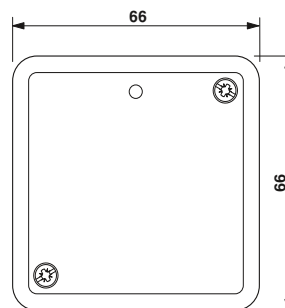
Type	Order No.	Pcs. / Pkt.
DC-B 6-HB-M	1602038	10

**Accessories**

<b>Special cable screw connection M25, brass</b>
With 10 mm and 11 mm hole

Panel cutout: DC-B 6-HB-M





**Base housing  
with closed bottom**



**Stackable housing  
without cable gland**



**T-Box, box mounting base**



### Technical data

Aluminum die-cast  
EMC-conductive  
-  
-

IP65/IP66/IP67

-40 °C ... 125 °C

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-HM-M	1602164	10

### Accessories

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### Technical data

Aluminum die-cast  
EMC-conductive  
NBR  
Stainless steel  
PA

IP65/IP66/IP67

-40 °C ... 125 °C

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-HD-M20/M20-M	1602067	10
DC-B 6-HD-M25/M25-M	1602070	10
DC-B 6-HD-M20-M	1602041	10
DC-B 6-HD-M25-M	1602054	10

### Accessories

HC-M-KV-M25(1X10/1X11)	1580228	10
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### Technical data

Aluminum die-cast  
EMC-conductive  
-  
-

IP65/IP66/IP67

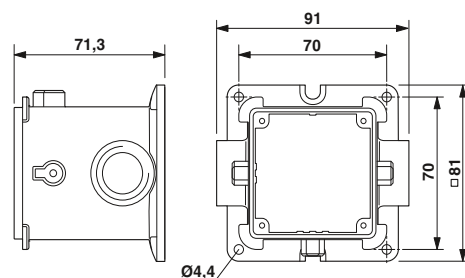
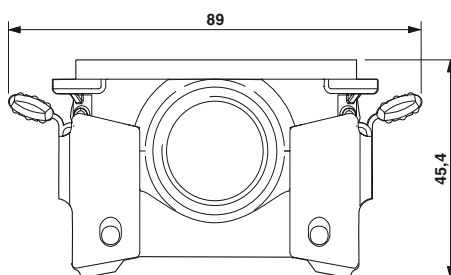
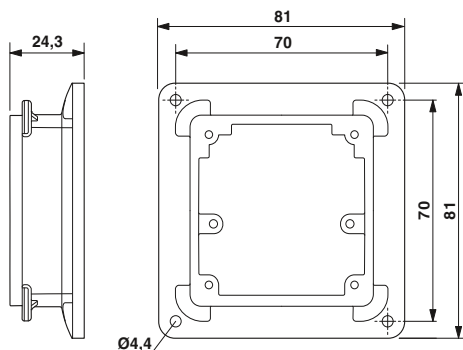
-40 °C ... 125 °C

### Ordering data

Type	Order No.	Pcs. / Pkt.
DC-B 6-HTC-M20-M20-M	1581049	10
DC-B 6-HTC-M25-M25-M	1581052	10

### Accessories

HC-M-KV-M25(1X10/1X11)	1580228	10
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# Heavy-duty connectors

## DUPLICON stackable power distribution

### Motor connector, sleeve housing, EMC-protected

<b>Notes:</b>
Cable glands, see from page 680
For accessories, refer to page: 664



Sleeve housing, one cable entry, without cable gland



Sleeve housing, two cable entries, without cable gland

Technical data
Material data
Housing material
Housing surface material
Seal material
Locking latch material
Material grip body interlock
Mechanical data
Degree of protection
Temperature data
Ambient temperature (operation)

ERC

Technical data	
Housing material	Aluminum die-cast
Housing surface material	EMC-conductive
Seal material	NBR
Locking latch material	Stainless steel
Material grip body interlock	PA
Degree of protection	IP65/IP66/IP67
Ambient temperature (operation)	-40 °C ... 125 °C

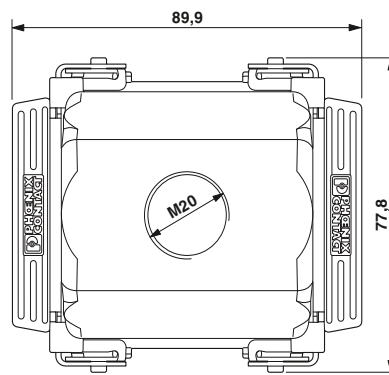
ERC

Technical data	
Housing material	Aluminum die-cast
Housing surface material	EMC-conductive
Seal material	NBR
Locking latch material	Stainless steel
Material grip body interlock	PA
Degree of protection	IP65/IP66/IP67
Ambient temperature (operation)	-40 °C ... 125 °C

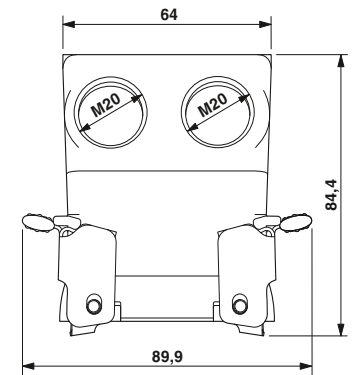
Description
<b>Sleeve housing, with one cable entry</b>
1 x M20, straight
1 x M20, lateral
1 x M25, straight
1 x M25, lateral
1 x M32, straight
1 x M32, lateral
<b>Sleeve housing, with two cable entries</b>
2 x M20, straight
2 x M20, lateral
2 x M25, straight
2 x M25, lateral

Ordering data		
Type	Order No.	Pcs. / Pkt.
DC-B 6-H-80/O1STM20G-M	1581173	10
DC-B 6-H-80/O1STM20S-M	1581117	10
DC-B 6-H-80/O1STM25G-M	1581194	10
DC-B 6-H-80/O1STM25S-M	1581138	10
DC-B 6-H-80/O1STM32G-M	1581215	10
DC-B 6-H-80/O1STM32S-M	1581159	10

Ordering data		
Type	Order No.	Pcs. / Pkt.
DC-B 6-H-80/O2STM20G-M	1581180	10
DC-B 6-H-80/O2STM20S-M	1581124	10
DC-B 6-H-80/O2STM25G-M	1581201	10
DC-B 6-H-80/O2STM25S-M	1581145	10



Dimensional drawing with straight cable outlet



Dimensional drawing with lateral cable outlet

**Motor connector, hinged retaining frame**



DUPLICON Modular has been designed for use in drives in the power distribution field. The square-shaped housing allows flexible cable outlet directions and the absolutely vibration-free locking latch can withstand the roughest of conditions. The requirements as per railway standard EN 50155 are markedly overshoot.

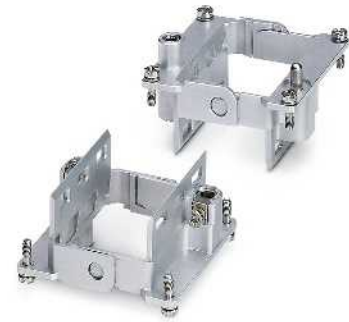
The modularity of contact inserts from the HEAVYCON field offers numerous applications.

The hinged retaining frames have been designed with leading PE contacts and can accommodate up to 3 contact insert modules.

The housings have one or two conductor entries in different sizes, depending on the type of cable entry.

**Notes:**

For contact insert modules, see from page: 548



Hinged retaining frame

ERIC

**Technical data**

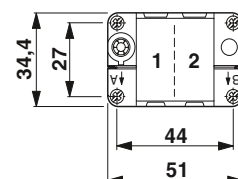
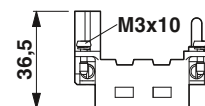
Material data		
Hinged retaining frame material		Die-cast zinc alloy
Connection data		
Connection cross section	[mm <sup>2</sup> ]	4 ... 6
Connection cross section	[mm <sup>2</sup> ]	1 ... 2.5
Connection cross section	AWG	12 ... 10 (for PE conductor – power side)
Connection cross section	AWG	18 ... 14 (for PE conductor – control side)
Temperature data		
Ambient temperature (operation)		-40 °C ... 125 °C

**Ordering data**

Description	Type	Order No.	Pcs. / Pkt.
<b>Hinged retaining frame</b> , for sleeve housing, marking: upper case letters (A, B, C, ...)	DC-B 6-MHR-T3	1581285	10
<b>Hinged retaining frame</b> , for panel mounting base, marking: lower case letters (a, b, c, ...)	DC-B 6-MHR-A3	1581287	10
<b>Cable lug</b> PE extension to 16 mm <sup>2</sup>	HC-M-MHR-PE16	1636981	50

**Accessories**

<b>Cable lug</b> PE extension to 16 mm <sup>2</sup>	HC-M-MHR-PE16	1636981	50
<b>Coding elements</b>	see from page 638		



# Heavy-duty connectors

## DUPLICON stackable power distribution

### Accessories

The DUPLICON-M12 adapter can be used to tap 24 V branches for active sensor/actuator boxes on site. The 5-pos. M12 connectors have thus been pre-wired only parallel to the connectors.



M12 adapters



Mounting brackets

ERC	
Technical data	
Technical data	
Material data	
Material	-
Housing material	Aluminum die-cast
Housing surface material	EMC-conductive
Material, protective cover	-
Seal material	NBR
Locking latch material	Stainless steel
Material grip body interlock	PA
Mechanical data	
Color	Pearl gray
Type	DC-B6
Degree of protection	IP65/IP66/IP67
Tightening torque	-
Temperature data	
Ambient temperature (operation)	-40 °C ... 100 °C

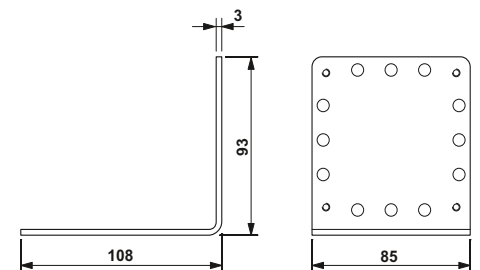
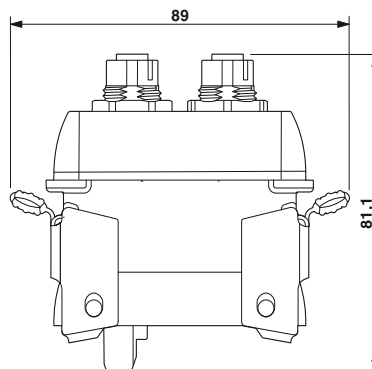
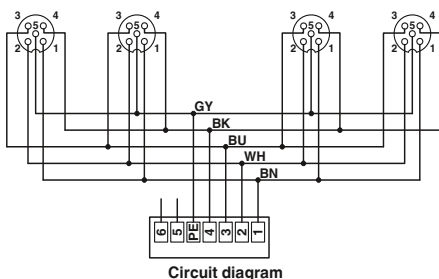
Description	
<b>M12 adapter for low-voltage distribution, A-coded</b>	
<b>Mounting bracket, made of 3 mm stainless steel plate, with predrilled holes, with long and short sides</b>	
<b>M4 Torx® screw T20, 12 mm long, self tapping, consisting of high-strength steel, anti-corrosive, for housing assembly</b>	
<b>Profile gasket for stackable housing</b>	
<b>Flat seal for panel mounting base</b>	
<b>Dust protection cover, for snapping on, with retaining cord eyelet, can be painted over</b>	

ERC	
Technical data	
Technical data	
Material data	
Material	Stainless steel V2A
Housing material	-
Housing surface material	-
Material, protective cover	-
Seal material	-
Locking latch material	-
Material grip body interlock	-
Mechanical data	
Color	Gray
Type	DC-B6
Degree of protection	-
Tightening torque	-
Temperature data	
Ambient temperature (operation)	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
DC-B 6-ADP-4M12-FS-5CON-7X4-UT	1581010	1
DC-B 6-A-SA	1602313	5

ERC	
Technical data	
Technical data	
Material data	
Material	Stainless steel V2A
Housing material	-
Housing surface material	-
Material, protective cover	-
Seal material	-
Locking latch material	-
Material grip body interlock	-
Mechanical data	
Color	Gray
Type	DC-B6
Degree of protection	-
Tightening torque	-
Temperature data	
Ambient temperature (operation)	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
DC-B 6-A-SA	1602313	5





Screw



Replacement seals

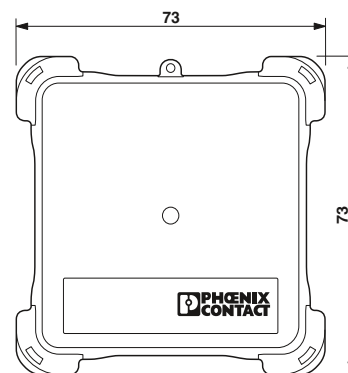


Dust protection cover

ERC

ERC

Technical data			Technical data			Technical data		
Steel	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
-	-	-	NBR	-	-	Polyamide	-	-
-	-	-	-	-	-	-	-	-
Chromated	-	-	Black	-	-	Black	-	-
-	-	-	DC-B6	-	-	DC-B6	-	-
-	-	-	-	-	-	IP54	-	-
1.5 Nm ... 2 Nm	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-40 °C ... 100 °C	-	-
-	-	-	-	-	-	-	-	-
Ordering data			Ordering data			Ordering data		
Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
T20-M4X12	1602410	100	DC-B 6-A-HD-G	1602326	10			
			DC-B 6-A-HB-G	1602339	10			
						DC-B 6-CT-P	1581078	10







# Installation and mounting material

Cable entry systems are in demand as an efficient alternative to heavy-duty connectors and cable glands. They can be used to route assembled cables directly into the control cabinet, to devices, and onto DIN rails without an additional plug-in connection. With the CES cable entry system, Phoenix Contact offers a well-designed system solution from system and field cabling to the DIN rail.

Plug assembly frames from Phoenix Contact can be easily mounted on standard DIN rails and so save entire jumpering levels in the control cabinet. They accommodate pre-assembled contact inserts and can be combined with HEAVYCON STANDARD sleeve housings. Thanks to the robust, conductive die-cast aluminum design, capacitive PE contact is ensured.

Clear and permanent marking of all cables and distributor boxes considerably improves transparency in control cabinets and systems. It makes assembly and maintenance work easier and assists in rectifying faults. Phoenix Contact cable marking systems provide the ideal marking option for any application. Just select an assembly method. The markers can be threaded on, clipped on, adhered in place or secured with cable binders.

 **Your web code: #0005**

## **CES cable entry system**

Sealing frames	<b>668</b>
Rubber cable sleeves	<b>670</b>
Plastic cable sleeves	<b>672</b>
Accessories	<b>674</b>

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## **Cable feed-throughs**

CES Multigates cable feed-throughs	<b>676</b>
Floor panels	<b>677</b>
Cable feed-throughs	<b>678</b>

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## **Plug assembly frames**

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## **Cable glands**

Plastic and brass cable glands	<b>680</b>
Cable glands for Ex protection	<b>697</b>

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## **Service interfaces**

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## **Marking systems, tools, and mounting material**



Sealing frame with locking latch

- Sealing frame with integrated metal reinforcement to protect against deformation
- Only two locking elements are required (screws or latch)
- Suitable for standard panel cutouts (e.g., Rittal)
- 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 dimensional drawings, see page 675  
 If the panel cutout width is 51 mm, HC industrial connectors and CIF plug assembly frames can also be fed through the panel using the cable entry system (CES).

General data	
Material of frames	Polyamide
Material of cable sleeves	-
Degree of protection	IP54
Torque	-
Inflammability class according to UL 94	V0
Temperature range	-40 ... 120 [°C]



Technical data	
Material of frames	Polyamide
Material of cable sleeves	-
Degree of protection	IP54
Torque	-
Inflammability class according to UL 94	V0
Temperature range	-40 ... 120 [°C]

Description
<b>Sealing frame</b> , including flat gasket, for accommodating cable sleeves, <b>for standard cutout:</b> 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
<b>Pre-assembled sealing frames with cone-shaped cable sleeves</b> , for cables with a diameter of 2 mm ... 11 mm, <b>for standard cutouts:</b> B16 (cutout: 36 mm x 86 mm) B24 (cutout: 36 mm x 113 mm)
<b>Snap-on frame</b> , including integrated seal for mounting panel, for accommodating sealing frames, <b>for standard cutouts:</b> 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

<b>Replacement flat gasket</b> , for sealing frame with <b>standard cutout:</b> B10 (cutout: 35 mm x 65 mm) B16 (cutout: 35 mm x 86 mm) B24 (cutout: 35 mm x 113 mm)
<b>Locking plate</b> , metal, locks an unused snap-up frame, transport protection, <b>for standard cutouts:</b> B10 B16 B24
<b>Electrician's scissors</b> , high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum, Kevlar fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint
<b>M4 replacement locking screw</b> , with 3 mm Allen screw head, for sealing frame with screw locking
<b>Bit screwdriver</b> , with 1/4" quick-action chuck, suitable for bits according to DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic
<b>Screw bit</b> , hexagonal, E6.3-1/4" drive, hardened, suitable for holder according to DIN 3126-F 6.3/ISO 1173, size: hex 3 x 50 mm Size: hex 3 x 50 mm

Accessories		
Type	Order No.	Pcs. / Pkt.
CES-B10-WRG-BK	0801725	10
CES-B16-WRG-BK	0801726	10
CES-B24-WRG-BK	0801727	10



Sealing frame with screw locking



Sealing frames with cone-shaped cable sleeves and screw locking



Snap-up frame



Technical data
Polyamide
-
IP54 / IP65 (when using a CES-SRC../CES-LRC.. cone sleeve and a cable binder)
2 Nm ... 4 Nm (locking screw)
V0
-40 ... 120

Technical data
Polyamide
NBR
IP54 (DIN IEC 60529)
2 Nm ... 4 Nm (locking screw)
-
-40 ... 120

Technical data
Polyamide
-
IP54
-
V0
-20 ... 80

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

Ordering data		
Type	Order No.	Pcs. / Pkt.
CES-B16-8XSRC-BK	1411073	1
CES-B24-10XSRC-BK	1411074	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
CES-B10-SF-PLBK	0801655	10
CES-B16-SF-PLBK	0801651	10
CES-B24-SF-PLBK	0801647	10

Accessories		
Type	Order No.	Pcs. / Pkt.
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	1
SF-BIT-HEX 3-50	1212647	5

Accessories		
Type	Order No.	Pcs. / Pkt.
CUTFOX-ES	1212621	1
CES-SFFS-H	0801728	10
SF-M BH	1212070	1
SF-BIT-HEX 3-50	1212647	5

Accessories		
Type	Order No.	Pcs. / Pkt.
CES-B10-SFC-M	0801645	10
CES-B16-SFC-M	0801642	10
CES-B24-SFC-M	0801641	10

# Installation and mounting material

## CES cable entry system

### Cable sleeves, rubber

#### Advantages:

- Significantly improved long-term performance
- Resistant to oil, fuels, and grease
- Halogen-free

#### Notes:

The CES cable entry system was developed according to DIN EN 50262 (Cable glands for electrical installations).

The cable sleeves must be mounted in accordance with the mounting instructions provided.



Cable sleeves, small



Cable sleeves, large

General data		Technical data			Technical data		
Material		NBR		NBR			
Degree of protection		IP54		IP54			
Temperature range	[°C]	-40 ... 125		-40 ... 125			
Description		Ordering data			Ordering data		
	Color	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Cone-shaped cable sleeves</b> , IP65 in sealing frames with screw locking and cable binders, IP54 in sealing frames with locking latch. For cables with a diameter of:							
2 mm ... 11 mm	black	<b>CES-SRC-BK</b>	<b>0801718</b>	10	<b>CES-LRC-BK</b>	<b>0801719</b>	10
7 mm ... 24 mm	black						
<b>Cable sleeves, IP65, without bore hole</b> , can be used in sealing frames with locking latch and screw locking							
	black	<b>CES-SRG-BK</b>	<b>0801670</b>	10	<b>CES-LRG-BK</b>	<b>0801671</b>	10
<b>Cable sleeves, small, slotted</b> , can be used in sealing frames with locking latch and screw locking, for cable diameter of:							
1 mm ... 2 mm	black	<b>CES-SRG-BK-2</b>	<b>0801635</b>	10			
2 mm ... 3 mm	black	<b>CES-SRG-BK-3</b>	<b>0801633</b>	10			
3 mm ... 4 mm	black	<b>CES-SRG-BK-4</b>	<b>0801632</b>	10			
4 mm ... 5 mm	black	<b>CES-SRG-BK-5</b>	<b>0801630</b>	10			
5 mm ... 6 mm	black	<b>CES-SRG-BK-6</b>	<b>0801628</b>	10			
6 mm ... 7 mm	black	<b>CES-SRG-BK-7</b>	<b>0801627</b>	10			
7 mm ... 8 mm	black	<b>CES-SRG-BK-8</b>	<b>0801625</b>	10			
8 mm ... 9 mm	black	<b>CES-SRG-BK-9</b>	<b>0801622</b>	10			
9 mm ... 10 mm	black	<b>CES-SRG-BK-10</b>	<b>0801620</b>	10			
10 mm ... 11 mm	black	<b>CES-SRG-BK-11</b>	<b>0801618</b>	10			
11 mm ... 12 mm	black	<b>CES-SRG-BK-12</b>	<b>0801617</b>	10			
12 mm ... 13 mm	black	<b>CES-SRG-BK-13</b>	<b>0801616</b>	10			
13 mm ... 14 mm	black	<b>CES-SRG-BK-14</b>	<b>0801615</b>	10			
14 mm ... 15 mm	black	<b>CES-SRG-BK-15</b>	<b>1410563</b>	10			
15 mm ... 16 mm	black	<b>CES-SRG-BK-16</b>	<b>1410576</b>	10			
16 mm ... 17 mm	black	<b>CES-SRG-BK-17</b>	<b>1410589</b>	10			
<b>Cable sleeves, large, slotted</b> , can be used in sealing frames with locking latch and screw locking, for cable diameter of:							
14 mm ... 15 mm	black				<b>CES-LRG-BK-15</b>	<b>0801619</b>	10
15 mm ... 16 mm	black				<b>CES-LRG-BK-16</b>	<b>0801621</b>	10
16 mm ... 17 mm	black				<b>CES-LRG-BK-17</b>	<b>0801624</b>	10
17 mm ... 18 mm	black				<b>CES-LRG-BK-18</b>	<b>0801626</b>	10
18 mm ... 19 mm	black				<b>CES-LRG-BK-19</b>	<b>0801629</b>	10
19 mm ... 20 mm	black				<b>CES-LRG-BK-20</b>	<b>0801631</b>	10
20 mm ... 21 mm	black				<b>CES-LRG-BK-21</b>	<b>0801634</b>	10
21 mm ... 22 mm	black				<b>CES-LRG-BK-22</b>	<b>0801637</b>	10
22 mm ... 23 mm	black				<b>CES-LRG-BK-23</b>	<b>0801638</b>	10
23 mm ... 24 mm	black				<b>CES-LRG-BK-24</b>	<b>0801639</b>	10
24 mm ... 25 mm	black				<b>CES-LRG-BK-25</b>	<b>0801640</b>	10
25 mm ... 26 mm	black				<b>CES-LRG-BK-26</b>	<b>0801643</b>	10
26 mm ... 27 mm	black				<b>CES-LRG-BK-27</b>	<b>0801644</b>	10
27 mm ... 28 mm	black				<b>CES-LRG-BK-28</b>	<b>0801646</b>	10
28 mm ... 29 mm	black				<b>CES-LRG-BK-29</b>	<b>0801648</b>	10
29 mm ... 30 mm	black				<b>CES-LRG-BK-30</b>	<b>0801650</b>	10
30 mm ... 31 mm	black				<b>CES-LRG-BK-31</b>	<b>0801653</b>	10
31 mm ... 32 mm	black				<b>CES-LRG-BK-32</b>	<b>0801654</b>	10
32 mm ... 33 mm	black				<b>CES-LRG-BK-33</b>	<b>0801656</b>	10



**Cable sleeves, rubber, special formats**

**Advantages:**

- Significantly improved long-term performance
- Resistant to oil, fuels, and grease
- Halogen-free

<b>Notes:</b>
The CES cable entry system was developed according to DIN EN 50262 (Cable glands for electrical installations).
The cable sleeves must be mounted in accordance with the mounting instructions provided.



**Cable sleeves, small, with several bore holes**



**Cable sleeves, small, for AS interface cables**

			Technical data			Technical data		
<b>General data</b>								
Material			NBR			NBR		
Degree of protection			IP54			-		
Temperature range		[°C]	-40 ... 125			-40 ... 125		
			Ordering data			Ordering data		
Description	Color		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Cable sleeves, with 2 bore holes, small, slotted</b> , 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			
<b>Cable sleeves, with 4 bore holes, small, slotted</b> , 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			
<b>Cable sleeve, IP54, slotted, for one AS-Interface cable, cable arrangement:</b>								
L	black					CES-SRG-BK-1ASI-L	1410042	10
R	black					CES-SRG-BK-1ASI-R	0801667	10
<b>Cable sleeve, IP54, slotted, for two AS-Interface cables, cable arrangement:</b>								
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

## CES cable entry system

### Cable sleeves, thermoplastics

#### Advantages:

- Low flammability according to UL 94 V0 of thermoplastic sleeves
- Good resistance to acids and lyes

<b>Notes:</b>
The CES cable entry system was developed according to DIN EN 50262 (Cable glands for electrical installations).
The cable sleeves must be mounted in accordance with the mounting instructions provided.



Cable sleeves, small



Cable sleeves, large

<b>General data</b>	
Material	SEBS
Degree of protection	IP44
Inflammability class according to UL 94	V0
Temperature range	-40 ... 80 [°C]

<b>Technical data</b>
SEBS
IP44
V0
-40 ... 80

<b>Technical data</b>
SEBS
IP44
V0
-40 ... 80

Description	Color
<b>Cable sleeves, small, slotted</b> , 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
<b>Cable sleeves, large, slotted</b> , 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
<b>Cable sleeves, IP65, without bore hole</b> , can be used in sealing frames with locking latch and screw locking	gray

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
CES-STPG-GY	0801715	10

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
CES-LTPG-GY	0801716	10

**Cable sleeves, thermoplastics, special formats**

**Advantages:**

- Low flammability according to UL 94 V0 of thermoplastic sleeves
- Good resistance to acids and lyes

<b>Notes:</b>
The CES cable entry system was developed according to DIN EN 50262 (Cable glands for electrical installations).
The cable sleeves must be mounted in accordance with the mounting instructions provided.



Cable sleeves, small, with several bore holes



Cable sleeves, small, for AS interface cables



General data	Technical data			Technical data			
	Material	SEBS		SEBS			
Degree of protection	IP44		IP54				
Inflammability class according to UL 94	V0		V0				
Temperature range	-40 ... 80	[°C]	-40 ... 80				
		Ordering data			Ordering data		
Description	Color	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Cable sleeves, with 2 bore holes, small, slotted</b> , can be used in sealing frames with locking latch and screw locking, for cable diameter of:							
2x 2 mm ... 3 mm	gray	CES-STPG-GY-2X3	1410424	10			
2x 3 mm ... 4 mm	gray	CES-STPG-GY-2X4	1410438	10			
2x 4 mm ... 5 mm	gray	CES-STPG-GY-2X5	0801708	10			
2x 5 mm ... 6 mm	gray	CES-STPG-GY-2X6	0801709	10			
2x 6 mm ... 7 mm	gray	CES-STPG-GY-2X7	1410110	10			
2x 7 mm ... 8 mm	gray	CES-STPG-GY-2X8	1410123	10			
2x 8 mm ... 9 mm	gray	CES-STPG-GY-2X9	1410440	10			
<b>Cable sleeves, with 4 bore holes, small, slotted</b> , can be used in sealing frames with locking latch and screw locking, for cable diameter of:							
4 x 2 mm ... 3 mm	gray	CES-STPG-GY-4X3	0801710	10			
4 x 3 mm ... 4 mm	gray	CES-STPG-GY-4X4	0801711	10			
4 x 4 mm ... 5 mm	gray	CES-STPG-GY-4X5	1410136	10			
4 x 5 mm ... 6 mm	gray	CES-STPG-GY-4X6	1410149	10			
<b>Cable sleeve, IP54, slotted, for one AS-Interface cable, cable arrangement:</b>							
L	gray				CES-STPG-GY-1ASI-L	1410068	10
R	gray				CES-STPG-GY-1ASI-R	0801712	10
<b>Cable sleeve, IP54, slotted, for two AS-Interface cables, cable arrangement:</b>							
LL	gray				CES-STPG-GY-2ASI-LL	1410071	10
RR	gray				CES-STPG-GY-2ASI-RR	0801713	10
LR	gray				CES-STPG-GY-2ASI-LR	0801714	10



# Installation and mounting material

## CES cable entry system

### Accessories, filler plugs, EMC cable catch rails



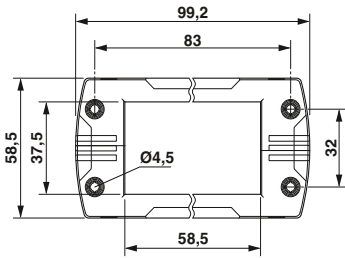
Filler plugs with a diameter of 2 mm to 17 mm



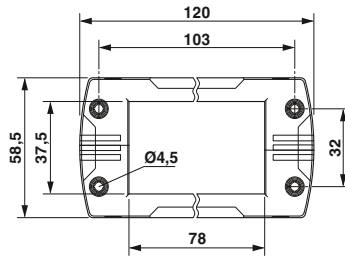
EMC cable catch rail for mounting on CES sealing frames

General data		Technical data			Technical data				
		Material	Degree of protection	Inflammability class according to UL 94	Temperature range	Material	Degree of protection	Inflammability class according to UL 94	Temperature range
		PA	IP54	-	-20 ... 80	Stainless steel	-	-	-
Description		Ordering data			Ordering data				
		Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.		
<b>Filler plugs</b> , for sealing unused cable sleeves with a diameter of:									
2 mm	black	KDT-ST 2	1410220	25					
3 mm	black	KDT-ST 3	3063921	25					
4 mm	black	KDT-ST 4	3063934	25					
5 mm	black	KDT-ST 5	3063947	25					
6 mm	black	KDT-ST 6	3063950	25					
7 mm	black	KDT-ST 7	3063963	25					
8 mm	black	KDT-ST 8	3063976	25					
9 mm	black	KDT-ST 9	3063989	25					
10 mm	black	KDT-ST 10	3063992	25					
11 mm	black	KDT-ST 11	3064001	25					
12 mm	black	KDT-ST 12	3062016	25					
13 mm	black	KDT-ST 13	3062029	25					
14 mm	black	KDT-ST 14	3062032	25					
15 mm	black	KDT-ST 15	3062045	25					
16 mm	black	KDT-ST 16	3062058	25					
17 mm	black	KDT-ST 17	3062061	25					
<b>EMC cable catch rail</b> , for mounting on the <b>longitudinal side</b> of the CES-B16... CES sealing frame					KEL-EMV 16-4	3063507	5		
<b>EMC cable catch rail</b> , for mounting on the <b>longitudinal side</b> of the CES-B24... CES sealing frame					KEL-EMV 24-5	3063510	5		
<b>EMC cable catch rail</b> , for mounting on the <b>diagonal side</b> of the CES-B16 ... and CES-24 ... CES sealing frames					KEL-EMV-F	3063523	5		

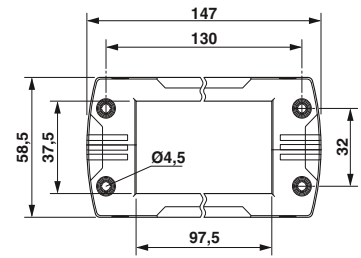
**Dimensional drawings  
CES... sealing frames**



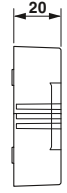
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CES-B10-SFFS-PLBK



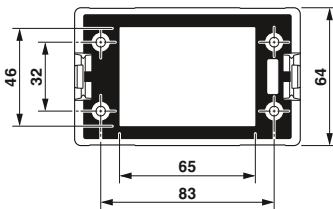
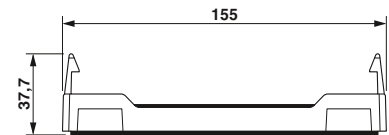
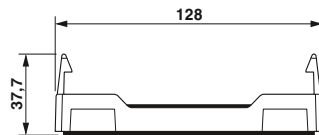
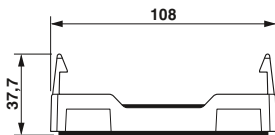
CES-B16-HFFS-PLBK  
CES-B16-SFFS-PLBK  
CES-B16-8XSRC-BK



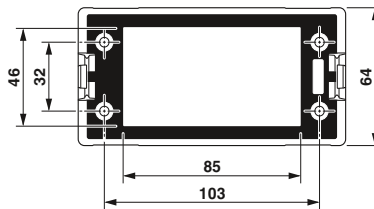
CES-B24-HFFS-PLBK  
CES-B24-SFFS-PLBK  
CES-B24-10XSRC-BK



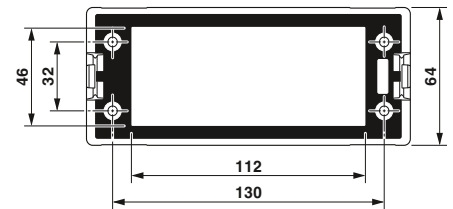
**Dimensional drawings  
CES... snap-on frames**



CES-B10-SF-PLBK



CES-B16-SF-PLBK



CES-B24-SF-PLBK

# Installation and mounting material

## Cable feed-throughs

### CES Multigates cable feed-throughs

new



Cable feed-throughs for housing and control cabinets.

#### Advantages:

- Space-saving feed-through of up to 37 cables
- High degree of protection thanks to double membrane sealing
- Quick installation of unassembled cables
- Suitable for cables sizes from 5 mm to 60 mm
- Flame-retardant and oil-resistant (black material)

**Notes:**  
Other versions available on request.



CES Multigates cable feed-through

General data	
Material	TPE-SEBS
Degree of protection	IP66 / IP67
Inflammability class according to UL 94	V0
Temperature range	-40 ... 100 [°C]

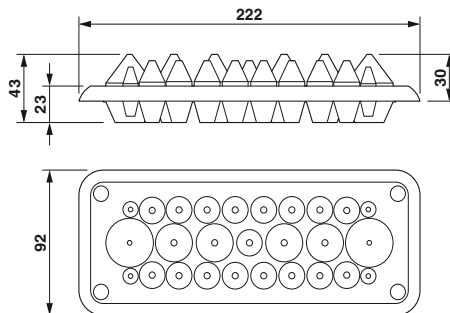
#### Technical data

Material	TPE-SEBS
Degree of protection	IP66 / IP67
Inflammability class according to UL 94	V0
Temperature range	-40 ... 100 [°C]

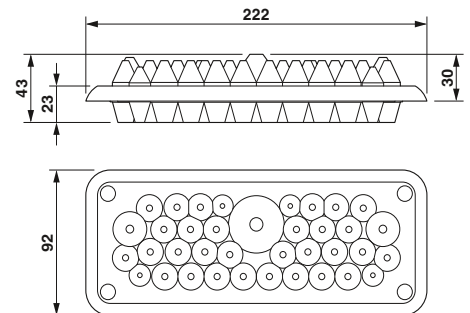
Description	Color
<b>CES Multigates</b> , flange size FL21 for C standard openings, cable feed-throughs for cable diameter:	
4 x 8-16 mm, 2 x 24-54 mm, 1 x 30-60 mm	gray
4 x 5-7 mm, 4 x 8-12 mm, 13 x 10-14 mm, 4 x 14-20 mm, 2 x 20-26 mm	gray
4 x 6-10 mm, 14 x 8-12 mm, 16 x 10-14 mm, 2 x 12-18 mm, 1 x 17-32 mm	gray
<b>CES Multigates</b> , flange size FL21 for C standard openings, cable feed-throughs for cable diameter:	
4 x 8-16 mm, 2 x 24-54 mm, 1 x 30-60 mm	black
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	black
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	black

#### Ordering data

Type	Order No.	Pcs. / Pkt.
MC-3/7-MULTI-67-PV-LG	1415234	1
MC-25/27-MULTI-67-PV-LG	1415236	1
MC-35/37-MULTI-67-PV-LG	1415240	1
MC-3/7-MULTI-67-PVO-BK	1415235	1
MC-25/27-MULTI-67-PVO-BK	1415237	1
MC-35/37-MULTI-67-PVO-BK	1415241	1



MC-25/27-MULTI-67-PV-LG



MC-35/37-MULTI-67-PV-LG

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
- Control cabinet hole matrix
- Rails for the TS system (Rittal)



Module plates

General data

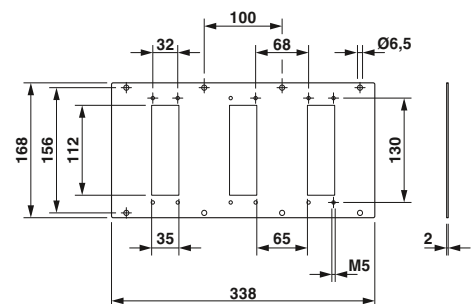
Material	Stainless steel 1.4301/AISI 304
Sealing material	NBR
Degree of protection	IP54
Temperature range	-40 ... 100 [°C]

Technical data

Material	Stainless steel 1.4301/AISI 304
Sealing material	NBR
Degree of protection	IP54
Temperature range	-40 ... 100

Ordering data

Description	Color	Type	Order No.	Pcs. / Pkt.
<b>Module plates, with seal, for CES B24 sealing frames</b>				
3 openings	silver	MD-INB24-3-SZP-S	1415242	1
4 openings	silver	MD-INB24-4-SZP-S	1415243	1
<b>Floor panel, with seal, CES Multigates</b>				
One opening	silver	MD-INC-1-SZP-S	1415245	1
Floor panel, with seal				
No opening	silver	MD-IN-0-SZP-S	1415244	1



MD-INB24-3-SZP-S

# Installation and mounting material

## Cable feed-throughs

### Cable feed-throughs



The conduits make IP54-rated sealing possible when leading preassembled conductors into the control cabinet.

This is done by pushing the slit sleeves over the conductor, positioning them and placing them in the cable feed-through housing.

Unused feed-through positions are filled with filler plugs.



Conduit/cable feed-through sleeves

ERC

Material data
Material
Inflammability class according to UL 94
Degree of protection
Temperature data
Ambient temperature (operation)

Technical data	
HC-KD/SG-...	HC-KDT... / HC-KDG-B
PC; gray similar to RAL 7044	Thermoplastic rubber
V0	HB
IP54	IP54
-40 °C ... 125 °C	-40 °C ... 125 °C

Description
-------------

**Conduit**, for connector housings:

HC-B16-AMQ (Order No. 1771587)  
 HC-B24-AMQ (Order No. 1771927)

**Cable feed-through sleeves**, for insertion in the conduit, for conductor diameters:

3 mm ... 4 mm  
 4 mm ... 5 mm  
 5 mm ... 6 mm  
 6 mm ... 7 mm  
 7 mm ... 8 mm  
 8 mm ... 9 mm  
 9 mm ... 10 mm

**Cable feed-through sleeves**, for insertion in the conduit, in addition to the strain relief, a cable binder can be used, for conductor diameters:

10 mm ... 11 mm  
 11 mm ... 12 mm  
 12 mm ... 13 mm  
 13 mm ... 14 mm  
 14 mm ... 15 mm  
 15 mm ... 16 mm

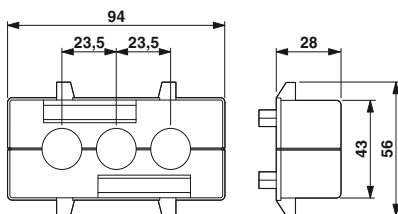
**Filler plug**, to close the unused openings of the HC-KD/SG-... conduit

**Marker tags**, 5-section, unprinted, marking with X-PEN, B-STIFT, plotter or BKMT 20 x 8 label

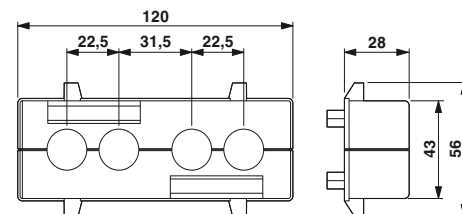
Lettering field size: 20 x 8 mm

### Ordering data

Type	Order No.	Pcs. / Pkt.
HC-KD/SG 16/ 3	1644012	1
HC-KD/SG 24/ 4	1644025	1
HC-KDT 3-4	1644038	10
HC-KDT 4-5	1644041	10
HC-KDT 5-6	1644054	10
HC-KDT 6-7	1644067	10
HC-KDT 7-8	1644070	10
HC-KDT 8-9	1644083	10
HC-KDT 9-10	1644093	10
HC-KDT 10-11	1644106	10
HC-KDT 11-12	1644119	10
HC-KDT 12-13	1644122	10
HC-KDT 13-14	1644135	10
HC-KDT 14-15	1644148	10
HC-KDT 15-16	1644151	10
HC-KDG-B	1644164	10
SS-ZB WH	5031171	50



HC-KD/SG 16/ 3



HC-KD/SG 24/ 4

Connector assembly frame



Advantages:

- For standard HEAVYCON contact inserts on NS35/7,5 DIN rail
- Robust cast aluminum housing
- Base frame for pre-assembled contact inserts
- Cable duct function
- Grounding for DIN rail
- Coding function

<b>Notes:</b>
The bridging function of the aluminum design ensures that there is a leading PE.
Stainless steel locking latch, handle: PA-GF
Upon delivery, there is no pre-assembled bracket (HC-CIF..BFWD..). The bracket is assembled after the contact insert.



Base frame/top frame

<b>Material data</b>
Material
Tightening torque
<b>Temperature data</b>
Ambient temperature (operation)

ERIC

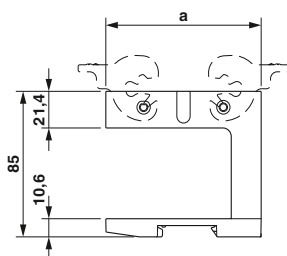
<b>Technical data</b>
Cast aluminum, uncoated
2 Nm (locking screw)
-40 °C ... 125 °C

Description	Size
<b>Base frame, with double locking latch</b>	
a = 93.5 mm	For B10
a = 93.5 mm	For B16
a = 120.0 mm	For B24
<b>Base frame, without double locking latch, for screw locking</b>	
a = 120.0 mm	For 2xB6
a = 93.5 mm	For B10
a = 93.5 mm	For B16
a = 120.0 mm	For B24
<b>Top frame, for double locking latch and optionally with locking screws, Allen screw, WAF 3</b>	
a = 150.2 mm	For 2xB6
a = 103.2 mm	For B10
a = 123.7 mm	For B16
a = 150.2 mm	For B24

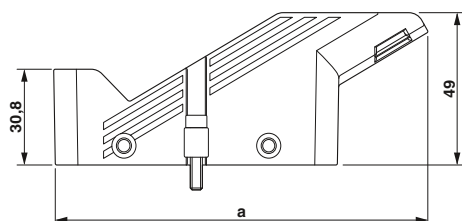
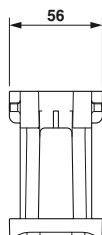
Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-CIF-B10-BFWD-FH-AL	1404220	1
HC-CIF-B16-BFWD-FH-AL	1404217	1
HC-CIF-B24-BFWD-FH-AL	1404212	1
HC-CIF-2B6-BFFD-FH-AL	1404214	1
HC-CIF-B10-BFFD-FH-AL	1404219	1
HC-CIF-B16-BFFD-FH-AL	1404216	1
HC-CIF-B24-BFFD-FH-AL	1404211	1
HC-CIF-2B6-HFFD-WH-AL	1404215	1
HC-CIF-B10-HFFD-WH-AL	1404221	1
HC-CIF-B16-HFFD-WH-AL	1404218	1
HC-CIF-B24-HFFD-WH-AL	1404213	1

<b>Bit screwdriver, with 1/4" quick-action chuck, suitable for bits according to DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic</b>
<b>Screw bit, hexagonal, E6.3-1/4" drive, hardened, suitable for holder according to DIN 3126-F 6.3/ISO 1173, size: hex 3 x 50 mm</b>
Size: hex 3 x 50 mm

Accessories		
Type	Order No.	Pcs. / Pkt.
SF-M BH	1212070	1
SF-BIT-HEX 3-50	1212647	5



HC-CIF-B24-BFWD-FH-AL



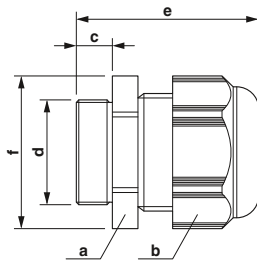
HC-CIF-B24-HFFD-WH-AL

# Installation and mounting material

## Cable glands

### Plastic cable glands, metric, EN 60423

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Seal: CR
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)
- Strain relief: integrated according to EN 50262



Plastic cable gland



243143 / QCRV2.E320158 / 40024418

#### Ordering data

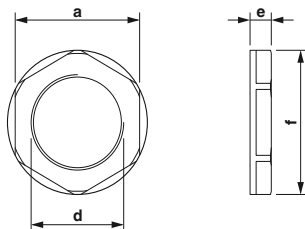
Thread type	Color	Clamping area [mm]
M12	silver gray	3.00 - 6.50
M16	silver gray	5.00 - 10.00
M20	silver gray	6.00 - 12.00
M25	silver gray	11.00 - 17.00
M32	silver gray	15.00 - 21.00
M40	silver gray	19.00 - 28.00
M50	silver gray	30.00 - 38.00
M63	silver gray	34.00 - 44.00

Dimensions [mm]								
a	b	c	d	e	f	g	t	
15.00	15.00	8.00	12.00	32.10	17.10	-		
22.00	22.00	10.00	16.00	39.70	25.00	-		
24.00	24.00	10.00	20.00	42.30	27.80	-		
29.00	29.00	8.00	25.00	42.50	33.50	-		
36.00	36.00	10.00	32.00	50.80	40.90	-		
46.00	46.00	10.00	40.00	55.10	52.00	-		
60.00	60.00	18.00	50.00	71.70	67.70	-		
65.00	65.00	18.00	63.00	75.40	72.20	-		

Type	Order No.	Pcs. / Pkt.
G-INS-M12-S68N-PNES-GY	1411123	10
G-INS-M16-S68N-PNES-GY	1411124	10
G-INS-M20-S68N-PNES-GY	1411125	5
G-INS-M25-M68N-PNES-GY	1411126	5
G-INS-M32-M68N-PNES-GY	1411127	5
G-INS-M40-M68N-PNES-GY	1411128	5
G-INS-M50-L68L-PNES-GY	1411129	1
G-INS-M63-L68L-PNES-GY	1411130	1

### Plastic counter nuts, metric, EN 60423

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Ambient temperature: -20°C ... +80°C



Plastic counter nut

#### Ordering data

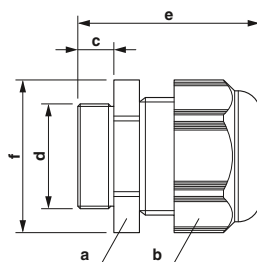
Thread type	Color	Clamping area [mm]
M12	silver gray	-
M16	silver gray	-
M20	silver gray	-
M25	silver gray	-
M32	silver gray	-
M40	silver gray	-
M50	silver gray	-
M63	silver gray	-

Dimensions [mm]								
a	b	c	d	e	f	g	t	
18.00	-	-	12.00	5.00	19.50	-		
22.00	-	-	16.00	5.00	24.20	-		
26.00	-	-	20.00	6.00	28.60	-		
32.00	-	-	25.00	6.00	35.00	-		
41.00	-	-	32.00	7.00	46.10	-		
50.00	-	-	40.00	7.00	55.30	-		
60.00	-	-	50.00	8.00	66.10	-		
75.00	-	-	63.00	8.00	82.50	-		

Type	Order No.	Pcs. / Pkt.
A-INL-M12-P-GY	1411205	10
A-INL-M16-P-GY	1411206	10
A-INL-M20-P-GY	1411207	5
A-INL-M25-P-GY	1411208	5
A-INL-M32-P-GY	1411209	5
A-INL-M40-P-GY	1411210	5
A-INL-M50-P-GY	1411211	5
A-INL-M63-P-GY	1411212	5

**Plastic cable glands, metric, EN 60423**

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Seal: CR
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)
- Strain relief: integrated according to EN 50262



Plastic cable gland



243143 / QCRV.E320158 / 40024418

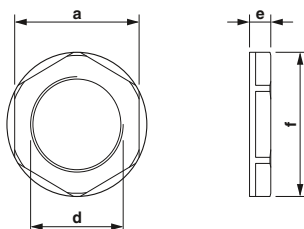
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	jet black	3.00 - 6.50	15.00	15.00	8.00	12.00	32.10	17.10	-
M16	jet black	5.00 - 10.00	22.00	22.00	10.00	16.00	39.70	25.00	-
M20	jet black	6.00 - 12.00	24.00	24.00	10.00	20.00	42.30	27.80	-
M25	jet black	11.00 - 17.00	29.00	29.00	8.00	25.00	42.50	33.50	-
M32	jet black	15.00 - 21.00	36.00	36.00	10.00	32.00	50.80	40.90	-
M40	jet black	19.00 - 28.00	46.00	46.00	10.00	40.00	55.10	52.00	-
M50	jet black	30.00 - 38.00	60.00	60.00	18.00	50.00	71.70	67.70	-
M63	jet black	34.00 - 44.00	65.00	65.00	18.00	63.00	75.40	72.20	-

**Ordering data**

Type	Order No.	Pcs. / Pkt.
G-INS-M12-S68N-PNES-BK	1411131	10
G-INS-M16-S68N-PNES-BK	1411132	10
G-INS-M20-S68N-PNES-BK	1411133	5
G-INS-M25-M68N-PNES-BK	1411134	5
G-INS-M32-M68N-PNES-BK	1411136	5
G-INS-M40-M68N-PNES-BK	1411137	5
G-INS-M50-L68L-PNES-BK	1411138	1
G-INS-M63-L68L-PNES-BK	1411139	1

**Plastic counter nuts, metric, EN 60423**

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Ambient temperature: -20°C ... +80°C



Plastic counter nut

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	jet black	-	18.00	-	-	12.00	5.00	19.50	-
M16	jet black	-	22.00	-	-	16.00	5.00	24.20	-
M20	jet black	-	26.00	-	-	20.00	6.00	28.60	-
M25	jet black	-	32.00	-	-	25.00	6.00	35.00	-
M32	jet black	-	41.00	-	-	32.00	7.00	46.10	-
M40	jet black	-	50.00	-	-	40.00	7.00	55.30	-
M50	jet black	-	60.00	-	-	50.00	8.00	66.10	-
M63	jet black	-	75.00	-	-	63.00	8.00	82.50	-

**Ordering data**

Type	Order No.	Pcs. / Pkt.
A-INL-M12-P-BK	1411213	10
A-INL-M16-P-BK	1411214	10
A-INL-M20-P-BK	1411215	5
A-INL-M25-P-BK	1411216	5
A-INL-M32-P-BK	1411217	5
A-INL-M40-P-BK	1411218	5
A-INL-M50-P-BK	1411219	5
A-INL-M63-P-BK	1411220	5

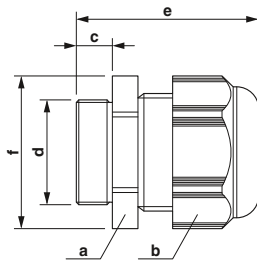


# Installation and mounting material

## Cable glands

### Plastic cable glands, Pg, EN 40430

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Seal: CR
- Ambient temperature:  
-30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar  
(30 minutes)
- Strain relief: integrated according to  
EN 50262



Plastic cable gland



243143 / QCRV2.E320158

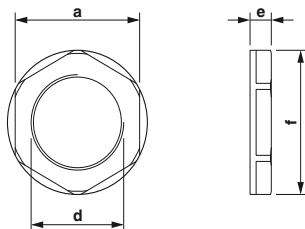
#### Ordering data

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver gray	3.00 - 6.50	15.00	15.00	8.00	12.50	32.70	17.10	-
Pg9	silver gray	4.00 - 8.00	19.00	19.00	8.00	15.20	36.20	21.60	-
Pg11	silver gray	5.00 - 10.00	22.00	22.00	8.00	18.60	38.10	25.00	-
Pg13.5	silver gray	6.00 - 12.00	24.00	24.00	9.00	20.40	40.00	27.80	-
Pg16	silver gray	10.00 - 14.00	27.00	27.00	10.00	22.50	44.20	30.80	-
Pg21	silver gray	13.00 - 18.00	33.00	33.00	11.00	28.30	49.30	37.80	-
Pg29	silver gray	18.00 - 25.00	42.00	42.00	11.00	37.00	53.90	48.00	-
Pg36	silver gray	22.00 - 32.00	53.00	53.00	13.00	47.00	65.40	60.00	-
Pg42	silver gray	30.00 - 38.00	60.00	60.00	13.00	54.00	65.90	67.70	-
Pg48	silver gray	34.00 - 44.00	65.00	65.00	14.00	59.30	68.80	72.20	-

Type	Order No.	Pcs. / Pkt.
G-INS-PG7-S68N-PNES-GY	1411140	10
G-INS-PG9-S68N-PNES-GY	1411141	10
G-INS-PG11-S68N-PNES-GY	1411142	5
G-INS-PG13,5-S68N-PNES-GY	1411143	5
G-INS-PG16-S68N-PNES-GY	1411144	5
G-INS-PG21-M68N-PNES-GY	1411145	5
G-INS-PG29-M68N-PNES-GY	1411146	5
G-INS-PG36-L68N-PNES-GY	1411147	5
G-INS-PG42-L68N-PNES-GY	1411149	1
G-INS-PG48-L68N-PNES-GY	1411150	1

### Plastic counter nuts, Pg, EN 40430

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Ambient temperature:  
-20°C ... +80°C



Plastic counter nut

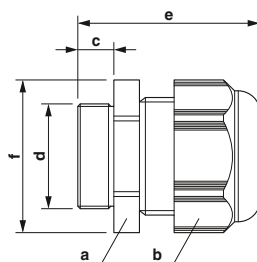
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver gray	-	19.00	-	-	12.50	5.00	21.00	-
Pg9	silver gray	-	22.00	-	-	15.20	5.00	24.00	-
Pg11	silver gray	-	24.00	-	-	18.60	5.00	26.00	-
Pg13.5	silver gray	-	27.00	-	-	20.40	6.00	29.00	-
Pg16	silver gray	-	30.00	-	-	22.50	6.00	33.00	-
Pg21	silver gray	-	36.00	-	-	28.30	7.00	39.00	-
Pg29	silver gray	-	46.00	-	-	37.00	7.00	50.00	-
Pg36	silver gray	-	60.00	-	-	47.00	8.00	66.00	-
Pg42	silver gray	-	65.00	-	-	54.00	8.00	73.00	-
Pg48	silver gray	-	70.00	-	-	59.30	8.00	78.00	-

#### Ordering data

Type	Order No.	Pcs. / Pkt.
A-INL-PG7-P-GY	1411221	10
A-INL-PG9-P-GY	1411222	10
A-INL-PG11-P-GY	1411223	5
A-INL-PG13,5-P-GY	1411224	5
A-INL-PG16-P-GY	1411225	5
A-INL-PG21-P-GY	1411226	5
A-INL-PG29-P-GY	1411227	5
A-INL-PG36-P-GY	1411228	5
A-INL-PG42-P-GY	1411229	5
A-INL-PG48-P-GY	1411230	5

**Plastic cable glands,  
NPT, ANSI B1.20.1**

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Seal: CR
- Ambient temperature:  
-30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar  
(30 minutes)
- Strain relief: integrated according to  
EN 50262



Plastic cable gland



243143 / QCRV.E320158

Thread type	Color	Clamping area [mm]
NPT3/8 inch	silver gray	5.00 - 10.00
1/2 inch NPT	silver gray	10.00 - 14.00
3/4 inch NPT	silver gray	13.00 - 18.00
1 inch NPT	silver gray	18.00 - 25.00

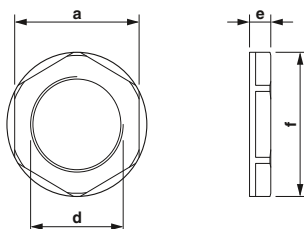
Dimensions [mm]								
a	b	c	d	e	f	g		
22.00	22.00	15.00	16.60	44.50	25.00	-		
27.00	27.00	15.00	20.60	47.10	30.80	-		
33.00	33.00	15.00	25.90	47.50	37.80	-		
42.00	42.00	18.00	32.40	58.50	48.00	-		

**Ordering data**

Type	Order No.	Pcs. / Pkt.
G-INS-N3/8-S68L-PNES-GY	1411152	10
G-INS-N1/2-S68L-PNES-GY	1411153	10
G-INS-N3/4-M68L-PNES-GY	1411154	5
G-INS-N1-M68L-PNES-GY	1411155	5

**Plastic counter nuts,  
NPT, ANSI B1.20.1**

- Material: polyamide 6
- Color: silver gray (RAL 7001)
- Ambient temperature:  
-20°C ... +80°C



Plastic counter nut

Thread type	Color	Clamping area [mm]
NPT3/8 inch	silver gray	-
1/2 inch NPT	silver gray	-
3/4 inch NPT	silver gray	-
1 inch NPT	silver gray	-

Dimensions [mm]								
a	b	c	d	e	f	g		
22.00	-	-	16.60	5.00	25.00	-		
27.00	-	-	20.60	5.00	30.50	-		
33.00	-	-	25.90	5.00	37.50	-		
47.00	-	-	32.40	6.00	46.50	-		

**Ordering data**

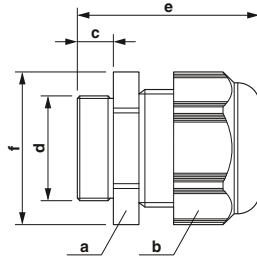
Type	Order No.	Pcs. / Pkt.
A-INL-NPT3/8-P-GY	1411231	10
A-INL-NPT1/2-P-GY	1411233	10
A-INL-NPT3/4-P-GY	1411234	5
A-INL-NPT1-P-GY	1411235	5

# Installation and mounting material

## Cable glands

### Plastic cable glands, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Seal: CR
- Ambient temperature:  
-30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar  
(30 minutes)
- Strain relief: integrated according to  
EN 50262



Plastic cable gland



243143 / QCRV.E320158

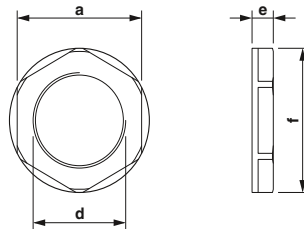
#### Ordering data

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
NPT3/8 inch	jet black	5.00 - 10.00	22.00	22.00	15.00	16.60	44.50	-	-
1/2 inch NPT	jet black	10.00 - 14.00	27.00	27.00	15.00	20.60	47.10	-	-
3/4 inch NPT	jet black	13.00 - 18.00	33.00	33.00	12.00	25.90	47.50	-	-
1 inch NPT	jet black	18.00 - 25.00	42.00	42.00	18.00	32.40	58.50	-	-

Type	Order No.	Pcs. / Pkt.
G-INS-N3/8-S68L-PNES-BK	<a href="#">1411156</a>	10
G-INS-N1/2-S68L-PNES-BK	<a href="#">1411157</a>	10
G-INS-N3/4-M68L-PNES-BK	<a href="#">1411158</a>	5
G-INS-N1-M68L-PNES-BK	<a href="#">1411159</a>	5

### Plastic counter nuts, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Ambient temperature:  
-20°C ... +80°C



Plastic counter nut

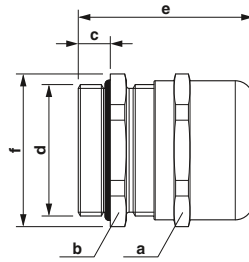
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
NPT3/8 inch	jet black	-	22.00	-	-	16.60	5.00	25.00	-
1/2 inch NPT	jet black	-	27.00	-	-	20.60	5.00	30.50	-
3/4 inch NPT	jet black	-	33.00	-	-	25.90	5.00	37.50	-
1 inch NPT	jet black	-	47.00	-	-	32.40	6.00	46.50	-

#### Ordering data

Type	Order No.	Pcs. / Pkt.
A-INL-NPT3/8-P-BK	<a href="#">1411236</a>	10
A-INL-NPT1/2-P-BK	<a href="#">1411237</a>	10
A-INL-NPT3/4-P-BK	<a href="#">1411238</a>	5
A-INL-NPT1-P-BK	<a href="#">1411239</a>	5

**Brass cable glands, metric, EN 60423**

- Material: brass, nickel-plated
- Seal: CR
- Clamping insert: polyamide 6
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68/IP69K
- Strain relief: integrated according to EN 50262



Brass cable gland

**Notes:**  
For alternative clamping areas, see page 690

QCRV.E320158

Thread type	Color	Clamping area [mm]
M12	silver	3.00 - 6.50
M16	silver	5.00 - 10.00
M20	silver	6.00 - 12.00
M25	silver	11.00 - 17.00
M32	silver	15.00 - 21.00
M40	silver	19.00 - 28.00
M50	silver	27.00 - 38.00
M63	silver	34.00 - 44.00

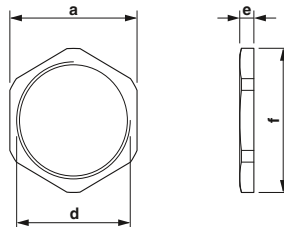
Dimensions [mm]								
a	b	c	d	e	f	g	t	
14.00	14.00	6.00	12.00	27.80	15.50	-		
20.00	20.00	7.00	16.00	34.50	22.00	-		
22.00	22.00	8.00	20.00	37.50	24.50	-		
27.00	27.00	8.00	25.00	40.00	30.00	-		
34.00	34.00	8.00	32.00	43.00	37.00	-		
43.00	43.00	9.00	40.00	53.70	48.40	-		
58.00	58.00	9.00	50.00	61.00	64.00	-		
64.00	68.00	14.00	63.00	65.20	70.00	-		

**Ordering data**

Type	Order No.	Pcs. / Pkt.
G-INS-M12-S68N-NNES-S	1411160	10
G-INS-M16-S68N-NNES-S	1411162	10
G-INS-M20-S68N-NNES-S	1411163	5
G-INS-M25-M68N-NNES-S	1411165	5
G-INS-M32-M68N-NNES-S	1411166	5
G-INS-M40-M68N-NNES-S	1411167	5
G-INS-M50-L68N-NNES-S	1411168	1
G-INS-M63-L68N-NNES-S	1411169	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	silver	-
M16	silver	-
M20	silver	-
M25	silver	-
M32	silver	-
M40	silver	-
M50	silver	-
M63	silver	-

Dimensions [mm]								
a	b	c	d	e	f	g	t	
15.00	-	-	12.00	2.80	16.50	-		
19.00	-	-	16.00	2.80	21.00	-		
24.00	-	-	20.00	3.00	27.00	-		
30.00	-	-	25.00	3.50	33.50	-		
36.00	-	-	32.00	4.00	40.00	-		
46.00	-	-	40.00	5.00	50.00	-		
57.00	-	-	50.00	5.00	65.00	-		
70.00	-	-	63.00	6.00	75.00	-		

**Ordering data**

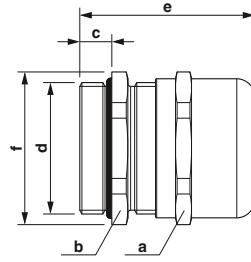
Type	Order No.	Pcs. / Pkt.
A-INL-M12-N-S	1411240	100
A-INL-M16-N-S	1411241	100
A-INL-M20-N-S	1411242	100
A-INL-M25-N-S	1411243	100
A-INL-M32-N-S	1411244	100
A-INL-M40-N-S	1411246	50
A-INL-M50-N-S	1411247	25
A-INL-M63-N-S	1411248	25

# Installation and mounting material

## Cable glands

### Brass cable glands, Pg, EN 40430

- Material: brass, nickel-plated
- Seal: CR
- O-ring: NBR
- Clamping insert: polyamide 6
- Ambient temperature:  
-40°C ... +100°C
- Degree of protection: IP68/IP69K
- Strain relief: integrated according to EN 50262



Brass cable gland

QCRV.E320158

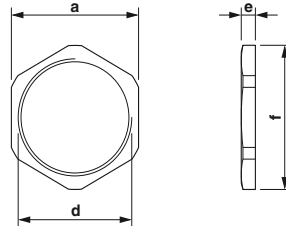
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver	3.00 - 6.50	14.00	14.00	6.00	12.50	27.80	15.50	-
Pg9	silver	4.00 - 8.00	17.00	17.00	6.00	15.20	28.20	18.90	-
Pg11	silver	5.00 - 10.00	20.00	20.00	6.00	18.60	21.00	22.00	-
Pg13.5	silver	6.00 - 12.00	22.00	22.00	6.50	20.40	30.50	24.50	-
Pg16	silver	10.00 - 14.00	24.00	24.00	6.50	22.50	33.90	26.80	-
Pg21	silver	13.00 - 18.00	30.00	30.00	7.20	28.30	38.50	33.00	-
Pg29	silver	18.00 - 25.00	40.00	40.00	8.00	37.00	46.90	44.50	-
Pg36	silver	22.00 - 32.00	50.00	50.00	9.00	47.00	57.20	55.50	-
Pg42	silver	30.00 - 38.00	58.00	58.00	12.00	54.00	60.00	64.00	-
Pg48	silver	34.00 - 44.00	64.00	64.00	14.00	59.30	63.40	70.00	-

### 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

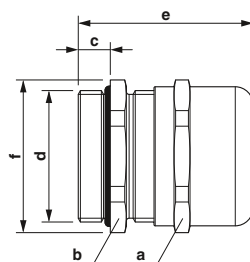
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver	-	15.00	-	-	12.50	2.80	16.50	-
Pg9	silver	-	18.00	-	-	15.20	2.80	20.00	-
Pg11	silver	-	21.00	-	-	18.60	3.00	24.00	-
Pg13.5	silver	-	23.00	-	-	20.40	3.00	26.00	-
Pg16	silver	-	26.00	-	-	22.50	3.00	29.00	-
Pg21	silver	-	32.00	-	-	28.30	3.50	36.00	-
Pg29	silver	-	41.00	-	-	37.00	4.00	45.00	-
Pg36	silver	-	51.00	-	-	47.00	5.00	56.00	-
Pg42	silver	-	60.00	-	-	54.00	5.00	65.00	-
Pg48	silver	-	64.00	-	-	59.30	5.50	69.00	-

### 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

**Brass cable glands,  
NPT, ANSI B1.20.1**

- Material: brass, nickel-plated
- Seal: CR
- O-ring: NBR
- Clamping insert: polyamide 6
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68, 5 bar (30 minutes)
- Strain relief: integrated according to EN 50262



Brass cable gland

**UL**  
QCRV2.E320158

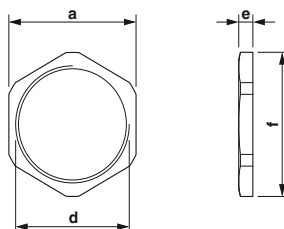
**Ordering data**

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
NPT3/8 inch	silver	5.00 - 10.00	17.00	19.00	11.50	16.00	34.50	22.00	-
1/2 inch NPT	silver	10.00 - 14.00	22.00	22.00	13.00	21.00	39.00	29.70	-
3/4 inch NPT	silver	13.00 - 18.00	30.00	30.00	13.00	29.00	48.50	33.00	-
1 inch NPT	silver	18.00 - 25.00	40.00	43.00	13.00	32.00	56.00	44.50	-

Type	Order No.	Pcs. / Pkt.
G-INS-NPT3/8-S68L-NNES-S	1411182	10
G-INS-NPT1/2-S68L-NNES-S	1411183	10
G-INS-NPT3/4-M68L-NNES-S	1411184	5
G-INS-NPT1-M68L-NNES-S	1411185	5

**Brass counter nuts  
NPT, ANSI B1.20.1**

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C



Brass counter nut

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
NPT3/8 inch	silver	-	21.00	-	-	16.60	4.00	24.00	-
1/2 inch NPT	silver	-	26.00	-	-	20.60	5.50	29.00	-
3/4 inch NPT	silver	-	32.00	-	-	25.90	5.50	36.00	-
1 inch NPT	silver	-	41.00	-	-	32.40	7.00	45.00	-

**Ordering data**

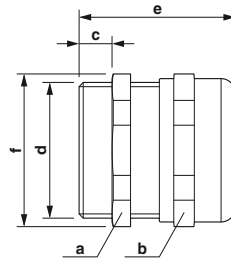
Type	Order No.	Pcs. / Pkt.
A-INL-NPT3/8-N-S	1416009	10
A-INL-NPT1/2-N-S	1416010	10
A-INL-NPT3/4-N-S	1416011	5
A-INL-NPT1-N-S	1416012	5

# Installation and mounting material

## Cable glands

### Brass EMC cable glands, metric, EN 60423

- Material: brass, nickel-plated
- Seal: CR/NBR
- O-ring: NBR
- Clamping insert: polyamide 6
- Contact spring: stainless steel
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP68, 5 bar (30 minutes)
- Strain relief: integrated according to EN 50262



Brass cable gland



QCRV.E140310 / QCRV2.E140310

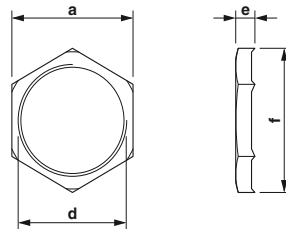
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	silver	3.00 - 6.50	14.00	14.00	6.00	12.00	28.00	15.50	-
M16	silver	5.00 - 9.00	17.00	17.00	5.00	16.00	30.00	19.00	-
M20	silver	9.00 - 13.00	22.00	22.00	6.00	20.00	33.50	24.00	-
M25	silver	11.00 - 16.00	27.00	27.00	7.00	25.00	36.50	30.00	-
M32	silver	14.00 - 21.00	34.00	34.00	8.00	32.00	38.00	36.00	-
M40	silver	19.00 - 27.00	43.00	43.00	8.00	40.00	41.00	46.00	-
M50	silver	24.00 - 35.00	55.00	55.00	9.00	50.00	49.50	60.00	-
M63	silver	32.00 - 42.00	65.00	65.00	10.00	63.00	52.50	70.00	-

### Ordering data

Type	Order No.	Pcs. / Pkt.
G-INSEC-M12-S68N-NCRS-S	1411187	10
G-INSEC-M16-S68N-NCRS-S	1411188	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

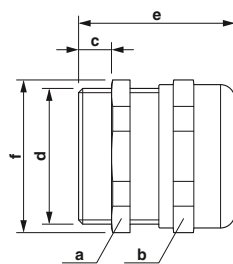
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	silver	-	15.00	-	-	12.00	4.70	16.50	-
M16	silver	-	19.00	-	-	16.00	4.70	21.00	-
M20	silver	-	24.00	-	-	20.00	4.70	27.00	-
M25	silver	-	30.00	-	-	25.00	5.20	33.50	-
M32	silver	-	36.00	-	-	32.00	5.70	40.00	-
M40	silver	-	46.00	-	-	40.00	6.50	50.00	-
M50	silver	-	60.00	-	-	50.00	6.50	65.00	-
M63	silver	-	70.00	-	-	63.00	7.00	75.00	-

### 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
- Seal: CR
- O-ring: NBR
- Clamping insert: polyamide 6
- Contact spring: copper beryllium
- Ambient temperature:  
-40°C ... +100°C
- Degree of protection: IP68, 5 bar  
(30 minutes)
- Strain relief: integrated according to  
EN 50262



Brass cable gland

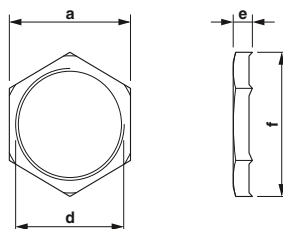
**UL**  
QCRV2.E320158

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver	3.00 - 6.50	14.00	14.00	6.00	12.50	27.00	15.50	-
Pg9	silver	4.00 - 8.00	17.00	17.00	6.00	15.20	29.00	18.90	-
Pg11	silver	5.00 - 10.00	20.00	20.00	6.00	18.60	30.00	22.00	-
Pg13.5	silver	6.00 - 12.00	22.00	22.00	6.50	20.40	30.00	24.50	-
Pg16	silver	10.00 - 14.00	24.00	24.00	6.50	22.50	33.90	26.80	-
Pg21	silver	13.00 - 18.00	30.00	30.00	7.20	28.30	38.50	33.00	-
Pg29	silver	18.00 - 25.00	40.00	40.00	8.00	37.00	47.00	44.50	-
Pg36	silver	22.00 - 32.00	50.00	50.00	9.00	47.00	57.00	55.50	-
Pg42	silver	30.00 - 38.00	58.00	58.00	12.00	54.00	60.00	64.00	-
Pg48	silver	34.00 - 44.00	64.00	64.00	14.00	59.30	65.00	70.00	-

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]	Dimensions [mm]						
			a	b	c	d	e	f	g
Pg7	silver	-	15.00	-	-	12.50	4.70	16.50	-
Pg9	silver	-	18.00	-	-	15.20	4.70	20.00	-
Pg11	silver	-	21.00	-	-	18.60	4.70	24.00	-
Pg13.5	silver	-	23.00	-	-	20.40	4.70	26.00	-
Pg16	silver	-	26.00	-	-	22.50	4.70	29.00	-
Pg21	silver	-	32.00	-	-	28.30	5.20	36.00	-
Pg29	silver	-	41.00	-	-	37.00	5.70	45.00	-
Pg36	silver	-	51.00	-	-	47.00	6.50	56.00	-

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

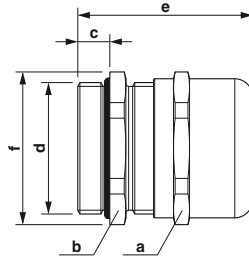


# Installation and mounting material

## Cable glands

### Brass cable glands, metric, EN 60423

- Material: brass, nickel-plated
- Seal: CR
- O-ring: NBR
- Ambient temperature: -20°C ... +100°C
- Degree of protection: IP68, 5 bar (30 minutes)



Brass cable gland

**Notes:**  
For counter nuts, see page 685

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Thread type	Color	Clamping area [mm]
M20	silver	11.00 - 16.00
M25	silver	14.00 - 21.00
M32	silver	19.00 - 27.00
M40	silver	27.00 - 34.00

Dimensions [mm]								
a	b	c	d	e	f	g		
27.00	27.00	6.00	20.00	26.00	30.00	-		
34.00	34.00	7.50	25.00	31.00	36.00	-		
43.00	43.00	8.00	32.00	32.00	46.00	-		
50.00	50.00	8.00	40.00	35.00	58.00	-		

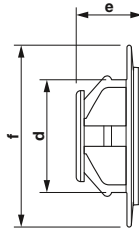
### Ordering data

Type	Order No.	Pcs. / Pkt.
HC-M-KV-M20(11-16)	1645998	25
HC-M-KV-M25(14-21)	1646007	25
HC-M-KV-M32(19-27)	1646010	10
HC-M-KV-M40(27-34)	1607729	10

## Membrane screw connection

new

- 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 screw connection

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]								
a	b	c	d	e	f	g		
-	-	8.00	16.00	15.00	32.00	-		
-	-	8.00	20.00	15.00	34.00	-		
-	-	8.00	25.00	15.00	40.00	-		

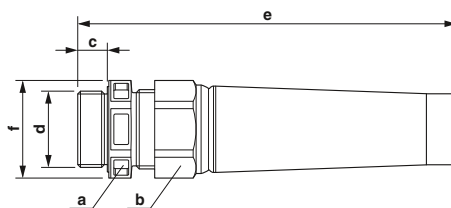
### Ordering data

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

new

**Plastic cable glands with bend protection, metric, EN 60423**

- Material: polyamide
- Seal: EPDM
- Glow-wire test: 750°C
- Ambient temperature: -40°C ... +100°C (+120°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)



**Notes:**  
For counter nuts, see page 680



Plastic cable gland with bend protection

UL E179850

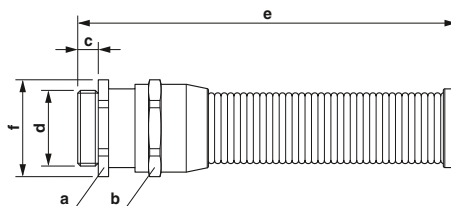
Ordering data

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	light gray	3.00 - 7.00	16.00	16.00	9.00	12.00	72.00	18.00	-
M16	light gray	4.50 - 10.00	20.00	20.00	9.00	16.00	82.00	22.00	-
M20	light gray	6.00 - 13.00	24.00	24.00	12.00	20.00	103.00	27.00	-
M25	light gray	9.00 - 17.00	29.00	29.00	12.00	25.00	113.00	32.00	-
M32	light gray	13.00 - 21.00	36.00	36.00	12.00	32.00	138.00	40.00	-
M12	black	3.00 - 7.00	16.00	16.00	9.00	12.00	72.00	18.00	-
M16	black	4.50 - 10.00	20.00	20.00	9.00	16.00	82.00	22.00	-
M20	black	6.00 - 13.00	24.00	24.00	12.00	20.00	103.00	27.00	-
M25	black	9.00 - 17.00	29.00	29.00	12.00	25.00	113.00	32.00	-
M32	black	13.00 - 21.00	36.00	36.00	12.00	32.00	138.00	40.00	-

Type	Order No.	Pcs. / Pkt.
G-INB-M12-S68N-PEPDS-LG	1415171	10
G-INB-M16-S68N-PEPDS-LG	1415172	10
G-INB-M20-S68N-PEPDS-LG	1415174	10
G-INB-M25-M68N-PEPDS-LG	1415175	10
G-INB-M32-M68N-PEPDS-LG	1415176	5
G-INB-M12-S68N-PEPDS-BK	1415177	10
G-INB-M16-S68N-PEPDS-BK	1415178	10
G-INB-M20-S68N-PEPDS-BK	1415179	10
G-INB-M25-M68N-PEPDS-BK	1415180	10
G-INB-M32-M68N-PEPDS-BK	1415181	5

**Brass cable glands with bend protection, metric, EN 60423**

- Material: brass, nickel-plated
- Seal: EPDM
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C (+120°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)



**Notes:**  
For counter nuts, see page 685

new



Brass cable gland with bend protection

UL E179850

Ordering data

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	6.00 - 13.00	24.00	24.00	6.00	20.00	96.00	27.00	-
M25	silver	9.00 - 17.00	29.00	29.00	7.00	25.00	120.00	32.00	-
M32	silver	13.00 - 21.00	36.00	36.00	8.00	32.00	146.00	40.00	-
M40	silver	16.00 - 28.00	46.00	46.00	8.00	40.00	184.00	51.00	-

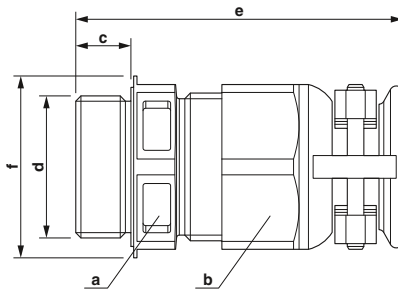
Type	Order No.	Pcs. / Pkt.
G-INB-M20-S68N-NEPDS-S	1415182	5
G-INB-M25-M68N-NEPDS-S	1415183	5
G-INB-M32-M68N-NEPDS-S	1415184	1
G-INB-M40-M68N-NEPDS-S	1415185	1

# Installation and mounting material

## Cable glands

### Plastic cable glands with strain relief, metric, EN 60423

- Material: polyamide
- Seal: EPDM
- Glow-wire test: 750°C
- Ambient temperature: -40°C ... +100°C (+120°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)



**Notes:**

For counter nuts, see page 681



new

Plastic cable gland with strain relief

UL E179850

**Ordering data**

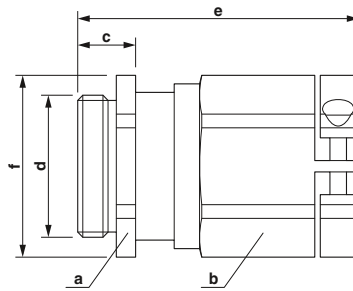
Thread type	Color	Clamping area [mm]
M20	black	6.00 - 13.00
M25	black	9.00 - 17.00
M32	black	13.00 - 21.00

Dimensions [mm]								
a	b	c	d	e	f	g		
24.00	24.00	10.00	20.00	49.00	26.50	-		
29.00	29.00	10.00	25.00	51.00	32.00	-		
36.00	36.00	12.00	32.00	57.00	40.00	-		

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
- Seal: EPDM
- O-ring: EPDM
- Ambient temperature: -40°C ... +100°C (+120°C briefly)
- Degree of protection: IP68, 5 bar (30 minutes)



**Notes:**

For counter nuts, see page 685



new

Brass cable gland with strain relief

UL E179850

**Ordering data**

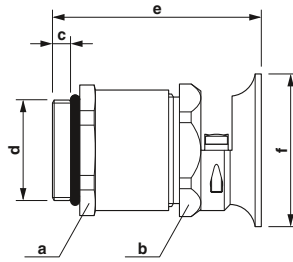
Thread type	Color	Clamping area [mm]
M20	silver	6.00 - 13.00
M25	silver	9.00 - 17.00
M32	silver	13.00 - 21.00
M40	silver	16.00 - 28.00

Dimensions [mm]								
a	b	c	d	e	f	g		
24.00	24.00	6.00	20.00	37.00	27.00	-		
29.00	29.00	7.00	25.00	42.00	32.00	-		
36.00	36.00	8.00	32.00	45.00	40.00	-		
46.00	46.00	8.00	40.00	54.00	51.00	-		

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
- Seal: NBR
- O-ring: NBR
- Ambient temperature: -30°C ... +80°C
- Degree of protection: IP65



**Notes:**  
For counter nuts, see page 685



**Brass cable gland with cable bend protection and strain relief**

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**Ordering data**

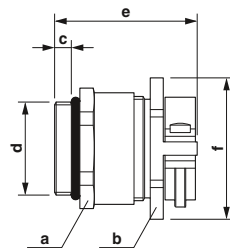
Thread type	Color	Clamping area [mm]
M20	silver	7.50 - 15.00
M25	silver	10.00 - 19.00
M32	silver	18.00 - 27.00

Dimensions [mm]							
a	b	c	d	e	f	g	
24.00	24.00	6.00	20.00	40.00	32.00	-	
30.00	30.00	7.00	25.00	44.00	38.00	-	
41.00	40.00	8.00	32.00	51.00	50.00	-	

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
- Seal: NBR
- O-ring: NBR
- Ambient temperature: -30°C ... +80°C
- Degree of protection: IP65



**Notes:**  
For counter nuts, see page 685



**Brass cable gland with strain relief clamp**

ERIC  
7500651.22.01.00246

**Ordering data**

Thread type	Color	Clamping area [mm]
M20	silver	7.50 - 15.00
M25	silver	10.00 - 19.00
M32	silver	18.00 - 27.00
M40	silver	24.00 - 33.00

Dimensions [mm]							
a	b	c	d	e	f	g	
27.00	24.00	6.00	20.00	35.00	30.00	-	
34.00	30.00	7.00	25.00	39.00	38.00	-	
42.00	40.00	8.00	32.00	43.00	47.00	-	
52.00	50.00	8.00	40.00	49.00	56.00	-	

Type	Order No.	Pcs. / Pkt.
HC-M-KV-Z-M20	1646146	10
HC-M-KV-Z-M25	1646159	10
HC-M-KV-Z-M32	1646162	10
HC-M-KV-Z-M40	1646175	10

# Installation and mounting material

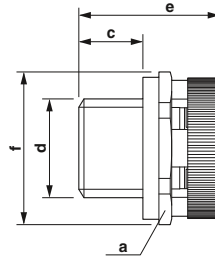
## Cable glands

### Pressure compensation elements

new

For avoiding condensation

- Material: polyamide, stainless steel
- Membrane: acrylic copolymer
- O-ring: NBR
- Ambient temperature: -40°C ... +105°C
- Degree of protection: IP66/IP67/IP69K



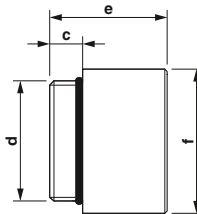
Pressure compensation elements

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	light gray	-	17.00	-	10.00	12.00	17.50	18.50	-
M12	black	-	17.00	-	10.00	12.00	17.50	18.50	-
M12	silver	-	17.00	-	10.00	12.00	21.00	18.50	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
A-INB-M12-69KN-P-LG	1415222	5
A-INB-M12-69KN-P-BK	1415223	5
A-INB-M12-69KN-S-S	1415224	5

### Metal NPT adapter, metric external thread, NPT internal thread

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature: -20°C ... +80°C



NPT adapter

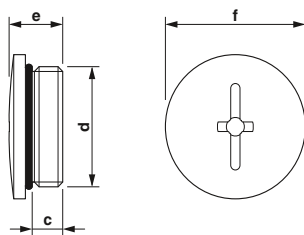
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Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20 / 1/2-inch NPT	silver	-	-	-	6.50	20.00	25.00	24.00	-
M25 / 3/4 inch NPT	silver	-	-	-	7.00	25.00	28.00	30.00	-
M32 / 1/1 inch NPT	silver	-	-	-	8.00	32.00	33.00	38.00	-
M40 / 1 1/4 in. NPT	silver	-	-	-	8.00	40.00	26.00	46.00	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-NPT-1/2-M20	1686847	25
HC-NPT-3/4-M25	1686850	25
HC-NPT-1/1-M32	1686863	10
HC-NPT-1 1/4-M40	1687587	10

Plastic screw plugs

- Material: polyamide, fiberglass reinforced
- O-ring: EPDM
- Ambient temperature:  
-40°C ... +100°C (+150°C briefly)
- Degree of protection: IP68



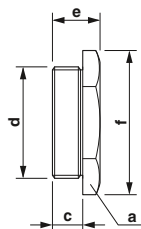
Plastic screw plug

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	black	-	-	-	6.00	20.00	9.50	24.00	-
M25	black	-	-	-	8.00	25.00	11.50	30.00	-
M32	black	-	-	-	8.00	32.00	12.00	37.00	-
M40	black	-	-	-	8.00	40.00	13.00	46.00	-
Pg16	black	-	-	-	6.00	22.50	9.50	27.00	-
Pg21	black	-	-	-	8.00	28.30	11.00	33.00	-
Pg29	black	-	-	-	8.00	37.00	12.00	44.00	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
A-INSP-M20-65N-P-BK	1415206	10
A-INSP-M25-65N-P-BK	1415207	10
A-INSP-M32-65N-P-BK	1415208	10
A-INSP-M40-65N-P-BK	1415210	5
A-INSP-PG16-65N-P-BK	1415213	10
A-INSP-PG21-65N-P-BK	1415214	10
A-INSP-PG29-65N-P-BK	1415215	10

Metal screw plugs

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:  
-20°C ... +80°C
- Degree of protection: IP68



Metal screw plug

ERIC  
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Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M16	silver	-	18.00	-	5.00	16.00	8.00	20.00	-
M20	silver	-	22.00	-	6.00	20.00	9.00	24.00	-
M25	silver	-	28.00	-	6.50	25.00	10.00	31.50	-
M32	silver	-	35.00	-	7.00	32.00	10.50	39.00	-
M40	silver	-	44.00	-	8.00	40.00	12.00	50.00	-
Pg11	silver	-	-	-	6.00	19.00	9.00	20.00	-
Pg13.5	silver	-	-	-	6.50	21.00	9.50	22.00	-
Pg16	silver	-	-	-	6.50	23.00	9.50	24.00	-
Pg21	silver	-	-	-	7.00	29.00	11.00	30.00	-
Pg29	silver	-	-	-	8.00	37.50	12.00	39.00	-
Pg36	silver	-	-	-	9.00	47.50	15.00	50.00	-

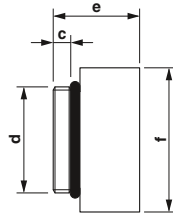
Ordering data		
Type	Order No.	Pcs. / Pkt.
HC-M-BS-M16	1646227	10
HC-M-BS-M20	1645846	10
HC-M-BS-M25	1645859	10
HC-M-BS-M32	1645862	10
HC-M-BS-M40	1645875	10
HC-BS-PG11	1674493	10
HC-BS-PG13	1674503	10
HC-BS-PG16	1674516	10
HC-BS-PG21	1674529	10
HC-BS-PG29	1674532	10
HC-BS-PG36	1674545	10

# Installation and mounting material

## Cable glands

### Metal extensions

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:  
-20°C ... +80°C



Metal extension adapter

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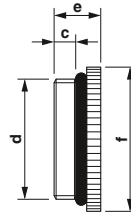
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M16 / M20	silver	-	-	-	6.00	16.00	17.50	22.00	-
M20 / M25	silver	-	-	-	6.50	20.00	19.00	27.00	-
M25 / M32	silver	-	-	-	6.50	25.00	21.00	34.00	-
M32 / M40	silver	-	-	-	7.00	32.00	23.00	42.00	-
Pg13.5 / Pg16	silver	-	-	-	6.50	21.00	19.00	24.00	-
Pg16 / Pg21	silver	-	-	-	6.50	23.00	21.00	30.00	-
Pg21 / Pg29	silver	-	-	-	7.00	29.00	23.00	39.00	-

### 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

### Metal reducing adapter

- Material: brass, nickel-plated
- O-ring: NBR
- Ambient temperature:  
-20°C ... +80°C



Metal reducing adapter

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20 / M16	silver	-	-	-	6.50	20.00	9.00	24.00	-
M25 / M20	silver	-	-	-	7.00	25.00	10.00	30.00	-
M32 / M25	silver	-	-	-	8.00	32.00	11.50	37.00	-
M40 / M32	silver	-	-	-	8.00	40.00	11.50	43.00	-
Pg29 / Pg21	silver	-	-	-	8.00	37.50	11.50	44.00	-
Pg21 / Pg16	silver	-	-	-	7.00	29.00	10.00	33.50	-
Pg16 / Pg13,5	silver	-	-	-	6.50	23.00	9.50	27.00	-

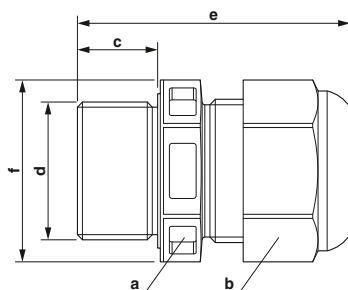
### Ordering data

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
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

new

**Plastic cable glands, metric, Ex protection**

- Halogen-free
- Vibration-proof plastic cable gland with protection against over-tightening of the cap nut
- Glow-wire test: 750°C
- Degree of protection: IP66/IP68, 5 bar (30 minutes)



Plastic cable gland

**Notes:**  
For counter nuts, see page 681

Ex: PTB 13 ATEX 1015 X / IECEx PTB 13.0034X

**General data**

Cable gland material  
Seal material  
O-ring material  
Ambient temperature (operation)

**Technical data**

Polyamide  
EPDM  
EPDM  
-40 °C ... 75 °C

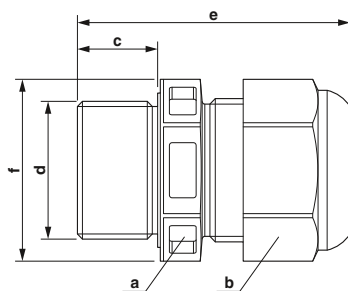
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	black	3.00 - 6.00	16.00	16.00	15.00	12.00	35.00	18.00	-
M16	black	4.50 - 9.00	20.00	20.00	15.00	16.00	37.00	23.00	-
M20	black	7.00 - 13.00	24.00	24.00	15.00	20.00	41.00	28.00	-
M25	black	10.00 - 17.00	29.00	29.00	15.00	25.00	43.00	33.00	-
M32	black	13.00 - 21.00	36.00	36.00	15.00	32.00	45.00	41.00	-
M40	black	17.00 - 28.00	46.00	46.00	18.00	40.00	58.00	51.00	-
M50	black	23.00 - 35.00	55.00	55.00	18.00	50.00	63.00	61.00	-
M63	black	34.00 - 48.00	68.00	68.00	18.00	63.00	67.00	75.00	-

**Ordering data**

Type	Order No.	Pcs. / Pkt.
G-ESIS-M12-S68L-PEPDS-BK	1415106	10
G-ESIS-M16-S68L-PEPDS-BK	1415107	10
G-ESIS-M20-S68L-PEPDS-BK	1415108	10
G-ESIS-M25-M68L-PEPDS-BK	1415109	10
G-ESIS-M32-M68L-PEPDS-BK	1415110	5
G-ESIS-M40-M68L-PEPDS-BK	1415111	5
G-ESIS-M50-L68L-PEPDS-BK	1415112	1
G-ESIS-M63-L68L-PEPDS-BK	1415113	1

**Plastic cable glands, metric, Ex protection**

- Halogen-free
- Vibration-proof plastic cable gland with protection against over-tightening of the cap nut
- Glow-wire test: 750°C
- Degree of protection: IP66/IP68, 5 bar (30 minutes)



Plastic cable gland

**Notes:**  
For counter nuts, see page 681

Ex: PTB 13 ATEX 1015 X / IECEx PTB 13.0034X

**General data**

Cable gland material  
Seal material  
O-ring material  
Ambient temperature (operation)

**Technical data**

Polyamide  
EPDM  
EPDM  
-40 °C ... 75 °C

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	black/blue	3.00 - 6.00	16.00	16.00	15.00	12.00	35.00	18.00	-
M16	black/blue	4.50 - 9.00	20.00	20.00	15.00	16.00	37.00	23.00	-
M20	black/blue	7.00 - 13.00	24.00	24.00	15.00	20.00	41.00	28.00	-
M25	black/blue	10.00 - 17.00	29.00	29.00	15.00	25.00	43.00	33.00	-
M32	black/blue	13.00 - 21.00	36.00	36.00	15.00	32.00	45.00	41.00	-
M40	black/blue	17.00 - 28.00	46.00	46.00	18.00	40.00	58.00	51.00	-
M50	black/blue	23.00 - 35.00	55.00	55.00	18.00	50.00	63.00	61.00	-
M63	black/blue	34.00 - 48.00	68.00	68.00	18.00	63.00	67.00	75.00	-

**Ordering data**

Type	Order No.	Pcs. / Pkt.
G-ESIS-M12-S68L-PEPDS-BL	1415114	10
G-ESIS-M16-S68L-PEPDS-BL	1415116	10
G-ESIS-M20-S68L-PEPDS-BL	1415117	10
G-ESIS-M25-M68L-PEPDS-BL	1415118	10
G-ESIS-M32-M68L-PEPDS-BL	1415119	5
G-ESIS-M40-M68L-PEPDS-BL	1415120	5
G-ESIS-M50-L68L-PEPDS-BL	1415121	1
G-ESIS-M63-L68L-PEPDS-BL	1415122	1



# Installation and mounting material

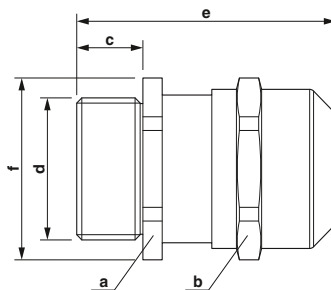
## Cable glands

### Brass cable glands, metric, Ex protection

- Halogen-free
- Polyamide compression ring
- Degree of protection: IP66/IP68, 5 bar (30 minutes)

#### Marking:

- II 2 G Ex e IIC Gb
- II 2 D Ex IIIC Db IP68



**Notes:**  
For counter nuts, see page 685



new

Brass cable gland



PTB 04 ATEX 1112 X / IECEx PTB 13.0027X

#### Technical data

Nickel-plated brass  
EPDM  
EPDM  
-40 °C ... 75 °C

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	silver	4.00 - 7.00	-	16.00	12.00	12.00	30.00	18.00	-
M16	silver	5.00 - 10.00	-	20.00	12.00	16.00	33.00	22.00	-
M20	silver	6.00 - 13.00	-	24.00	12.00	20.00	35.00	27.00	-
M25	silver	10.00 - 17.00	-	29.00	12.00	25.00	38.00	32.00	-
M32	silver	13.00 - 21.00	-	36.00	15.00	32.00	43.00	40.00	-
M40	silver	16.00 - 28.00	-	46.00	15.00	40.00	51.00	51.00	-
M50	silver	21.00 - 35.00	-	55.00	15.00	50.00	57.00	61.00	-
M63	silver	34.00 - 48.00	-	68.00	15.00	63.00	61.00	75.00	-

#### Ordering data

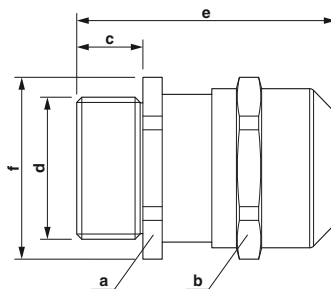
Type	Order No.	Pcs. / Pkt.
G-ESIS-M12-S68N-NEPDS-S	1415123	10
G-ESIS-M16-S68N-NEPDS-S	1415124	10
G-ESIS-M20-S68N-NEPDS-S	1415125	10
G-ESIS-M25-M68N-NEPDS-S	1415126	10
G-ESIS-M32-M68L-NEPDS-S	1415127	5
G-ESIS-M40-M68L-NEPDS-S	1415129	5
G-ESIS-M50-L68L-NEPDS-S	1415146	1
G-ESIS-M63-L68L-NEPDS-S	1415147	1

### Brass EMC cable glands, metric, Ex protection

- Halogen-free
- Polyamide compression ring
- Permanent braided shield contact by means of grounding cones in the EMC screw connection
- Degree of protection: IP66/IP68, 5 bar (30 minutes)

#### Marking:

- II 2 G Ex e IIC Gb
- II 2 D Ex IIIC Db IP68



**Notes:**  
For ribbed counter nut, see page 688



new

Brass EMC cable gland



PTB 04 ATEX 1112 X / IECEx PTB 13.0027X

#### Technical data

Nickel-plated brass  
EPDM  
EPDM  
-40 °C ... 75 °C

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M12	silver	4.00 - 7.00	16.00	16.00	12.00	12.00	30.00	18.00	-
M16	silver	5.00 - 10.00	20.00	20.00	12.00	16.00	33.00	22.00	-
M20	silver	6.00 - 13.00	24.00	24.00	12.00	20.00	35.00	27.00	-
M25	silver	10.00 - 17.00	29.00	29.00	12.00	25.00	38.00	32.00	-
M32	silver	13.00 - 21.00	36.00	36.00	15.00	32.00	43.00	40.00	-
M40	silver	16.00 - 28.00	46.00	46.00	15.00	40.00	51.00	51.00	-
M50	silver	21.00 - 35.00	55.00	55.00	15.00	50.00	57.00	61.00	-
M63	silver	34.00 - 48.00	68.00	68.00	15.00	63.00	61.00	75.00	-

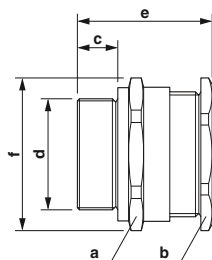
#### Ordering data

Type	Order No.	Pcs. / Pkt.
G-ESIS-EMC-M12-S68N-NEPDS-S	1415148	10
G-ESIS-EMC-M16-S68N-NEPDS-S	1415149	10
G-ESIS-EMC-M20-S68N-NEPDS-S	1415163	10
G-ESIS-EMC-M25-M68N-NEPDS-S	1415165	10
G-ESIS-EMC-M32-M68L-NEPDS-S	1415166	5
G-ESIS-EMC-M40-M68L-NEPDS-S	1415168	5
G-ESIS-EMC-M50-L68L-NEPDS-S	1415169	1
G-ESIS-EMC-M63-L68L-NEPDS-S	1415170	1

**Brass cable glands, metric, Ex protection**

The cable glands for unarmored and braided cables provide flameproof (type “d”), increased safety (type “e”), and restricted breathing (type “nR”) protection.

– Degree of protection: IP66/IP67/IP68



**Brass cable gland**

**Notes:**  
For counter nuts, see page 685

Ex: CIDET EAC Ex NEPSI  
SIRA13ATEX1068X / IECEX SIR13.0023X

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

Technical data	
Nickel-plated brass	
Thermoplastic elastomers	
Viton	
-60 °C ... 130 °C	

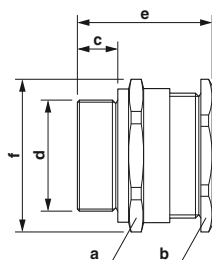
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	6.50 - 14.00	27.00	27.00	15.00	20.00	39.00	29.70	-
M25	silver	11.10 - 20.00	36.00	36.00	15.00	25.00	41.00	39.60	-
M32	silver	17.00 - 26.30	41.00	41.00	15.00	32.00	42.00	45.10	-
M40	silver	23.50 - 32.20	50.00	50.00	15.00	40.00	43.00	55.00	-
M50	silver	35.60 - 44.10	60.00	60.00	15.00	50.00	45.00	66.00	-
M63	silver	47.20 - 56.00	75.00	75.00	15.00	63.00	45.00	82.50	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
G-ESS-M20-S66L-NTES-S	1411075	20
G-ESS-M25-M66L-NTES-S	1411077	20
G-ESS-M32-M66L-NTES-S	1411079	10
G-ESS-M40-L66L-NTES-S	1411081	2
G-ESS-M50-L66L-NTES-S	1411084	2
G-ESS-M63-L66L-NTES-S	1411086	2

**Stainless steel cable glands, metric, Ex protection**

The cable glands for unarmored and braided cables provide flameproof (type “d”), increased safety (type “e”), and restricted breathing (type “nR”) protection.

– Degree of protection: IP66/IP67/IP68



**Stainless steel cable gland**

**Notes:**  
For counter nuts, see page 703

Ex: CIDET EAC Ex NEPSI  
SIRA13ATEX1068X / IECEX SIR13.0023X

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

Technical data	
Stainless steel 1.4404	
Thermoplastic elastomers	
Viton	
-60 °C ... 130 °C	

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	6.50 - 14.00	27.00	27.00	15.00	20.00	39.00	29.70	-
M25	silver	11.10 - 20.00	36.00	36.00	15.00	25.00	41.00	39.60	-
M32	silver	17.00 - 26.30	41.00	41.00	15.00	32.00	42.00	45.10	-
M40	silver	23.50 - 32.20	50.00	50.00	15.00	40.00	43.00	55.00	-
M50	silver	35.60 - 44.10	60.00	60.00	15.00	50.00	45.00	66.00	-
M63	silver	47.20 - 56.00	75.00	75.00	15.00	63.00	45.00	82.50	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
G-ESS-M20-S66L-STES-S	1411076	20
G-ESS-M25-M66L-STES-S	1411078	20
G-ESS-M32-M66L-STES-S	1411080	10
G-ESS-M40-L66L-STES-S	1411082	2
G-ESS-M50-L66L-STES-S	1411085	2
G-ESS-M63-L66L-STES-S	1411087	2

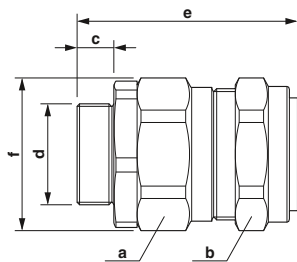
# Installation and mounting material

## Cable glands

### Brass cable glands, metric, Ex protection

The cable glands for armored cables provide increased safety (type "e") protection.

– Degree of protection: IP66/IP67/IP68



Brass cable gland

**Notes:**  
For counter nuts, see page 685

Ex: CIDET EAC Ex NEPSI  
SIRA13ATEX1070X / IECEx SIR13.0025X

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

Technical data	
Nickel-plated brass	
Thermoplastic elastomers	
Viton	
-60 °C ... 130 °C	

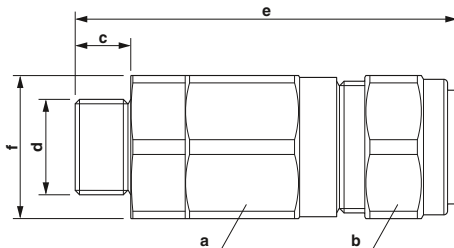
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	9.50 - 15.90	24.00	24.00	15.00	20.00	62.00	26.40	-
M20	silver	12.50 - 20.90	30.50	30.50	15.00	20.00	65.00	33.60	-
M25	silver	18.20 - 26.20	37.50	37.50	15.00	25.00	70.00	41.30	-
M32	silver	23.70 - 33.90	46.00	46.00	15.00	32.00	73.00	50.60	-
M40	silver	27.90 - 40.40	55.00	55.00	15.00	40.00	73.00	60.50	-
M50	silver	40.40 - 53.10	70.00	70.00	15.00	50.00	75.00	77.00	-
M63	silver	54.60 - 65.90	80.00	80.00	15.00	63.00	78.00	88.00	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
G-ESSWU-M20S-S66L-NTES-S	1411088	10
G-ESSWU-M20-M66L-NTES-S	1411090	10
G-ESSWU-M25-M66L-NTES-S	1411092	10
G-ESSWU-M32-L66L-NTES-S	1411094	5
G-ESSWU-M40-L66L-NTES-S	1411097	1
G-ESSWU-M50-L66L-NTES-S	1411100	1
G-ESSWU-M63-L66L-NTES-S	1411102	1

### Stainless steel cable glands, metric, Ex protection

The cable glands for armored cables provide flameproof (type "d"), increased safety (type "e"), and restricted breathing (type "nR") protection.

– Degree of protection: IP66/IP67/IP68



Stainless steel cable gland

**Notes:**  
For counter nuts, see page 703

Ex: CIDET EAC Ex NEPSI  
SIRA13ATEX1073X / IECEx SIR13.0028X

General data	
Cable gland material	
Seal material	
O-ring material	
Ambient temperature (operation)	

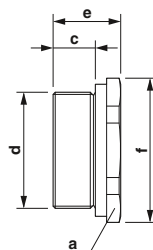
Technical data	
Stainless steel 1.4404	
Thermoplastic elastomers	
Viton	
-60 °C ... 130 °C	

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	9.50 - 15.90	24.00	24.00	15.00	20.00	85.00	26.40	-
M20	silver	12.50 - 20.90	30.50	30.50	15.00	20.00	87.00	33.60	-
M25	silver	18.20 - 26.20	37.50	37.50	15.00	25.00	97.00	41.30	-
M32	silver	23.70 - 33.90	46.00	46.00	15.00	32.00	100.00	50.60	-
M40	silver	27.90 - 40.40	55.00	55.00	15.00	40.00	101.00	60.50	-
M50	silver	40.40 - 53.10	70.00	70.00	15.00	50.00	115.00	77.00	-
M63	silver	54.60 - 65.90	80.00	80.00	15.00	63.00	118.00	88.00	-

Ordering data		
Type	Order No.	Pcs. / Pkt.
G-EDSWU-M20S-S66L-STES-S	1411089	10
G-EDSWU-M20-M66L-STES-S	1411091	10
G-EDSWU-M25-M66L-STES-S	1411093	10
G-EDSWU-M32-L66L-STES-S	1411095	5
G-EDSWU-M40-L66L-STES-S	1411099	1
G-EDSWU-M50-L66L-STES-S	1411101	1
G-EDSWU-M63-L66L-STES-S	1411103	1

### Brass screw plugs, metric, Ex protection

Screw plugs provide IP66 and IP68 protection when installed with an entry thread ring, sealing unused cable entries in flameproof (type "d") and increased safety (type "e") installations.



Brass screw plug

**Notes:**  
For counter nuts, see page 685

Ex:   
SIRA01ATEX1284U / IECEx SIR07.0083X

General data	
Material	
Ambient temperature (operation)	

#### Technical data

Nickel-plated brass  
-60 °C ... 200 °C

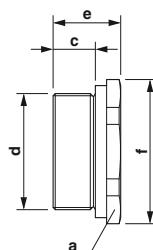
Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	-	24.00	-	15.00	20.00	24.00	26.40	-
M25	silver	-	30.00	-	15.00	25.00	24.00	33.00	-
M32	silver	-	36.00	-	15.00	32.00	24.00	39.60	-
M40	silver	-	46.00	-	15.00	40.00	24.00	50.60	-
M50	silver	-	55.00	-	15.00	50.00	24.00	60.50	-
M63	silver	-	65.00	-	15.00	63.00	24.00	77.00	-

#### Ordering data

Type	Order No.	Pcs. / Pkt.
A-EXSH-M20-68L-N-S	1411104	20
A-EXSH-M25-68L-N-S	1411107	20
A-EXSH-M32-68L-N-S	1411109	10
A-EXSH-M40-68L-N-S	1411111	5
A-EXSH-M50-68L-N-S	1411113	2
A-EXSH-M63-68L-N-S	1411115	1

### Stainless steel screw plugs, metric, Ex protection

Screw plugs provide IP66 and IP68 protection when installed with an entry thread ring, sealing unused cable entries in flameproof (type "d") and increased safety (type "e") installations.



Stainless steel screw plug

**Notes:**  
For counter nuts, see page 703

Ex:   
SIRA01ATEX1284U / IECEx SIR07.0083X

General data	
Material	
Ambient temperature (operation)	

#### Technical data

Stainless steel 1.4404  
-60 °C ... 200 °C

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	-	24.00	-	15.00	20.00	24.00	26.40	-
M25	silver	-	30.00	-	15.00	25.00	24.00	33.00	-
M32	silver	-	36.00	-	15.00	32.00	24.00	39.60	-
M40	silver	-	46.00	-	15.00	40.00	24.00	50.60	-
M50	silver	-	55.00	-	15.00	50.00	24.00	60.50	-
M63	silver	-	65.00	-	15.00	63.00	24.00	77.00	-

#### Ordering data

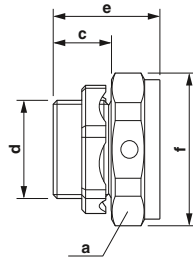
Type	Order No.	Pcs. / Pkt.
A-EXSH-M20-68L-S-S	1411105	20
A-EXSH-M25-68L-S-S	1411108	20
A-EXSH-M32-68L-S-S	1411110	10
A-EXSH-M40-68L-S-S	1411112	5
A-EXSH-M50-68L-S-S	1411114	2
A-EXSH-M63-68L-S-S	1411116	1

# Installation and mounting material

## Cable glands

### Brass pressure compensation, metric, Ex protection

Breather/drain plugs for increased safety (type "e") provide superior ventilation for devices. They are designed to act as a pressure compensation element preventing moisture build-up to IP66.



**Brass pressure compensation**

**Notes:**  
For counter nuts, see page 685

Ex: EAC Ex NEPSI  
SIRA10ATEX1307U / IECEx SIR10.0149U

General data		
Material		
Ambient temperature (operation)		

#### Technical data

Nickel-plated brass  
-60 °C ... 130 °C

Thread type	Color	Clamping area [mm]
M20	silver	-
M25	silver	-

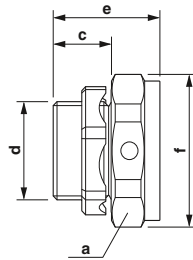
Dimensions [mm]						
a	b	c	d	e	f	g
30.00	-	15.00	20.00	32.00	33.00	-
31.50	-	15.00	25.00	32.00	39.60	-

#### Ordering data

Type	Order No.	Pcs. / Pkt.
A-EXB-20-66L-N-S	1411117	5
A-EXB-25-66L-N-S	1411120	5

### Stainless steel pressure compensation, metric, Ex protection

Breather/drain plugs for increased safety (type "e") provide superior ventilation for devices. They are designed to act as a pressure compensation element preventing moisture build-up to IP66.



**Stainless steel pressure compensation**

**Notes:**  
For counter nuts, see page 703

Ex: EAC Ex NEPSI  
SIRA10ATEX1307U / IECEx SIR10.0149U

General data		
Material		
Ambient temperature (operation)		

#### Technical data

Stainless steel 1.4404  
-60 °C ... 130 °C

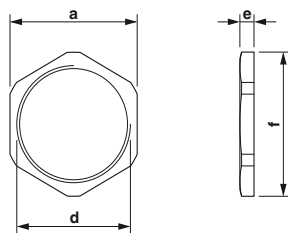
Thread type	Color	Clamping area [mm]
M20	silver	-
M25	silver	-

Dimensions [mm]						
a	b	c	d	e	f	g
30.00	-	15.00	20.00	32.00	26.40	-
31.50	-	15.00	25.00	32.00	33.00	-

#### Ordering data

Type	Order No.	Pcs. / Pkt.
A-EXB-20-66L-S-S	1411118	5
A-EXB-25-66L-S-S	1411121	5

**Stainless steel counter nuts, metric**



Stainless steel counter nut

**General data**

Material  
Ambient temperature (operation)

**Technical data**

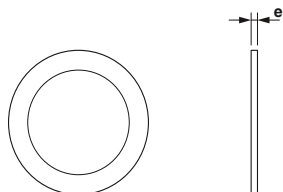
Stainless steel 1.4305  
-70 °C ... 220 °C

**Ordering data**

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	silver	-	24.00	-	-	20.00	3.00	27.00	-
M25	silver	-	30.00	-	-	25.00	3.50	33.50	-
M32	silver	-	36.00	-	-	32.00	4.00	40.00	-
M40	silver	-	46.00	-	-	40.00	5.00	50.00	-
M50	silver	-	55.00	-	-	50.00	5.00	65.00	-
M63	silver	-	70.00	-	-	63.00	6.00	75.00	-

Type	Order No.	Pcs. / Pkt.
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

**Sealing washers, metric**



Sealing washer

**General data**

Material  
Ambient temperature (operation)

**Technical data**

Nylon  
-70 °C ... 100 °C

**Ordering data**

Thread type	Color	Clamping area [mm]	Dimensions [mm]						
			a	b	c	d	e	f	g
M20	white	-	-	-	-	-	2.00	-	-
M25	white	-	-	-	-	-	2.00	-	-
M32	white	-	-	-	-	-	2.00	-	-
M40	white	-	-	-	-	-	2.00	-	-
M50	white	-	-	-	-	-	2.00	-	-
M63	white	-	-	-	-	-	2.00	-	-

Type	Order No.	Pcs. / Pkt.
A-SEW-20-P-W	1411283	20
A-SEW-25-P-W	1411284	20
A-SEW-32-P-W	1411285	20
A-SEW-40-P-W	1411286	20
A-SEW-50-P-W	1411287	10
A-SEW-63-P-W	1411288	10

# Installation and mounting material

## Service interfaces

### Mounting frame, front plates and socket inserts

**Notes:**  
For RJ45 socket inserts, see page 708

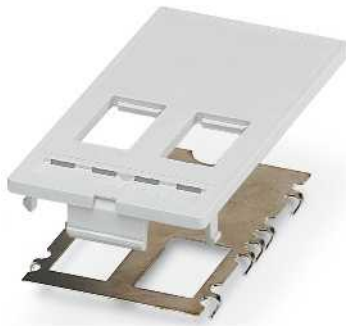


EMC mounting frame for front plates



Mounting frame for front plates

	Technical data			Technical data		
Electrical data	VS-SI-EB-EMV-...			SI-M...		
Rated voltage	-			-		
Rated current	-			-		
Housing material	Zinc alloy			PBT		
Inflammability class according to UL 94	V0			V0		
Degree of protection	IP65			IP65		
Connection method	-			-		
Conductor cross section	-			-		
Connection cross section AWG	-			-		
Ambient temperature (operation)	-10 °C ... 60 °C			-30 °C ... 70 °C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Mounting frame</b> , metal frame, matt nickel-plated, electrically conductive, transparent cover						
Single	VS-SI-EB-EMV-1	1656482	1	SI-M1A	1404493	1
Double	VS-SI-EB-EMV-2	1656495	1	SI-M1B	1404494	1
<b>Mounting frame</b> , black, transparent PC plastic cover, closed with 3 mm two-way key bit						
Single				SI-M1A-T	1407586	1
Double				SI-M1B-T	1407587	1
<b>Mounting frame</b> , black, transparent PC plastic cover, closed with turn knob						
Single				SI-M1A-ML	1407588	1
Double				SI-M1B-ML	1407589	1
<b>Mounting frame</b> , black, metallic ABS plastic cover, closed with 3 mm two-way key bit						
Single				SI-M1A-MT	1407590	1
Double				SI-M1B-MT	1407591	1
<b>Mounting frame</b> , black, metallic ABS plastic cover, closed with turn knob						
Single				SI-M1A-GL	1407592	1
Double				SI-M1B-GL	1407593	1
<b>Mounting frame</b> , black, gray PBT plastic cover, closed with 3 mm two-way key bit						
Single				SI-M1A-GT	1407594	1
Double				SI-M1B-GT	1407595	1
<b>Front plate</b>						
2 x RJ (with shroud)						
2 x D-SUB 09						
1 x D-SUB 09, 1 x D-SUB 15						
1 x D-SUB 09, 1 x D-SUB 25						
2 x D-SUB 15						
1 x D-SUB 15, 1 x D-SUB 25						
2 x D-SUB 25						
<b>Socket inserts</b>						
Germany						
Germany, yellow						
USA						
France						
Great Britain						
Italy						
	Accessories			Accessories		
<b>Marker labels</b> , for identifying mounting frames and front plates, one sheet has 20 labels	VS-SI-BZ	1656660	1	VS-SI-BZ	1656660	1
<b>Dummy plate</b> , plastic				VS-SI-FP-BP	1656657	1



Front plate,  
without contact inserts



Data front plate  
with contact inserts RJ45 (socket to socket),  
D-SUB (socket to pin)



Socket inserts

ERC

ERC

Technical data	
VS-SI-FP-2RJ-MOD	
-	
-	
PBT	
V0	
-	
-	
-	
-10 °C ... 60 °C	

Technical data	
VS-SI-FP...RJ45...	VS-SI-FP...DSUB...
50 V	125 V
1 A	3 A
PBT	PBT
V0	V0
IP20	IP20
-	-
-	-
-	-
-10 °C ... 60 °C	-10 °C ... 60 °C

Technical data	
VS-SI-SD-DE	VS-SI-SD-USA
250 V	125 V
16 A	15 A
PA	PA
V0	V0
IP20	IP20
Screw connection	Slip-on connection
2.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
14	14
-10 °C ... 60 °C	-10 °C ... 60 °C

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-SI-FP-2RJ-MOD	1656631	1
VS-SI-FP-2DSUB9	1656563	1
VS-SI-FP-DSUB9-DSUB15	1656576	1
VS-SI-FP-DSUB9-DSUB25	1656589	1
VS-SI-FP-2DSUB15	1656592	1
VS-SI-FP-DSUB15-DSUB25	1656602	1
VS-SI-FP-2DSUB25	1656615	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-SI-FP-2RJ45-5-MOD-BU/BU	1657766	1
VS-SI-FP-2DSUB9-GC-BU/ST	1657708	1
VS-SI-FP-DSUB9-DSUB15-GC-BU/ST	1657711	1
VS-SI-FP-DSUB9-DSUB25-GC-BU/ST	1657724	1
VS-SI-FP-2DSUB15-GC-BU/ST	1657737	1
VS-SI-FP-DSUB15DSUB25-GC-BU/ST	1657740	1
VS-SI-FP-2DSUB25-GC-BU/ST	1657753	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-SI-SD-DE	1656505	1
VS-SI-SD-DE-G	1656518	1
VS-SI-SD-USA	1656521	1
VS-SI-SD-FR	1656534	1
VS-SI-SD-GB	1656547	1
VS-SI-SD-IT	1656550	1

Accessories		

Accessories		

Accessories		



# Installation and mounting material

## Service interfaces

### Data front plates, service sockets, and programming interfaces



Front plates



Service sockets

	Technical data			Technical data		
Material data						
Housing material	PBT			PA		
Mechanical data						
Degree of protection	IP20			IP65		
Temperature data						
Ambient temperature (operation)	-10 °C ... 60 °C			-25 °C ... 70 °C		
	Ordering data			Ordering data		
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
<b>Front plate</b> , with the following contact inserts:						
D-SUB9	SI-FP-D1A	1404501	1			
D-SUB9, D-SUB9-BP	SI-FP-D1D-D1E	1404509	1			
2x D-SUB 9	SI-FP-2D1D	1404510	1			
D-SUB9, D-SUB9, RJ45	SI-FP-R1A-D1A-D1C	1404507	1			
D-SUB9, RJ45	SI-FP-R1A-D1A	1404496	1			
D-SUB9, D-SUB25, RJ45	SI-FP-R1A-D1B-D3B	1404502	1			
D-SUB9, RJ45, USB with 0.7 m cable	SI-FP-R1A-D1B-U1A/0,7	1404504	1			
D-SUB9 BP, RJ45	SI-FP-R1A-D1E	1404500	1			
RJ45, RJ12, 2 x USB	SI-FP-R1A-R2A-2U1A	1404503	1			
RJ45, USB	SI-FP-R1A-U1A	1404499	1			
RJ45, USB with 0.7 m cable	SI-FP-R1A-U1A/0,7	1404512	1			
D-SUB9, RJ45, USB	SI-FP-R1A-U1A-D1A	1404497	1			
D-SUB9, RJ45, USB	SI-FP-R1A-U1A-D1B	1404495	1			
2x RJ45, USB	SI-FP-2R1A-U1A	1404506	1			
USB	SI-FP-U1A	1404505	1			
<b>Service sockets</b>						
RJ45				SI-SES-R1A	1404513	1
USB with 0.6 m cable				SI-SES-U1A/0,6	1404514	1
USB with 1.0 m cable				SI-SES-U1A/1	1404515	1
<b>Programming interface</b> for HEAVYCON panel mounting base, with:						
2x RJ45 gender changers						
2x USB (A), D-SUB15						
RJ45						
RJ45, RJ11						
RJ45, socket insert USA						
RJ45, socket insert USA 3A						
USB (A)						



Programming interfaces

ERC

Technical data		
Aluminum die-cast		
IP54		
-35 °C ... 65 °C		
Ordering data		
Type	Order No.	Pcs. / Pkt.
SI-PP-2R1A	1404520	1
SI-PP-2U1A-D2A	1404519	1
SI-PP-R1A	1404517	1
SI-PP-R1A-R3A	1404521	1
SI-PP-R1A-S0A	1404516	1
SI-PP-R1A-S0B	1404518	1
SI-PP-U1A	1404522	1

## Service interfaces

### Front plate and socket inserts (Freenet system)



Front plate  
with two Freenet slots

### Ethernet



RJ45 socket inserts,  
Freenet system

ERC

	Technical data			Technical data		
	VS-SI-FP-2F	VS-08-BU/BU-RJ45-F	VS-08-BU-RJ45-6-F/PK			
<b>Electrical data</b>						
Rated voltage	-	50 V	50 V			
Rated current	-	1 A	1 A			
Transmission speed	-	-	-			
Transmission characteristics (category)	-	-	-			
<b>Material data</b>						
Housing material	PBT	Copper alloy	-			
Contact material	-	Copper alloy	Copper alloy			
Contact surface material	-	Gold over nickel	Gold over nickel			
Contact carrier material	-	PC	PC			
Ferrule material	-	-	-			
Inflammability class according to UL 94	V0	V0	V0			
<b>Mechanical data</b>						
No. of pos.	-	8	8			
Pollution degree	-	1	1			
Degree of protection	IP20	IP20	IP20			
Connection method	-	IDC	IDC			
Conductor cross section	-	0.2 mm <sup>2</sup> ... 0.32 mm <sup>2</sup> (solid)	0.14 mm <sup>2</sup> ... 0.35 mm <sup>2</sup>			
Connection cross section AWG	-	24 ... 22 (solid)	26 ... 22 (7-wire)			
Fiber type	-	-	-			
Insertion/withdrawal cycles	-	≥ 750	≥ 750			
<b>Temperature data</b>						
Ambient temperature (operation)	-10 °C ... 60 °C	-20 °C ... 70 °C	-20 °C ... 70 °C			
	Ordering data			Ordering data		
<b>Description</b>	<b>Type</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>	<b>Type</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>
<b>Front plate</b>	VS-SI-FP-2F	1658532	1			
<b>RJ45 Freenet socket insert</b> , 8-pos., shielded, socket to socket 1 Gbps, CAT5				VS-08-BU/BU-RJ45-F	1405617	1
<b>RJ45 Freenet socket insert</b> , 8-pos., shielded, with cable connection 1 Gbps, CAT5				VS-08-BU-RJ45-5-F/PK	1652936	1
<b>SC-RJ coupling</b> , for VS-TO-... terminal outlets and 19" VS-PP-19-1HE-16-F patch panels and VS-SI-FP-2F front plate						
<b>USB socket insert</b> , 4-pos., version 6, panel mounting frame with USB coupling: Slot V6 with USB-A Slot V6 with USB-B						
<b>USB socket insert</b> , 4-pos., socket on flat-ribbon cable terminal strip, pitch 2.54 Socket, type A Socket, type B						
	Accessories			Accessories		
<b>Marker labels</b> , for identifying mounting frames and front plates, one sheet has 20 labels	VS-SI-BZ	1656660	1			

Ethernet



SC-RJ coupling



Panel mounting frame,  
USB socket insert

Technical data	
VS-SCRJ-GOF-KU	
-	-
-	-
-	-
PBT	-
-	-
-	-
Zirconia ceramics	-
V0	-
2	-
-	-
IP20	-
Coupling	-
-	-
-	-
GOF, PCF, POF	-
≥ 500	-
-25 °C ... 70 °C	

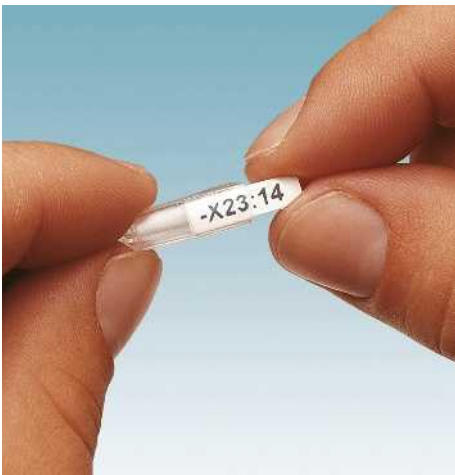
Technical data	
CUC-V06-F1PGY-UBA/UB...	VS-04-BUA-FK-F/IP67
30 V	30 V
1 A	1 A
-	-
-	-
PC	PC
Copper alloy	Copper alloy
Gold over nickel	Gold over nickel
Thermoplastic	PET
-	-
V0	V0
4	4
-	-
IP67	IP20
USB type A, socket	Flat-ribbon cable connection, pitch 2.54 mm
-	-
-	-
-	-
-	≥ 1000
-15 °C ... 65 °C	

Ordering data		
Type	Order No.	Pcs. / Pkt.
VS-SCRJ-GOF-KU	1654358	1

Ordering data		
Type	Order No.	Pcs. / Pkt.
CUC-V06-F1PGY-UBA/UBBB	1411904	1
CUC-V06-F1PGY-UBB/UBAB	1411905	1
VS-04-BUA-FK-F/IP67	1653854	1
VS-04-BUB-FK-F/IP67	1653867	1

Accessories		

Accessories		



### Cable marking

The cables are supplied with marked marking collars. Suitable marking materials are available for each marking system.



### Distributor box marking

High-quality marking materials for individual marking of distributor boxes are available for each marking system.



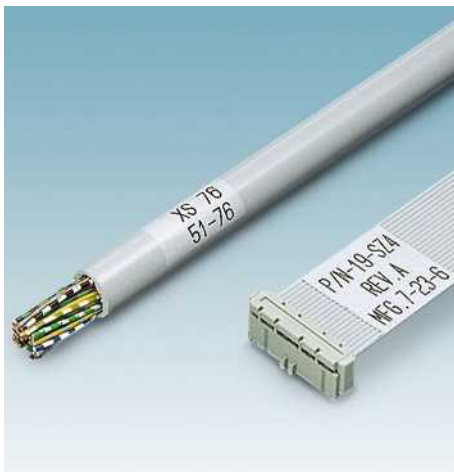
### Connector marking

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**

The comprehensive range of plastic and metal protective hoses offers the right solution for every application. Protective hose screw connections with tool-free quick mounting function and various IP protection classes round off the range of products.

# Find out more with the web code

Detailed information on these products can be found on our website. Simply enter # and numbers in the search field.








# Plug-in charging systems for E-Mobility

Phoenix Contact E-Mobility offers a product and technology portfolio that enables the flexible, modular, and efficient implementation of various concepts for the charging infrastructure for different business models. Whether charging on an AC power grid or rapid DC charging – the AC and DC charging systems from Phoenix Contact are safe, reliable, and user-friendly.

<b>Product range overview</b>	<b>714</b>
<b>DC charging cables</b>	<b>716</b>
<b>AC charging cables</b>	<b>718</b>
<b>Mobile AC charging cables</b>	<b>722</b>
<b>Infrastructure Socket Outlets</b>	<b>726</b>





The development of a widespread charging infrastructure in conjunction with renewable energy is an important step toward a mobile future. Internationally standardized charging systems are used to establish an electrical connection between the electric vehicle and the infrastructure (e.g., a charging station). In terms of the charging interfaces required, a distinction is made between:

- Vehicle inlets
- Infrastructure Socket Outlets
- Charging cables with Vehicle Connectors, Infrastructure Plugs, and integrated IC-CPD control units

International standards ensure uniform connection for charging stations and vehicles:

- Type 1 according to SAE J1772 and IEC 62196 (USA, Japan)
- Type 2 according to IEC 62196 (Europe)
- GB/T 20234 standard (China)

The charging systems from Phoenix Contact offer reliable, standard-compliant solutions for a consistent charging interface for all applications.

This is implemented, for example, with the Combined Charging System (CCS), which was developed by major German automobile manufacturers in cooperation with Phoenix Contact. The electric vehicle can be charged conventionally with AC at home, for example. In addition, the vehicle-side inlet is also designed for rapid DC charging. Only short stops are required for the charging process - e.g., at rest stops when on the road.



**AC type 1**

AC charging system Type 1 is based on the SAE J1772 and IEC 62196 standard. It is primarily used in the USA and Japan. The lock is implemented using a lever system.



**AC type 2**

The type 2 AC charging system, developed for Europe, is designed according to the IEC 62196-2 standard. It supports single- and three-phase charging. An electromechanical actuator lock safeguards the charging process.



**AC GB/T**

The AC charging system standardized according to the Chinese GB/T standard supports both single and three-phase charging. Charging takes place securely thanks to a special lever system.



**DC CCS type 1**

In the USA, the type 1 DC CCS charging system is used for fast DC charging, according to SAE J1772 and IEC 62196-3. The lever locking mechanism is also supported by an additional actuator lock.



**DC CCS type 2**

In Europe, the type 2 DC CCS charging system is the vanguard for rapid DC charging according to IEC 62196-3. The electromechanical actuator lock prevents premature removal during the charging process.



**DC GB/T**

The DC charging system for China is based on the GB/T standard. It offers rapid DC charging for Chinese charging stations. The locking mechanism is integrated in the Vehicle Connector.

# Plug-in charging systems for E-Mobility

## DC charging cables

### Combined charging system (CCS) DC charging cables type 1 and type 2

The CCS DC charging cables with open cable end are connected directly to a DC charging station. They are suitable for fast DC charging of electric vehicles.

The CCS Vehicle Connector is compatible with the CCS Vehicle Inlet, which also accommodates an AC Vehicle Connector.



CCS Type 1 Vehicle Connector,  
with AWG cable



CCS Type 2 Vehicle Connector,  
with metric cable

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing and cables are available on request.

Technical data	
Rated current	60 A
Rated voltage	600 V DC
Approvals	-
Standards	SAE J1772
Charging mode	DC level 2
Resistor coding	480 Ω (Lever actuated) 150 Ω (Lever not actuated)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (PE, DC+, DC-)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Temperature sensor	Pt 1000
Type of protection (when plugged in)	IP44
Degree of protection (when not plugged in)	IP20
Cable data	
Cable type	Straight
Cable length	5 m
Cable diameter	20.6 mm ±0.2 mm
Cable structure	3 x 6 AWG + 3 x 2 x 18 AWG
Sheath color	Black

Technical data	
Rated current	60 A
Rated voltage	600 V DC
Approvals	-
Standards	SAE J1772
Charging mode	DC level 2
Resistor coding	480 Ω (Lever actuated) 150 Ω (Lever not actuated)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (PE, DC+, DC-)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Temperature sensor	Pt 1000
Type of protection (when plugged in)	IP44
Degree of protection (when not plugged in)	IP20
Cable data	
Cable type	Straight
Cable length	5 m
Cable diameter	32.2 mm ±0.2 mm
Cable structure	2 x 1 AWG + 1 x 3 AWG + 3 x 2 x 18 AWG
Sheath color	Black

Technical data		
Rated current	60 A	125 A
Rated voltage	850 V DC	850 V DC
Approvals	-	⚠
Standards	IEC 62196-3	IEC 62196-3
Charging mode	Mode 4	Mode 4
Resistor coding	1500 Ω (between PE and PP)	1500 Ω (between PE and PP)
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (PE, DC+, DC-)	3 (PE, DC+, DC-)
Insertion/withdrawal cycles	> 10000	> 10000
Insertion/withdrawal force	< 100 N	< 100 N
Temperature sensor	Pt 1000	Pt 1000
Type of protection (when plugged in)	IP44	IP44
Degree of protection (when not plugged in)	IP20	IP20
Cable data		
Cable type	Straight	Straight
Cable length	4,5 m	5 m
Cable diameter	18.5 mm ±0.2 mm	28.2 mm ±0.2 mm
Cable structure	3 x 16 mm <sup>2</sup> + 3 x 2 x 0.75 mm <sup>2</sup>	2 x 50 mm <sup>2</sup> + 1 x 25 mm <sup>2</sup> + 3 x 2 x 0.75 mm <sup>2</sup>
Sheath color	Black	Black

Ordering data	
Description	

Ordering data	
Order No.	Pcs. / Pkt.
60 A	

Ordering data		
Order No.	Pcs. / Pkt.	Order No.
60 A		125 A

DC charging cable with Vehicle Connector and open cable end, Combined Charging System (CCS)	
1621488	1

DC charging cable with Vehicle Connector and open cable end, Combined Charging System (CCS)	
1409950	1

DC charging cable with Vehicle Connector and open cable end, Combined Charging System (CCS)		
1618306	1	1409060
		1621653

**DC charging cables GB/T (China)**

DC GB charging cables with open cable end are installed in Chinese charging stations with a stationary AC/DC converter. They are suitable for fast DC charging of electric vehicles.

An innovative locking mechanism is integrated in the Vehicle Connector for secure locking during the charging process.



**GB/T DC Vehicle Connector, with metric cable**

Notes:
Further cable types and lengths are available on request.
Color variants for housing and cables are available on request.
All Vehicle Connectors are supplied with a protective cap.

	Technical data		
	60 A	125 A	250 A
Rated current	60 A	125 A	250 A
Rated voltage	750 V DC	750 V DC	750 V DC
Standards	GB/T 20234.3	GB/T 20234.3	GB/T 20234.3
Charging mode	Mode 4	Mode 4	Mode 4
Resistor coding	1000 Ω	1000 Ω	1000 Ω
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (PE, DC+, DC-)	3 (PE, DC+, DC-)	3 (PE, DC+, DC-)
Insertion/withdrawal cycles	> 10000	> 10000	> 10000
Insertion/withdrawal force	< 100 N	< 100 N	< 100 N
Temperature sensor	Pt 1000	Pt 1000	Pt 1000
Type of protection (when plugged in)	IP55	IP55	IP55
Degree of protection (with protective cap)	IP54	IP54	IP54
Cable data			
Cable type	Straight	Straight	Straight
Cable length	5 m	5 m	5 m
Cable diameter	20.2 mm ±0.2 mm	28 mm ±0.2 mm	32.4 mm ±0.2 mm
Cable structure	3 x 16 mm <sup>2</sup> + 2 x 2.5 mm <sup>2</sup> + 9 x 0.5 mm <sup>2</sup>	2 x 50 mm <sup>2</sup> + 1 x 16 mm <sup>2</sup> + 2 x 2.5 mm <sup>2</sup> + 9 x 0.5 mm <sup>2</sup>	2 x 70 mm <sup>2</sup> + 1 x 25 mm <sup>2</sup> + 2 x 2.5 mm <sup>2</sup> + 9 x 0.5 mm <sup>2</sup>
Sheath color	Black	Black	Black

Description	Ordering data					
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
DC charging cable with Vehicle Connector and open cable end, GB/T	60 A		125 A		250 A	
	1621468	1	1622119	1	1622120	1

# Plug-in charging systems for E-Mobility

## AC charging cables

### AC charging cables type 1 with open cable end

Type 1 AC charging cables with open cable end are primarily installed in charging stations and wall boxes in the USA and Japan. They are used to charge electric vehicles with alternating current.

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors are supplied with a protective cap.



AC Type 1 Vehicle Connector, with metric cable



AC Type 1 Vehicle Connector, with AWG cable

	Technical data		Technical data					
	20 A, 1-phase	32 A, 1-phase	16 A, 1-phase	30 A, 1-phase				
Rated current	20 A	32 A	16 A	30 A				
Number of phases	1	1	1	1				
Rated voltage	250 V AC	250 V AC	240 V AC	240 V AC				
Standards	IEC 62196-2	IEC 62196-2	SAE J1772	SAE J1772				
Charging mode	Mode 3	Mode 3	AC level 2	AC level 2				
Resistor coding	480 Ω (Lever actuated) 150 Ω (Lever not actuated)	480 Ω (Lever actuated) 150 Ω (Lever not actuated)	480 Ω (Lever actuated) 150 Ω (Lever not actuated)	480 Ω (Lever actuated) 150 Ω (Lever not actuated)				
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C				
Number of power contacts	3 (L1, N, PE)	3 (L1, N, PE)	3 (L1, N, PE)	3 (L1, N, PE)				
Insertion/withdrawal cycles	> 10000	> 10000	> 10000	> 10000				
Insertion/withdrawal force	< 100 N	< 100 N	< 100 N	< 100 N				
Type of protection (when plugged in)	IP44	IP44	IP44	IP44				
Degree of protection (with protective cap)	IP44	IP44	IP44	IP44				
<b>Cable data</b>								
Cable length	4 m	4 m	4 m	4 m				
Cable diameter	10.5 mm ±0.5 mm	13.9 mm ±0.5 mm	9.4 mm ±0.2 mm	16.4 mm ±0.2 mm				
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	3 x 6 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	3 x 14 AWG + 1 x 18 AWG	3 x 10 AWG + 1 x 18 AWG				
Sheath color	Black	Black	Black	Black				
	Ordering data		Ordering data					
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	20 A, 1-phase		32 A, 1-phase		16 A, 1-phase		30 A, 1-phase	
AC charging cable with Type 1 Vehicle Connector and straight cable with open cable end	1621482	1	1409952	1	1621484	1	1409949	1
AC charging cable with Type 1 Vehicle Connector and spiraled cable with open cable end	1621670	1	1621794	1				

**AC charging cables GB/T with open cable end**

The AC charging cables with open cable end according to the GB/T standard are specially designed for the Chinese charging infrastructure. They are used to charge electric vehicles in China with alternating current at GB/T charging stations and wall boxes.



**AC GB/T Vehicle Connector, with metric cable**



**AC GB/T Vehicle Connector, with metric cable**

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors are supplied with a protective cap.

Rated current	16 A
Number of phases	1
Rated voltage	250 V
Standards	GB/T 20234.2
Charging mode	Mode 3
Resistor coding	680 Ω (between PE and CC)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Type of protection (when plugged in)	IP55
Degree of protection (with protective cap)	IP54
<b>Cable data</b>	
Cable type	Straight
Cable length	5 m
Cable diameter	10.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Orange

Technical data	
16 A, 1-phase	
Rated current	16 A
Number of phases	1
Rated voltage	250 V
Standards	GB/T 20234.2
Charging mode	Mode 3
Resistor coding	680 Ω (between PE and CC)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Type of protection (when plugged in)	IP55
Degree of protection (with protective cap)	IP54
<b>Cable data</b>	
Cable type	Straight
Cable length	5 m
Cable diameter	10.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Orange

Technical data	
32 A, 1-phase	32 A, 3-phase
Rated current	32 A
Number of phases	3
Rated voltage	440 V
Standards	GB/T 20234.2
Charging mode	Mode 3
Resistor coding	220 Ω (between PE and CC)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	5 (L1, N, PE)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Type of protection (when plugged in)	IP55
Degree of protection (with protective cap)	IP54
<b>Cable data</b>	
Cable type	Straight
Cable length	5 m
Cable diameter	13.9 mm
Cable structure	3 x 6.0 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Orange

Description	<b>AC charging cable with GB/T Vehicle Connector and open cable end</b>
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Ordering data	
Order No.	Pcs. / Pkt.
<b>16 A, 1-phase</b>	
<b>1408166</b>	1

Ordering data	
Order No.	Pcs. / Pkt.
<b>32 A, 1-phase</b>	
<b>1408167</b>	1
<b>32 A, 3-phase</b>	
<b>1408168</b>	1

# Plug-in charging systems for E-Mobility

## AC charging cables

### AC charging cables type 2 with open cable end

AC charging cables Type 2 with open cable end are installed in charging stations and wall boxes in European infrastructure. They are used to charge electric vehicles with single or three-phase alternating current.

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors are supplied with a protective cap.



AC Type 2 Vehicle Connector, with metric cable



AC Type 2 Vehicle Connector, with metric cable



	Technical data		Technical data	
	20 A, 1-phase	20 A, 3-phase	32 A, 1-phase	32 A, 3-phase
Rated current	20 A	20 A	32 A	32 A
Number of phases	1	3	1	3
Rated voltage	250 V AC	480 V AC	250 V AC	480 V AC
Standards	IEC 62196-2	IEC 62196-2	IEC 62196-2	IEC 62196-2
Charging mode	Mode 3	Mode 3	Mode 3	Mode 3
Resistor coding	680 Ω (between PE and PP)	680 Ω (between PE and PP)	220 Ω (between PE and PP)	220 Ω (between PE and PP)
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)
Insertion/withdrawal cycles	> 10000	> 10000	> 10000	> 10000
Insertion/withdrawal force	< 100 N	< 100 N	< 100 N	< 100 N
Type of protection (when plugged in)	IP44	IP44	IP44	IP44
Degree of protection (with protective cap)	IP44	IP44	IP44	IP44
<b>Cable data</b>				
Cable length	4 m	4 m	4 m	4 m
Cable diameter	10,5 mm ±0,5 mm	13 mm ±0,5 mm	13,9 mm ±0,5 mm	17 mm ±0,5 mm
Cable structure	3 x 2,5 mm <sup>2</sup> + 1 x 0,5 mm <sup>2</sup>	5 x 2,5 mm <sup>2</sup> + 1 x 0,5 mm <sup>2</sup>	3 x 6 mm <sup>2</sup> + 1 x 0,5 mm <sup>2</sup>	5 x 6 mm <sup>2</sup> + 1 x 0,5 mm <sup>2</sup>
Sheath color	Black	Black	Black	Black
	Ordering data		Ordering data	
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	20 A, 1-phase		20 A, 3-phase	
AC charging cable with Type 2 Vehicle Connector and straight cable with open cable end	1409319	1	1409320	1
AC charging cable with Type 2 Vehicle Connector and spiraled cable with open cable end	1405195	1	1405197	1
	Ordering data		Ordering data	
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	32 A, 1-phase		32 A, 3-phase	
	1405198	1	1405199	1
	1622042	1	1410088	1



**AC charging cables type 2 with open cable end**

AC charging cables Type 2 with open cable end are installed in charging stations and wall boxes in European infrastructure. They are used to charge electric vehicles with single or three-phase alternating current.

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors are supplied with a protective cap.



**AC Type 2 Vehicle Connector, with metric, red cable**



**AC Type 2 Vehicle Connector, with metric, red cable**



Technical data	
20 A, 1-phase	
Rated current	20 A
Number of phases	1
Rated voltage	250 V AC
Standards	IEC 62196-2
Charging mode	Mode 3
Resistor coding	680 Ω (between PE and PP)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Type of protection (when plugged in)	IP44
Degree of protection (with protective cap)	IP44
Cable data	
Cable type	Straight
Cable length	4 m
Cable diameter	10.5 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Red

Ordering data		
Type	Order No.	Pcs. / Pkt.
EV-T2M3C-1AC20A-4,0M2,5ESRD00	1408274	1



Technical data	
20 A, 1-phase	
Rated current	20 A
Number of phases	1
Rated voltage	250 V AC
Standards	IEC 62196-2
Charging mode	Mode 3
Resistor coding	680 Ω (between PE and PP)
Ambient temperature (operation)	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)
Insertion/withdrawal cycles	> 10000
Insertion/withdrawal force	< 100 N
Type of protection (when plugged in)	IP44
Degree of protection (with protective cap)	IP44
Cable data	
Cable type	Spiraled
Cable length	4 m
Cable diameter	10.5 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Red

Ordering data		
Type	Order No.	Pcs. / Pkt.
EV-T2M3C-1AC20A-4,0M2,5EHRD00	1405194	1

Description
<b>AC charging cable with Type 2 Vehicle Connector and straight cable with open cable end</b>
<b>AC charging cable with Type 2 Vehicle Connector and spiraled cable with open cable end</b>



# Plug-in charging systems for E-Mobility

## Mobile AC charging cables

### Mobile AC charging cables

#### Type 1 to Type 2 (mode 3)

The mobile AC charging cables enable electric vehicles to be charged with alternating current at European charging stations or wall boxes at home and while on the move. They can easily be stored inside the vehicle.

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors and Infrastructure Plugs are supplied with a protective cap.



**Type 1 Vehicle Connector with Type 2 Infrastructure Plug**



**Type 1 Vehicle Connector with Type 2 Infrastructure Plug**

	Technical data		Technical data	
	20 A, 1-phase	32 A, 1-phase	20 A, 1-phase	
Rated current	20 A	32 A	20 A	
Number of phases	1	1	1	
Rated voltage	250 V AC	250 V AC	250 V AC	
Standards	IEC 62196-2	IEC 62196-2	IEC 62196-2	
Charging mode	Mode 3	Mode 3	Mode 3	
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	
Number of power contacts	3 (L1, N, PE)	3 (L1, N, PE)	3 (L1, N, PE)	
Insertion/withdrawal cycles	> 10000	> 10000	> 10000	
Insertion/withdrawal force	< 100 N	< 100 N	< 100 N	
Type of protection (when plugged in)	IP44	IP44	IP44	
Degree of protection (with protective cap)	IP44	IP44	IP44	
<b>Cable data</b>				
Cable type	Straight	Straight	Spiraled	
Cable length	4 m	4 m	4 m	
Cable diameter	10.5 mm ±0.5 mm	13.9 mm ±0.5 mm	10.5 mm ±0.5 mm	
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	3 x 6 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	
Sheath color	Black	Black	Black	
	Ordering data		Ordering data	
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	<b>20 A, 1-phase</b>		<b>32 A, 1-phase</b>	
<b>AC charging cable</b> with Type 1 Vehicle Connector, <b>straight</b> cable, and Type 2 Infrastructure Plug	<b>1621481</b>	1	<b>1410090</b>	1
<b>AC charging cable</b> with Type 1 Vehicle Connector, <b>spiral</b> cable, and Type 2 Infrastructure Plug			<b>1621669</b>	1

**Mobile AC charging cables  
Type 2 (mode 3)**

The mobile AC charging cables enable electric vehicles to be charged with alternating current at European charging stations or wall boxes at home and while on the move. They can easily be stored inside the vehicle.



**Type 2 Vehicle Connector with Type 2 Infrastructure Plug**



**Type 2 Vehicle Connector with Type 2 Infrastructure Plug**

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors and Infrastructure Plugs are supplied with a protective cap.



	Technical data		Technical data	
	20 A, 1-phase	20 A, 3-phase	32 A, 1-phase	32 A, 3-phase
Rated current	20 A	20 A	32 A	32 A
Number of phases	1	3	1	3
Rated voltage	250 V AC	480 V AC	250 V AC	480 V AC
Standards	IEC 62196-2	IEC 62196-2	IEC 62196-2	IEC 62196-2
Charging mode	Mode 3	Mode 3	Mode 3	Mode 3
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)
Insertion/withdrawal cycles	> 10000	> 10000	> 10000	> 10000
Insertion/withdrawal force	< 100 N	< 100 N	< 100 N	< 100 N
Type of protection (when plugged in)	IP44	IP44	IP44	IP44
Degree of protection (with protective cap)	IP44	IP44	IP44	IP44
<b>Cable data</b>				
Cable length	4 m	4 m	4 m	4 m
Cable diameter	10.5 mm ±0.5 mm	13 mm ±0.5 mm	13.9 mm ±0.5 mm	17 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	5 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	3 x 6 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	5 x 6 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Description	Ordering data		Ordering data	
	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>AC charging cable with Type 2 Vehicle Connector, black, straight cable, and Type 2 Infrastructure Plug</b>				
	<b>20 A, 1-phase</b>	<b>20 A, 3-phase</b>	<b>32 A, 1-phase</b>	<b>32 A, 3-phase</b>
	1405193	1404877	1404568	1404569
	1	1	1	1
<b>AC charging cable with Type 2 Vehicle Connector, red, straight cable, and Type 2 Infrastructure Plug</b>				
	1404876			
	1			
<b>AC charging cable with Type 2 Vehicle Connector, black, spiraled cable, and Type 2 Infrastructure Plug</b>				
Outer sheath color: black	1405192	1404567		1622495
<b>AC charging cable with Type 2 Vehicle Connector, red, spiraled cable, and Type 2 Infrastructure Plug</b>				
	1404563			
	1			

# Plug-in charging systems for E-Mobility

## Mobile AC charging cables

### Mobile AC charging cables GB/T (mode 3)

The mobile GB/T charging cables enable electric vehicles to be charged with alternating current at Chinese charging stations or wall boxes at home and while on the move.

They can easily be stored inside the vehicle.



**GB/T Vehicle Connector  
with GB/T Infrastructure Plug**



**GB/T Vehicle Connector  
with GB/T Infrastructure Plug**

<b>Notes:</b>
Further cable types and lengths are available on request.
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors and Infrastructure Plugs are supplied with a protective cap.

	Technical data		Technical data	
	16 A, 1-phase		32 A, 1-phase	32 A, 3-phase
Rated current	16 A		32 A	32 A
Number of phases	1		1	3
Rated voltage	250 V		250 V	440 V
Standards	GB/T 20234.2		GB/T 20234.2	GB/T 20234.2
Charging mode	Mode 3		Mode 3	Mode 3
Resistor coding	680 Ω (between PE and CC)		220 Ω (between PE and CC)	220 Ω (between PE and CC)
Ambient temperature (operation)	-30 °C ... 50 °C		-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)		3 (L1, N, PE)	5 (L, NC1, NC2, N, PE)
Insertion/withdrawal cycles	> 10000		> 10000	> 10000
Insertion/withdrawal force	< 100 N		< 100 N	< 100 N
Type of protection (when plugged in)	IP55		IP55	IP55
Degree of protection (with protective cap)	IP54		IP54	IP54
<b>Cable data</b>				
Cable type	Straight		Straight	Straight
Cable length	5 m		5 m	5 m
Cable diameter	10.5 mm		13.9 mm	17.1 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>		3 x 6.0 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>	5 x 6.0 mm <sup>2</sup> + 1 x 0.5 mm <sup>2</sup>
Sheath color	Orange		Orange	Orange
	Ordering data		Ordering data	
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
	16 A, 1-phase		32 A, 1-phase	
<b>AC charging cable with GB/T Vehicle Connector and GB/T Infrastructure Plug</b>	<b>1408161</b>	1	<b>1408163</b>	1
			<b>1408165</b>	1

### Mobile AC charging cables type 1 and type 2 (mode 2)

The mobile AC charging cables with In-Cable Control and Protection Device (IC-CPD) enable electric vehicles to be charged with alternating current at a normal, European socket at home and while on the move. The components for standardized communication with the vehicle as well as the safety equipment are integrated in the IC-CPD.



**Type 1 Vehicle Connector  
with IC-CPD and SCHUKO connector**



**Type 2 Vehicle Connector  
with IC-CPD and SCHUKO connector**

<b>Notes:</b>
Color variants for housing, cables, and customer-specific labels available on request.
All Vehicle Connectors are supplied with a protective cap.

Rated current	6 A ... 13 A
Number of phases	1
Rated voltage	200 V AC ... 250 V AC
Frequency	50 Hz
Charging power	1.4 kW ... 3 kW
Standards	IEC 61851-1
Charging mode	Mode 2
Ambient temperature (operation)	-30 °C ... 50 °C
Tripping characteristics / residual current	Type A/30 mA
Infrastructure plug	SCHUKO (CEE 7/7, type AF)
Temperature sensor (infrastructure plug)	Available
Degree of protection (IC-CPD)	IP67
Type of protection (when plugged in)	IP44
Degree of protection (with protective cap)	IP44
<b>Cable data</b>	
Cable type	Straight
Cable length	4 m
Cable diameter	10.5 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>
Sheath color	Red

#### Technical data

<b>13 A, 1-phase</b>	
Rated current	6 A ... 13 A
Number of phases	1
Rated voltage	200 V AC ... 250 V AC
Frequency	50 Hz
Charging power	1.4 kW ... 3 kW
Standards	IEC 61851-1
Charging mode	Mode 2
Ambient temperature (operation)	-30 °C ... 50 °C
Tripping characteristics / residual current	Type A/30 mA
Infrastructure plug	SCHUKO (CEE 7/7, type AF)
Temperature sensor (infrastructure plug)	Available
Degree of protection (IC-CPD)	IP67
Type of protection (when plugged in)	IP44
Degree of protection (with protective cap)	IP44
<b>Cable data</b>	
Cable type	Straight
Cable length	4 m
Cable diameter	10.5 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>
Sheath color	Red

#### Technical data

<b>13 A, 1-phase</b>	
Rated current	6 A ... 13 A
Number of phases	1
Rated voltage	200 V AC ... 250 V AC
Frequency	50 Hz
Charging power	1.4 kW ... 3 kW
Standards	IEC 61851-1
Charging mode	Mode 2
Ambient temperature (operation)	-30 °C ... 50 °C
Tripping characteristics / residual current	Type A/30 mA
Infrastructure plug	SCHUKO (CEE 7/7, type AF)
Temperature sensor (infrastructure plug)	Available
Degree of protection (IC-CPD)	IP67
Type of protection (when plugged in)	IP44
Degree of protection (with protective cap)	IP44
<b>Cable data</b>	
Cable type	Straight
Cable length	4 m
Cable diameter	10.5 mm ±0.5 mm
Cable structure	3 x 2.5 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>
Sheath color	Red

<b>Description</b>
<b>AC charging cable with Vehicle Connector and IC-CPD control unit</b>

#### Ordering data

Type	Order No.	Pcs. / Pkt.
EV-ICCPD-T1C-EU-S-13A1-A-GEN2	1621797	1

#### Ordering data

Type	Order No.	Pcs. / Pkt.
EV-ICCPD-T2C-EU-S-13A1-A	1621516	1

<b>Wall bracket, for mobile AC charging cables with Vehicle Connector and IC-CPD</b>
--

#### Accessories

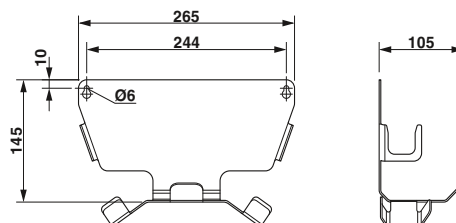
EV-ICCPD-WB	1622474	1
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#### Accessories

EV-ICCPD-WB	1622474	1
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**Wall bracket**



## Infrastructure Socket Outlets

### AC Infrastructure Socket Outlets GB/T and Type 2

Single or three-phase charging is possible with the standardized Infrastructure Socket Outlets for charging stations or wall charging stations. Up to 22 kW of power can be transmitted when a mobile AC charging cable is connected.

**Notes:**  
 All Infrastructure Socket Outlets can be mounted on the housing panel from both the front and the rear (see below).  
 As an option, the AC Infrastructure Socket Outlet Type 2 can be secured with a hinged cover or a panel mounting frame for both front and rear panel mounting.



**Infrastructure Socket Outlet GB/T with actuator**



**Infrastructure Socket Outlet GB/T without actuator**

	Technical data		Technical data	
	32 A, 1-phase	32 A, 3-phase	32 A, 1-phase	32 A, 3-phase
Rated current	32 A	32 A	32 A	32 A
Number of phases	1	3	-	3
Rated voltage	250 V AC	440 V AC	250 V AC	440 V AC
Standards	GB/T 20234.2	GB/T 20234.2	GB/T 20234.2	GB/T 20234.2
Charging mode	Mode 3	Mode 3	Mode 3	Mode 3
Ambient temperature (operation)	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C
Number of power contacts	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)	3 (L1, N, PE)	5 (L1, L2, L3, N, PE)
Insertion/withdrawal cycles	> 10000	> 10000	> 10000	> 10000
Type of protection (when plugged in)	IP55	IP55	IP55	IP55
Degree of protection (with hinged cover)	-	-	-	-
<b>Cable data</b>				
Cable type	Single wires	Single wires	Single wires	Single wires
Cable length	0.70 m	0.70 m	0.70 m	0.70 m
Cable structure	3 x 6.0 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>	5 x 6.0 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>	3 x 6.0 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>	5 x 6.0 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>
<b>Actuator data</b>				
Mechanical emergency release	Available	Available	Available	Available
Lock recognition	Available	Available	Available	Available
<b>Ordering data</b>				
Description	<b>Order No.</b>	<b>Pcs. / Pkt.</b>	<b>Order No.</b>	<b>Pcs. / Pkt.</b>
	<b>32 A, 1-phase</b>		<b>32 A, 3-phase</b>	
<b>AC socket outlet</b>				
With actuator (12 V operating voltage)	1408171	1	1408172	1
With actuator (24 V operating voltage)				
Without actuator				
<b>AC socket outlet accessories</b>				
			1408169	1
			1408170	1



**Infrastructure Socket Outlet Type 2 with actuator**



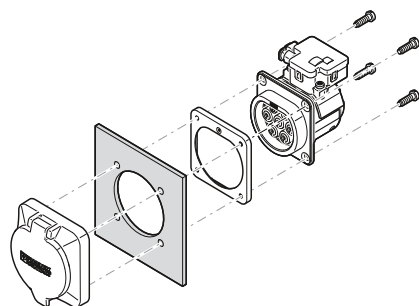
**Hinged cover for Infrastructure Socket Outlet Type 2**



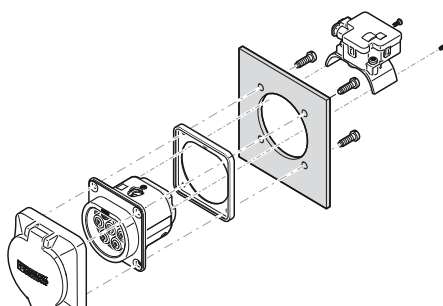
**Panel mounting frame for Infrastructure Socket Outlet Type 2**



Technical data		Technical data		Technical data	
<b>20 A, 3-phase</b>		<b>32 A, 3-phase</b>			
20 A	32 A	-	-	-	-
3	3	-	-	-	-
480 V AC	480 V AC	-	-	-	-
IEC 62196-2	IEC 62196-2	IEC 62196-2	IEC 62196-2	IEC 62196-2	IEC 62196-2
Mode 3	Mode 3	Mode 3	Mode 3	Mode 3	Mode 3
-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C	-30 °C ... 50 °C
5 (L1, L2, L3, N, PE)	5 (L1, L2, L3, N, PE)	-	-	-	-
> 10000	> 10000	-	-	-	-
IP44	IP44	-	-	-	-
IP54	IP54	IP54	IP54	-	-
Single wires	Single wires	-	-	-	-
0.70 m	0.70 m	-	-	-	-
5 x 2.5 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>	5 x 6.0 mm <sup>2</sup> + 2 x 0.5 mm <sup>2</sup>	-	-	-	-
Available	Available	-	-	-	-
Available	Available	-	-	-	-
Ordering data		Ordering data		Ordering data	
Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
<b>20 A, 3-phase</b>		<b>32 A, 3-phase</b>			
1405213	1	1405214	1		
1405215	1	1405216	1		
		1405217	1	1405218	1

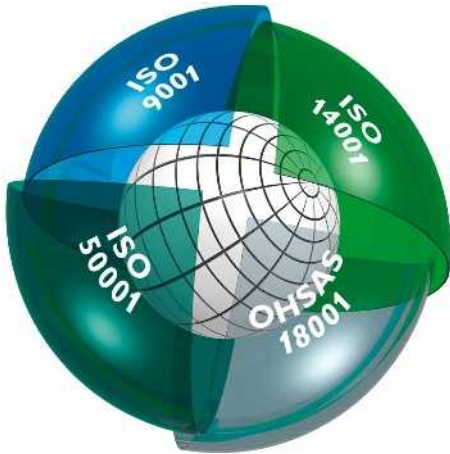


**Rear panel mounting**



**Front mounting**

### Quality in quantity



#### Integrated management system

The aim of the Phoenix Contact integrated management system is to coordinate all the requirements regarding products, processes, and 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. They serve as the basis for innovative products with the familiar high Phoenix 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.

This system provides a building block for the success of the Phoenix Contact Group and 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 attaching the mark to a product, the manufacturer confirms that it complies with all applicable European Union (EU) directives. EC directives describe the product properties with regard to device safety and avoiding danger. These are legally binding regulations of the European Union (EU). In other words, compliance with the requirements is a **statutory condition for marketing the product within the EU.**

Where applicable, the products that our company currently manufactures fall within the scope of the following directives:

- 2006/95/EC and 2014/35/EU  
Electrical equipment designed for use with certain voltage limits (Low-Voltage Directive)
- 2004/108/EC and 2014/30/EU  
Electromagnetic compatibility (EMC Directive)
- 2004/22/EC and 2014/32/EU  
Measuring instruments
- 2006/42/EC  
Safety of machinery (Machinery Directive)
- 94/9/EC and 2014/34/EU  
Equipment and protective systems intended for use in potentially explosive areas (ATEX Directive)
- 1999/5/EC  
R&TTE Directive and 2014/53/EU  
Radio Equipment Directive

The standards upon which the specified directives are based have been part of our standard of development for a long time. This guarantees conformance 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.

The EMC Directive occupies a special place among the European directives listed. It defines electromagnetic compatibility as a fundamental property of devices based on mandatory guidelines. European Law therefore acknowledges the electromagnetic compatibility of devices and systems as an important condition for error-free operation of machinery and systems. Phoenix Contact is one of the leading international companies in surge protection, and therefore possesses broad expertise in EMC. This expertise and the experience gained over years of developing and applying industrial interface and communication technology have resulted in our products having an extremely high standard of quality with regard to electromagnetic compatibility. It was with a view to providing other companies with this expertise that our associate company, Phoenix Testlab, was founded. Phoenix Testlab GmbH is an independent, accredited service provider offering EMC testing that conforms to 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. Furthermore, Phoenix Testlab is a “Notified Body” in accordance with EMC Directive 2004/108/EC and according to R&TTE Directive 1999/5/EC for

radio and telecommunications terminal equipment. As a “Telecom Certification Body” (TCB), Phoenix Testlab may also approve these products for 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 [www.phoenixcontact.net/products](http://www.phoenixcontact.net/products).

#### Online product information service on the web

Phoenix Contact's product range is growing constantly.

Due to our commitment to product monitoring, all products are subject to improvement.

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 [www.phoenixcontact.com](http://www.phoenixcontact.com). Here, you will always find the latest overview of products, solutions, and services from Phoenix Contact. This includes technical documents, such as data sheets and user manuals, the latest driver and demo software, plus a means of contacting the appropriate contact person directly.



## Connection cross section

### IEC 60947-7-1/-2

The connection capacity for connectors and PCB terminal blocks is documented in the technical data. The connection capacity defines the conductor cross section which can be connected for conductors in solid (single and multi-strand) or stranded (fine-strand) versions. Cross section ranges are also specified for the use of ferrules. In addition, ranges where two conductors in solid and stranded versions are to be simultaneously connected are also mentioned.

Phoenix Contact PCB terminal blocks and PCB connectors are designed to allow copper conductors to be connected to them 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 stranded conductor in order to consolidate its ends.

If ferrules are nevertheless used to protect stranded conductors against splicing, the connection capacity of the stranded conductor is generally reduced by one level. Conductors must not be soldered ("soldering all litz wires of a conductor together").

It is always recommended that you use Phoenix Contact CRIMPFOX crimping tools to crimp ferrules.

### Structure and dimensions of connecting cables

Cross section [mm <sup>2</sup> ]	Single-strand		Multi-strand		Fine-strand		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.	Solid wires*			Stranded wires*		
							AWG	[Ø mm]	[circ. mils]	[mm <sup>2</sup> ]	[Ø mm]	[circ. mils]	[mm <sup>2</sup> ]
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 of 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 connecting conductors with Phoenix Contact terminal blocks.

The table opposite lists recommended tightening torques which differ from those in this standard and which will ensure gas-tight connections with long-term stability.

Phoenix Contact torque screwdrivers can be set to the corresponding torques.

#### Extract from DIN EN 60947-1/EN 60947-1, Table 4

The torque according to 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*
M3	0.5*
M4	1.2*
M4.5	1.8*
M5	2.0*
M6	2.5*
M8	3.5*
M10	4.0* / 10**
M12	14**
M14	19**
M16	25**
M20	36**
M24	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

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 tests of terminal blocks are based on this data.

#### Test currents according to IEC 60947-7-1/EN 60947-7-1, Table 5

Rated cross section	[mm <sup>2</sup> ]	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	[mm <sup>2</sup> ]	25	35	50	70	95	120	150	185	240	300
Test current	[A]	101	125	150	192	232	269	309	353	415	520

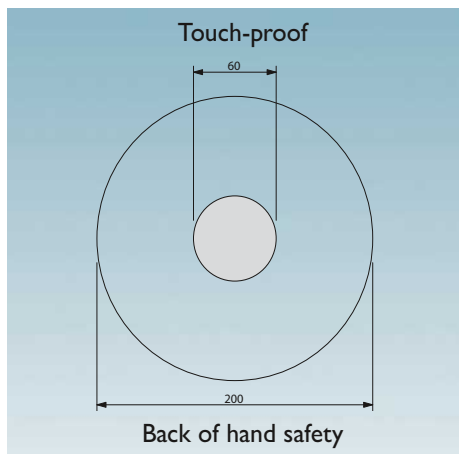
### Color designations

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

### 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.

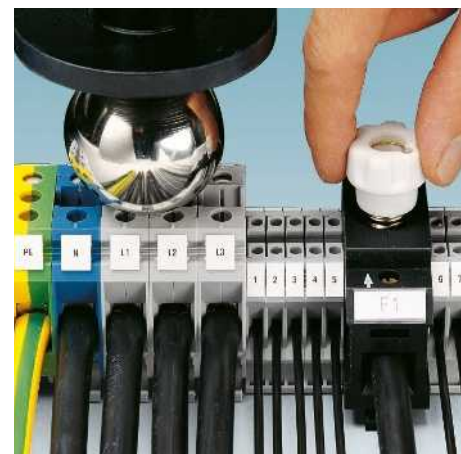
## Shock protection



Example: pressure actuation



Finger safety



Back of hand safety

The accident prevention regulations BGV A 2 issued by the German employer's liability insurance association for precision mechanics and electrical engineering apply to the operators of electrical systems and are aimed at the prevention of electrical accidents by means of special safety requirements.

These regulations contain specifications regarding the safety distances for work, operation, and occasional handling in the proximity of "live parts" in low-voltage systems up to 1000 V ~ or 1500 V –.

- Work with live parts is only permitted once they have been de-energized.

Operational activities are only permitted in the vicinity of live parts if these parts are de-energized or are protected against direct contact (§ 6). The following safety measures apply when working in the vicinity of live parts:

- Provision of the de-energized state for the duration of the work

- Ensure shock protection is in place in the form of covers or barriers during the work

- Assurance that proximity limits will not be violated (§ 7)

The term "occasional handling" has been introduced for the operation of elements such as pushbuttons, rocker arms or rotary buttons in the proximity of live parts.

According to VDE 0105-1, this is covered by "operation with partial protection against direct contact".

Detailed specifications for "occasional handling" can be found in DIN VDE 0106-100. This specifies to what degree live parts in the proximity of operating elements are to be protected against contact. The basis for this is the definition of a "protection area for occasional handling"; this is the area into which the user must reach in order to handle the machine.

The most important thing is that an area formed by an even envelope curve 30 mm in radius must surround the live parts. This area must be **touch-proof**, i.e., the live parts of the electrical device must not be within reach of the VDE test finger according to IEC 60529/DIN VDE 0470-1 (test finger).

Back of hand safety is specified for the "rest of the area" up to 100 mm around the operating element. **Back of hand safety** means that when a force of 50 N is applied to a ball with a diameter of 50 mm, this does not come into contact with the live parts of the equipment. No special measures for ensuring contact safety are stipulated outside this area.

Note: systems and equipment that are operated with SELV up to 25 V ~ or 60 V – are considered to be protected against "direct contact".

According to § 5, Subsection 4 of the BGV A 2 regulations, there is no need to test the condition of the system prior to initial start-up if the company has confirmation from the manufacturer or installer that the electrical systems and equipment conform to BGV A 2. The confirmation required relates to systems and equipment that have been installed and are ready for operation and can only be issued by the installer or installation company. The manufacturer of the electrical equipment can only issue a confirmation that products have been produced in accordance with the relevant electro-technical DIN VDE regulations stipulated in BGV A 2. The installer must bear this in mind when selecting the equipment to be used.

In the field of connection technology, Phoenix Contact offers a wide range of products which are touch-proof or can be protected against contact by means of covers. Depending on the conditions, all of this

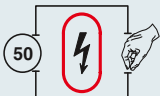

must be taken into account when selecting the individual types of terminal blocks and accessories.

### Degrees of protection according to DIN EN 60529





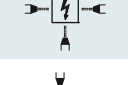
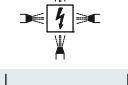

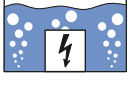
#### Definition:

IP (Ingress Protection) protection according to 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 solid foreign objects

First digit	Short description	Example	Definition
0	Not protected		
1	Protected against solid foreign objects		Protected against touching dangerous parts with the back of the hand. Protection against ingress of solid foreign objects with $\varnothing > 50$ mm.
2	Protected against solid foreign objects with $\varnothing 12.5$ mm or more		Protected against touching dangerous parts with a finger. Protection against ingress of solid foreign objects with $\varnothing > 12.5$ mm.
3	Protected against solid foreign objects with $\varnothing 2.5$ mm or more		Protected against touching dangerous parts with a tool. Protection against ingress of solid foreign objects with $\varnothing > 2.5$ mm.
4	Protected against solid foreign objects with $\varnothing 1$ mm or more		Protected against touching dangerous parts with a wire. Protection against ingress of solid foreign objects with $\varnothing > 1$ 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 such an amount that the satisfactory operation of the device or its safety is impaired.
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 every direction shall have no harmful effect.
6	Protected against powerful jet water		Water that is directed as a strong jet against the housing from every 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 standard 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 every direction shall have no harmful effect. (Example: IP69K according to DIN 40050 Part 9)

For safety reasons, electrical equipment must be protected against external influences. This is the job 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 according to 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)	
Shock protection	Foreign object protection	IP0x	IPx0	IPx1	IPx2	IPx3	IPx4	IPx5	IPx6	IPx7	IPx8	IPX9K
No shock 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

**Example: DUPLICON power distribution with IP67 protection according to DIN EN 60529**

Dust-proof (IP6x)

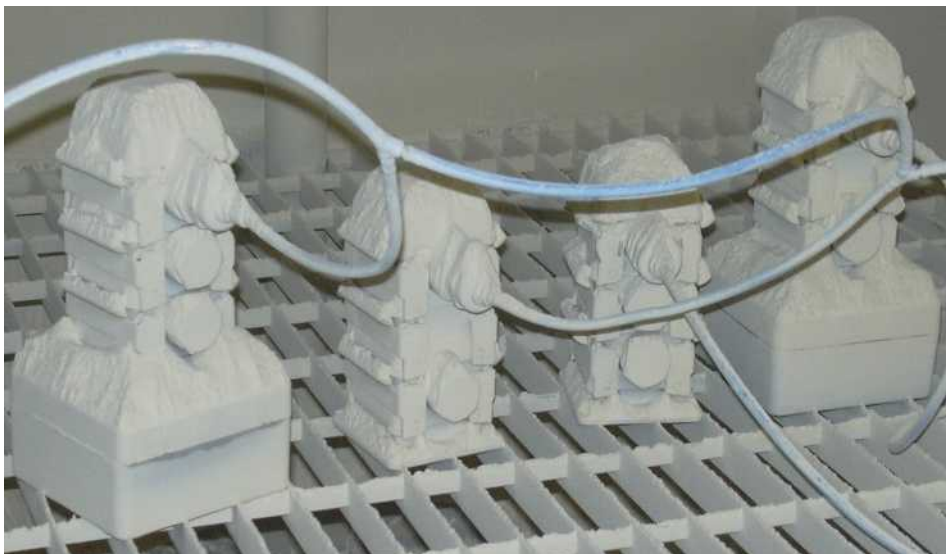


Photo shows DUPLICON test sample during the IP6x dust test

Protected against temporary submersion (IPx7)





### 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 materials. 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 RTI Elec. according to 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 flexible and resistant to breakage, even at low temperatures.

Fiber-reinforced polyamides feature greater rigidity and hardness as well as operating temperatures higher than those of non-reinforced materials.

##### Polyamide for high-temperature applications: PA HT and PA-GF HT

Special high-temperature-resistant types of polyamide are used in non-reinforced or fiberglass-reinforced versions for reflow applications. These high-temperature polyamides combine the excellent electrical properties of polyamide and the

requirements of the reflow soldering process for temperature resistance.

##### Liquid crystal polymers: LCP GF

LCP combines high temperature stability with excellent dimensional stability and creepage resistance for products used in reflow processes. LCP has exceptional mechanical properties across a wide temperature range and a very low thermal expansion.

##### Polyester: PBT and PBT-GF

We use thermoplastic polyester in non-reinforced and fiberglass-reinforced versions for special applications which 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 housing.

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 which 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 powder 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 notch-sensitive.

##### Polyoxymethylene: POM

Polyoxymethylene is a technical material that combines high rigidity with mechanical stability, excellent elastic properties, high tenacity, 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 using almost all procedures. Furthermore, PE has excellent tenacity 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. PP is not as tough at low temperatures, however.

##### 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: EPDM-PP

EPDM-PP is a polymer blend of PP and cross-linked EPDM. EPDM-PP is a rubber-like material which can be processed using thermoplastic procedures. EPDM-PP combines high temperature resistance, a low compression set, and excellent resistance to abrasion and chemicals.

##### Acrylonitrile butadiene styrene rubber: NBR

NBR is a rubber with excellent resistance to aging. It also features excellent resistance to abrasion and 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 <sup>1)</sup>	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
Dielectric strength	IEC 60243-1/ DIN VDE 0303-21	kV/cm	600	400		> 200	400	400		> 300	850		850		
Resistance to creepage CTI...	IEC 60112/ DIN VDE 0303-1		600	400	≥ 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		
Inflammability class	UL 94	HB – V0	V2, V0	HB, V0	V0	V0	V0	V0	V0	V2, V0		V0	HB	HB	HB
Tropical and termite resistance			Good	Good			Good			Good					

<sup>1)</sup> Possible at "≥" higher temperatures, 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
Dielectric strength	IEC 60243-1/ DIN VDE 0303-21	kV/cm	35	35		Dielectric 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				
Inflammability class	UL 94	HB – V0	V2	HB	HB	Inflammability class	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	-	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	-	0	-
Benzophenone		20	+	+	+	0	0	-	+	0	0	+	+	-	-	-	+	-
Boric 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	+	-	-	0
Ester			+	+	+	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	+	+	+	-	-	-	+	-
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		+				+	+	+	+	+			+	+	+	+	+

\* 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 within low-voltage systems

Dimensioning of clearances and creepage distances according to DIN EN 60664-1/VDE 0110-1.

This part of the standard, based on IEC 60664, contains specifications for the insulation coordination of equipment in low-voltage systems. This part is applicable for equipment to be used at an altitude of up to 2000 m above sea level. This basic safety standard is primarily aimed at technical committees, and if suitable product directives are not available for equipment, it can be applied at the user's own responsibility. International and European product standards cited in this catalog contain specifications for insulation coordination according to DIN EN 60664/VDE 0110-1.

### Insulation coordination

Insulation coordination includes the selection of electrical insulation properties for equipment as regards intended applications and ambient conditions. Separate requirements must be applied for clearances and creepage distances and for rigid insulation. The surge voltages to be expected, characteristics of surge protective devices, and pollution at the intended site must be considered when dimensioning clearances. Clearances are then dimensioned according to the external or internal surge voltages to be expected. Different surge voltages, grouped into categories, i.e., a value that specifies a rated impulse voltage, determine the required clearance directly. These surge voltage categories (I to IV) are mainly based on a statistical study, and are used for equipment that is directly supplied by low-voltage networks. Definitions of the individual categories are provided below as an extract of DIN EN 60664/VDE 0110-1.

The clearances can be calculated according to 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 according to case A are capable of withstanding the assigned impulse voltages under all conditions. Equipment that is dimensioned according to case A can therefore be used without any further testing. Clearance values according to case B are based on ideal conditions. Clearance values which fall between case A and case B must be proven by means of an impulse voltage test.

The voltages present, the properties of insulation materials, the pollution to be

expected, and safety measures against pollution are considered when dimensioning creepage distances.

The effect of pollution is considered when determining the clearances and creepage distances according to three intensity levels (pollution degree 1 to 3).

The creepage distance is based on the rated voltage that is derived from the working voltage or nominal mains voltage. The minimum creepage distances are assigned to the rated voltages according to the pollution degree in Table 4.

If the respective product descriptions do not contain any additional specifications, the products presented in this catalog are dimensioned for surge voltage category III and pollution degree 3 according to this regulation (DIN EN 60664-1/VDE 0110-1).

### Surge voltage categories I to IV

– Equipment in **surge voltage category IV** can be used at the terminal point of the installation.

**Note:** examples of such equipment include electricity meters and primary devices for overcurrent protection.

– Equipment in **surge voltage category III** can be used in fixed installations and is intended for such cases where there are special requirements for the reliability and availability of the equipment.

**Note:** examples of such equipment include switches in fixed installations and equipment for industrial use with permanent connection to the fixed installation.

– Equipment in **surge voltage category II** is power-consuming equipment that is supplied by the fixed installation.

**Note:** examples of such equipment include household appliances, portable tools, other domestic appliances, and similar devices.

– Equipment in **surge voltage category I** can be connected to circuits where measures have been taken to limit the surge voltages to a suitable lower value.

### Pollution degrees 1 to 4

The following four pollution degrees have been defined for the micro-environment in order to determine clearances and creepage distances:

– Pollution degree 1

No pollution or only dry, non-conductive pollution occurs. The pollution has no effect.

– Pollution degree 2

Only non-conductive pollution occurs. However, temporary conductivity due to condensation must occasionally be taken into consideration.

– 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 that were obtained using solution A as per IEC 60112. These are:

Insulation material group I:  $600 \leq CTI$   
Insulation material group II:  $400 \leq CTI \leq 600$

Insulation material group IIIa:  $175 \leq CTI < 400$

Insulation material group IIIb:  $100 \leq CTI < 175$

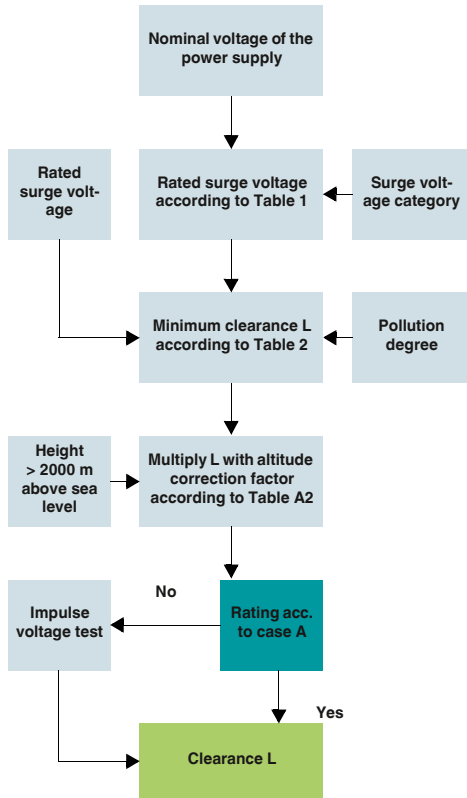
The comparative tracking index of the creepage distance formation must have been determined based on suitable samples using test solution A as specified in DIN IEC 60112.

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 acc. to IEC 60038 3)		Conductor-neutral conductor voltage derived from the total nominal AC voltage or nominal DC voltage [V]	Rated surge voltage 2) [V]			
Three-phase [V]	Single-phase [V]		Surge voltage category 4)			
			I	II	III	IV
		50	330	500	800	1500
		100	500	800	1500	2500
		150	800	1500	2500	4000
230/400	277/480	300	1500	2500	4000	6000
	400/690	600	2500	4000	6000	8000
	1000	1000	4000	6000	8000	12000

1) Refer to Appendix 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 according to 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 surge voltage categories.

### Minimum clearances for surge voltages (extract from Table 2)

Required rated impulse 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			0.15		
1.2	0.25	0.25		0.2		
1.5 2)	0.5	0.5		0.3	0.3	
2.0	1.0	1.0	1.0	0.45	0.45	
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	1.2
5.0	4	4	4	1.5	1.5	1.5
6.0 2)	5.5	5.5	5.5	2	2	2
8.0 2)	8	8	8	3	3	3
10	11	11	11	3.5	3.5	3.5
12 2)	14	14	14	4.5	4.5	4.5
15	18	18	18	5.5	5.5	5.5
20	25	25	25	8	8	8
25	33	33	33	10	10	10
30	40	40	40	12.5	12.5	12.5
40	60	60	60	17	17	17
50	75	75	75	22	22	22
60	90	90	90	27	27	27
80	130	130	130	35	35	35
100	170	170	170	45	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 surge voltages from the low-voltage network: the rated surge voltage of the equipment
- For a different basic insulation: the highest impulse 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 impulse voltages.

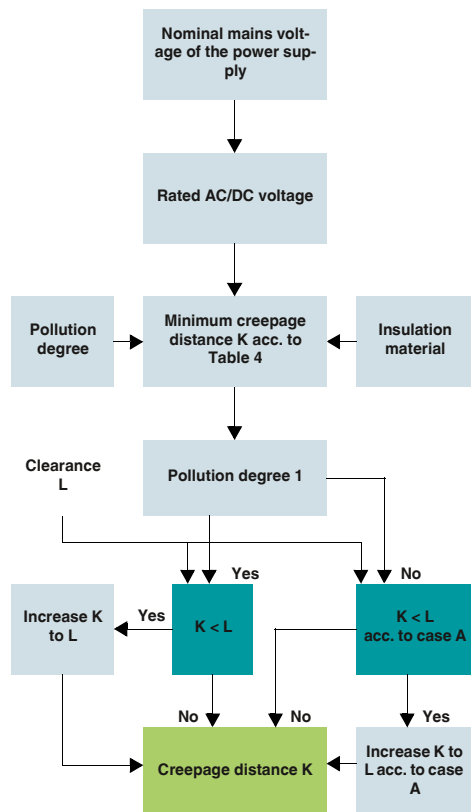
6) The distances for pollution degree 4 are equal to those for pollution degree 3, except that the minimum clearance is 1.6 mm.

### Altitude correction factors (extract from Table A.2)

Height in m	Normal air pressure in kPa	Multiplication factor for gaps
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
10000	26.5	3.02
15000	12.0	6.67
20000	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 3a)

Nominal voltage of the power supply system (mains *)	Voltages for Table 4	
	For conductor-conductor insulation 1)	For conductor-ground insulation 1)
	All systems	Three-conductor systems center point grounded
[V]	[V]	[V]
12.5	12.5	-
24	25	-
30	32	-
42		
48	50	-
50 **)		
60	63	-
30-60	63	32
100 **)	100	-
110		
120	125	-
150 **)	160	-
220	250	-
110-220		125
220-240	250	
300 **)	320	-
220-440	500	250
600 **)	630	-
480-960	1000	500
1000 **)	1000	-

1) Conductor-ground insulation levels for non-grounded systems or those grounded through impedance correspond to conductor-conductor insulation levels as the operating voltage of every conductor to ground can, in practice, reach the conductor-conductor voltage. This is due to the fact that the actual voltage to ground is determined by the insulation resistance and the capacitive reactance of each conductor to ground. A low (but permissible) insulation resistance of one conductor can thereby practically ground it and increase the other two to conductor-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 3b)

Nominal voltage of the power supply system (mains *)	Voltages for Table 4		
	For conductor-conductor insulation	Insulation for conductor-ground	
		All systems	Three-phase four-conductor systems with grounded neutral conductor 2)
[V]	[V]	[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-ground insulation levels for non-grounded systems or those grounded through impedance correspond to conductor-conductor insulation levels as the operating voltage of every conductor to ground can, in practice, reach the conductor-conductor voltage. This is due to the fact that the actual voltage to ground is determined by the insulation resistance and the capacitive reactance of each conductor to ground. A low (but permissible) insulation resistance of one conductor can thereby practically ground it and increase the other two to conductor-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			3		
	All insulation material groups	All insulation material groups except IIIb	All insulation material groups	Insulation material group			Insulation material group					
[V]	[mm]	[mm]	[mm]	I [mm]	II [mm]	III [mm]	I [mm]	II [mm]	III 2) [mm]			
10	0.025	0.04	0.08	0.40	0.40	0.40	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	0.11	0.48	0.48	0.48	1.20	1.20	1.20			
25	0.025	0.04	0.125	0.50	0.50	0.50	1.25	1.25	1.25			
32	0.025	0.04	0.14	0.53	0.53	0.53	1.30	1.30	1.30			
40	0.025	0.04	0.16	0.56	0.80	1.10	1.4	1.6	1.8			
50	0.025	0.04	0.18	0.60	0.85	1.20	1.5	1.7	1.9			
63	0.040	0.63	0.20	0.63	0.90	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	1.00	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	0.40	0.32	0.80	1.1	1.6	2.0	2.2	2.5			
200	0.40	0.63	0.42	1.00	1.4	2.0	2.5	2.8	3.2			
250	0.56	1.00	0.56	1.25	1.8	2.5	3.2	3.6	4.0			
320	0.75	1.60	0.75	1.60	2.2	3.2	4.0	4.5	5.0			
400	1.00	2.00	1.00	2.00	2.8	4.0	5.0	5.6	6.3			
500	1.30	2.50	1.30	2.50	3.6	5.0	6.3	7.1	8.0			
630	1.80	3.20	1.8	3.2	4.5	6.3	8.0	9	10.0			
800	2.40	4.00	2.4	4.0	5.6	8.0	10.0	11	12.5			
1000	3.20	5.00	3.2	5.0	7.1	10	12.5	14	16.0			
1250			4.2	6.3	9	12.5	16	18	20			
1600			5.6	8	11	16	20	22	25			
2000			7.5	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			
10000			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 3a or 3b 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 IIIb is not recommended for use if voltages are greater than 630 V.

### Certification bodies and safety marks

Certification bodies and approvals	Country code	 Explosion protection	Country code	Ship classification societies	Country code
 IECEE CB Scheme (in combination with certifying body)	International	 International Electrotechnical Commission	International	 Bureau Veritas	FR
 CENELEC Certification Agreement (CCA inspection report) (in combination with certifying body)	EU	 DEKRA Certification B.V.	NL	 Germanischer Lloyd AG	DE
 Canadian Standards Association (CSA)	CA	 Physikalisch-Technische Bundesanstalt	DE	 Lloyd's Register of Shipping	GB
 Canadian Standards Association (CSA) - CSA approval for the USA -	US	 KIWA Nederland B.V.	NL	 Nippon Kaiji Kyokai	JP
 Canadian Standards Association. (CSA) Combined logo - CSA approval for Canada and the USA -	CA US	 QS Schaffhausen AG	CH	 Det Norske Veritas	NO
 Underwriters Laboratories Inc. (UL)	US	 VTT Expert Services Oy	FI	 Polski Rejestr Statków	PL
 Underwriters Laboratories Inc. (UL) - UL approval for Canada -	CA	 IBEXU Institut für Sicherheitstechnik GmbH	DE	 Russian Maritime Register of Shipping	RU
 Underwriters Laboratories Inc. (UL) Combined logo - UL approval for the USA and Canada -	US CA	 TÜV Rheinland do Brasil	BR	 Korean Register of Shipping	KR
 INSIEME PER LA QUALITA'E LA SICUREZZA	IT	 Technischer Überwachungsverein Nord	DE	 American Bureau of Shipping	US
 Eurasian Conformity	BY KZ RU	 DEKRA EXAM GmbH	DE		
 DEKRA Certification B.V.	NL	 Canadian Standards Association (CSA)	CA		
 Österreichischer Verband für Elektrotechnik	AT	 Canadian Standards Association (CSA) - CSA approval for the USA -	US		
 electrosuisse SEV Verband für Elektro-, Energie- und Informationstechnik	CH	 Canadian Standards Association. (CSA) Combined logo - CSA approval for Canada and the USA -	CA US		
 Verband Deutscher Elektrotechniker e.V. (VDE) - Approval of drawings - Reports with production monitoring	DE	 Underwriters Laboratories Inc. (UL)	US		
 Berufsgenossenschaft (BG) GS - Geprüfte Sicherheit	DE	 Underwriters Laboratories Inc. (UL) - UL approval for Canada -	CA		
 Intertek ETL Listed - Approval for the USA -	US	 Underwriters Laboratories Inc. (UL) Combined logo - UL approval for the USA and Canada -	US CA		
 Intertek ETL Listed - Approval for Canada -	CA	 FM Approvals	US		
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A-INE-PG16/21-N-NS-S	1415220	696	A-INR-PG16/13-N-NS-S	1415216	696	CA-06S1N8A2S00	1619991	83	CA-09P1N122S00	1619972	83
A-INE-PG21/29-N-NS-S	1415221	696	A-INR-PG21/16-N-NS-S	1415217	696	CA-06S1N8A6Y00	1619875	82	CA-09P1N126Y00	1619868	82
A-INL-M12-N-S	1411240	685	A-INR-PG29/21-N-NS-S	1415218	696	CA-06S1N8A6Z00	1619901	81	CA-09P1N126Z00	1619894	81
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A-INL-M25-N-S	1411243	685	A-SEW-32-P-W	1411285	703	CA-06S1N8A9007	1620117	80	CA-09P1N129007	1620078	80
A-INL-M25-P-BK	1411216	681	A-SEW-40-P-W	1411286	703	CA-06S1N8A9008	1620044	80	CA-09P1N129008	1620035	80
A-INL-M25-P-GY	1411208	680	A-SEW-50-P-W	1411287	703	CA-06S1N8A90DN	1620170	80	CA-09P1N1290DN	1620163	80
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A-INL-M32-N-S	1411244	685	ALU-SB	1404531	460	CA-07P1N122S00	1619988	83	CA-09P1N12HZ00	1619842	85
A-INL-M32-P-BK	1411217	681	ASI CC ADR	2741338	429	CA-07P1N126Y00	1619872	82	CA-09P1N8A2S00	1619970	83
A-INL-M32-P-GY	1411209	680	ASI CC ADR CAB CINCH	2741341	430	CA-07P1N126Z00	1619898	81	CA-09P1N8A6Y00	1619866	82
A-INL-M32-S-S	1411251	703				CA-07P1N128006	1619745	79	CA-09P1N8A6Z00	1619892	81
A-INL-M40-N-S	1411246	685				CA-07P1N128006S	1619574	78	CA-09P1N8A8006	1619739	79
A-INL-M40-P-BK	1411218	681				CA-07P1N128007	1619719	79	CA-09P1N8A8006S	1619568	78
A-INL-M40-P-GY	1411210	680				CA-07P1N128007S	1619529	78	CA-09P1N8A8007	1619711	79
A-INL-M40-S-S	1411252	703				CA-07P1N128008	1619654	79	CA-09P1N8A8007S	1619523	78
A-INL-M50-N-S	1411247	685				CA-07P1N128008S	1619503	78	CA-09P1N8A8008	1619648	79
A-INL-M50-P-BK	1411219	681	BMKL 11,5 (108X16) WH	0821797	431	CA-07P1N1280DN	1619771	79	CA-09P1N8A8008S	1619497	78
A-INL-M50-P-GY	1411211	680	BMKL 64X16 WH	0821807	430	CA-07P1N1280DNS	1619600	78	CA-09P1N8A80DN	1619765	79
A-INL-M50-S-S	1411253	703				CA-07P1N129006	1620140	80	CA-09P1N8A80DNS	1619594	78
A-INL-M63-N-S	1411248	685				CA-07P1N129007	1620114	80	CA-09P1N8A9006	1620134	80
A-INL-M63-P-BK	1411220	681				CA-07P1N129008	1620041	80	CA-09P1N8A9007	1620076	80
A-INL-M63-P-GY	1411212	680				CA-07P1N1290DN	1620167	80	CA-09P1N8A9008	1620033	80
A-INL-M63-S-S	1411254	703				CA-07P1N12HZ00	1619846	85	CA-09P1N8A90DN	1620161	80
A-INL-NPT1-N-S	1416012	687				CA-07P1N129007	1620114	80	CA-09P1N8A9006	1620134	80
A-INL-NPT1-P-BK	1411239	684	CA-06P1N122S00	1619992	83	CA-07P1N8A2S00	1619986	83	CA-09P1N8AAD00	1621735	84
A-INL-NPT1-P-GY	1411235	683	CA-06P1N126Y00	1619876	82	CA-07P1N8A6Y00	1619870	82	CA-09P1N8AHZ00	1619791	85
A-INL-NPT1/2-N-S	1416010	687	CA-06P1N126Z00	1619902	81	CA-07P1N8A6Z00	1619896	81	CA-09S1N122S00	1619973	83
A-INL-NPT1/2-P-BK	1411237	684	CA-06P1N128006	1619749	79	CA-07P1N8A8006	1619743	79	CA-09S1N126Y00	1619869	82
A-INL-NPT1/2-P-GY	1411233	684	CA-06P1N128006S	1619578	78	CA-07P1N8A8006S	1619572	78	CA-09S1N126Z00	1619895	81
A-INL-NPT3/4-N-S	1416011	687	CA-06P1N128007	1619723	79	CA-07P1N8A8007	1619717	79	CA-09S1N128006	1619742	79
A-INL-NPT3/4-P-BK	1411238	684	CA-06P1N128007S	1619533	78	CA-07P1N8A8007S	1619527	78	CA-09S1N128006S	1619571	78
A-INL-NPT3/4-P-GY	1411236	683	CA-06P1N128008	1619658	79	CA-07P1N8A8008	1619652	79	CA-09S1N128007	1619716	79
A-INL-NPT3/8-N-S	1411234	683	CA-06P1N128008S	1619507	78	CA-07P1N8A8008S	1619501	78	CA-09S1N128007S	1619526	78
A-INL-NPT3/8-P-BK	1416009	687	CA-06P1N1280DN	1619775	79	CA-07P1N8A80DN	1619769	79	CA-09S1N128008	1619651	79
A-INL-NPT3/8-P-GY	1411236	684	CA-06P1N1280DNS	1619604	78	CA-07P1N8A80DNS	1619598	78	CA-09S1N128008S	1619500	78
A-INL-NPT3/8-S-S	1411231	683	CA-06P1N129006	1620144	80	CA-07P1N8A9006	1620138	80	CA-09S1N1280DN	1619768	79
A-INL-PG11-N-S	1411257	686	CA-06P1N129007	1620018	80	CA-07P1N8A9007	1620080	80	CA-09S1N1280DNS	1619597	78
A-INL-PG11-P-GY	1411223	682	CA-06P1N129008	1620045	80	CA-07P1N8A9008	1620037	80	CA-09S1N129006	1620137	80
A-INL-PG13,5-N-S	1411259	686	CA-06P1N1290DN	1620171	80	CA-07P1N8A90DN	1620165	80	CA-09S1N129007	1620079	80
A-INL-PG13,5-P-GY	1411224	682	CA-06P1N12HZ00	1619850	85	CA-07P1N8AHZ00	1619844	85			

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CA-09S1N8A8006	1619740	79	CA-12P1N8A6Z00	1619888	81	CA-17P1N12800DN	1619755	79	CA-19S1N128008	1619635	79
CA-09S1N8A8006S	1619569	78	CA-12P1N8A8006	1619735	79	CA-17P1N12800DNS	1619584	78	CA-19S1N128008S	1619479	78
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CES-STPG-GY-2ASH-LR	0801714	673	CK4,0-ED-10,00BU AG	1586183	547				EV-T2M3C-3AC32A-4,0M6,0EHBK00	1410088	720
CES-STPG-GY-2ASH-RR	0801713	673	CK4,0-ED-10,00ST AG	1586198	547				EV-T2M3C-3AC32A-4,0M6,0ESBK00	1405199	720
CES-STPG-GY-2X3	1410424	673	CK4,0-ED-2,50BU AG	1663284	547				EV-T2M3PC-1AC20A-4,0M2,5EHBK00	1405192	723
CES-STPG-GY-2X4	1410438	673	CK4,0-ED-2,50ST AG	1663242	547				EV-T2M3PC-1AC20A-4,0M2,5ESRD00	1404563	723
CES-STPG-GY-2X5	0801708	673	CK4,0-ED-4,00BU AG	1663297	547				EV-T2M3PC-1AC20A-4,0M2,5ESBK00	1405193	723
CES-STPG-GY-2X6	0801709	673	CK4,0-ED-4,00ST AG	1663255	547				EV-T2M3PC-1AC20A-4,0M2,5ESRD00	1404876	723
CES-STPG-GY-2X7	1410110	673	CK4,0-ED-6,00BU AG	1663307	547				EV-T2M3PC-1AC32A-4,0M6,0ESBK00	1404568	723
CES-STPG-GY-2X8	1410123	673	CK4,0-ED-6,00ST AG	1663268	547				EV-T2M3PC-3AC20A-4,0M2,5EHBK00	1404567	723
CES-STPG-GY-2X9	1410440	673	CK4,0-EWZ	1662735	636				EV-T2M3PC-3AC20A-4,0M2,5ESBK00	1404877	723
CES-STPG-GY-3	0801673	672	CP-HC	1686478	638				EV-T2M3PC-3AC32A-4,0M6,0EHBK00	1622495	723
CES-STPG-GY-4	0801674	672	CP-HC-S	1410916	638				EV-T2M3PC-3AC32A-4,0M6,0ESBK00	1404569	723
CES-STPG-GY-4X3	0801710	673	CP-QPD	1582459	468				EV-T2M3SE12-3AC20A-0,7M2,5E10	1405213	727
CES-STPG-GY-4X4	0801711	673	CP-QPD 3/4X1,5	1414729	460				EV-T2M3SE12-3AC32A-0,7M6,0E10	1405214	727
CES-STPG-GY-4X5	1410136	673	CP-QPD 5X1,5	1414760	460				EV-T2M3SE24-3AC20A-0,7M2,5E10	1405215	727
CES-STPG-GY-4X6	1410149	673	CP-QPD 5X2,5	1404530	468				EV-T2M3SE24-3AC32A-0,7M6,0E10	1405216	727
CES-STPG-GY-5	0801675	672	CP-QPD 5X6,0	1411402	474				EV-T2M4CC-DC125A-5,0M50ESBK00	1409060	716
CES-STPG-GY-6	0801676	672	CRIMPFOX RC 2,5	1205448	637				EV-T2M4CC-DC200A-5,0M70ESBK00	1621653	716
CES-STPG-GY-7	0801677	672	CRIMPFOX-1,6-ER-1,50-AT	1884843	637				EV-T2M4CC-DC60A-4,5M16ESBK00	1618306	716
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CES-STPG-GY-9	0801680	672	CRIMPFOX-CX 4,52	1212094	637				EV-T2SF	1581052	661
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CK1,6-ED-0,37BU AU	1674969	487	CRIMPFOX-M TC 10/DIE	1212076	636				EV-TAM3PC-1AC20A-4,0M2,5ESBK00	1621481	722
CK1,6-ED-0,37ST AG	1663336	487	CRIMPFOX-M TC 4/DIE	1212075	636				EV-TAM3PC-1AC32A-4,0M6,0ESBK00	1410090	722
CK1,6-ED-0,37ST AU	1674901	487	CRIMPFOX-TC 10	1212114	636				EWR	1665075	637
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FL DUST CVR GY	2891505	376	FOC-HCS-GI-1005/M12-C/M12-C/2	1408872	329	FOC-SC-A-SJ-A-GZ02/1	1409811	402	G-ESIS-M12-S68L-PEPDS-BK	1415106	697
FL DUST CVR RD	2891709	376	FOC-HCS-GI-1005/M12-C/M12-C/5	1416693	329	FOC-SC-A-SJ-A-GZ02/2	1400691	402	G-ESIS-M12-S68L-PEPDS-BL	1415114	697
FL DUST CVR VT	2891806	376	FOC-HCS-GI-1005/M12-C/SCRJ/1	1408867	329	FOC-SC-A-SJ-A-GZ03/...	1405702	404	G-ESIS-M12-S68N-NEPDS-S	1415123	698
FL DUST CVR WH	2891903	376	FOC-HCS-GI-1005/M12-C/SCRJ/2	1408866	329	FOC-SC-A-SJ-A-GZ03/1	1409812	404	G-ESIS-M16-S68L-PEPDS-BK	1415107	697
FL DUST CVR YE	2891408	376	FOC-HCS-GI-1005/M12-C/SCRJ/5	1416651	329	FOC-SC-A-SJ-A-GZ03/2	1400695	404	G-ESIS-M16-S68L-PEPDS-BL	1415116	697
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FL PATCH CCODE BK	2891194	377	FOC-LC-A-LC-A-GZ01/1	1409787	401	FOC-SJ-A-SJ-A-GZ01/1	1409813	400	G-ESIS-M20-S68L-PEPDS-BK	1415108	697
FL PATCH CCODE BN	2891495	377	FOC-LC-A-LC-A-GZ01/2	1400604	401	FOC-SJ-A-SJ-A-GZ01/2	1400697	400	G-ESIS-M20-S68L-PEPDS-BL	1415117	697
FL PATCH CCODE BU	2891291	377	FOC-LC-A-LC-A-GZ02/1	1409788	403	FOC-SJ-A-SJ-A-GZ02/...	1405704	402	G-ESIS-M20-S68N-NEPDS-S	1415125	698
FL PATCH CCODE GN	2891796	377	FOC-LC-A-LC-A-GZ02/2	1400621	403	FOC-SJ-A-SJ-A-GZ02/1	1409814	402	G-ESIS-M25-M68L-PEPDS-BK	1415109	697
FL PATCH CCODE GY	2891699	377	FOC-LC-A-LC-A-GZ03/...	1405690	405	FOC-SJ-A-SJ-A-GZ02/2	1400699	402	G-ESIS-M25-M68L-PEPDS-BL	1415118	697
FL PATCH CCODE RD	2891893	377	FOC-LC-A-LC-A-GZ03/1	1409789	405	FOC-SJ-A-SJ-A-GZ03/...	1405705	404	G-ESIS-M25-M68N-NEPDS-S	1415126	698
FL PATCH CCODE VT	2891900	377	FOC-LC-A-LC-A-GZ03/2	1400622	405	FOC-SJ-A-SJ-A-GZ03/1	1409815	404	G-ESIS-M32-M68L-NEPDS-S	1415127	698
FL PATCH CCODE YE	2891592	377	FOC-LC-A-SJ-A-GZ01/...	1405694	401	FOC-SJ-A-SJ-A-GZ03/2	1400700	404	G-ESIS-M32-M68L-PEPDS-BK	1415110	697
FL PATCH GUARD	2891424	377	FOC-LC-A-SJ-A-GZ01/1	1409793	401	FOC-ST-A-LC-A-GZ01/...	1405706	401	G-ESIS-M32-M68L-PEPDS-BL	1415119	697
FL PATCH GUARD KEY	2891521	377	FOC-LC-A-SJ-A-GZ01/2	1400682	401	FOC-ST-A-LC-A-GZ01/1	1409816	401	G-ESIS-M40-M68L-NEPDS-S	1415129	698
FL PATCH SAFE CLIP	2891246	377	FOC-LC-A-SJ-A-GZ02/...	1405695	403	FOC-ST-A-LC-A-GZ01/2	1400701	401	G-ESIS-M40-M68L-PEPDS-BK	1415111	697
FL PLUG GUARD GN	2891615	376	FOC-LC-A-SJ-A-GZ02/1	1409796	403	FOC-ST-A-LC-A-GZ02/...	1405707	403	G-ESIS-M40-M68L-PEPDS-BL	1415120	697
FL PLUG GUARD KEY	2891327	376	FOC-LC-A-SJ-A-GZ02/2	1400683	403	FOC-ST-A-LC-A-GZ02/1	1409818	403	G-ESIS-M50-L68L-NEPDS-S	1415146	698
FL PLUG GUARD RD	2891712	376	FOC-LC-A-SJ-A-GZ03/...	1405696	405	FOC-ST-A-LC-A-GZ02/2	1400702	403	G-ESIS-M50-L68L-PEPDS-BK	1415112	697
FL PLUG GUARD WH	2891819	376	FOC-LC-A-SJ-A-GZ03/1	1409797	405	FOC-ST-A-SC-A-GZ01/...	1405708	401	G-ESIS-M50-L68L-PEPDS-BL	1415121	697
FL PORT GUARD	2891220	376	FOC-LC-A-SJ-A-GZ03/2	1400684	405	FOC-ST-A-SC-A-GZ01/1	1409819	401	G-ESIS-M63-L68L-NEPDS-S	1415147	698
FL RJ45 PROTECT CAP	2832991	377	FOC-M12-BU/BU	1416677	329	FOC-ST-A-SC-A-GZ01/2	1400703	401	G-ESIS-M63-L68L-PEPDS-BK	1415113	697
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FL SM PATCH 1,0 ST-ST	2901836	397	FOC-M12-M12-GB02/5	1416703	329	FOC-ST-A-SJ-A-GZ01/2	1400706	401	G-ESIS-M63-L68L-NEPDS-S	1415166	698
FL SM PATCH 2,0 LC-LC	2989284	396	FOC-M12-MNNA-TC-1300	1416729	329	FOC-ST-A-SJ-A-GZ02/...	1405711	403	G-ESIS-M63-L68L-NEPDS-S	1415168	698
FL SM PATCH 2,0 LC-SC	2989297	397	FOC-M12-MNNA-TC-650	1416716	329	FOC-ST-A-SJ-A-GZ02/1	1409823	403	G-ESIS-M63-L68L-NEPDS-S	1415169	698
FL SM PATCH 2,0 LC-ST	2989349	397	FOC-M12-RS-GOF	1406423	329	FOC-ST-A-SJ-A-GZ02/2	1400711	403	G-ESIS-M63-L68L-NEPDS-S	1415170	698
FL SM PATCH 2,0 SC-SC	2901830	397	FOC-M12-RS-HCS	1406422	329	FOC-ST-A-ST-A-GZ01/...	1405712	401	G-ESS-M20-S66L-NTES-S	1410775	699
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FL-PP-RJ45-SC	2901643	363	FOC-PN-B-1000/M12-C/M12-C/5	1416680	329	FOC-TOOL-STRIPPING-1HOLE-250	1407004	371	G-ESS-M63-L66L-NTES-S	1411087	699
FL-PP-RJ45-SCC	2901642	363	FOC-PN-B-1000/M12-C/SCRJ/1	1408865	329	FOC-TOOL-STRIPPING-2HOLE-250	1407008	371	G-ESSWU-M20-M66L-NTES-S	1411090	700
FL-PP-RJ45/RJ45	2901646	363	FOC-PN-B-1000/M12-C/SCRJ/2	1408864	329	FOC-TOOL-STRIPPING-T-1	1407016	371	G-ESSWU-M20S-S66L-NTES-S	1411088	700
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G-INB-M40-M68N-PEPDS-S	1415185	691	G-INSEC-PG7-S68N-NNES-S	1411195	689	HC-B 10-I-CT-M	1648212	523	HC-B 24-AP-GY	1660397	648
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G-INB-M40-M68N-NEPDS-S	1415185	691	G-INSEC-PG48-L68N-NNES-S	1415190	692	HC-B 10-I-UT-F	1648186	523	HC-B 24-EBUQ-2,5-48	1605608	527
G-INB-M40-M68N-PEPDS-S	1415185	691	G-INSEC-PG7-S68N-NNES-S	1411195	689	HC-B 10-I-UT-M	1648173	523	HC-B 24-ESTQ-2,5	1605640	527
G-INB-M32-M68N-NEPDS-S	1415184	691	G-INSEC-PG9-S68N-NNES-S	1411196	689	HC-B 10-SD-FL/FS	1660177	647	HC-B 24-ESTQ-2,5-48	1605666	527
G-INB-M32-M68N-PEPDS-LG	1415176	691	G-INSEC-PG42-L68N-NNES-S	1415189	692	HC-B 10-SD-FLU/FS-AL	1644562	647	HC-B 24-I-CT-F	1648348	527
G-INB-M40-M68N-NEPDS-S	1415185	691	G-INSEC-PG48-L68N-NNES-S	1415190	692	HC-B 10-SD-FQ/FS	1772586	647	HC-B 24-I-CT-F-48	1584981	527
G-INB-M40-M68N-PEPDS-S	1415185	691	G-INSEC-PG7-S68N-NNES-S	1411195	689	HC-B 10-SD-FQI/FS	1687260	646	HC-B 24-I-CT-M	1648335	527
G-INB-M32-M68N-NEPDS-S	1415184	691	G-INSEC-PG9-S68N-NNES-S	1411196	689	HC-B 10-SD-FQI/FS-AL	1647750	646	HC-B 24-I-CT-M-48	1584978	527
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G-INB-M40-M68N-PEPDS-S	1415185	691	G-INSEC-PG7-S68N-NNES-S	1411195	689	HC-B 10-SD-MLT/FS-AL	1584512	646	HC-B 24-I-PT-M	1407736	527
G-INB-M32-M68N-NEPDS-S	1415184	691	G-INSEC-PG9-S68N-NNES-S	1411196	689	HC-B 10-SD-MQ/FS	1678305	646	HC-B 24-I-PT-M-48	1407738	527
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G-INB-M40-M68N-PEPDS-S	1415185	691	G-INSEC-PG7-S68N-NNES-S	1411195	689	HC-B 10-TMS-SD-IP50	1690749	576	HC-B 24-I-UT-M	1648296	527
G-INB-M32-M68N-NEPDS-S	1415184	691	G-INSEC-PG9-S68N-NNES-S	1411196	689	HC-B 10-TMS-SD-IP66	1411504	576	HC-B 24-UT-M-48	1584936	527
G-INB-M32-M68N-PEPDS-LG	1415176	691	G-INSEC-PG42-L68N-NNES-S	1415189	692	HC-B 16-A-DT-PEL-F	1648432	531	HC-B 24-SD-FL/FS	1660148	647
G-INB-M40-M68N-NEPDS-S	1415185	691	G-INSEC-PG48-L68N-NNES-S	1415190	692	HC-B 16-A-DT-PEL-M	1648445	531	HC-B 24-SD-FLU/FS-AL	1644601	647
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HC-B 32-KMQ-82/O1PG21	1675010	620	HC-B-GM8X6.5-M40-PLTBK	1414646	644	HC-BB18-I-CT-M	1584716	533	HC-D 7-SML-26/O1STM20/PA	1674886	492
HC-B 32-KMQ-82/O1PG29	1675023	620	HC-B-GTRS-M20-ER-AL	1414656	645	HC-BB32-I-CT-F	1584758	533	HC-D 7-TFL-49/O1PG11S/PA BK	1413717	492
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HC-B 32-KMQ-82/O1STM40	1647297	620	HC-B-GTRS-M25-ER-AL	1414657	645	HC-BB32-I-CT-M	1584732	533	HC-D 7-TFL-48/O1M20S/PA	1604890	490
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HC-B 32-SMQ-72/O1PG29	1675036	620	HC-B-GTRS-M32-PLRBK	1414654	645	HC-BB46-I-CT-F 47-92	1406545	533	HC-D 7-TFL-57/O1M20G	1604888	491
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HC-B 32-SMQ-72/O2M40	1604869	620	HC-B-PES	1604997	640	HC-BB46-I-CT-M 47-92	1406546	533	HC-D 7-TFL-57/O1M20G/PA BK	1410673	490
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HC-B 32-TFQ-80/O1PG29G	1675081	620	HC-B-TA-M20-PLR-BK	1414243	643	HC-BBB 40-ESTC	1409921	535	HC-D 7-TFL-57/O1PG11G/PA	1675450	490
HC-B 32-TFQ-80/O1PG29S	1675094	620	HC-B-TA-M25-ER-AL	1414257	643	HC-BBB 64-EBUC	1409914	535	HC-D 8-I-CT-F	1584363	487
HC-B 32-TFQ-80/O1PG36G	1460388	620	HC-B-TA-M25-PLR-BK	1414244	643	HC-BBB 64-ESTC	1409901	535	HC-D 8-I-CT-M	1584350	487
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HC-B 32-TFQ-80/O1STM40S	1645451	620	HC-B-TA-NPT-1 1/4-ER-AL	1414267	643	HC-BS-PG29	1674532	695	HC-D 15-AMLD	1678363	505
HC-B 32-TFQ-80/O1STM50G	1460197	620	HC-B-TA-NPT-1 1/4-PLR-BK	1414254	643	HC-BS-PG36	1674545	695	HC-D 15-AP-GY	1660342	648
HC-B 32-TFQ-80/O1STM50S	1585980	620	HC-B-TA-NPT-1/1-ER-AL	1414266	643	HC-CB	1772722	638	HC-D 15-FL-DI	1679582	653
HC-B 32-TMS-100-O1STM32G-EEE	1580516	618	HC-B-TA-NPT-1/1-PLR-BK	1414253	643	HC-CBU	1676860	639	HC-D 15-I-CT-F	1584389	499
HC-B 32-TMS-100-O1STM32S-EEE	1580517	618	HC-B-TA-NPT-1/2-ER-AL	1414264	643	HC-CBU-MOD	1636130	639	HC-D 15-I-CT-M	1584376	499
HC-B 32-TMS-100-O1STM40G-EEE	1580518	618	HC-B-TA-NPT-1/2-PLR-BK	1414251	643	HC-CIF-2B6-BFFD-FH-AL	1404214	679	HC-D 15-KML-48/O1M20	1604892	505
HC-B 32-TMS-100-O1STM40S-EEE	1580519	618	HC-B-TA-NPT-3/4-ER-AL	1414265	643	HC-CIF-2B6-HFFD-WH-AL	1404215	679	HC-D 15-KML-48/O1PG16	1678266	505
HC-B 32-TMS-100-O1STM50G-EEE	1580522	618	HC-B-TA-NPT-3/4-PLR-BK	1414252	643	HC-CIF-B10-BFFD-FH-AL	1404219	679	HC-D 15-PR-DI	1661189	653
HC-B 32-TMS-100-O1STM50S-EEE	1580521	618	HC-B-TA-PG13-ER-AL	1414260	643	HC-CIF-B10-BFWD-FH-AL	1404220	679	HC-D 15-SD-FL/FS	1660164	505
HC-B 32-TMS-SD-IP65	1580539	618	HC-B-TA-PG13-PLR-BK	1414247	643	HC-CIF-B10-HFFD-WH-AL	1404221	679	HC-D 15-SML-52/O1M25	1604893	505
HC-B 32/48-AF	1580524	618	HC-B-TA-PG16-ER-AL	1414261	643	HC-CIF-B16-BFFD-FH-AL	1404216	679	HC-D 15-SML-52/O1PG16	1672657	505
HC-B 32/48-AF-SET	1580523	618	HC-B-TA-PG16-PLR-BK	1414248	643	HC-CIF-B16-BFWD-FH-AL	1404217	679	HC-D 15-SML-52/O2M20	1604894	505
HC-B 48-AML	1772175	621	HC-B-TA-PG21-ER-AL	1414262	643	HC-CIF-B16-HFFD-WH-AL	1404218	679	HC-D 15-SML-52/O2M25	1604895	505
HC-B 48-AMLD	1772188	621	HC-B-TA-PG21-PLR-BK	1414249	643	HC-CIF-B24-BFFD-FH-AL	1404211	679	HC-D 15-SML-52/O2PG16	1672660	505
HC-B 48-FL-DI	1774678	653	HC-B-TA-PG29-ER-AL	1414263	643	HC-CIF-B24-BFWD-FH-AL	1404212	679	HC-D 15-TFL-53/O1M20G	1416379	503
HC-B 48-LB ERSBOLZ	1636114	651	HC-B-TA-PG29-PLR-BK	1414250	643	HC-CIF-B24-HFFD-WH-AL	1404213	679	HC-D 15-TFL-53/O1M20S	1604896	503
HC-B 48-SML-100/O1M32	1604875	621	HC-B-ZG	1685327	641	HC-COM- 4/2-EBUC	1408517	631	HC-D 15-TFL-53/O1PG16G	1672741	503
HC-B 48-SML-100/O1PG29	1675117	621	HC-B-ZS	1685330	641	HC-COM- 4/2-ESTC	1408504	631	HC-D 15-TFL-53/O1PG16S	1672699	503
HC-B 48-SML-100/O2M40	1604876	621	HC-B06-BC-HI-PLBK	1407692	647	HC-COM- 8-EBUC	1408494	631	HC-D 15-TFL-66/O1PG16S	1672709	503
HC-B 48-SML-100/O2PG29	1675120	621	HC-B06-BCSFS-P-BK	1414623	647	HC-COM- 8-ESTC	1408481	631	HC-D 15-TFL-66/O1STM20G	1645163	503
HC-B 48-SMLD-100/O2M40	1604878	621	HC-B06-HCLWS-PLR-BK	1414634	646	HC-COM-17-EBUC	1408478	631	HC-D 15-TFL-66/O1STM20S	1636046	503
HC-B 48-TFL-96/O1PG29G	1675159	621	HC-B06-SG-CBK	1411483	652	HC-COM-17-ESTC	1408465	631	HC-D 15-TFL-66/O1STM25G	1645176	503
HC-B 48-TFL-96/O1PG29S	1675162	621	HC-B06-SG-RBK	1407702	652	HC-COM-K-AML-GR	1408355	633	HC-D 15-TFL-66/O1STM25S	1636059	503
HC-B 48-TFL-96/O1PG36G	1675175	621	HC-B06-SL-PLBK	1407697	650	HC-COM-K-AML-GW	1408368	633	HC-D 25-AML	1772463	509
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HC-B 48-TFL-96/O1STM32S	1647336	621	HC-B10-24-DL-PLBK	1407696	650	HC-COM-K-KV-PG16(9-12) SML	1409286	633	HC-D 25-FL-DI	1679595	653
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HC-B 6-TMS-EEE-PR-DI	1409794	653	HC-B10-BCSFS-P-BK	1414625	647	HC-COM-K-SML-O1PG16	1408371	633	HC-D 25-KML-53/O1M20	1604900	509
HC-B 3-PE	1644326	640	HC-B10-HCLFD-PR-BK	1414631	646	HC-COM-K-TFL-O1PG16-G	1408342	632	HC-D 25-PR-DI	1408054	653
HC-B-AF	1686533	570	HC-B10-HCLWD-PLR-BK	1414638	646	HC-COM-K-TFL-O1PG16-S	1408339	632	HC-D 25-SD-FL/FS	1660135	509
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HC-B-G-M20-PLR-BK	1407669	572	HC-B10-SL-PLBK	1407698	650	HC-D 4-1ST	1886144	635	HC-D 25-SML-57/O2PG16	1672783	509
HC-B-G-M25-EC-AL	1411446	642	HC-B10-SP-CBK	1411479	652	HC-D 4-2BU	1886140	635	HC-D 25-SML-57/O1PG16	1672796	509
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HC-B-G-M40-PLR-BK	1407672	572	HC-B16-SG-CBK	1411485	652	HC-D 7-AML-26/GW/PA BK	1410686	492	HC-D 25-TFL-72/O1PG21S	1672864	507
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HC-D50-SMQ-81/O1PG21	1416398	511	HC-EVO-B16-HHWD-PLBK	1407644	600	HC-HV03-I-CT-M	1405260	537	HC-M-20-MOD-BU	1636936	557
HC-D50-SMQ-81/O1PG29	1416399	511	HC-EVO-B16-SHFDC-2SSM40-PLRKB	1407653	600	HC-HV03-I-PT-F	1407743	537	HC-M-20-MOD-ST	1636923	557
HC-D50-SMQ-81/O2PG21	1416400	511	HC-EVO-B16-SHWD-2SSM40-PLRKB	1407652	596	HC-HV03-I-PT-M	1407739	537	HC-M-25-MOD-BU	1605005	561
HC-D50-SMQ-81/O2PG29	1416401	511	HC-EVO-B16-SHWS-2SSM40-PLRKB	1407650	592	HC-HV06-I-CT-F	1405263	539	HC-M-25-MOD-ST	1605004	561
HC-D50-TFQ-76/O1PG21G	1416394	510	HC-EVO-B16PT-BWD-HH-M25-PLRKB	1407712	622	HC-HV06-I-CT-M	1405262	539	HC-M-BM	1676828	695
HC-D50-TFQ-76/O1PG21S	1416395	510	HC-EVO-B16PT-BWD-HH-M25ELC-AL	1411489	623	HC-HV06-I-PT-F	1407744	539	HC-M-BS-M16	1646227	695
HC-D50-TFQ-76/O1PG29S	1416397	510	HC-EVO-B16PT-BWSC-HH-M25-PLRKB	1408793	622	HC-HV06-I-PT-M	1407740	539	HC-M-BS-M20	1645846	695
HC-D7-SML-26/O1STPG11	1416406	493	HC-EVO-B16PT-BWSC-HH-M25ELC-AL	1411492	623	HC-HV10-I-CT-F	1405265	541	HC-M-BS-M25	1645859	695
HC-D7-SML-57/O1STPG11/PA	1416405	492	HC-EVO-B24-BFDC-PLRKB	1407662	614	HC-HV10-I-CT-M	1405264	541	HC-M-BS-M32	1645862	695
HC-DD108-I-CT-F	1584130	519	HC-EVO-B24-BWD-PLRKB	1407661	610	HC-HV10-I-PT-F	1407745	541	HC-M-BS-M40	1645875	695
HC-DD108-I-CT-F-216	1584143	519	HC-EVO-B24-BWS-PLRKB	1407659	606	HC-HV10-I-PT-M	1407741	541	HC-M-DSUB 09-MOD-BU	1647543	561
HC-DD108-I-CT-M	1584114	519	HC-EVO-B24-BWSC-PLRKB	1407660	606	HC-K 4/0-EBUS	1679427	545	HC-M-DSUB 09-MOD-ST	1647530	561
HC-DD108-I-CT-M-216	1584127	519	HC-EVO-B24-CHWD-ELC-AL	1411475	611	HC-K 4/0-ESTS	1679414	545	HC-M-DSUB 09/O2T-MOD-BU	1636444	561
HC-DD24-I-CT-F	1584046	519	HC-EVO-B24-CHWD-PLRKB	1407668	610	HC-K 4/8-EBUS	1679320	545	HC-M-EMV-BU-3-9,5	1636091	559
HC-DD24-I-CT-M	1584033	519	HC-EVO-B24-CHWS-ELC-AL	1411476	607	HC-K 4/8-ESTS	1679333	545	HC-M-EMV-MOD-BU	1678570	559
HC-DD42-I-CT-F	1584062	519	HC-EVO-B24-CHWS-PLRKB	1407667	606	HC-K 6 PE 16 QMM F	1583869	640	HC-M-EMV-MOD-ST	1678567	559
HC-DD42-I-CT-M	1584059	519	HC-EVO-B24-HHFD-2B-PLR-BK	1411497	610	HC-K 6 PE 16 QMM M	1583870	640	HC-M-EMV-ST/3-9,5	1636088	559
HC-DD72-I-CT-F	1584091	519	HC-EVO-B24-HHFD-EL-AL	1411472	611	HC-K 6/0-EBUS	1580537	543	HC-M-HS 200/40-MOD-BU	1637171	551
HC-DD72-I-CT-F-144	1584101	519	HC-EVO-B24-HHFD-PLBK	1407657	610	HC-K 6/0-ESTS	1580538	543	HC-M-HS 200/40-MOD-BU-PE	1637197	551
HC-DD72-I-CT-M	1584075	519	HC-EVO-B24-HHFS-EL-AL	1411473	607	HC-K 6/12-EBUS	1636363	545	HC-M-HS 200/40-MOD-ST	1637168	551
HC-DD72-I-CT-M-144	1584088	519	HC-EVO-B24-HHFS-PLBK	1407656	606	HC-K 6/12-ESTS	1636350	545	HC-M-HS 200/40-MOD-ST-PE	1637184	551
HC-EVO-A10UT-BWS-HH-M20-PLRKB	1411356	502	HC-EVO-B24-HHWD-EL-AL	1411474	615	HC-K 6/36-EBUC	1636389	547	HC-M-HS 200/70-MOD-BU	1636897	551
HC-EVO-A10UT-BWSC-HH-M20-PLRKB	1411357	502	HC-EVO-B24-HHWD-PLBK	1407658	614	HC-K 6/36-ESTC	1636376	547	HC-M-HS 200/70-MOD-BU-PE	1636910	551
HC-EVO-A16UT-BWS-HH-M25-PLRKB	1411358	506	HC-EVO-B24-SHFDC-2SSM40-PLRKB	1407666	614	HC-K 8/24-EBUC	163632				



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HC-M-KV-M25(14-21)	1646007	690	HC-STA-B06-SLWS-2SSM25-ELC-AL	1412822	573	HC-STA-B16-SLWSC-2SSM25-ELC-AL	1412865	593
HC-M-KV-M25(1AS1)	1584020	426	HC-STA-B06-SLWS-2SSP16-ELC-AL	1412823	573	HC-STA-B16-SLWSC-2SSM32-ELC-AL	1412866	593
HC-M-KV-M25(1X10/1X11)	1580228	656	HC-STA-B06-SLWSC-2SSM20-ELC-AL	1412825	573	HC-STA-B16-SLWSC-2SSP21-ELC-AL	1412867	593
HC-M-KV-M32(19-27)	1646010	690	HC-STA-B06-SLWSC-2SSM25-ELC-AL	1412826	573	HC-STA-B16PT-BWD-LS-M25-ELCAL	1416357	625
HC-M-KV-M40(27-34)	1607729	690	HC-STA-B06-SLWSC-2SSP16-ELC-AL	1412827	573	HC-STA-B16PT-BWD-LT-M25-ELCAL	1416349	624
HC-M-KV-T-M20	1646188	693	HC-STA-B06PT-BWSC-LS-M20-ELCAL	1416353	625	HC-STA-B16PT-BWSC-LS-M25-ELCAL	1416356	625
HC-M-KV-T-M25	1646191	693	HC-STA-B06PT-BWSC-LT-M20-ELCAL	1416344	624	HC-STA-B16PT-BWSC-LT-M25-ELCAL	1416348	624
HC-M-KV-T-M32	1646201	693	HC-STA-B10-24-DL-PLBK	1412886	650	HC-STA-B24-BFDC-ELC-AL	1411332	615
HC-M-KV-Z-M20	1646146	693	HC-STA-B10-BFDC-ELC-AL	1411323	587	HC-STA-B24-BWD-ELC-AL	1411331	611
HC-M-KV-Z-M25	1646159	693	HC-STA-B10-BWD-ELC-AL	1411322	583	HC-STA-B24-BWS-ELC-AL	1411339	607
HC-M-KV-Z-M32	1646162	693	HC-STA-B10-BWS-ELC-AL	1411320	579	HC-STA-B24-BWSC-ELC-AL	1411330	607
HC-M-KV-Z-M40	1646175	693	HC-STA-B10-BWSC-ELC-AL	1411321	579	HC-STA-B24-CHWD-1TTM32-ELC-AL	1412742	613
HC-M-MHMZ	1676831	569	HC-STA-B10-CHWD-1TTM20-ELC-AL	1412578	585	HC-STA-B24-CHWD-1TTM40-ELC-AL	1412743	613
HC-M-MHOZ	1676844	569	HC-STA-B10-CHWD-1TTM25-ELC-AL	1412579	585	HC-STA-B24-CHWD-1TTP21-EL-AL	1412744	613
HC-M-MHR-A2-N	1679281	566	HC-STA-B10-CHWD-1TTM32-ELC-AL	1412580	585	HC-STA-B24-CHWD-1TTP29-ELC-AL	1412745	613
HC-M-MHR-A3-N	1679294	566	HC-STA-B10-CHWD-1TTP16-ELC-AL	1412581	585	HC-STA-B24-CHWS-1TTM32-ELC-AL	1412746	609
HC-M-MHR-A4-N	1679304	566	HC-STA-B10-CHWD-1TTP21-ELC-AL	1412582	585	HC-STA-B24-CHWS-1TTM40-ELC-AL	1412747	609
HC-M-MHR-A6-N	1679317	566	HC-STA-B10-CHWS-1TTM25-ELC-AL	1412583	585	HC-STA-B24-CHWS-1TTP21-EL-AL	1412752	612
HC-M-MHR-FIX	1585155	566	HC-STA-B10-CHWS-1TTM20-ELC-AL	1412584	581	HC-STA-B24-CHWS-1TTP29-ELC-AL	1412749	609
HC-M-MHR-PE16	1636981	566	HC-STA-B10-CHWS-1TTM25-ELC-AL	1412585	581	HC-STA-B24-CHWS-1TTP21-ELC-AL	1412647	595
HC-M-MHR-T2-N	1679249	566	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-M-MHR-T3-N	1679252	566	HC-STA-B10-CHWS-1TTP21-ELC-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-M-MHR-T4-N	1679265	566	HC-STA-B10-CHWS-1TTP21-ELC-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-M-MHR-T6-N	1679278	566	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-M-PN2-6.00-BU	1676763	565	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-M-PN2-6.00-BU-V	1676776	565	HC-STA-B10-CHWS-1TTM25-ELC-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-M-PN2-6.00-ST	1676750	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-M-PN2-MOD-ST-BU	1674998	565	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-M-PN3-1.60-BU	1663514	565	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-M-PN3-1.60-BU-V	1663543	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-M-PN3-1.60-ST	1663488	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-M-PN3-3.00-BU	1663527	565	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-M-PN3-3.00-BU-V	1663556	565	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-M-PN3-3.00-ST	1663491	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-M-PN3-4.00-BU	1663530	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-M-PN3-4.00-BU-V	1663569	565	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-M-PN3-4.00-ST	1663501	565	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-M-PN3-MOD-ST-BU	1663475	565	HC-STA-B10-CHWS-1TTP21-EL-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-M4-KOAX-EWZ	1676747	435	HC-STA-B10-CHWS-1TTP21-EL-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-MOD-ANDOCK-USCH	1587496	567	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-MOD-K-AFS-OPE	1408559	568	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-MOD-K-AFS-PE	1408533	568	HC-STA-B10-CHWS-1TTP21-EL-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-MOD-K-CP	1408562	568	HC-STA-B10-CHWS-1TTP21-EL-AL	1412588	581	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-MOD-K-TMS-M1M20-G-OPE	1408546	568	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412589	581	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-MOD-K-TMS-M1M20-G-PE	1408520	568	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412586	581	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-NPT-1/1-M4/M40	1687587	694	HC-STA-B10-CHWS-1TTP21-EL-AL	1412587	581	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-NPT-1/1-M32	1686863	694	HC-STA-B10-CHWS-1TTP21-EL-AL	1412614	588	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-NPT-1/2-M20	1686847	694	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412615	588	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-NPT-3/4-M25	1686850	694	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412612	588	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-Q 12-COD	1409435	638	HC-STA-B10-CHWS-1TTP21-EL-AL	1412613	588	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412645	595
HC-Q 12+CT-F	1409419	489	HC-STA-B10-CHWS-1TTP21-EL-AL	1412614	588	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412646	595
HC-Q 12+CT-M	1409422	489	HC-STA-B10-CHWS-1TTP29-ELC-AL	1412615	588	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412647	595
HC-Q05-I-CT-F	1406537	489	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412612	588	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412648	595
HC-Q05-I-CT-M	1406538	489	HC-STA-B10-CHWS-1TTP21-EL-AL	1412621	584	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412725	594
HC-STA-B06-BWS-ELC-AL	1411318	573	HC-STA-B10-CHWS-1TTP16-EL-AL	1412622	584	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412726	594
HC-STA-B06-BWSC-ELC-AL	1411319	573	HC-STA-B10-CHWS-1TTP21-EL-AL	1412623	584	HC-STA-B16-CHWS-1TTP21-ELC-AL	1412727	594
HC-STA-B06-CHWS-1TTM20-ELC-AL	1412555	575	HC-STA-B10-CHWS-1TTM32-ELC-AL	1412624	580	HC-STA-B16-CHWS-1TTP29-ELC-AL	1412728	594
HC-STA-B06-CHWS-1TTM25-ELC-AL	1412556	575	HC-STA-B10-CHWS-1TTP21-EL-AL	1412625	580	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412729	594
HC-STA-B06-CHWS-1TTM32-ELC-AL	1412557	575	HC-STA-B10-CHWS-1TTP16-EL-AL	1412626	580	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412730	594
HC-STA-B06-CHWS-1TTP13-ELC-AL	1412558	575	HC-STA-B10-CHWS-1TTP21-EL-AL	1412628	580	HC-STA-B16-CHWS-1TTP16-EL-AL	1412731	594
HC-STA-B06-CHWS-1TTP21-ELC-AL	1412559	575	HC-STA-B10-CHWS-1TTM20-EL-AL	1412629	580	HC-STA-B16-CHWS-1TTP21-EL-AL	1412732	594
HC-STA-B06-CHWS-1TTP29-ELC-AL	1412560	575	HC-STA-B10-CHWS-1TTM25-EL-AL	1412630	580	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412733	602
HC-STA-B06-HHFS-1STM25-EL-AL	1412562	574	HC-STA-B10-CHWS-1TTM32-EL-AL	1412631	580	HC-STA-B16-CHWS-1TTM32-ELC-AL	1412734	602
HC-STA-B06-HHFS-1STM32-EL-AL	1412563	574	HC-STA-B10-CHWS-1TTP21-EL-AL	1412632	580	HC-STA-B16-CHWS-1TTP16-EL-AL	1412735	602
HC-STA-B06-HHFS-1STP21-EL-AL	1412564	574	HC-STA-B10-CHWS-1TTM20-EL-AL	1412633	588	HC-STA-B16-CHWS-1TTP21-EL-AL	1412737	602
HC-STA-B06-HHFS-1STP29-EL-AL	1412565	574	HC-STA-B10-CHWS-1TTM25-EL-AL	1412634	588	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412738	602
HC-STA-B06-HHFS-1TTM25-EL-AL	1412566	574	HC-STA-B10-CHWS-1TTP16-EL-AL	1412635	588	HC-STA-B16-CHWS-1TTM32-EL-AL	1412739	602
HC-STA-B06-HHFS-1TTM32-EL-AL	1412567	574	HC-STA-B10-CHWS-1TTP21-EL-AL	1412636	588	HC-STA-B16-CHWS-1TTP16-EL-AL	1412740	602
HC-STA-B06-HHFS-1TTP21-EL-AL	1412568	574	HC-STA-B10-CHWS-1TTM20-EL-AL	1412637	588	HC-STA-B16-CHWS-1TTP21-EL-AL	1412741	602
HC-STA-B06-HHFS-1TTP29-EL-AL	1412569	574	HC-STA-B10-CHWS-1TTM25-EL-AL	1412638	588	HC-STA-B16-CHWS-1TTM25-ELC-AL	1412284	650
HC-STA-B06-HHFS-1STM20-EL-AL	1412570	574	HC-STA-B10-CHWS-1TTP16-EL-AL	1412639	588	HC-STA-B16-SLFDC-2SSM25-ELC-AL	1412849	601
HC-STA-B06-HHFS-1STM25-EL-AL	1412571	574	HC-STA-B10-CHWS-1TTP21-EL-AL	1412640	588	HC-STA-B16-SLFDC-2SSM32-ELC-AL	1412850	601
HC-STA-B06-HHFS-1STP13-EL-AL	1412572	574	HC-STA-B10-CHWS-1TTM32-EL-AL	1412804	650	HC-STA-B16-SLFDC-2SSP16-ELC-AL	1412852	601
HC-STA-B06-HHFS-1STP16-EL-AL	1412573	574	HC-STA-B10-CHWS-1TTM25-EL-AL	1412830	587	HC-STA-B16-SLFDC-2SSP21-ELC-AL	1412853	601
HC-STA-B06-HHFS-1TTM20-EL-AL	1412574	574	HC-STA-B10-CHWS-1TTM32-EL-AL	1412831	587	HC-STA-B16-SLWD-2SSM25-ELC-AL	1412855	597
HC-STA-B06-HHFS-1TTM25-EL-AL	1412575	574	HC-STA-B10-CHWS-1TTP16-EL-AL	1412832	587	HC-STA-B16-SLWD-2SSM32-ELC-AL	1412856	597
HC-STA-B06-HHFS-1TTP13-EL-AL	1412576	574	HC-STA-B10-CHWS-1TTM20-EL-AL	1412835	583	HC-STA-B16-SLWD-2SSP21-ELC-AL	1412857	597
HC-STA-B06-HHFS-1TTP16-EL-AL	1412577	574	HC-STA-B10-CHWS-1TTM25-EL-AL	1412836	583	HC-STA-B16-SLWD-2SSM25-ELC-AL	1412861	593
HC-STA-B06-SL-PLBK	1412591	650	HC-STA-B10-CHWS-1TTP16-EL-AL	1412837	583	HC-STA-B16-SLWS-2SSM32-ELC-AL	1412862	593
HC-STA-B06-SLWS-2SSM20-ELC-AL	1412821	573	HC-STA-B10-CHWS-1TTP21-EL-AL	1412839	579	HC-STA-B16-SLWS-2SSP21-ELC-AL	1412863	593
HC-STA-B10-SLWS-2SSM25-ELC-AL	1412840	579	HC-STA-B10-SLWS-2SSM25-ELC-AL	1412840	579	HC-STA-B16-SLWS-2SSM25-ELC-AL	1412840	579
HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	579	HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	579	HC-STA-B10-SLWS-2SSP16-ELC-AL	1412842	579
HC-STA-B10-SLWSC-2SSM20-ELC-AL	1412844	579	HC-STA-B10-SLWSC-2SSM20-ELC-AL	1412844	579	HC-STA-B10-SLWSC-2SSM20-ELC-AL	1412844	579
HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	579	HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	579	HC-STA-B10-SLWSC-2SSM25-ELC-AL	1412845	579
HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	579	HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	579	HC-STA-B10-SLWSC-2SSP16-ELC-AL	1412846	579
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NBC-R4QC/2,0-93E/R4QC	1408948	389	Q 1,5/4A10/24-M20KU-ESA BK PE	1584787	456	QPD P 3PE2,5 9-14 BK	1582205	467	QPD W 4PE1,5 9-14 M25 0,5 BK	1414733	457
NBC-R4QC/2,0-94B/R4QC	1408969	391	Q 1,5/4A50/24-M20KU-ESA-ASI BK	1437274	426	QPD P 3PE2,5 9-14 BK BK	1582638	467	QPD W 4PE1,5 9-14 M25 1,0 BK	1414734	457
NBC-R4QC/5,0-93B/R4QC	1408977	383	Q 1,5/4A50/24-M20KU-ESA-BK	1585045	456	QPD P 4PE1,5 5-10 BK	1414749	459	QPD W 4PE1,5 9-14 M25 FC BK	1414735	458
NBC-R4QC/5,0-93E/R4QC	1408946	389	Q 1,5/4FL/24-M20KU-ESA BK	1643000	456	QPD P 4PE1,5 9-14 BK	1414750	459	QPD W 4PE1,5 M25 0,5 BK	1414736	457
NBC-R4QC/5,0-94B/R4QC	1408964	391	Q 1,5/4FL/24-M20KU-ESA-ASI BK	1437261	426	QPD P 4PE2,5 6-11 BK	1403784	467	QPD W 4PE1,5 M25 1,0 BK	1414737	457
NBC-R4RC-IE4/.....	1411829	388	Q 1,5/4IDC/24-24KU-KU BK	1642153	454	QPD P 4PE2,5 9-14 BK	1403782	467	QPD W 4PE2,5 M25 FC BK	1414738	458
NBC-R4RC-IE8/.....	1411840	390	Q 1,5/4IDC/24-24KU-KU BK PE	1642182	454	QPD P 4PE6,0 12-20 BK	1410387	473	QPD W 4PE2,5 6-11 M20 0,5 BK	1403725	464
NBC-R4RC-IE8A/.....	1415637	392	Q 1,5/4IDC/24-24KU-KU-ASI-BK	1585058	426	QPD P 4PE6,0 9-14 BK	1410386	473	QPD W 4PE2,5 6-11 M20 0,5 EX	1411398	475
NBC-R4RC-PN4/.....	1411859	382	Q SET-11/4 COD1 SACB-Q	1670743	296	QPD PSK 2,5	1582151	468	QPD W 4PE2,5 6-11 M20 1,0 BK	1403727	464
NBC-R4RC-R4RC-IE4/.....	1411836	388	Q-MU M16	1640692	468	QPD PSK 3/4X1,5	1414724	460	QPD W 4PE2,5 6-11 M20 1,0 EX	1411394	475
NBC-R4RC-R4RC-IE8/.....	1411847	390	Q-MU M20	1640702	460	QPD PSK 5X1,5	1414759	460	QPD W 4PE2,5 6-11 M20 FC BK	1403729	465
NBC-R4RC-R4RC-IE8A/.....	1414323	392	Q-MU M25	1640715	460	QPD PSK 5X2,5	1404529	468	QPD W 4PE2,5 6-11 M20 FC EX	1411398	475
NBC-R4RC-R4RC-PN4/.....	1411866	382	Q-MU PG 21 BK	1582655	468	QPD PSK 5X6,0	1411404	468	QPD W 4PE2,5 6-11 M25 0,5 BK	1582557	464
NBC-R4RC/1,0-93B/R4RC	1408974	382	Q-PROT 9/11	1670235	52	QPD QSK 2,5	1582150	468	QPD W 4PE2,5 6-11 M25 0,5 EX	1411387	475
NBC-R4RC/1,0-93E/R4RC	1408941	388	QO-SET	1548626	295	QPD QSK 2,5 FS	1582488	468	QPD W 4PE2,5 6-11 M25 1,0 BK	1582558	464
NBC-R4RC/1,0-94B/R4RC	1408961	390	QPD 5P/1,0-PVC/5P 5X2,5 BK	1408720	477	QPD QSK 3/4X1,5	1414723	460	QPD W 4PE2,5 6-11 M20 0,5 EX	1411398	475
NBC-R4RC/10,0-93B/R4RC	1408976	382	QPD 5P/3,0-PVC/5P 5X2,5 BK	1408721	477	QPD QSK 5X1,5	1414758	460	QPD W 4PE2,5 6-11 M25 FC BK	1582559	465
NBC-R4RC/10,0-93E/R4RC	1408945	388	QPD 5P/5,0-PVC/5P 5X2,5 BK	1408722	477	QPD QSK 5X2,5	1404528	468	QPD W 4PE2,5 6-11 M25 FC EX	1411389	475
NBC-R4RC/10,0-94B/R4RC	1408963	390	QPD 5P/10,0-PVC/5P 5X2,5 BK	1408723	477	QPD QSK 5X6,0	1411403	468	QPD W 4PE2,5 9-16 M20 0,5 BK	1403731	464
NBC-R4RC/2,0-93B/R4RC	1408975	382	QPD C 2PE1,5 1X4-9 BK	1414699	455	QPD QSK 5X6,0 FS	1582645	468	QPD W 4PE2,5 9-16 M20 0,5 EX	1411397	475
NBC-R4RC/2,0-93E/R4RC	1408942	388	QPD C 2PE1,5 1X8-13 BK	1414701	455	QPD QSK BK 3/4X1,5 FS	1414722	460	QPD W 4PE2,5 9-16 M20 1,0 BK	1403733	464
NBC-R4RC/2,0-94B/R4RC	1408962	390	QPD C 2PE1,5 2X4-9 BK	1414700	455	QPD QSK BK 5X1,5 FS	1414728	460	QPD W 4PE2,5 9-16 M20 1,0 EX	1411398	475
NBC-R4RC/5,0-93B/R4RC	1408972	382	QPD C 2PE1,5 2X8-13 BK	1414702	455	QPD QSK BK 5X2,5 FS	1404525	468	QPD W 4PE2,5 9-16 M20 FC BK	1403735	465
NBC-R4RC/5,0-93E/R4RC	1408943	388	QPD C 3PE1,5 1X4-9 BK	1414694	455	QPD QSK BK 5X6,0 FS	1411400	474	QPD W 4PE2,5 9-16 M20 FC EX	1411399	475
NBC-R4RC/5,0-94B/R4RC	1408959	390	QPD C 3PE1,5 1X8-13 BK	1414697	455	QPD QSK GY 5X2,5 FS	1404526	468	QPD W 4PE2,5 9-16 M25 0,5 BK	1582561	464
			QPD C 3PE1,5 2X4-9 BK	1414696	455	QPD QSK GY 5X6,0 FS	1411401	474	QPD W 4PE2,5 9-16 M25 0,5 EX	1411390	475
			QPD C 3PE1,5 2X8-13 BK	1414698	455	QPD T 2PE1,5 2X4-9 BK	1414711	453	QPD W 4PE2,5 9-16 M25 1,0 BK	1582562	464
			QPD C 3PE2,5 1X6-10 BK	1582220	463	QPD T 2PE1,5 2X8-13 BK	1414713	453	QPD W 4PE2,5 9-16 M25 1,0 EX	1411391	475
			QPD C 3PE2,5 1X9-14 BK	1582223	463	QPD T 2PE1,5 3X4-9 BK	1414712	453	QPD W 4PE2,5 9-16 M25 FC BK	1582563	465
			QPD C 3PE2,5 2X6-10 BK	1582211	463	QPD T 2PE1,5 3X8-13 BK	1414714	453	QPD W 4PE2,5 9-16 M25 FC EX	1411392	475
			QPD C 3PE2,5 2X9-14 BK	1582214	463	QPD T 3PE1,5 2X4-9 BK	1414707	453	QPD W 4PE2,5 M20 0,5 BK	1403737	464
			QPD C 4PE1,5 1X5-10 BK	1414739	455	QPD T 3PE1,5 2X8-13 BK	1414709	453	QPD W 4PE2,5 M20 1,0 BK	1403739	464
			QPD C 4PE1,5 1X9-14 BK	1414741	455	QPD T 3PE1,5 3X4-9 BK	1414708	453	QPD W 4PE2,5 M20 FC BK	1403741	465
			QPD C 4PE1,5 2X5-10 BK	1414740	455	QPD T 3PE1,5 3X8-13 BK	1414710	453	QPD W 4PE2,5 M25 0,5 BK	1582565	464
			QPD C 4PE1,5 2X9-14 BK	1414742	455	QPD T 4PE 2X6-11 BK	1405403	462	QPD W 4PE2,5 M25 1,0 BK	1582566	464
			QPD C 4PE2,5 1X6-11 BK	1403834	463	QPD T 4PE 2X9-16 BK	1405404	462	QPD W 4PE2,5 M25 FC BK	1582567	465
			QPD C 4PE2,5 1X9-16 BK	1403831	463	QPD T 4PE 3X6-11 BK	1405401	462	QPD W 4PE6,0 12-20 M25 0,5 BK	1410394	472
			QPD C 4PE2,5 2X6-11 BK	1403838	463	QPD T 4PE 3X9-16 BK	1405402	462	QPD W 4PE6,0 12-20 M25 1,0 BK	1410395	472
			QPD C 4PE2,5 2X9-16 BK	1403836	463	QPD T 4PE 5,5 2X5-10 BK	1414751	453	QPD W 4PE6,0 9-14 M25 0,5 BK	1410392	472
			QPD C 4PE6,0 1X12-20 BK	1410416	471	QPD T 4PE1,5 2X9-14 BK	1414752	453	QPD W 4PE6,0 9-14 M25 1,0 BK	1410393	472
			QPD C 4PE6,0 1X9-14 BK	1410415	471	QPD T 4PE1,5 3X5-10 BK	1414753	453	QPD W 4PE6,0 M25 0,5 BK	1410396	472
			QPD C 4PE6,0 2X12-20 BK	1410412	466	QPD T 4PE1,5 3X9-14 BK	1414754	453	QPD W 4PE6,0 M25 1,0 BK	1410397	472
			QPD C 4PE6,0 2X9-14 BK	1410410	466	QPD T 4PE6,0 2X12-20 BK	1411417	470	QPDW3PE1,5 6-10 M25 0,1 BKKTH	1582475	476
			QPD CLIP 2,5 BK	1582235	468	QPD T 4PE6,0 2X9-14 BK	1411416	470	QPDW3PE1,5 9-14 M25 0,1 BKKTH	1582476	476
			QPD H 2PE1,5 4X4-9 BK	1414719	452	QPD T 4PE6,0 3X12-20 BK	1411415	470	QSS 15	1641992	460
			QPD H 2PE1,5 4X8-13 BK	1414720	452	QPD T 4PE6,0 3X9-14 BK	1411414	470	QSS 19	1670895	460
			QPD H 2PE1,5 BK	1414721	452	QPD W 2PE1,5 4-9 M20 0,5 BK	1414684	457	QSS 22	1670206	296
			QPD H 3PE1,5 4X4-9 BK	1414715	452	QPD W 2PE1,5 4-9 M20 1,0 BK	1414685	457	QSS 24	1670219	468
			QPD H 3PE1,5 4X8-13 BK	1414716	452	QPD W 2PE1,5 4-9 M20 FC BK	1414686	458	QSS 27	1670646	468
			QPD H 3PE1,5 BK	1414717	452	QPD W 2PE1,5 8-13 M20 0,5 BK	1414687	457			
			QPD H 3PE2,5 6-10 BK	1582145	461	QPD W 2PE1,5 8-13 M20 1,0 BK	1414688	457			
			QPD H 3PE2,5 9-14 BK	1582148	461	QPD W 2PE1,5 8-13 M20 FC BK	1414689	458			
			QPD H 3PE2,5 BK	1582154	461	QPD W 2PE1,5 M20 0,5 BK	1414690	457			
			QPD H 4PE1,5 4X5-								

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RC-5AP2000	1603505	86	SAC- 3,0/0,1-116/2XBI-1L-Z	1458350	229	SAC-12P-MS/ 5,0-35T SH SCO	1430064	200	SAC-2P- 3,0-PUR/SUSFS	1410749	233
RC-5AS2000	1603509	86	SAC- 3,0/0,15-116/2XA-1L-Z	1458033	229	SAC-12P-MS/ 5,0-PUR SCO	1430556	198	SAC-2P- 5,0-910/FSB SCO	1518074	231
RC-5CP2000	1603513	86	SAC- 3,0/0,15-116/2XB-1L-Z	1458211	229	SAC-12P-MS/ 5,0-PVC SCO	1554791	199	SAC-2P- 5,0-910/M12FSB	1507308	413
RC-5CS2000	1603517	86	SAC- 3,0/0,15-116/2XBI-1L-Z	1458392	229	SAC-12P-MS/0,5-35T/M23FS SHSCO	1437326	200	SAC-2P- 5,0-PUR/DTFS	1410726	230
RC-Z2058	1604223	166	SAC- 3,0/0,2-116/2XA-1L-Z	1458075	229	SAC-12P-MS/1,0-35T/M23FS SHSCO	1437339	200	SAC-2P- 5,0-PUR/DTFS-1L	1410730	231
RC-Z2059	1604225	166	SAC- 3,0/0,2-116/2XB-1L-Z	1458253	229	SAC-12P-MS/10,0-35T SH SCO	1430077	200	SAC-2P- 5,0-PUR/DTFS-1L-S	1410734	232
RC-Z2062	1604228	167	SAC- 3,0/0,2-116/2XBI-1L-Z	1458431	229	SAC-12P-MS/10,0-PUR SCO	1430569	198	SAC-2P- 5,0-PUR/SUSFS	1410750	233
RC-Z2068	1604236	167	SAC- 5,0/0,1-116/2XA-1L-Z	1458004	229	SAC-12P-MS/10,0-PVC SCO	1554801	199	SAC-2P-10,0-910/FSB SCO	1518083	413
RC-Z2104	1604260	167	SAC- 5,0/0,1-116/2XB-1L-Z	1458185	229	SAC-12P-MS/2,0-35T/M23FS SHSCO	1437342	200	SAC-2P-10,0-910/M12FSB	1507311	413
RC-Z2130	1604267	156	SAC- 5,0/0,1-116/2XBI-1L-Z	1458363	229	SAC-12P-MS/5,0-35T/M23FS SHSCO	1437355	200	SAC-2P-10,0-PUR/DTFS	1410727	230
RC-Z2274	1604409	156	SAC- 5,0/0,15-116/2XA-1L-Z	1458046	229	SAC-14P- 5,0-PUR/M16FR	1693746	291	SAC-2P-10,0-PUR/DTFS-1L	1410731	231
RC-Z2468	1611796	166	SAC- 5,0/0,15-116/2XB-1L-Z	1458224	229	SAC-14P-10,0-PUR/M16FR	1693759	291	SAC-2P-10,0-PUR/DTFS-1L-S	1410735	232
RC-Z2469	1611797	166	SAC- 5,0/0,15-116/2XBI-1L-Z	1458402	229	SAC-17P- 1,5-35T/FR SH SCO	1430329	201	SAC-2P-10,0-PUR/SUSFS	1410751	233
RC-Z2490	1611803	156	SAC- 5,0/0,2-116/2XA-1L-Z	1458088	229	SAC-17P- 1,5-35T/FS SH SCO	1430284	201	SAC-2P-15,0-910/FSB SCO	1518096	413
RC-Z2494	1614123	156	SAC- 5,0/0,2-116/2XB-1L-Z	1458266	229	SAC-17P- 1,5-PUR/FR SCO	1430815	198	SAC-2P-15,0-910/M12FSB	1507324	413
RC-Z2514	1614590	156	SAC- 5,0/0,2-116/2XBI-1L-Z	1458444	229	SAC-17P- 1,5-PUR/FS SCO	1430776	198	SAC-2P-910/...	1511491	413
RC/TGGM/KVD/LBL 16+3	1685505	294	SAC-10,0/0,1-116/2XA-1L-Z	1458017	229	SAC-17P- 1,5-PVC/FR SCO	1555389	199	SAC-2P-960/...	1432389	422
RC/TWGM/KVD/LBL 16+3	1685518	294	SAC-10,0/0,1-116/2XB-1L-Z	1458198	229	SAC-17P- 1,5-PVC/FS SCO	1555347	199	SAC-2P-961/...	1434620	421
RCK-TWGM/BL16+3/ 5,0PUR SH	1519529	294	SAC-10,0/0,1-116/2XBI-1L-Z	1458376	229	SAC-17P- 3,0-35T/FR SH SCO	1430336	201	SAC-2P-DTMS/ 0,3-PUR/DTFS	1414991	230
RCK-TWGM/BL16+3/10,0PUR SH	1511828	294	SAC-10,0/0,15-116/2XA-1L-Z	1458059	229	SAC-17P- 3,0-35T/FS SH SCO	1430297	201	SAC-2P-DTMS/ 0,6-PUR/DTFS	1414992	230
REDUC-M-KV-M20/M16	1647611	696	SAC-10,0/0,15-116/2XB-1L-Z	1458237	229	SAC-17P- 3,0-PUR/FR SCO	1430828	198	SAC-2P-DTMS/ 1,5-PUR/DTFS	1414993	230
REDUC-M-KV-M25/M20	1647624	696	SAC-10,0/0,15-116/2XBI-1L-Z	1458415	229	SAC-17P- 3,0-PUR/FS SCO	1430789	198	SAC-2P-DTMS/ 3,0-PUR/DTFS	1414994	230
REDUC-M-KV-M32/M25	1647637	696	SAC-10,0/0,2-116/2XA-1L-Z	1458091	229	SAC-17P- 3,0-PVC/FR SCO	1555392	199	SAC-2P-FRB SCO/910/...	1433249	413
REDUC-M-KV-M40/M32	1647640	696	SAC-10,0/0,2-116/2XB-1L-Z	1458279	229	SAC-17P- 3,0-PVC/FS SCO	1555350	199	SAC-2P-FSB SCO/910/...	1538076	413
RF-12P1N8AAC00	1607802	97	SAC-10,0/0,2-116/2XBI-1L-Z	1458457	229	SAC-17P- 5,0-35T/FR SH SCO	1430349	201	SAC-2P-M 8MS-A-1L-Z/...	1405650	214
RF-12P1N8AAD00	1607233	97	SAC-10P- 5,0-PUR/M16FR	1693704	291	SAC-17P- 5,0-35T/FS SH SCO	1430307	201	SAC-2P-M 8MS-B-1L-Z/...	1405651	214
RF-12P1N8AWA00	1607236	96	SAC-10P-10,0-PUR/M16FR	1693717	291	SAC-17P- 5,0-PUR/FR SCO	1430831	198	SAC-2P-M 8MS-BI-1L-Z/...	1405652	214
RF-12P1N8AWB00	1607804	96	SAC-12P- 0,5-35T/FS SH SCO	1437083	200	SAC-17P- 5,0-PUR/FS SCO	1430792	198	SAC-2P-M 8MS-C-1L-Z/...	1405653	214
RF-12P2N8AAC00	1607814	97	SAC-12P- 1,0-35T/FS SH SCO	1434730	200	SAC-17P- 5,0-PVC/FR SCO	1555402	199	SAC-2P-M 8MS-CI-1L-Z/...	1405654	214
RF-12P2N8AAD00	1607257	97	SAC-12P- 1,5-35T/FR SH SCO	1430161	200	SAC-17P- 5,0-PVC/FS SCO	1555363	199	SAC-2P-M12FSB/910/...	1538063	413
RF-12P2N8AWA00	1607260	96	SAC-12P- 1,5-35T/FS SH SCO	1430129	200	SAC-17P-10,0-35T/FR SH SCO	1430352	201	SAC-2P-M12MSB-M12FSB/910/...	1538089	413
RF-12P2N8AWB00	1607817	96	SAC-12P- 1,5-PUR/FR SCO	1430653	198	SAC-17P-10,0-35T/FS SH SCO	1430310	201	SAC-2P-M12MSB/ 0,3-910/M12FSB	1507340	413
RF-12S1N8AAC00	1607827	97	SAC-12P- 1,5-PUR/FS SCO	1430611	198	SAC-17P-10,0-PUR/FR SCO	1430844	198	SAC-2P-M12MSB/ 0,5-910/M12FSB	1507353	413
RF-12S1N8AAD00	1607280	97	SAC-12P- 1,5-PVC/FR SCO	1554898	199	SAC-17P-10,0-PUR/FS SCO	1430802	198	SAC-2P-M12MSB/ 1,0-910/M12FSB	1507366	413
RF-12S1N8AWA00	1607283	96	SAC-12P- 1,5-PVC/FS SCO	1554856	199	SAC-17P-10,0-PVC/FR SCO	1555415	199	SAC-2P-M12MSB/ 2,0-910	1507243	413
RF-12S1N8AWB00	1607830	96	SAC-12P- 3,0-35T/FR SH SCO	1430174	200	SAC-17P-10,0-PVC/FS SCO	1555376	199	SAC-2P-M12MSB/ 2,0-910/M12FSB	1507379	413
RF-12S2N8AAC00	1607842	97	SAC-12P- 3,0-35T/FS SH SCO	1430132	200	SAC-17P-100,0-PVC/0,14	1441545	282	SAC-2P-M12MSB/ 5,0-910	1507256	413
RF-12S2N8AAD00	1607304	97	SAC-12P- 3,0-PUR/FR SCO	1430666	198	SAC-17P-M23MS/0,5-35T/FS SHSCO	1437368	201	SAC-2P-M12MSB/ 5,0-910/M12FSB	1507382	413
RF-12S2N8AWA00	1607307	96	SAC-12P- 3,0-PUR/FS SCO	1430624	198	SAC-17P-M23MS/1,0-35T/FS SHSCO	1437371	201	SAC-2P-M12MSB/ 5,0-910/M12FSB	1507269	413
RF-12S2N8AWB00	1607844	96	SAC-12P- 3,0-PVC/FR SCO	1554908	199	SAC-17P-M23MS/2,0-35T/FS SHSCO	1437384	201	SAC-2P-M12MSB/10,0-910/M12FSB	1507395	413
RF-17P1N8AAC00	1607852	97	SAC-12P- 3,0-PVC/FS SCO	1554869	199	SAC-17P-M23MS/5,0-35T/FS SHSCO	1437397	201	SAC-2P-M12MSB/15,0-910	1507272	413
RF-17P1N8AAD00	1607328	97	SAC-12P- 5,0-35T/FR SH SCO	1430187	200	SAC-17P-MR/ 1,5-35T SH SCO	1430242	201	SAC-2P-M12MSB/15,0-910/M12FSB	1507405	413
RF-17P1N8AWA00	1607860	96	SAC-12P- 5,0-35T/FS SH SCO	1430145	200	SAC-17P-MR/ 1,5-PUR SCO	1430734	198	SAC-2P-M12MSB/910/...	1538047	413
RF-17P1N8AWB00	1607863	96	SAC-12P- 5,0-PUR/FR SCO	1430679	198	SAC-17P-MR/ 1,5-PVC SCO	1555305	199	SAC-2P-MRB SCO/910/...	1433236	413
RF-17S1N8AAC00	1607887	97	SAC-12P- 5,0-PUR/FS SCO	1430637	198	SAC-17P-MR/ 3,0-35T SH SCO	1430255	201	SAC-2P-MRB-FRB SCO/910/...	1433278	413
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SAC-3P-M12Y/2X0,6-PUR/M 8FS	1671344	236	SAC-3P-MR/1,5-PUR/CI-1L-Z SCO	1435506	214	SAC-4P-1,0-PUR/FRS PE SCO	1408848	272	SAC-4P-5,0-PUR/M12FS SH	1682867	185
SAC-3P-M12Y/2X0,6-PUR/M12FR B	1669000	236	SAC-3P-MR/1,5-PUR/CI-1L-Z SCO	1435658	214	SAC-4P-1,0-PUR/FRT SCO	1408827	274	SAC-4P-5,0-PUR/M12FS-2L	1694826	180
SAC-3P-M12Y/2X0,6-PUR/M12FR2LB	1669042	236	SAC-3P-MR/3,0-PUR/A-1L-Z SCO	1434963	214	SAC-4P-1,0-PUR/FSS PE SCO	1408843	272	SAC-4P-5,0-PUR/M5FR	1530566	170
SAC-3P-M12Y/2X0,6-PUR/M12FS B	1668962	236	SAC-3P-MR/3,0-PUR/B-1L-Z SCO	1435360	214	SAC-4P-1,0-PUR/FST SCO	1408823	274	SAC-4P-5,0-PUR/M5FS	1530485	170
SAC-3P-M12Y/2X1,5-PUR	1669686	236	SAC-3P-MR/3,0-PUR/BI-1L-Z SCO	1435218	214	SAC-4P-1,5-800/M12FR	1456954	184	SAC-4P-5,0-PVC/M 8FR	1403254	182
SAC-3P-M12Y/2X1,5-PUR/M 8FR	1671399	236	SAC-3P-MR/3,0-PUR/CI-1L-Z SCO	1435519	214	SAC-4P-1,5-800/M12FR-3L	1456996	184	SAC-4P-5,0-PVC/M 8FS	1567335	182
SAC-3P-M12Y/2X1,5-PUR/M 8FR-2L	1671438	236	SAC-3P-MR/3,0-PUR/CI-1L-Z SCO	1435661	214	SAC-4P-1,5-800/M12FS	1456938	184	SAC-4P-5,0-PVC/M12FR	1693539	182
SAC-3P-M12Y/2X1,5-PUR/M 8FS	1671357	236	SAC-3P-MR/A-1L-Z SCO	1458538	242	SAC-4P-1,5-PUR/DTFS	1415007	230	SAC-4P-5,0-PVC/M12FR-3L	1404961	182
SAC-3P-M12Y/2X1,5-PUR/M12FR B	1669013	236	SAC-3P-MR/B-1L-Z SCO	1458554	243	SAC-4P-1,5-PUR/M 8FR	1681871	180	SAC-4P-5,0-PVC/M12FS	1404408	182
SAC-3P-M12Y/2X1,5-PUR/M12FR2LB	1669055	236	SAC-3P-MR/BI-1L-Z SCO	1458570	243	SAC-4P-1,5-PUR/M 8FR SH	1521960	185	SAC-4P-5,0-PVC/M12FS-2L	1415602	182
SAC-3P-M12Y/2X1,5-PUR/M12FS B	1668975	236	SAC-3P-MRS/1,0-PVC PE SCO	1411640	271	SAC-4P-1,5-PUR/M 8FS	1681842	180	SAC-4P-10,0-186/FS SCO	1555664	428
SAC-3P-M12Y/2X10,0-PUR	1694473	236	SAC-3P-MRS/2,0-PVC PE SCO	1411641	271	SAC-4P-1,5-PUR/M 8FS SH	1521915	185	SAC-4P-10,0-800/M12FR	1456983	184
SAC-3P-M12Y/2X3,0-PUR	1669699	236	SAC-3P-MRS/5,0-PVC PE SCO	1411642	271	SAC-4P-1,5-PUR/M12FR	1668221	180	SAC-4P-10,0-800/M12FR-3L	1567364	184
SAC-3P-M12Y/2X3,0-PUR/M 8FR	1671409	236	SAC-3P-MRS/10,0-PVC PE SCO	1411643	271	SAC-4P-1,5-PUR/M12FR SH	1682906	185	SAC-4P-10,0-960/MINFR VA	1433896	422
SAC-3P-M12Y/2X3,0-PUR/M 8FR-2L	1671441	236	SAC-3P-MS A SCO/.....	1400895	224	SAC-4P-1,5-PUR/M12FR-3L	1668289	180	SAC-4P-10,0-960/M12FS VA	1431238	422
SAC-3P-M12Y/2X3,0-PUR/M 8FS	1671360	236	SAC-3P-MS A-1L-V SCO/.....	1400874	216	SAC-4P-1,5-PUR/M12FS	1668108	180	SAC-4P-10,0-960/MINFR VA	1429282	422
SAC-3P-M12Y/2X3,0-PUR/M12FR B	1669026	236	SAC-3P-MS A-1L-Z SCO/.....	1434923	214	SAC-4P-1,5-PUR/M12FS SH	1682841	185	SAC-4P-10,0-960/MINFS VAL	1429198	422
SAC-3P-M12Y/2X3,0-PUR/M12FR2LB	1669068	236	SAC-3P-MS B SCO/.....	1400903	224	SAC-4P-1,5-PUR/M12FS-2L	1694800	180	SAC-4P-10,0-961/MINFR VA	1433896	422
SAC-3P-M12Y/2X3,0-PUR/M12FS B	1668988	236	SAC-3P-MS B-1L-V SCO/.....	1400880	216	SAC-4P-1,5-PUR/M5FR	1530540	170	SAC-4P-10,0-961/MINFS VAL	1433809	421
SAC-3P-M12Y/2X5,0-PUR	1669754	236	SAC-3P-MS B-1L-Z SCO/.....	1435328	214	SAC-4P-1,5-PUR/M5FS	1530469	170	SAC-4P-10,0-PUR/DTFS	1415011	230
SAC-3P-M12Y/2XM 8FS	1683471	238	SAC-3P-MS BI SCO/.....	1400900	224	SAC-4P-1,5-PVC/M 8FR	1415552	182	SAC-4P-10,0-PUR/FRS PE SCO	1408854	272
SAC-3P-M12Y/2X1,5-PUR/M 8FS VP	1683549	239	SAC-3P-MS BI-1L-V SCO/.....	1400877	216	SAC-4P-1,5-PVC/M 8FS	1415550	182	SAC-4P-10,0-PUR/FRT SCO	1408830	274
SAC-3P-M12Y/2XM12FS 3L	1403627	238	SAC-3P-MS BI-1L-Z SCO/.....	1435179	214	SAC-4P-1,5-PVC/M12FR	1415606	182	SAC-4P-10,0-PUR/FSS PE SCO	1408846	272
SAC-3P-M12Y/2XM12FS B PE	1683413	238	SAC-3P-MS C SCO/.....	1400919	224	SAC-4P-1,5-PVC/M12FR-3L	1415609	182	SAC-4P-10,0-PUR/DTFS	1408826	274
SAC-3P-M12Y/2XM12FS B PE S21	1514016	238	SAC-3P-MS C-1L-V SCO/.....	1400892	216	SAC-4P-1,5-PVC/M12FS	1544976	182	SAC-4P-10,0-PUR/M 8FR	1694172	180
SAC-3P-M12Y/2XM12FS PE	1683455	238	SAC-3P-MS C-1L-Z SCO/.....	1435629	214	SAC-4P-1,5-PVC/M12FS-2L	1415596	182	SAC-4P-10,0-PUR/M 8FR SH	1521999	185
SAC-3P-M12Y/2XM12FS PE S21	1511739	238	SAC-3P-MS CI SCO/.....	1400916	224	SAC-4P-2,0-186/FS SCO	1555648	428	SAC-4P-10,0-PUR/M 8FS	1683484	180
SAC-3P-M5MR/1,5-PUR	1530346	170	SAC-3P-MS CI-1L-V SCO/.....	1400889	216	SAC-4P-2,0-960/M12FS VA	1431212	422	SAC-4P-10,0-PUR/M 8FS SH	1521944	185
SAC-3P-M5MR/3,0-PUR	1530359	170	SAC-3P-MS CI-1L-Z SCO/.....	1435470	214	SAC-4P-2,0-960/MINFR VA	1429266	422	SAC-4P-10,0-PUR/M12FR	1681389	180
SAC-3P-M5MR/5,0-PUR	1530362	170	SAC-3P-MS/0,3-PUR/A-1L-Z SCO	1434882	214	SAC-4P-2,0-960/MINFS VAL	1429712	422	SAC-4P-10,0-PUR/M12FR SH	1500729	185
SAC-3P-M5MR/10,0-PUR	1530375	170	SAC-3P-MS/0,3-PUR/B-1L-Z SCO	1435289	214	SAC-4P-2,0-961/MINFR VA	1433870	421	SAC-4P-10,0-PUR/M12FR-3L	1681020	180
SAC-3P-M5MS/1,5-PUR	1530265	170	SAC-3P-MS/0,3-PUR/BI-1L-Z SCO	1435137	214	SAC-4P-2,0-961/MINFS VAL	1433786	421	SAC-4P-10,0-PUR/M12FS	1681302	180
SAC-3P-M5MS/3,0-PUR	1530278	170	SAC-3P-MS/0,3-PUR/CI-1L-Z SCO	1435438	214	SAC-4P-2,0-PUR/FRS PE SCO	1408852	272	SAC-4P-10,0-PUR/M12FS SH	1500716	185
SAC-3P-M5MS/5,0-PUR	1530281	170	SAC-3P-MS/0,3-PUR/CI-1L-Z SCO	1435580	214	SAC-4P-2,0-PUR/FRT SCO	1408828	274	SAC-4P-10,0-PUR/M12FS-2L	1694839	180
SAC-3P-M5MS/10,0-PUR	1530294	170	SAC-3P-MS/0,6-PUR/A-1L-Z SCO	1434895	214	SAC-4P-2,0-PUR/FSS PE SCO	1408844	272	SAC-4P-10,0-PUR/M5FR	1530579	170
SAC-3P-M8Y/2X 1,5-PUR	1458622	234	SAC-3P-MS/0,6-PUR/B-1L-Z SCO	1435292	214	SAC-4P-2,0-PUR/FST SCO	1408824	274	SAC-4P-10,0-PUR/M5FS	1530498	170
SAC-3P-M8Y/2X 3,0-PUR	1458635	234	SAC-3P-MS/0,6-PUR/BI-1L-Z SCO	1435140	214	SAC-4P-3,0-800/M12FR	1456967	184	SAC-4P-10,0-PVC/M 8FR	1401064	182
SAC-3P-M8Y/2X 5,0-PUR	1458648	234	SAC-3P-MS/0,6-PUR/CI-1L-Z SCO	1435441	214	SAC-4P-3,0-800/M12FR-3L	1457005	184	SAC-4P-10,0-PVC/M 8FS	1401062	182
SAC-3P-M8Y/2X0,3-PUR/M 8FR	1458703	234	SAC-3P-MS/0,6-PUR/CI-1L-Z SCO	1435593	214	SAC-4P-3,0-800/M12FS	1456941	184	SAC-4P-10,0-PVC/M12FR	1415608	182
SAC-3P-M8Y/2X0,3-PUR/M 8FR-2L	1458745	234	SAC-3P-MS/1,5-PUR/A-1L-Z SCO	1434905	214	SAC-4P-3,0-PUR/DTFS	1415008	230	SAC-4P-10,0-PVC/M12FR-3L	1401063	182
SAC-3P-M8Y/2X0,3-PUR/M 8FS	1458664	234	SAC-3P-MS/1,5-PUR/B-1L-Z SCO	1435302	214	SAC-4P-3,0-PUR/M 8FR	1681884	180	SAC-4P-10,0-PVC/M12FS	1446333	182
SAC-3P-M8Y/2X0,6-PUR/M 8FR	1458716	234	SAC-3P-MS/1,5-PUR/BI-1L-Z SCO	1435153	214	SAC-4P-3,0-PUR/M 8FR SH	1521973	185	SAC-4P-10,0-PVC/M12FS-2L	1415605	182
SAC-3P-M8Y/2X0,6-PUR/M 8FR-2L	1458758	234	SAC-3P-MS/1,5-PUR/CI-1L-Z SCO	1435454	214	SAC-4P-3,0-PUR/M 8FS	1681855	180	SAC-4P-100,0-PUR/0,25	1501692	282
SAC-3P-M8Y/2X0,6-PUR/M 8FS	1458677	234	SAC-3P-MS/1,5-PUR/CI-1L-Z SCO	1435603	214	SAC-4P-3,0-PUR/M 8FS SH	1521928	185	SAC-4P-100,0-PUR/0,34	1501663	282
SAC-3P-M8Y/2X1,5-PUR/M 8FR	1458729	234	SAC-3P-MS/3,0-PUR/A-1L-Z SCO	1434918	214	SAC-4P-3,0-PUR/M12FR	1668234	180	SAC-4P-100,0-PUR/SH,0,25	1535794	283
SAC-3P-M8Y/2X1,5-PUR/M 8FR-2L	1458761	234	SAC-3P-MS/3,0-PUR/B-1L-Z SCO	1435315	214	SAC-4P-3,0-PUR/M12FR SH	1682919	185	SAC-4P-100,0-PUR/SH,0,34	1501715	283
SAC-3P-M8Y/2X1,5-PUR/M 8FS	1458680	234	SAC-3P-MS/3,0-PUR/BI-1L-Z SCO	1435166	214	SAC-4P-3,0-PUR/M12FR	1668292	180	SAC-4P-100,0-PVC/0,25	1501867	282
SAC-3P-M8Y/2X10,0-PUR	1458651	234	SAC-3P-MS/3,0-PUR/CI-1L-Z SCO	1435467	214	SAC-4P-3,0-PUR/M12FS	1668111	180	SAC-4P-100,0-PVC/0,34	1501838	282
SAC-3P-M8Y/2X3,0-PUR/M 8FR	1458732	234	SAC-3P-MS/3,0-PUR/CI-1L-Z SCO	1435616	214	SAC-4P-3,0-PUR/M12FS SH	1682854	185	SAC-4P-15,0-186/FS SCO	1555677	428
SAC-3P-M8Y/2X3,0-PUR/M 8FR-2L	1458774	234	SAC-3P-MS/A-1L-Z SCO	1458525	242	SAC-4P-3,0-PUR/M12FS-2L	1694813	180	SAC-4P-15,0-960/M12FS VA	1431241	422
SAC-3P-M8Y/2X3,0-PUR/M 8FS	1458693	234	SAC-3P-MS/B-1L-Z SCO	1458541	243	SAC-4P-3,0-PUR/M5FR	1530553	170	SAC-4P-15,0-960/MINFR VA	1429295	422
SAC-3P-MINT/2XM1N VP	1412393	241	SAC-3P-MS/BI-1L-Z SCO	1458567	243	SAC-4P-3,0-PUR/M5FS	1530472	170	SAC-4P-15,0-960/MINFR VA	1429295	422
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SAC-3P-MR-A-1L-Z SCO/.....	1434976	214	SAC-3P-MSS/5,0-PVC PE SCO	1411638	271	SAC-4P-3,0-PVC/M12FR	1693526	182	SAC-4P-20,0-960/MINFS VAL	1429211	422
SAC-3P-MR-B SCO/.....	1400905	224	SAC-3P-MSS/10,0-PVC PE SCO	1411639	271	SAC-4P-3,0-PVC/M12FR-3L	1415610	182	SAC-4P-25,0-960/MINFR VA	1429318	422
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SAC-3P-MR-B-1L-Z SCO/.....	1435373	214	SAC-3P-PUR-0,25/...	1408505	283	SAC-4P-3,0-PVC/M12FS-2L	1415597	182	SAC-4P-3,0-PUR/AD	1438956	228
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SAC-4P-M 8MR/1,5-PUR SH	1521863	185	SAC-4P-M12FS/./...	1696963	180	SAC-4P-M12MS/0,3-PUR/M12FR	1668470	180
SAC-4P-M 8MR/3,0-PUR SH	1521876	185	SAC-4P-M12MR FF VA/./...	1431335	422	SAC-4P-M12MS/0,3-PUR/M12FR SH	1500965	185
SAC-4P-M 8MR/5,0-PUR SH	1521889	185	SAC-4P-M12MR SH/./...	1697470	185	SAC-4P-M12MS/0,3-PUR/M12FS	1668357	180
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SAC-4P-M 8MR/0,6-PUR/M 8FS	1682236	180	SAC-4P-M12MR-M12FS SH/./...	1536104	185	SAC-4P-M12MS/0,6-PUR/M12FR	1668483	180
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SAC-4P-M 8MR/0,6-PVC/M 8FS	1415577	182	SAC-4P-M12MR/1,5-800	1457128	184	SAC-4P-M12MS/0,6-PUR/M12FS	1668360	180
SAC-4P-M 8MR/1,5-PUR	1681813	180	SAC-4P-M12MR/1,5-PUR SH	1682870	185	SAC-4P-M12MS/0,6-PUR/M12FS SH	1500855	185
SAC-4P-M 8MR/1,5-PUR/M 8FR	1682281	180	SAC-4P-M12MR/3,0-800	1457131	184	SAC-4P-M12MS/0,6-PVC/M12FR	1454817	182
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SAC-4P-M 8MR/1,5-PVC	1415546	182	SAC-4P-M12MR/5,0-800	1457144	184	SAC-4P-M12MS/1,0-960/M12FS VA	1431270	422
SAC-4P-M 8MR/1,5-PVC/M 8FR	1415582	182	SAC-4P-M12MR/5,0-PUR SH	1682896	185	SAC-4P-M12MS/1,0-960/M12FS	1457018	184
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SAC-4P-M 8MR/10,0-PUR SH	1521892	185	SAC-4P-M12MR/0,3-PUR/M12FR	1668713	180	SAC-4P-M12MS/1,5-PUR	1668043	180
SAC-4P-M 8MR/10,0-PVC	1415549	182	SAC-4P-M12MR/0,3-PUR/M12FR-3L	1668755	180	SAC-4P-M12MS/1,5-PUR SH	1682715	185
SAC-4P-M 8MR/3,0-PUR	1681826	180	SAC-4P-M12MR/0,3-PUR/M12FS	1668593	180	SAC-4P-M12MS/1,5-PUR/M12FR SH	1500981	185
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SAC-4P-M 8MS-M 8FS SH/./...	1552094	185	SAC-4P-M12MR/0,6-PVC/M12FR-3L	1415647	182	SAC-4P-M12MS/3,0-PUR	1668056	180
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SAC-4P-M 8MS/5,0-PUR SH	1521834	185	SAC-4P-M12MR/1,5-PVC/M12FS	1415635	182	SAC-4P-M12MS/5,0-PUR SH	1682647	185
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SAC-4P-MINMS/10,0-961/MINFSVAL	1434196	421	SAC-4P-PVC-0,25/...	1408521	283	SAC-5P-5,0-802/M12FR-3L	1454370	189	SAC-5P-15,0-928/MINFR DN	1417537	419
SAC-4P-MINMS/15,0-960 VAL	1429389	422	SAC-4P-PVC-0,34-SH/...	1408526	283	SAC-5P-5,0-802/M12FS	1454422	189	SAC-5P-15,0-928/MINFS DN	1417485	419
SAC-4P-MINMS/15,0-960/MINFRVAL	1429842	422	SAC-4P-PVC-0,34/...	1408522	283	SAC-5P-5,0-900/FSB SCO	1517929	412	SAC-5P-20,0-923/FR CAN SCO	1419038	415
SAC-4P-MINMS/15,0-960/MINFSVAL	1429606	422	SAC-4PY-1,5-PUR/2XF	1436125	235	SAC-5P-5,0-900/M12FSB	1507120	412	SAC-5P-20,0-923/FS CAN SCO	1419033	415
SAC-4P-MINMS/20,0-960 VAL	1429392	422	SAC-4PY-3,0-PUR/2XF	1436178	235	SAC-5P-5,0-920/FS SCO	1518229	417	SAC-5P-20,0-923/MINFR DN	1418510	418
SAC-4P-MINMS/20,0-960/MINFRVAL	1429855	422	SAC-4PY-5,0-PUR/2XF	1436181	235	SAC-5P-5,0-920/M 8FS	1575783	416	SAC-5P-20,0-923/MINFS DN	1418468	418
SAC-4P-MINMS/20,0-960/MINFSVAL	1429619	422	SAC-4PY-10,0-PUR/2XF	1436194	235	SAC-5P-5,0-920/M12FS	1507489	417	SAC-5P-20,0-928/MINFR DN	1417540	419
SAC-4P-MINMS/25,0-960 VAL	1429402	422	SAC-4PY-MS-0,3-PUR/2XF	1436204	235	SAC-5P-5,0-923/FR CAN SCO	1419035	415	SAC-5P-20,0-928/MINFS DN	1417498	419
SAC-4P-MINMS/25,0-960/MINFRVAL	1429868	422	SAC-4PY-MS-0,6-PUR/2XF	1436217	235	SAC-5P-5,0-923/FS CAN SCO	1419030	415	SAC-5P-920/...	1511504	417
SAC-4P-MINMS/25,0-960/MINFSVAL	1429622	422	SAC-4PY-MS-1,5-PUR/2XF	1436220	235	SAC-5P-5,0-923/MINFR DN	1418484	418	SAC-5P-AD-2L/...	1435124	226
SAC-4P-MINMS/30,0-960 VAL	1429415	422	SAC-4PY-MS-3,0-PUR/2XF	1436233	235	SAC-5P-5,0-923/MINFS DN	1418439	418	SAC-5P-FR SCO/920/...	1433294	417
SAC-4P-MINMS/30,0-960/MINFRVAL	1429871	422	SAC-4PY-MT/2XFT VP	1410632	280	SAC-5P-5,0-928/MINFR DN	1417511	419	SAC-5P-FRB SCO/900/...	1433197	412
SAC-4P-MINMS/30,0-960/MINFSVAL	1429635	422	SAC-5P-1,5-115/M 8FRB	1404475	186	SAC-5P-5,0-928/MINFS DN	1417469	419	SAC-5P-FS SCO/920/...	1538131	417
SAC-4P-MINMS/40,0-960 VAL	1429428	422	SAC-5P-1,5-115/M 8FSB	1404470	186	SAC-5P-5,0-PUR/AD-2L	1435108	226	SAC-5P-FSB SCO/900/...	1538018	412
SAC-4P-MINMS/40,0-960/MINFRVAL	1429884	422	SAC-5P-1,5-430/MINFR PWR	1443352	278	SAC-5P-5,0-PUR/M12FR	1669877	187	SAC-5P-M 8FR/920/...	1575916	416
SAC-4P-MINMS/40,0-960/MINFSVAL	1429648	422	SAC-5P-1,5-430/MINFS PWR	1443307	278	SAC-5P-5,0-PUR/M12FR SH	1682980	190	SAC-5P-M 8FS/920/...	1575819	416
SAC-4P-MINMS/50,0-960 VAL	1429431	422	SAC-5P-1,5-431/MINFR PWR	1443556	279	SAC-5P-5,0-PUR/M12FR-3L	1669903	187	SAC-5P-M 8MR-M 8FR/920/...	1575945	416
SAC-4P-MINMS/50,0-960/MINFRVAL	1429897	422	SAC-5P-1,5-431/MINFS PWR	1443501	279	SAC-5P-5,0-PUR/M12FS	1669848	187	SAC-5P-M 8MR-M 8FS/920/...	1575932	416
SAC-4P-MINMS/50,0-960/MINFSVAL	1429651	422	SAC-5P-1,5-440/MINFR PWR	1443750	276	SAC-5P-5,0-PUR/M12FS SH	1682951	190	SAC-5P-M 8MR/920/...	1575903	416
SAC-4P-MRS/1,0-PUR PE SCO	1408839	272	SAC-5P-1,5-440/MINFS PWR	1443705	276	SAC-5P-5,0-PVC/AD-2L	1438639	227	SAC-5P-M 8MRB/1,5-115	1404465	186
SAC-4P-MRS/1,5-PUR PE SH SCO	1424108	273	SAC-5P-1,5-441/MINFR PWR	1443954	277	SAC-5P-5,0-PVC/M12FR	1415688	188	SAC-5P-M 8MRB/3,0-115	1404466	186
SAC-4P-MRS/2,0-PUR PE SCO	1408840	272	SAC-5P-1,5-441/MINFS PWR	1443909	277	SAC-5P-5,0-PVC/M12FR-3L	1415693	188	SAC-5P-M 8MRB/5,0-115	1404467	186
SAC-4P-MRS/3,0-PUR PE SH SCO	1424109	273	SAC-5P-1,5-802/M12FR	1457173	189	SAC-5P-5,0-PVC/M12FS	1453889	188	SAC-5P-M 8MRB/10,0-115	1404468	186
SAC-4P-MRS/5,0-PUR PE SCO	1408841	272	SAC-5P-1,5-802/M12FR-3L	1454367	189	SAC-5P-7,5-430/MINFR PWR	1443381	278	SAC-5P-M 8MS DN TR	1435988	425
SAC-4P-MRS/5,0-PUR PE SH SCO	1424110	273	SAC-5P-1,5-802/M12FS	1454419	189	SAC-5P-7,5-430/MINFS PWR	1443336	278	SAC-5P-M 8MS-M 8FS/920/...	1575893	416
SAC-4P-MRS/10,0-PUR PE SCO	1408842	272	SAC-5P-1,5-PUR/AD-2L	1435085	226	SAC-5P-7,5-431/MINFR PWR	1443585	279	SAC-5P-M 8MS/0,3-920/M 8FS	1575822	416
SAC-4P-MRS/10,0-PUR PE SH SCO	1424111	273	SAC-5P-1,5-PUR/M12FR	1669851	187	SAC-5P-7,5-431/MINFS PWR	1443530	279	SAC-5P-M 8MS/0,5-920/M 8FS	1575835	416
SAC-4P-MRT/1,0-PUR SCO	1408816	274	SAC-5P-1,5-PUR/M12FR SH	1682964	190	SAC-5P-7,5-440/MINFR PWR	1443789	276	SAC-5P-M 8MS/1,0-920/M 8FS	1575848	416
SAC-4P-MRT/1,0-PUR/FRT SCO	1415196	274	SAC-5P-1,5-PUR/M12FR-3L	1669880	187	SAC-5P-7,5-440/MINFS PWR	1443734	276	SAC-5P-M 8MS/2,0-920	1575712	416
SAC-4P-MRT/1,5-PUR SH SCO	1424124	275	SAC-5P-1,5-PUR/M12FS	1669822	187	SAC-5P-7,5-441/MINFR PWR	1419807	277	SAC-5P-M 8MS/2,0-920/M 8FS	1575851	416
SAC-4P-MRT/1,5-PUR/FRT SH SCO	1415202	275	SAC-5P-1,5-PUR/M12FS SH	1682935	190	SAC-5P-7,5-441/MINFS PWR	1443938	277	SAC-5P-M 8MS/5,0-920	1575725	416
SAC-4P-MRT/10,0-PUR/FRT SCO	1415199	274	SAC-5P-1,5-PVC/AD-2L	1415945	227	SAC-5P-10,0-115/M 8FRB	1404478	186	SAC-5P-M 8MS/5,0-920/M 8FS	1575864	416
SAC-4P-MRT/10,0-PUR/FRT SH SCO	1415205	275	SAC-5P-1,5-PVC/M12FR	1415686	188	SAC-5P-10,0-115/M 8FSB	1404474	186	SAC-5P-M 8MS/10,0-920	1575738	416
SAC-4P-MRT/2,0-PUR SCO	1408819	274	SAC-5P-1,5-PVC/M12FR-3L	1415690	188	SAC-5P-10,0-430/MINFR PWR	1443394	278	SAC-5P-M 8MS/10,0-920/M 8FS	1575877	416
SAC-4P-MRT/2,0-PUR/FRT SCO	1415197	274	SAC-5P-1,5-PVC/M12FS	1415683	188	SAC-5P-10,0-430/MINFS PWR	1443349	278	SAC-5P-M 8MS/15,0-920	1575754	416
SAC-4P-MRT/3,0-PUR SH SCO	1424125	275	SAC-5P-2,0-900/FSB SCO	1517916	412	SAC-5P-10,0-431/MINFR PWR	1443598	279	SAC-5P-M 8MS/15,0-920/M 8FS	1575880	416
SAC-4P-MRT/3,0-PUR/FRT SH SCO	1415203	275	SAC-5P-2,0-900/M12FSB	1507117	412	SAC-5P-10,0-431/MINFS PWR	1443543	279	SAC-5P-M 8MS/920/...	1575767	416
SAC-4P-MRT/5,0-PUR SCO	1408820	274	SAC-5P-2,0-920/FS SCO	1518216	417	SAC-5P-10,0-440/MINFR PWR	1443792	276	SAC-5P-M 8MSB/0,3-115/M 8FSB	1404479	186
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SAC-5P-M12MR SH/.....	1697519	190	SAC-5P-M12MS/1,5-PUR/M12FR-3L	1694651	187	SAC-5P-MINMR/1,5-441/MINFR PWR	1419904	277	SAC-5P-MINMS/20,0-923 DN	1418565	418
SAC-5P-M12MR-M12FR SH/.....	1536159	190	SAC-5P-M12MS/1,5-PUR/M12FS	1681606	187	SAC-5P-MINMR/10,0-923 DN	1418594	418	SAC-5P-MINMS/20,0-923/MINFR DN	1420032	418
SAC-5P-M12MR-M12FR/.....	1552159	187	SAC-5P-M12MS/1,5-PVC	1415675	188	SAC-5P-MINMR/10,0-923/MINFR DN	1420090	418	SAC-5P-MINMS/20,0-923/MINFS DN	1418691	418
SAC-5P-M12MR-M12FR/.....	1529506	187	SAC-5P-M12MS/1,5-PVC/M12FR	1415701	188	SAC-5P-MINMR/10,0-923/MINFS DN	1418756	418	SAC-5P-MINMS/20,0-928 DN	1417595	419
SAC-5P-M12MR-M12FS SH/.....	1536146	190	SAC-5P-M12MS/1,5-PVC/M12FR-3L	1415705	188	SAC-5P-MINMR/10,0-928 DN	1417621	419	SAC-5P-MINMS/20,0-928/MINFR DN	1417883	419
SAC-5P-M12MR-M12FS/.....	1508734	187	SAC-5P-M12MS/1,5-PVC/M12FS	1415697	188	SAC-5P-MINMR/10,0-928/MINFR DN	1417948	419	SAC-5P-MINMS/20,0-928/MINFS DN	1417728	419
SAC-5P-M12MR/1,5-802	1457322	189	SAC-5P-M12MS/10,0-802	1457254	189	SAC-5P-MINMR/10,0-928/MINFS DN	1417786	419	SAC-5P-MINT/2XMIN DN	1401229	424
SAC-5P-M12MR/1,5-PUR SH	1682757	190	SAC-5P-M12MS/10,0-920	1507447	417	SAC-5P-MINMR/15,0-923 DN	1418604	418	SAC-5P-MINT/2XMIN VP	1543977	241
SAC-5P-M12MR/3,0-802	1457335	189	SAC-5P-M12MS/10,0-920/M12FS	1507573	417	SAC-5P-MINMR/15,0-923/MINFR DN	1420100	418	SAC-5P-MR SCO/920/...	1433281	417
SAC-5P-M12MR/3,0-PUR SH	1682760	190	SAC-5P-M12MS/10,0-PUR	1683361	187	SAC-5P-MINMR/15,0-923/MINFS DN	1418769	418	SAC-5P-MR-FC SCO/920/...	1433320	417
SAC-5P-M12MR/5,0-802	1457348	189	SAC-5P-M12MS/10,0-PUR SH	1500732	190	SAC-5P-MINMR/15,0-928 DN	1417634	419	SAC-5P-MR-FS SCO/920/...	1433317	417
SAC-5P-M12MR/5,0-PUR SH	1682773	190	SAC-5P-M12MS/10,0-PVC	1415678	188	SAC-5P-MINMR/15,0-928/MINFR DN	1417951	419	SAC-5P-MR/0,3-923/FR CAN SCO	1419073	415
SAC-5P-M12MR/.....	1697108	187	SAC-5P-M12MS/15,0-920	1507450	417	SAC-5P-MINMR/15,0-923/MINFS DN	1417799	419	SAC-5P-MR/0,3-923/FS CAN SCO	1419057	415
SAC-5P-M12MR/1,5-PUR	1669796	187	SAC-5P-M12MS/15,0-920/M12FS	1507586	417	SAC-5P-MINMR/2,0-430/MINFR PWR	1443491	278	SAC-5P-MR/0,5-923/FR CAN SCO	1419704	415
SAC-5P-M12MR/1,5-PVC	1415679	188	SAC-5P-M12MS/3,0-PUR	1669770	187	SAC-5P-MINMR/2,0-431/MINFR PWR	1443695	279	SAC-5P-MR/0,5-923/FS CAN SCO	1419058	415
SAC-5P-M12MR/10,0-802	1457351	189	SAC-5P-M12MS/3,0-PUR/M12FR	1681651	187	SAC-5P-MINMR/2,0-440/MINFR PWR	1443899	276	SAC-5P-MR/1,0-923/FR CAN SCO	1419075	415
SAC-5P-M12MR/10,0-PUR	1694460	187	SAC-5P-M12MS/3,0-PUR/M12FS	1681619	187	SAC-5P-MINMR/2,0-441/MINFR PWR	1419917	277	SAC-5P-MR/1,0-923/FS CAN SCO	1419059	415
SAC-5P-M12MR/10,0-PUR SH	1669819	187	SAC-5P-M12MS/3,0-PUR	1415676	188	SAC-5P-MINMR/20,0-923 DN	1418617	418	SAC-5P-MR/2,0-923/FR CAN SCO	1419044	415
SAC-5P-M12MR/10,0-PVC	1415682	188	SAC-5P-M12MS/3,0-PVC/M12FR	1415702	188	SAC-5P-MINMR/20,0-923/MINFR DN	1420113	418	SAC-5P-MR/2,0-923/FR CAN SCO	1419076	415
SAC-5P-M12MR/3,0-PUR	1669806	187	SAC-5P-M12MS/3,0-PVC/M12FR-3L	1415706	188	SAC-5P-MINMR/20,0-923/MINFS DN	1418772	418	SAC-5P-MR/2,0-923/FS CAN SCO	1419060	415
SAC-5P-M12MR/3,0-PVC	1415680	188	SAC-5P-M12MS/3,0-PVC/M12FS	1415698	188	SAC-5P-MINMR/20,0-928 DN	1417647	419	SAC-5P-MR/5,0-923 CAN SCO	1419045	415
SAC-5P-M12MR/5,0-PUR	1669796	187	SAC-5P-M12MS/5,0-PUR	1669783	187	SAC-5P-MINMR/20,0-928/MINFR DN	1417964	419	SAC-5P-MR/5,0-923/FR CAN SCO	1419077	415
SAC-5P-M12MR/5,0-PVC	1415681	188	SAC-5P-M12MS/5,0-PVC	1415677	188	SAC-5P-MINMR/20,0-928/MINFS DN	1417809	419	SAC-5P-MR/5,0-923/FS CAN SCO	1419061	415
SAC-5P-M12MS CAN TR	1507816	425	SAC-5P-M12MS/920/...	1538102	417	SAC-5P-MINMS TR-DN	1434701	425	SAC-5P-MR/10,0-923 CAN SCO	1419064	415
SAC-5P-M12MS PB TR	1507803	425	SAC-5P-M12MSB-M12FSB/900/...	1538021	412	SAC-5P-MINMS/0,3-923/MINFR DN	1418785	418	SAC-5P-MR/10,0-923/FR CAN SCO	1419078	415
SAC-5P-M12MS SH/.....	1697506	190	SAC-5P-M12MSB/0,3-900/M12FSB	1507162	412	SAC-5P-MINMS/0,5-923/MINFS DN	1418620	418	SAC-5P-MR/10,0-923/FS CAN SCO	1419062	415
SAC-5P-M12MS-M12FR SH/.....	1536133	190	SAC-5P-M12MSB/0,5-900/M12FSB	1507175	412	SAC-5P-MINMS/0,3-928/MINFR DN	1417812	419	SAC-5P-MR/15,0-923 CAN SCO	1419047	415
SAC-5P-M12MS-M12FR-3L/.....	1697166	187	SAC-5P-M12MSB/1,0-900/M12FSB	1507188	412	SAC-5P-MINMS/0,3-928/MINFS DN	1417650	419	SAC-5P-MR/15,0-923/FR CAN SCO	1419079	415
SAC-5P-M12MS-M12FR/.....	1697153	187	SAC-5P-M12MSB/2,0-900	1507065	412	SAC-5P-MINMS/0,5-923/MINFR DN	1418798	418	SAC-5P-MR/15,0-923/FS CAN SCO	1419063	415
SAC-5P-M12MS-M12FS SH/.....	1536120	190	SAC-5P-M12MSB/2,0-900/M12FSB	1507191	412	SAC-5P-MINMS/0,5-923/MINFS DN	1418633	418	SAC-5P-MR/20,0-923 CAN SCO	1419048	415
SAC-5P-M12MS-M12FS/.....	1697140	187	SAC-5P-M12MSB/5,0-900	1507078	412	SAC-5P-MINMS/0,5-928/MINFR DN	1417825	419	SAC-5P-MR/20,0-923/FR CAN SCO	1419080	415
SAC-5P-M12MS-M12FS/920/...	1538144	417	SAC-5P-M12MSB/5,0-900/M12FSB	1507201	412	SAC-5P-MINMS/0,5-928/MINFS DN	1417663	419	SAC-5P-MR/20,0-923/FS CAN SCO	1419064	415
SAC-5P-M12MS/0,3-802/M12FR	1457283	189	SAC-5P-M12MSB/10,0-900	1507081	412	SAC-5P-MINMS/1,0-923/MINFR DN	1418808	418	SAC-5P-MR/AD-2L SCO	1458606	242
SAC-5P-M12MS/0,3-802/M12FR-3L	1457306	189	SAC-5P-M12MSB/10,0-900/M12FSB	1507214	412	SAC-5P-MINMS/1,0-923/MINFS DN	1418646	418	SAC-5P-MRB SCO/900/...	1433184	412
SAC-5P-M12MS/0,3-802/M12FS	1457267	189	SAC-5P-M12MSB/15,0-900	1507094	412	SAC-5P-MINMS/1,0-928/MINFR DN	1417838	419	SAC-5P-MRB-FRB SCO/900/...	1433223	412
SAC-5P-M12MS/0,3-920/M12FS	1507528	417	SAC-5P-M12MSB/15,0-900/M12FSB	1507227	412	SAC-5P-MINMS/1,0-928/MINFS DN	1417676	419	SAC-5P-MRB-FSB SCO/900/...	1433210	412
SAC-5P-M12MS/0,3-PUR/M12FR SH	1501003	190	SAC-5P-M12MSB/900/...	1537983	412	SAC-5P-MINMS/2,0-923 DN	1418523	418	SAC-5P-MS SCO/920/...	1538115	417
SAC-5P-M12MS/0,3-PUR/M12FS SH	1500884	190	SAC-5P-M12T/2XMIN1 VP	1541186	239	SAC-5P-MINMS/2,0-923/MINFR DN	1418811	418	SAC-5P-MS-AD-2L SCO/.....	1435072	226
SAC-5P-M12MS/0,5-920/M12FS	1507531	417	SAC-5P-M12T/2XMIN DN	1401028	424	SAC-5P-MINMS/2,0-923/MINFS DN	1418659	418	SAC-5P-MS-FR SCO/920/...	1433304	417
SAC-5P-M12MS/0,6-802/M12FR	1454516	189	SAC-5P-M12Y/2XMIN12FS VP	1683468	239	SAC-5P-MINMS/2,0-928 DN	1417553	419	SAC-5P-MS-FC SCO/920/...	1538157	417
SAC-5P-M12MS/0,6-802/M12FR-3L	1454464	189	SAC-5P-M12Y/2XMIN12FS VP S21	1514029	239	SAC-5P-MINMS/2,0-928/MINFR DN	1417841	419	SAC-5P-MS/0,3-920/FS SCO	1518258	417
SAC-5P-M12MS/0,6-802/M12FS	1454561	189	SAC-5P-MINMR/0,3-923/MINFR DN	1420045	418	SAC-5P-MINMS/2,0-928/MINFS DN	1417689	419	SAC-5P-MS/0,3-923/FR CAN SCO	1419065	415
SAC-5P-M12MS/0,6-PUR/M12FR SH	1501029	190	SAC-5P-MINMR/0,3-923/MINFS DN	1418701	418	SAC-5P-MINMS/5,0-923 DN	1418536	418	SAC-5P-MS/0,3-923/FS CAN SCO	1419049	415
SAC-5P-M12MS/0,6-PUR/M12FS SH	1500897	190	SAC-5P-MINMR/0,3-928/MINFR DN	1417896	419	SAC-5P-MINMS/5,0-923/MINFR DN	1418824	418	SAC-5P-MS/0,3-PUR/AD-2L SCO	1435030	226
SAC-5P-M12MS/1,0-920/M12FS	1507544	417	SAC-5P-MINMR/0,3-928/MINFS DN	1417731	419	SAC-5P-MINMS/5,0-923/MINFS DN	1418662	418	SAC-5P-MS/0,5-920/FS SCO	1518261	417
SAC-5P-M12MS/1,5-802	1457225	189	SAC-5P-MINMR/0,5-923/MINFR DN	1420058	418	SAC-5P-MINMS/5,0-928 DN	1417566	419	SAC-5P-MS/0,5-923/FR CAN SCO	1419066	415
SAC-5P-M12MS/1,5-802/M12FR	1454532	189	SAC-5P-MINMR/0,5-923/MINFS DN	1418714	418	SAC-5P-MINMS/5,0-928/MINFR DN	1417854	419	SAC-5P-MS/0,5-923/FS CAN SCO	1419050	415
SAC-5P-M12MS/1,5-802/M12FR-3L	1454480	189	SAC-5P-MINMR/0,5-928/MINFR DN	1417906	419	SAC-5P-MINMS/5,0-928/MINFS DN	1417692	419	SAC-5P-MS/0,6-PUR/AD-2L SCO	1435043	226
SAC-5P-M12MS/1,5-802/M12FS	1454587	189	SAC-5P-MINMR/0,5-928/MINFS DN	1417744	419	SAC-5P-MINMS/0,3-430/MINFS PWR	1443404	278	SAC-5P-MS/1,0-920/FS SCO	1518274	417
SAC-5P-M12MS/1,5-PUR SH	1682728	190	SAC-5P-MINMR/1,0-923/MINFR DN	1420061	418	SAC-5P-MINMS/0,3-431/MINFS PWR	1443608	279	SAC-5P-MS/1,0-923/FR CAN SCO	1419067	415
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SAC-5P-M12MS/1,5-PUR/M12FS SH	1500907	190	SAC-5P-MINMR/1,0-928/MINFR DN	1417919	419	SAC-5P-MINMS/0,3-441/MINFS PWR	1419823	277	SAC-5P-MS/1,5-PUR/AD-2L SCO	1435056	226
SAC-5P-M12MS/2,0-920	1507421	417	SAC-5P-MINMR/1,0-928/MINFS DN	1417757	419	SAC-5P-MINMS/0,6-430/MINFS PWR	1443417	278	SAC-5P-MS/2,0-920 SCO	1518177	417
SAC-5P-M12MS/2,0-920/M12FS	1507557	417	SAC-5P-MINMR/2,0-923 DN	1418578	418	SAC-5P-MINMS/0,6-431/MINFS PWR	1443611	279	SAC-5P-MS/2,0-920/FS SCO	1518287	417
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SAC-5P-M12MS/3,0-802/M12FR-3L	1457319	189	SAC-5P-MINMR/2,0-928 DN	1417605	419	SAC-5P-MINMS/1,0-430/MINFS PWR	1443420	278	SAC-5P-MS/2,0-923/FS CAN SCO	1419052	415
SAC-5P-M12MS/3,0-802/M12FS	1457270	189	SAC-5P-MINMR/2,0-928/MINFR DN	1417922	419	SAC-5P-MINMS/1,0-431/MINFS PWR	1443624	279	SAC-5P-MS/3,0-PUR/AD-2L SCO	1435069	226
SAC-5P-M12MS/3,0-PUR SH	1682740	190	SAC-5P-MINMR/2,0-928/MINFS DN	1417760	419	SAC-5P-MINMS/1,0-440/MINFS PWR	1443828	276	SAC-5P-MS/5,0-920 SCO	1518180	417
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SAC-5P-M12MS/3,0-PUR/M12FS SH	1500910	190	SAC-5P-MINMR/5,0-923/MINFR DN	1420087	418	SAC-5P-MINMS/1,5-430/MINFS PWR	1443433	278	SAC-5P-MS/5,0-923 CAN SCO	1419040	415
SAC-5P-M12MS/5,0-802	1457241	189	SAC-5P-MINMR/5,0-923/MINFS DN	1418743	418	SAC-5P-MINMS/1,5-431/MINFS PWR	1443637	279	SAC-5P-MS/5,0-923/FR CAN SCO	1419069	415
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SAC-6P-DTMS/ 3,0-PUR	1415031	230	SAC-8P-100,0-PVC/SH-0,25	1550708	283	SAC-8P-M12MS/ 3,0-PVC	1415717	195	SACB- 4/3-L-C M8	1503412	247
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SACC-DSI-M12FSB-5P-M16XL/0,5	1411587	45	SACC-E-M12FSS-4CON-M16/0,5 PE	1424137	269	SACC-FS-4CON-PG 7-M SCO	1543029	20	SACC-M12FS-4CON-PG 7-VA	1553242	21
SACC-DSI-M12FSD-4CON-M16/0,5	1419616	44	SACC-E-M12FSS-4P-M16XL/0,5 PE	1411605	270	SACC-FS-4QO-0,34-M SCO	1521588	18	SACC-M12FS-4CON-PG 9-M	1696439	21
SACC-DSI-M12FSD-4P-M16XL/0,5	1411585	45	SACC-E-M12FST-4CON-M16/0,5	1424138	269	SACC-FS-4QO-0,75 SH SCO	1413994	18	SACC-M12FS-4CON-PG 9-SH	1515170	22
SACC-DSI-M12FSS-3P-M16/0,5 PE	1411652	268	SACC-E-M12FST-4P-M16XL/0,5	1411606	270	SACC-FS-4QO-0,75-M SCO	1521601	18	SACC-M12FS-4CON-PG 9-VA	1553268	21
SACC-DSI-M12FSS-4CON-M16/0,5 PE	1424133	269	SACC-E-M12MS-12P-M16XL/0,5	1411582	36	SACC-FS-4SC M SCO	1432619	19	SACC-M12FS-4CON-PG11-M PWR	1404416	21
SACC-DSI-M12FSS-4P-M16XL/0,5 PE	1411598	270	SACC-E-M12MS-17P-M16XL/0,5	1411583	36	SACC-FS-4SC SH SCO	1432745	19	SACC-M12FS-4CON-PG 7-M	1681114	20
SACC-DSI-M12FST-4CON-M16/0,5	1424134	269	SACC-E-M12MS-4CON-M20/0,5	1408451	37	SACC-FS-5CON-PG 7-M SCO	1543032	20	SACC-M12FS-4CON-PG7-M	1681127	21
SACC-DSI-M12FST-4P-M16XL/0,5	1411599	270	SACC-E-M12MS-4CON-PG9/0,5	1693762	33	SACC-FS-5CON-PG 9-M SCO	1543045	20	SACC-M12FS-4CON-PG7-M SKIN	1430381	21
SACC-DSI-M12MS-12CON-M16/0,5	1419700	44	SACC-E-M12MS-12P-M16XL/0,5	1411582	36	SACC-FS-5QO-0,75 SH SCO	1413992	18	SACC-M12FS-4QO-0,34	1641701	18
SACC-DSI-M12MS-4P-M16XL/0,5	1411596	45	SACC-E-M12MS-4P-M16XL/0,5	1411577	36	SACC-FS-5SC M SCO	1432583	19	SACC-M12FS-4QO-0,34-M	1641688	18
SACC-DSI-M12MS-17CON-M16/0,5	1419726	44	SACC-E-M12MS-5CON-M20/0,5	1408446	37	SACC-FS-5SC SH DN SCO	1432787	407	SACC-M12FS-4QO-0,34-VA	1440766	18
SACC-DSI-M12MS-17P-M16XL/0,5	1411597	45	SACC-E-M12MS-5CON-PG9/0,5	1671111	33	SACC-FS-5SC SH SCO	1432664	19	SACC-M12FS-4QO-0,75	1641756	18
SACC-DSI-M12MS-4CON-M16/0,5	1419629	44	SACC-E-M12MS-5P-M16XL/0,5	1411579	36	SACC-FSB-2QO SH PB SCO	1413932	407	SACC-M12FS-4QO-0,75-M	1641772	18
SACC-DSI-M12MS-4P-M16XL/0,5	1411591	45	SACC-E-M12MS-8CON-M20/0,5	1408442	37	SACC-FSB-2SC SH PB SCO	1432868	406	SACC-M12FS-4QO-0,75-VA	1440782	18
SACC-DSI-M12MS-5CON-M16/0,5	1419645	44	SACC-E-M12MS-8CON-PG9/0,5	1513774	33	SACC-FSB-5SC SH IB SCO	1432826	406	SACC-M12FS-4SC SH CCL	1559770	407
SACC-DSI-M12MS-5P-M16XL/0,5	1411593	45	SACC-E-M12MS-8P-M16XL/0,5	1411581	36	SACC-FSD-4QO SH ETH SCO	1411069	325	SACC-M12FS-5CON-DM 3-5 SH VA	1440038	22
SACC-DSI-M12MS-8CON-M16/0,5	1419687	44	SACC-E-M12MSB-5P-M16XL/0,5	1411580	36	SACC-FSD-4QO SH PN SCO	1411071	325	SACC-M12FS-5CON-DM 5-8 SH VA	1440041	22
SACC-DSI-M12MS-8P-M16XL/0,5	1411595	45	SACC-E-M12MSD-4P-M16XL/0,5	1411578	36	SACC-M 8-SET/2,3-5	1436945	14	SACC-M12FS-5CON-PG 7	1662298	20
SACC-DSI-M12MSB-5CON-M16/0,5	1419661	44	SACC-E-M12MS-3P-M16/0,5 PE	1411655	268	SACC-M 8FR-3CON-M	1529399	14	SACC-M12FS-5CON-PG 7-M	1662968	21
SACC-DSI-M12MSB-5P-M16XL/0,5	1411594	45	SACC-E-M12MS-4CON-M16/0,5 PE	1424139	269	SACC-M 8FR-3CON-M-SW	1407582	16	SACC-M12FS-5CON-PG 9-VA	1694305	22
SACC-DSI-M12MSD-4CON-M16/0,5	1419603	44	SACC-E-M12MS-4P-M16XL/0,5 PE	1411607	270	SACC-M 8FR-3CON-SH	1436479	14	SACC-M12FS-5CON-PG 7-VA	1553255	21
SACC-DSI-M12MSD-4P-M16XL/0,5	1411592	45	SACC-E-M12MST-4CON-M16/0,5	1424140	269	SACC-M 8FR-4CON-M	1513444	14	SACC-M12FS-5CON-PG 9 SH AU	1508365	22
SACC-DSI-M12MSS-3P-M16/0,5 PE	1411653	268	SACC-E-M12MST-4P-M16XL/0,5	1411608	270	SACC-M 8FR-4CON-M-SW	1407584	16	SACC-M12FS-5CON-PG 9-SH	1694318	22
SACC-DSI-M12MSS-4CON-M16/0,5 PE	1424132	269	SACC-E-M5FS-3CON-M5/0,5	1530605	30	SACC-M 8FR-4CON-SH	1436482	14	SACC-M12FS-5CON-PG 9-VA	1553271	21
SACC-DSI-M12MSS-4P-M16XL/0,5 PE	1411603	270	SACC-E-M5FS-4CON-M5/0,5	1530618	30	SACC-M 8FS-3CON-M	1681172	14	SACC-M12FS-5CON-PG11-DUO	1694596	23
SACC-DSI-M12MST-4CON-M16/0,5	1424136	269	SACC-E-M5MS-3CON-M5/0,5	1530582	30	SACC-M 8FS-3CON-M-0,34-SH	1542907	16	SACC-M12FS-5CON-PG11-DUO VA	1403372	23
SACC-DSI-M12MST-4P-M16XL/0,5	1411604	270	SACC-E-M5MS-4CON-M5/0,5	1530595	30	SACC-M 8FS-3CON-M-SH	1506927	16	SACC-M12FS-5CON-PG11-M PWR	1404418	21
SACC-DSI-M8FS-3CON-M10/0,5	1456080	32	SACC-E-M8FS-5CON-M10/0,5 DN	1424233	31	SACC-M 8FS-3CON-M-SW	1506888	14	SACC-M12FS-5CON-PG7-M SKIN	1559000	21
SACC-DSI-M8FS-4CON-M10/0,5	1456093	32	SACC-E-M8FS-8CON-M10/0,5	1424231	31	SACC-M 8FS-3QO-0,25-M	1441040	15	SACC-M12FS-5CON-PG9	1500787	20
SACC-DSI-M8FS-6CON-M10/0,5	1456103	32	SACC-E-M8MS-5CON-M10/0,5 DN	1424234	31	SACC-M 8FS-3QO-0,5-M	1441066	15	SACC-M12FS-5CON-PG9-M	1681486	21
SACC-DSI-M8FS-8CON-M10/0,5	1424229	32	SACC-E-M8MS-8CON-M10/0,5	1424232	31	SACC-M 8FS-4CON-M	1681185	14	SACC-M12FS-5CON-PG9-M SKIN	1556838	21
SACC-DSI-M8MS-8CON-M8/0,5	1424230	32	SACC-E-M1NFS-3CON-PG13/0,5	1521407	49	SACC-M 8FS-4CON-M-0,34-SH	1542910	16	SACC-M12FS-6Q SH VARAN	1429143	325
SACC-DSI-MINFS-3CON-M26/1,0	1453782	50	SACC-E-MINFS-4CON-PG13/0,5	1521423	49	SACC-M 8FS-4CON-M-SH	1506930	14	SACC-M12FS-8CON-PG 9-SH	1511860	22
SACC-DSI-MINFS-4CON-M26/1,0	1453795	50	SACC-E-MINFS-5CON-PG13/0,5	1521449	49	SACC-M 8FS-4CON-M-SW	1506891	16	SACC-M12FS-8CON-PG11-M	1410665	21
SACC-DSI-MINFS-5CON-M26/1,0	1453805	50	SACC-E-MINMS-3CON-PG13/0,5	1521410	49	SACC-M 8FS-4QO-0,25-M	1441053	15	SACC-M12FST-3PECON-PG9-M	1513347	21
SACC-DSI-MINMS-3CON-UNF/1,0	1453753	50	SACC-E-MINMS-4CON-PG13/0,5	1521436	49	SACC-M 8FS-4QO-0,5-M	1441079	15	SACC-M12FS-8Q SH	1553640	325
SACC-DSI-MINMS-4CON-UNF/1,0	1453766	50	SACC-E-MINMS-5CON-PG13/0,5	1521452	49	SACC-M 8MR-3CON-M	1699902	14	SACC-M12FSB-5CON-PG9 SH AU	1507777	406
SACC-DSI-MINMS-5CON-UNF/1,0	1453799	50	SACC-E-MS-12CON-M16/0,5 SCO	1556265	34	SACC-M 8MR-3CON-M-SW	1407583	16	SACC-M12FSS-3PECON-PG11-M	1404642	266
SACC-DSI-MS-12CON-M12/0,5 SCO	1437122	43	SACC-E-MS-17CON-M16/0,5 SCO	1556304	34	SACC-M 8MR-3CON-SH	1436453	14	SACC-M12FST-3PECON-PG11-M	1404644	266
SACC-DSI-MS-12CON-PG9/0,5 SCO	1430459	42	SACC-E-MS-4CON-M16/0,5 SCO	1523450	34	SACC-M 8MR-4CON-M	1554209	14	SACC-M12MR-12SOL-PG 9-M	1404421	17
SACC-DSI-MS-17CON-M12/0,5 SCO	1437135	43	SACC-E-MS-5CON-M16/0,5 SCO	1520055	34	SACC-M 8MR-4CON-M-SW	1407585	16	SACC-M12MR-12SOL-PG 9-M SH	1404412	17
SACC-DSI-MS-17CON-PG9/0,5 SCO	1430475	42	SACC-E-MS-8CON-M16/0,5 SCO	1523492	34	SACC-M 8MR-4CON-SH	1436466	14	SACC-M12MR-4CON-PG 7-SH	1694279	22
SACC-DSI-MS-12CON-M12/0,5 SCO	1551875	43	SACC-E-MSB-5CON-M16/0,5 SCO	1520013	34	SACC-M 8MS-3CON-M	1681156	14	SACC-M12MR-4CON-PG 7-VA	1553200	21
SACC-DSI-MS-4CON-PG9/0,5 SCO	1556618	42	SACC-E-MSD-4CON-M16/0,5 SCO	1551558	34	SACC-M 8MS-3CON-M-0,34-SH	1542884	16	SACC-M12MR-4CON-PG 9-VA	1553226	21
SACC-DSI-MS-5CON-M12/0,5 SCO	1551888	43	SACC-E-MU-M 5	1535901	30	SACC-M 8MS-3CON-M-SH	1506901	14	SACC-M12MR-4CON-PG11-M PWR	1408990	21
SACC-DSI-MS-5CON-PG 9/0,5 SCO	1542703	42	SACC-E-MU-M 8	1504071	31	SACC-M 8MS-3CON-M-SW	1501252	16	SACC-M12MR-4CON-PG7	1681091	20
SACC-DSI-MS-8CON-M12/0,5 SCO	1551914	43	SACC-E-MU-M16	1504097	34	SACC-M 8MS-3QO-0,25-M	1441008	15	SACC-M12MR-4CON-PG7-M	1681101	21
SACC-DSI-MS-8CON-PG 9/0,5 SCO	1542716	42	SACC-E-MU-PG13,5	1539143	49	SACC-M 8MS-3QO-0,5-M	1441024	15	SACC-M12MR-5CON-PG 7	1662269	20
SACC-DSI-MSB-5CON-M12/0,5 SCO	1551891	43	SACC-E-MU-PG9	1504084	33	SACC-M 8MS-4CON-M	1681169	14	SACC-M12MR-5CON-PG 7-M	1663129	21
SACC-DSI-MSB-5CON-PG9/0,5 SCO	1543663	43	SACC-EC-FS-4CON-M16/0,5 SCO	1523447	35	SACC-M 8MS-4CON-M-0,34-SH	1542897	16	SACC-M12MR-5CON-PG 7-SH	1693429	22
SACC-DSI-MSD-4CON-M12/0,5 SCO	1551901	43	SACC-EC-FS-5CON-M16/0,5 SCO	1520042	35	SACC-M 8MS-4CON-M-SH	1506914	14	SACC-M12MR-5CON-PG 7-VA	1553213	21
SACC-DSI-MSD-4CON-PG9/0,5 SCO	1551532	42	SACC-EC-FS-8CON-M16/0,5 SCO	1523489	35	SACC-M 8MS-4CON-M-SW	1501265	16	SACC-M12MR-5CON-PG 9-SH	1694282	22
SACC-E-FS-12CON-M16/0,5 SCO	1556252	34	SACC-EC-FSB-5CON-M16/0,5 SCO	1519998	35	SACC-M 8MS-4QO-0,25-M	1441011	15	SACC-M12MR-5CON-PG 9-VA	1553239	21
SACC-E-FS-17CON-M16/0,5 SCO	1556294	34	SACC-EC-FSD-4CON-M16/0,5 SCO	1535215	35	SACC-M 8MS-4QO-0,5-M	1441037	15	SACC-M12MR-5CON-PG11-DUO	1531044	23
SACC-E-FS-4CON-M16/0,5 SCO	1523434	34	SACC-EC-M12FS-4CON-PG9/0,5	1693791	33	SACC-M12-KD-NUT-SH	1440151	54	SACC-M12MR-5CON-PG11-M PWR	1408992	21
SACC-E-FS-5CON-M16/0,5 SCO	1520039	34	SACC-EC-M12FS-5CON-PG9/0,5	1671108	33	SACC-M12-SET/2,3-5	1436505	20	SACC-M12MR-5CON-PG9	1513431	20
SACC-E-FS-8CON-M16/0,5 SCO	1523476	34	SACC-EC-M12FS-8CON-PG9/0,5	1513761	33	SACC-M12FR-12SOL-PG 9-M	1404423	17	SACC-M12MR-5CON-PG9-M	1681473	21
SACC-E-FSB-5CON-M16/0,5 SCO	1520000	34	SACC-EC-M12FSB-5CON-PG9/0,5	1515044	33	SACC-M12FR-4CON-PG7 9-M SH	1404413	17	SACC-M12MR-5CON-PG9-M SKINTOP	1561742	21
SACC-E-FSD-4CON-M16/0,5 SCO	1535202	34	SACC-EC-M12MS-4CON-PG9/0,5	1693775	33	SACC-M12FR-4CON-PG 7-VA	1553284	21	SACC-M12MR-6Q SH VARAN	1429156	325
SACC-E-M 8FS-3CON-M8/0,5	1500350	31	SACC-EC-M12MS-5CON-PG9/0,5	1671124	33	SACC-M12FR-4CON-PG11-M PWR	1408991	21	SACC-M12MR-8Q SH	1553653	325
SACC-E-M 8FS-4CON-M8/0,5	1500363	31	SACC-EC-M12MS-8CON-PG9/0,5	1513787	33	SACC-M12FR-4CON-PG7	1681130	20	SACC-M12MRD-4Q SH	1553624	325
SACC-E-M 8FS-6CON-M 8/0,5	1542677	31	SACC-EC-M12MSB-5CON-PG9/0,5	1515057	33	SACC-M12FR-4CON-PG7-M	1681143	21	SACC-M1		

Type	Order No.	Page	Type	Order No.	Page	Type	Order No.	Page
SACC-M12MS-4CON-PG-9-VA	1553174	21	SACC-MINMS-5CON-PG13/2,5	1456213	24	SACC-VB-3CON-M16/A-1L-SV 230V	1452165	26
SACC-M12MS-4CON-PG11-M DUO-M	1507052	23	SACC-MINMS-5CON-PG16	1559039	24	SACC-VB-3CON-M16/A-1L-SV 24V	1452149	26
SACC-M12MS-4CON-PG11-M PWR	1404415	21	SACC-MINMS-5CON-PG16/2,5	1456239	24	SACC-VB-3CON-M16/A-GVL 110V	1452181	27
SACC-M12MS-4CON-PG9-M	1523230	21	SACC-MR-4CON-PG-7-M SCO	1542981	20	SACC-VB-3CON-M16/A-GVL 12/24V	1452178	27
SACC-M12MS-4QO-0,34	1641714	18	SACC-MR-4SC M SCO	1432606	19	SACC-VB-3CON-M16/A-GVL 230V	1452194	27
SACC-M12MS-4QO-0,34-M	1641691	18	SACC-MR-4SC SH SCO	1432732	19	SACC-VB-3CON-M16/B-1L-SV 110V	1452217	28
SACC-M12MS-4QO-0,34-VA	1440753	18	SACC-MR-5CON-PG-7-M SCO	1542994	20	SACC-VB-3CON-M16/B-1L-SV 230V	1452220	28
SACC-M12MS-4QO-0,75	1641769	18	SACC-MR-5CON-PG-9-M SCO	1543003	20	SACC-VB-3CON-M16/B-1L-SV 24V	1452204	28
SACC-M12MS-4QO-0,75-M	1641785	18	SACC-MR-5SC M SCO	1432570	19	SACC-VB-3CON-M16/BI-1L-SV 24V	1452233	28
SACC-M12MS-4QO-0,75-VA	1440779	18	SACC-MR-5SC SH DN SCO	1432774	407	SACC-VB-3CON-M16/BI-1L-SV 110V	1452246	28
SACC-M12MS-4SC SH CCL	1559767	407	SACC-MR-5SC SH SCO	1432651	19	SACC-VB-3CON-M16/BI-1L-SV 230V	1452259	28
SACC-M12MS-5CON-DM 3-5 SH VA	1440012	22	SACC-MRB-2SC SH PB SCO	1432855	406	SACC-VB-4CON-M16/A	1452136	26
SACC-M12MS-5CON-DM 5-8 SH VA	1440025	22	SACC-MRB-5SC SH IB SCO	1432813	406	SACC-VB-5CON-M16/AD-2L 24V	1457908	27
SACC-M12MS-5CON-PG-9	1662256	20	SACC-MS-12PCON SCO	1559592	17	SACCBP-FS-12CON-M16/1,0-PVCSCO	1442188	46
SACC-M12MS-5CON-PG-7-M	1663116	21	SACC-MS-17PCON SCO	1559602	17	SACCBP-FS-12CON-M16/2,0-PVCSCO	1442191	46
SACC-M12MS-5CON-PG-7-SH	1693416	22	SACC-MS-2QO SH PBPA SCO	1413933	407	SACCBP-FS-17CON-M16/1,0-PVCSCO	1442269	46
SACC-M12MS-5CON-PG-7-VA	1553187	21	SACC-MS-4CON-PG-7-M SCO	1542952	20	SACCBP-FS-17CON-M16/2,0-PVCSCO	1442272	46
SACC-M12MS-5CON-PG-9-VA	1500774	20	SACC-MS-4QO-0,34-M SCO	1521775	18	SACCBP-FS-4CON-M16/1,0-PUR SCO	1419302	46
SACC-M12MS-5CON-PG-9 SH AU	1508352	22	SACC-MS-4QO-0,75 SH SCO	1413993	18	SACCBP-FS-4CON-M16/2,0-PUR SCO	1419315	46
SACC-M12MS-5CON-PG-9-M	1681460	21	SACC-MS-4QO-0,75-M SCO	1521591	18	SACCBP-FS-5CON-M16/1,0-PUR SCO	1419328	46
SACC-M12MS-5CON-PG-9-SH	1694266	22	SACC-MS-4SC M SCO	1432635	19	SACCBP-FS-5CON-M16/2,0-PUR SCO	1419331	46
SACC-M12MS-5CON-PG-9-VA	1553190	21	SACC-MS-4SC SH SCO	1432729	19	SACCBP-FS-5CON-M16/2,0-PUR SCO	1437520	411
SACC-M12MS-5CON-PG11-M DUO	1662285	23	SACC-MS-5CON-PG-7-M SCO	1542965	20	SACCBP-FS-5CON-PG9/1,0-920SCO	1437533	411
SACC-M12MS-5CON-PG11-M PWR	1403371	23	SACC-MS-5CON-PG-9-M SCO	1542978	20	SACCBP-FS-5CON-PG9/2,0-920SCO	1437546	411
SACC-M12MS-5CON-PG11-M SKIN	1662748	23	SACC-MS-5CON-PG11-M DUO-M SCO	1543016	23	SACCBP-FS-5CON-PG9/5,0-920SCO	1437559	411
SACC-M12MS-5CON-PG7-M SKIN	1404417	21	SACC-MS-5QO-0,75 SH SCO	1413991	18	SACCBP-FS-8CON-M16/1,0-PUR SCO	1419357	46
SACC-M12MS-5CON-PG9-M SKIN	1456466	21	SACC-MS-5SC M SCO	1432567	19	SACCBP-FS-8CON-M16/2,0-PUR SCO	1419344	46
SACC-M12MS-6Q SH VARAN	1429130	325	SACC-MS-5SC SH DN SCO	1432761	407	SACCBP-FSB-2CON-PG9/0,5-910SCO	1437449	410
SACC-M12MS-8CON-PG-9-SH	1511857	22	SACC-MS-5SC SH SCO	1432648	19	SACCBP-FSB-2CON-PG9/1,0-910SCO	1437452	410
SACC-M12MS-8CON-PG11-M	1410666	21	SACC-MSB-2QO SH PB SCO	1413931	407	SACCBP-FSB-2CON-PG9/2,0-910SCO	1437465	410
SACC-M12MS-8CON-PG9-M	1513334	21	SACC-MSB-2SC SH PB SCO	1432842	406	SACCBP-FSB-2CON-PG9/0,5-910SCO	1437478	410
SACC-M12MS-8Q SH	1543236	325	SACC-MSB-5SC SH IB SCO	1432800	406	SACCBP-FSB-5CON-PG9/0,5-900SCO	1437601	409
SACC-M12MSB-5CON-PG9 SH AU	1507764	406	SACC-MSD-4QO SH ETH SCO	1411066	325	SACCBP-FSB-5CON-PG9/1,0-900SCO	1437614	409
SACC-M12MST-3PECON-PG11-M	1404641	266	SACC-MSD-4QO SH PN SCO	1411068	325	SACCBP-FSB-5CON-PG9/2,0-900SCO	1437627	409
SACC-M12MST-3PECON-PG11-M	1404643	266	SACC-MSQ-M12MS-25-3,2 SCO	1419959	40	SACCBP-FSB-5CON-PG9/5,0-900SCO	1437630	409
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SACC-MCI-M12MS-4CON/0,5	1440805	40	SACC-SQ-M12FS-12CON-25F/0,5	1441590	39	SACCBP-M12FS-5CON-M16/5,0-920	1534494	411
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ST-8ES1N8A9003S	1613625	120	VS-04-2X2X26C7/7-67A/OE/1,0	1655722	438	VS-ASI-J-Y-N-SWA-LC	1433168	428	VS-OE-OE-94F-100.0	1416347	381
ST-8ES1N8A9004S	1613626	120	VS-04-2X2X26C7/7-67A/OE/2,0	1655784	438	VS-BH-M12FS-8CON-RJ45/ 90	1405057	327	VS-OE-OE-94F/...	1417359	381
ST-8ES1N8A9005S	1624654	120	VS-04-2X2X26C7/7-SDA/OE/5,0	1655797	438	VS-BH-M12FS-8CON-RJ45/180	1405060	327	VS-OE-PPC/ME-93B-LI/5,0	1416162	382
ST-8ES1N8A9K02S	1618748	115				VS-BH-M12FSD-RJ45/180	1657494	327	VS-OE-PPC/PL-93B-LI/5,0	1416168	383
ST-8ES1N8A9K03S	1618749	115	VS-04-2X2X26C7/7-SDA/SD/2,0	1653935	438	VS-BH-M12FSD-RJ45/90	1657261	327	VS-P1220-P1220-C1020/ 1,0	1609170	352
ST-8ES1N8A9K04S	1618750	115	VS-04-2X2X26C7/7-SDA/SD/5,0	1653948	438	VS-BH-M12FSX-10G-RJ45/180	1404549	327	VS-P1220-P1220-C1020/ 2,0	1609183	352
ST-8ES1N8AA400S	1620438	122	VS-04-BUA-FK-F/IP67	1653854	439	VS-BH-M12FSX-10G-RJ45/90	1404548	327	VS-P1220-P1220-C1020/ 5,0	1609196	352
ST-8ES1N8AA500S	1620453	122				VS-BU-CD-1,0/14,4/0,2	1688997	434	VS-P1220-P1220-C1020/...	1609206	352
ST-8ES1N8ACK02S	1618825	116	VS-04-C-SDA/PH/0,3	1405552	439	VS-BU-CD-1,0/14,4/0,5	1688984	434	VS-P1220-P1226-C1021/ 1,0	1609219	353
ST-8ES1N8ACK03S	1618824	116	VS-04-C-SDA/SD/1,8	1405578	439	VS-BU-CD-HD-1,0/13,5/0,37	1655263	434	VS-P1220-P1226-C1021/ 2,0	1609222	353
ST-8ES1N8ACK04S	1618823	116	VS-04-C-SDB/PH/0,3	1405565	439	VS-BU-LH-3,6/18/3,8	1655454	435	VS-P1220-P1226-C1021/ 5,0	1609235	353
ST-8ES1N8AH100S	1613629	123				VS-BU-LK-3,6/22,8/2,6	1688256	435	VS-P1220-P1226-C1021/...	1609248	353
ST-8ES1N8AW400S	1613630	117	VS-04-MS-IP67	1402489	439	VS-BU-LK-3,6/22,8/4,6	1688272	435	VS-P1222-P1222-C1020/ 1,0	1609251	352
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ST-Z0016	1617993	164	VS-08-KS-H/GY	1654743	360	VS-FSDB-IP20SDA/981/2,0 SCO	1420171	438	VS-PNRJ45-PNRJ45R-93B-1,0	1418248	382
ST-Z0017	1618049	164	VS-08-KU-IP67	1689268	339	VS-FSDB-IP20SDA/981/5,0 SCO	1420184	438	VS-PNRJ45-PNRJ45R-93B-2,0	1418277	382
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