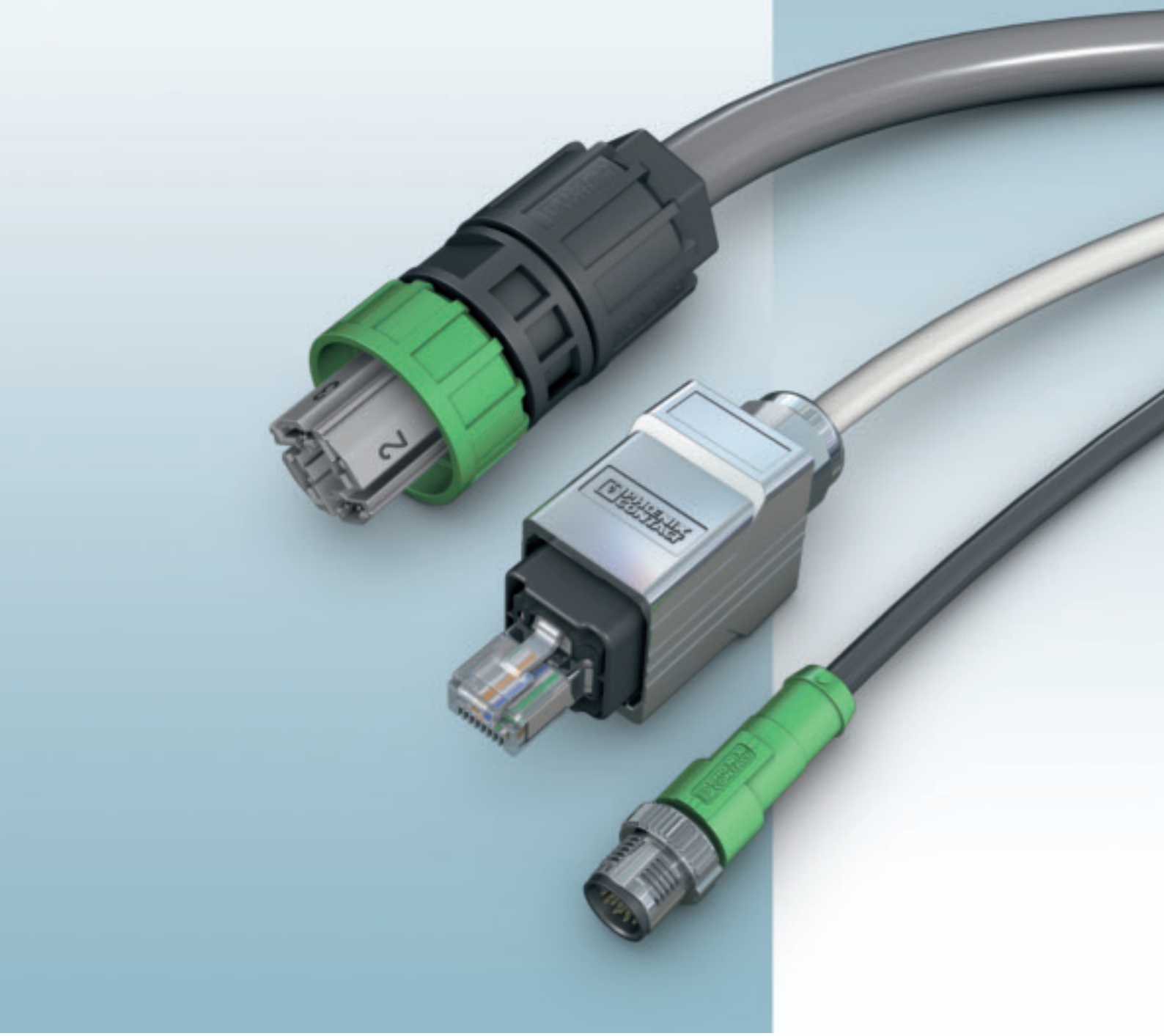
Connection Technology for
Field Devices and Field Cabling

PLUSCON



PHOENIX CONTACT
INSPIRING INNOVATIONS

PLUSCON | Connection Technology for Field Devices and Field Cabling

PLUSCON

For you, as a plant or device manufacturer, the challenge is how to save even more time and money during installation. Regardless of how you design your plant concept, Phoenix Contact offers you a comprehensive, universal and innovative range of industrial plug connectors for the IP6X world – with the option of EMC-shielding as well. As a specialist for industrial plug connections, we are now one of the leading companies in the industry, with a comprehensive knowledge of the market and a uniquely wide range of products.

CLIPLINE

From the modular terminal block to the assembly material and tools and through to the complete PC-aided project planning and marking system, the CLIPLINE catalog has everything that you need for perfect control cabinet wiring.

COMBICON

The COMBICON catalog provides a complete range of device connection technology with protection classes up to IP67. Electronic housings, plug-in card blocks and DIN socket strips make this catalog a standard for every developer.

TRABTECH

With professional surge protection structured according to surge protection for power supply units, data interfaces and MCR applications, Phoenix Contact provides one of the most comprehensive programs on the market.

INTERFACE

With interface modules for binary, serial and analog signals, power supply units, PLC system cabling and electronic load relays, the INTERFACE catalog provides all components around the industrial control.

AUTOMATION

From the serial sensor/actuator box, through to PC-based control technology, right down to visualization software, the AUTOMATION catalog provides the latest automation components and systems from Phoenix Contact.

www.phoenixcontact.com

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Device connection method and field cabling from Phoenix Contact

COMBICON control

Connection method for MCR technology: PCB terminal blocks and connectors with pitches of 2.54 to 7.62 mm, screw, spring-cage and IDC terminal block connection, wave soldering, reflow-soldering, press-in mounting as well as THR-capable versions.

See COMBICON catalog

COMBICON power

Connection method for power electronics: PCB terminal blocks and connectors for currents of up to 125 A, screw and spring-cage connection, panel feed-throughs.

See COMBICON catalog

COMBICON compact

Connection method for building communication systems and telecommunications: PCB terminal blocks and connectors with pitches of 3.5 to 7.5 mm, screw and spring-cage connection, reflow solderable terminals and pin strips and FO PCB terminal blocks.

See COMBICON catalog

COMBICON IO

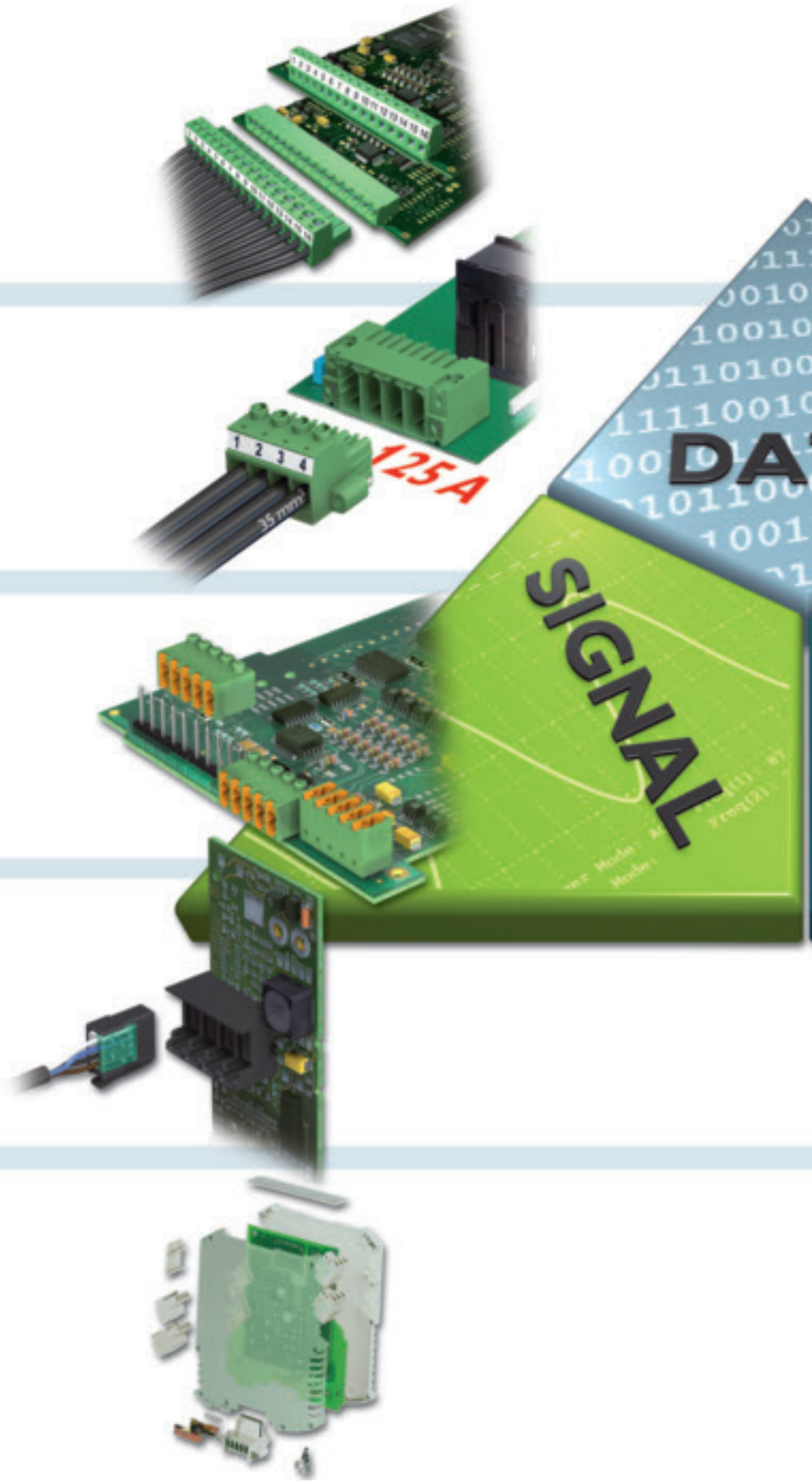
Miniature connectors for sensor/actuator technology: Fast IDC terminal block technology, T-branches for easy bus connections.

See COMBICON catalog

COMBICON housing

Electronic housing: Component housings and panel mounting bases for industrial electronics, component housings for building installation, innovative bus connections between the housings.

See COMBICON catalog



PLUSCON circular

Circular connectors for industrial applications: Flush-type connectors and connectors from M5 to M40 for assembly, for signals, data and power.

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Heavy-duty industrial connectors for signal and power distribution with IDC terminal block, spring-cage and crimp connection, QUICKON and DUPLICON connector systems for flexible power distribution.

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Device connection method and field cabling from Phoenix Contact

Individual connection solutions

Customer-specific adaptation of standard products

You have found a technically matching product in one of our catalogs, but would like to have an individual adaptation? No problem – Our Solution Center will readily support you in implementing your requirements. Individual colors, special imprinting, specific contacts or complete cable assembly – Please contact us.

Ideas transformed into innovative products

Phoenix Contact has been producing high-quality products for worldwide use for over 80 years.

Take advantage of our comprehensive development, manufacturing and process know-how for your individual solutions. Working together with you, we can transform good ideas into innovative products.

Intelligent solutions in the field of housing and connection methods increasingly require individual concepts.

As a manufacturer, you can develop products with us that meet the requirements of today's markets, such as high quality, individual design and great customer benefit at an economical price.

You will have the entire competence of the Phoenix Contact group at your disposal. From our own tool and machine engineering, through plastic molding, metal processing up to the expertise in electronics production, we offer a depth of manufacturing that makes it possible to realize even demanding projects and complex products in a short development time.

Our own laboratory guarantees testing throughout the process, the necessary qualifications and naturally the international approvals as well.

As a manufacturer, you can focus on your core competencies and benefit from our expertise as specialists in the field of connection and housing systems.

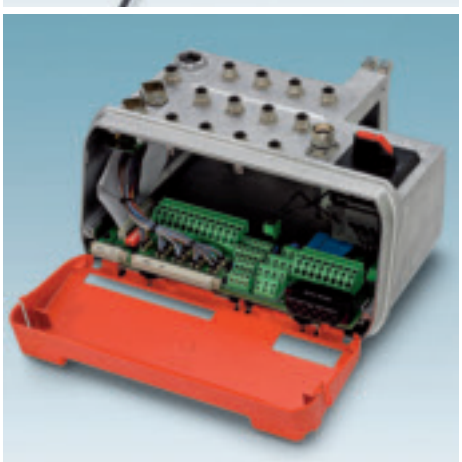
Good products require good ideas and experience. Together with the expertise of Phoenix Contact, you can realize your individual solution – Right from the first idea to the cost-effective serial production.

Our products and services range from customer-specific PCB connection technology with screw, spring-cage or IDC fast connection, in all conceivable designs and colors...

...to the matching electronic housings in a special design with color and size of your choice, and including the connection method...

...to individual field cabling, with connectors with shielding for high data transmission speeds, splash-proof housings for harsh industrial environments...

...up to complete solutions, consisting of, e. g., splash-proof housings including the connection methods for signal, data and power, as well as perfect PCB connections.



Device connection method and field cabling from Phoenix Contact

Our value-added service for you

Phoenix Contact not only offers you the correct products, but also a professional service for all types of connection methods for field devices and field cabling. Irrespective of where you are in this world, Phoenix Contact offers a comprehensive range of services through its wide-spread network. Being at home all over the world and speaking the language of the user is what we understand by customer proximity – Proximity that guarantees ideal service for our partners. This motto is implemented by our more than 40 customer-oriented subsidiaries and approximately 30 representatives in different countries.

Personal consultation and service

As our customer, you are always the focus of attention at Phoenix Contact, be it during consultation or at the time of after sales service. Competent and personal consultation is the basis for our relations. Even though we all live in the age of the Internet, maintaining a personal touch in our relations with you is of utmost importance to us.

Our motivated team is therefore available for you across the world.

Reliable delivery service

Reliable and on-time delivery of our products is part of our work culture. In addition to an optimum delivery service, we offer you numerous options to make your purchasing process more efficient and transparent.

Thanks to our warehouses in the major industrial nations, we ensure that Phoenix Contact products are available all over the world at an affordable price and in a requirement-specific delivery time.

Online catalog

The online catalog offers extensive and up-to-date information on more than 22,000 products from Phoenix Contact in seven languages. The online catalog provides you with product-specific information like technical data, references to approvals, dimensional drawings, 3D data, etc. You can easily generate a product data sheet as a PDF file with just a click of the mouse.

The online catalog is complemented with E-Shop functions in more than 15 countries. After the successful registration, you can always access your prices and delivery dates and you also have the option to place orders online.

www.phoenixcontact.net/catalog

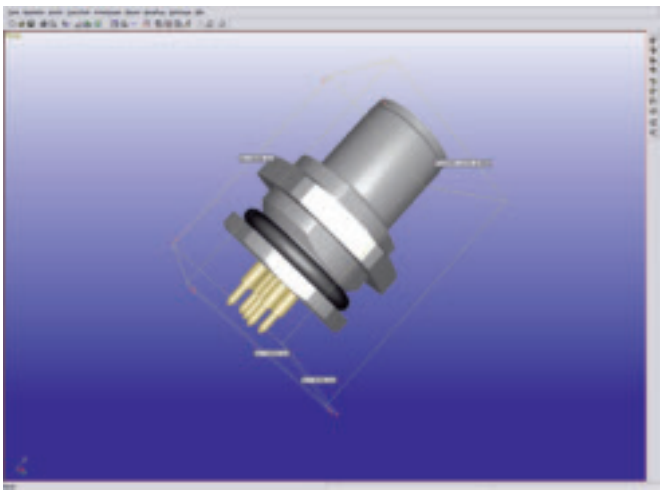
Quick search for product-specific information in the online catalog

Online search assistants

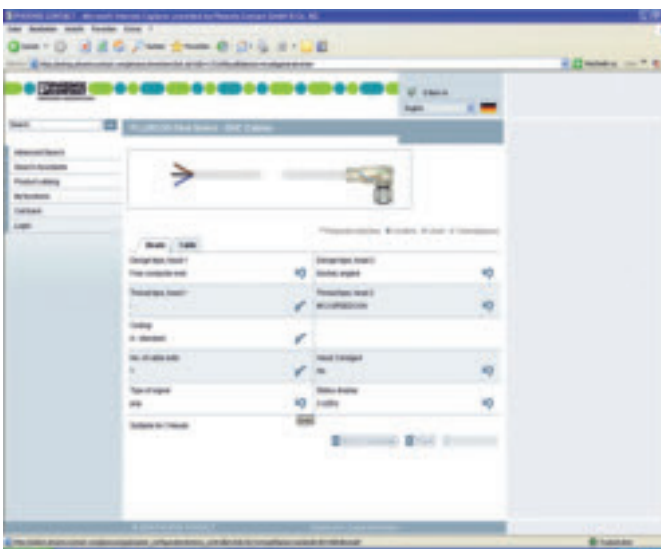
The online search assistants help you to search for articles systematically and quickly from the extensive range of connectors available. By selecting electric values and further product characteristics, you are guided straight to 'your' article.

– COMBICON Select – PCB connection technology and electronic housings
– PLUSCON field Select – Sensor/actuator cabling
– PLUSCON data Select – Data connectors for fieldbuses and networks

www.phoenixcontact.net/searchassistants



Easy download of 3D data



Comfortable article search using PLUSCON field Select

QUICKON – The proven fast connection technology

The well-known IDC connection method by Phoenix Contact makes the backbone of QUICKON. The term 'IDC' stands for Insulation Displacement Connection, i.e. an insulation displacement contact.

The advantage lies in the elimination of the preparation of the conductor, which reduces the conventional connection time by 60 - 80% compared to the spring-cage or screw connections.

In the automotive technology field, telecommunications or in domestic appliances, this type of fast contacting has been established for many years, and Phoenix Contact has made it suitable for industrial applications. It includes contacts that can accommodate solid or stranded conductors that cover a large cross-section range, reach across different conductor insulations and function reliably and durably even under harsh industrial conditions

Advantages of QUICKON

– Time-saving during connection
– High reliability due to defined contact force
– Multiple usage with a standard tool

Individual conductors are simply inserted into the connection space without preparing them and pushed into the IDC terminal block using a screw or lever mechanism. The conductor insulation is displaced without damaging or weakening the copper litz wires in an unauthorized manner. A force-defined, user-independent and gas-tight contacting is established in this case. Contact resistances lie between the values of spring-cage or screw connections.

Notes regarding IDC fast connection technology

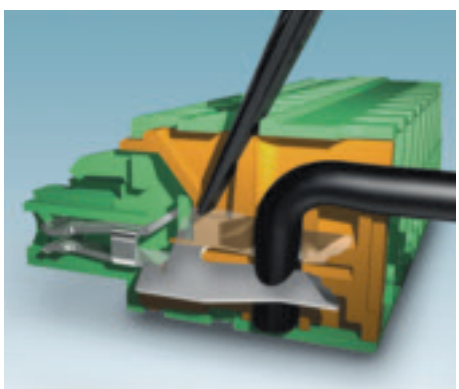
The specified cross-section range must be adhered to.

If the conductors are too thin, the insulation is no longer displaced since the contact gap is too large, and if the conductors are too large, connecting is either not possible at all, or the system may get damaged due to excessive wiring forces.

QUICKON connections should not be installed at extremely low or high ambient temperatures.

Moreover, the specified conductor insulation must be adhered to or released at the request of Phoenix Contact. Extremely hard insulation materials like Teflon, or high tenacity-elastic insulations, like silicone, can be wired only using the IDC contacts that are specially designed for this purpose. Solid and stranded conductors are best suited for contacts. In case of highly stranded conductors of category 6, the minimum litz wire diameter must be taken into account.

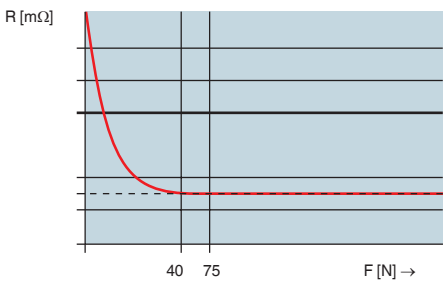
Due to geometrical reasons, two different contact types are used:



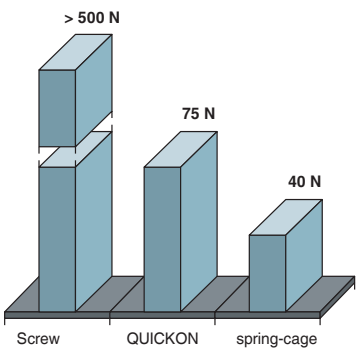
1. Flat contacts distinguish themselves through their space-saving and cost-effective design.

2. Pipe contacts cover an even larger cross-section range.

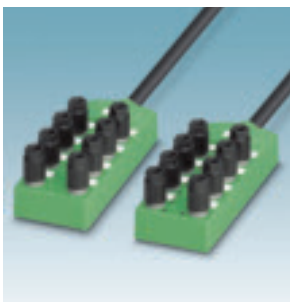
Contact resistance

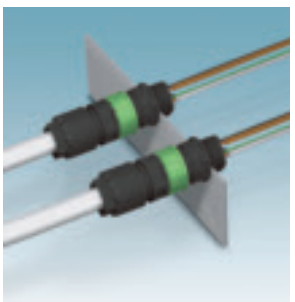


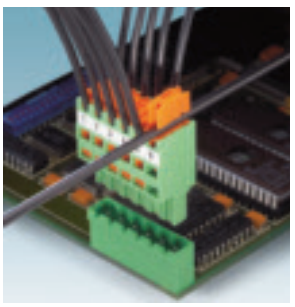
Contact force



The positive features and the high market acceptance of QUICKON made it possible to develop a whole range of different products at Phoenix Contact. Numerous modular terminal blocks, PCB connectors, industrial connectors and different customer-specific integrations in the cross-section range from 0.14 to 6.0 mm² are thus available.







Time-saving with QUICKON fast connection

PLUSCON – Connection method for field devices and field cabling

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M8 flush-type connectors with litz wire or solder connection

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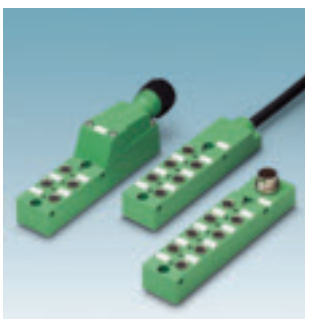

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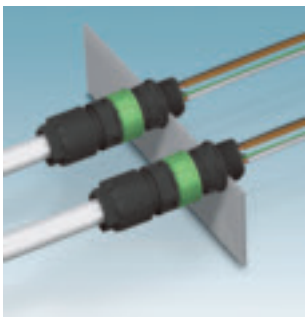

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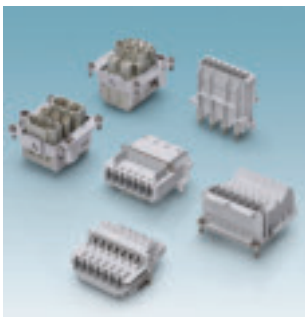

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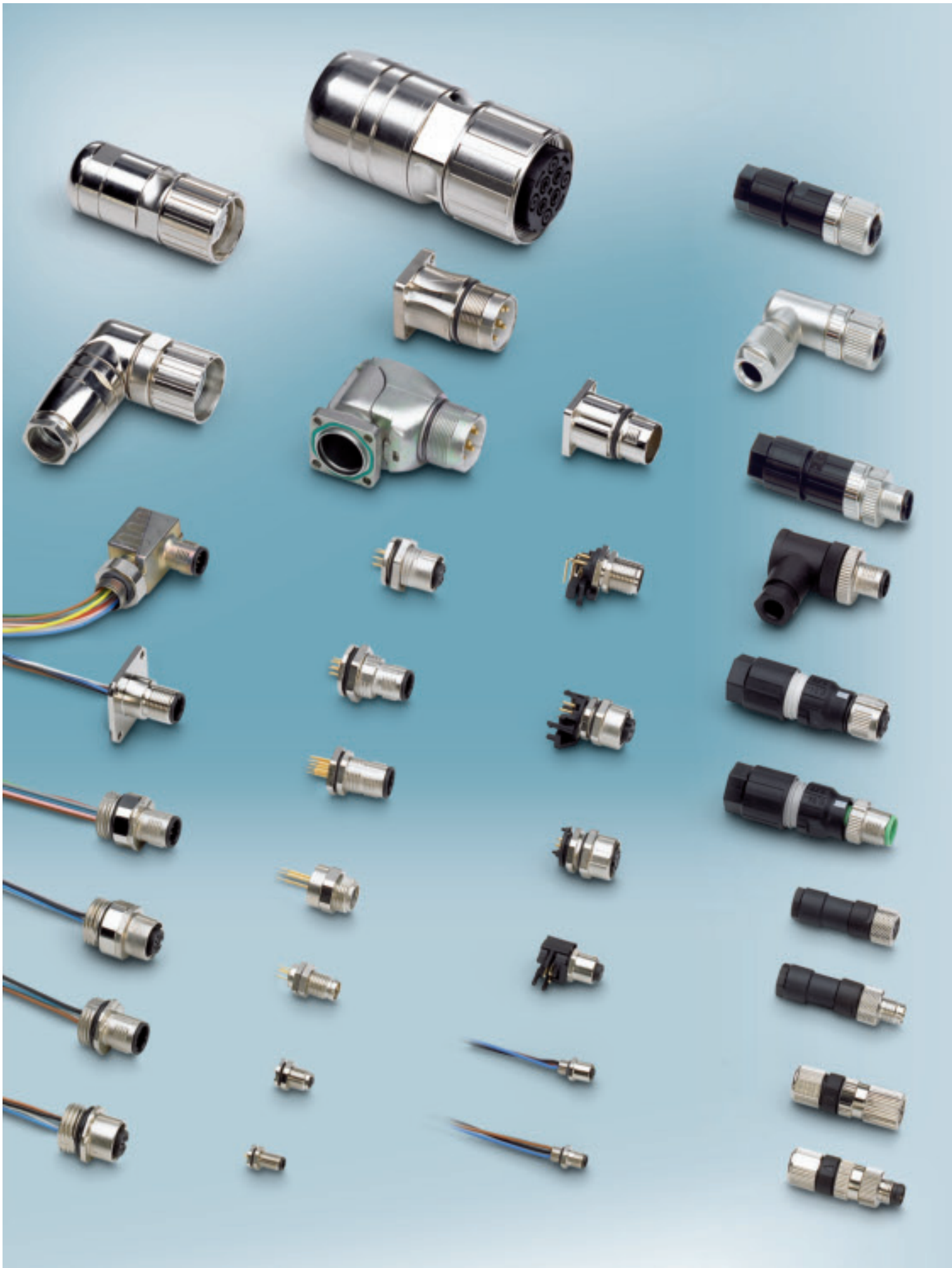

Circular connectors – PLUSCON circular

PLUSCON circular is a circular connector for use in industrial automation. The range of design sizes available is varied, starting with the design sizes M5 to M8 and M12, for sensor/actuator connection technology through M17, M23, predominantly for the transmission of analog and digital signals, up to M40 and M58 connectors. The latter are used exclusively for the transmission of electrical currents of up to 150 A at 630 V per contact feed-through. The entire range covers the band width of circular connectors for industrial applications.

Sensor/actuator flush-type connectors

Varied requirements for the sensor/actuator device connection methods in the industrial environment have resulted in an extensive range of M5, M8 and M12 flush-type connectors and panel feed-throughs. Customer-specific developments allow optimum adaptations to individual device concepts.

Sensor/actuator connectors for assembly

A safe and efficient assembly is a decisive factor for field cabling. The 5x selection options of the connection technology provide fine adaptation to the respective application or requirement in the field. The connectors for assembly are available in different unshielded and EMC-compliant versions.

Signal and power connectors

In the numerous applications for signal and power connectors, the device connection for electric drives plays an important role. In addition to cable and coupling connectors, cabling also requires device flanges and panel feed-throughs. The ConPower product range has been designed accordingly. It includes a total of four performance classes

P20 – up to 20 A/400 V
P30 – up to 30 A/630 V
P70 – up to 70 A/630 V
P150 – up to 150 A/630 V

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Faster installation through innovative connection methods

An extensive range of circular connectors that can be freely assembled is available for safe and efficient field wiring. The 5x selection options of the connection technology provide fine adaptation to the respective application or on-site requirement. Straight or angled connectors, with male as well as female contacts and different numbers of positions can be delivered.

The M8 connectors are available with the classic screw or solder connection and the Piercecon fast connection system. Depending on the number of positions, the M12 series is available with screw or spring-cage connection as well as with the Quickon fast connection technology.

Connectors that can be shielded and freely assembled are available for EMC-capable applications. They are characterized by a rugged, metal shell with corresponding shield attenuation.

Piercecon M8

The Piercecon connection system enables quick and reliable field assembly of even the compact M8 connectors. The electrical connection is made by axial piercing of a contact pin into the individual cores. In doing so, the contact forms the individual wires into an adapted contact area. Piercecon saves the need for time-consuming solder or screw solutions for the M8 connection. All versions meet the requirements of IP67 degree of protection.

M12 spring-cage

The M12 connector with a spring-cage connection guarantees simple and reliable wiring of solid or stranded conductors, with or without ferrules. The complete product range comprises 4 and 5-position straight and angled versions. The connector types with metal housing are particularly suitable for EMC requirements.

M12 QUICKON

QUICKON provides the fastest connection for M12 connectors. Individual conductors no longer have to be stripped before connection. When contacting, an insulation displacement contact cuts through the conductor insulation and makes vibration-free, gas-tight spring contact to the litz wire. The connectors with male or female contacts are available with metal or plastic knurl.

M12 screw connection

The M8 and M12 connectors with a screw connection are among the classics in connection technology. Different cables and cable qualities can be assembled on-site quickly and without any error.

The product range

M5, M8, M12, 7/8" flush-type connectors

The wide product range of flush-type connectors for sensor/actuator components offers comprehensive solutions for M5, M8, M12 and 7/8" device connection methods. Typical fields of application are: The pluggable connection method of control cabinets, limit switches, encoders and devices using panel feed-throughs. Flush-type connectors are available for the device connection method for sensor/actuator boxes, fieldbus modules and industrial controllers. These connectors can be 'seamlessly' mechanically integrated into the device design and are also designed for economical PCB assembly, e.g. using THR and the Pick & Place technique.

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M8, M12, 7/8" connectors for assembly

A wide range of connectors for free assembly is available for the quick assembly of often differing conductor lengths, e.g. on-site. For the M8 and M12 connector range, various connection concepts are available. The M8 connectors are available with the classic screw or solder connection and the Piercecon fast connection system. The M12 series is available with screw or spring-cage connection as well as with the QUICKON fast connection technology. These versions are uniformly available with a SPEEDCON interlock. Connectors that can be shielded and freely assembled are available for EMC-capable applications. They are characterized by a rugged, metal shell with corresponding shield attenuation.

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M23, M40 signal and power connectors

CONINVERS is the specialist for circular connectors in the Phoenix Contact group of companies. An extract of the product range that is especially suitable for power cables is given on the following pages. In addition to P30 and P70 series power connectors for up to 70 A at 630 V, it also contains M23 feedback connectors.

Additional information can be found at: www.phoenixcontact.com/pluscon

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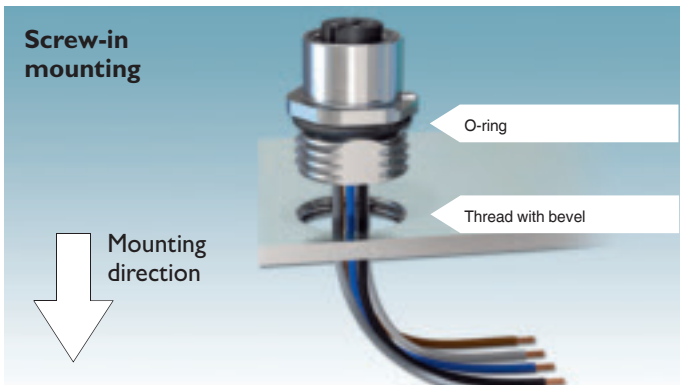
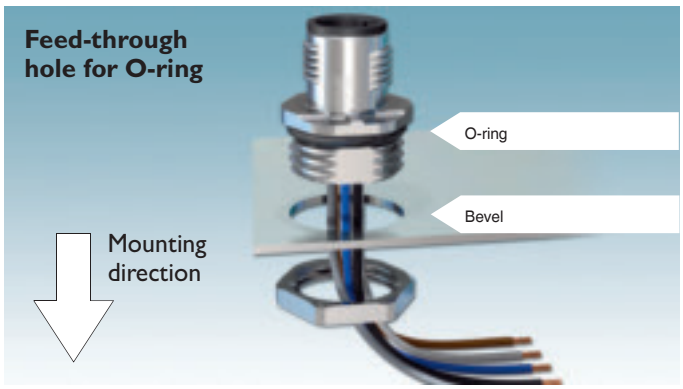
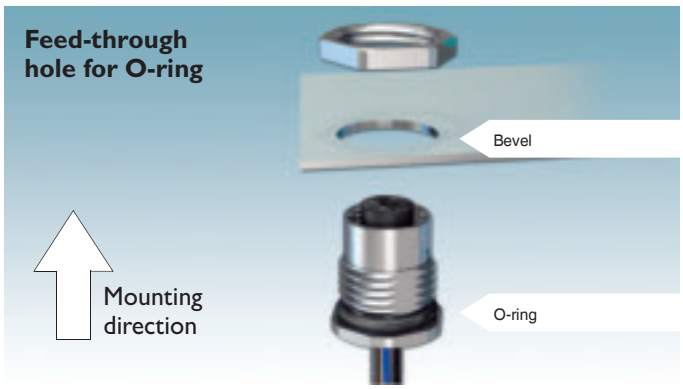
Universal mounting options and varied connection options of M12 flush-type connectors

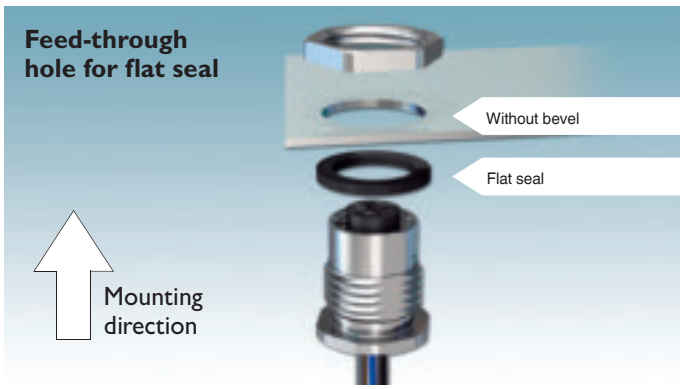
Front mounting



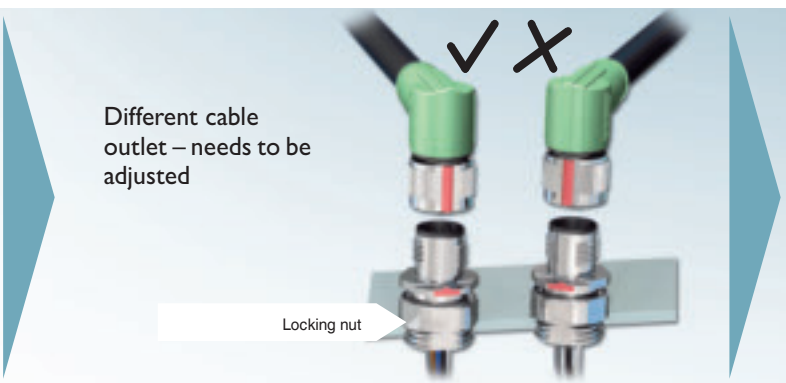


Rear mounting, one-section

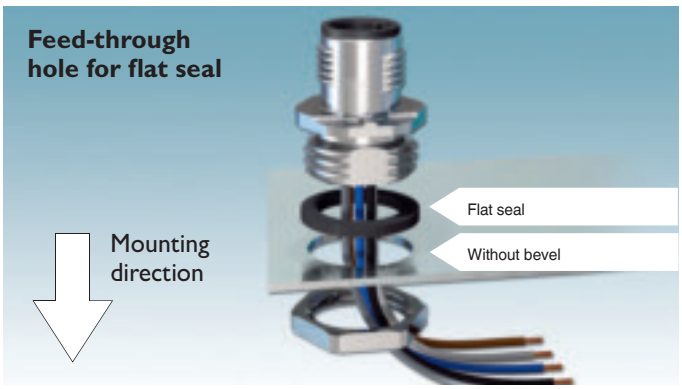




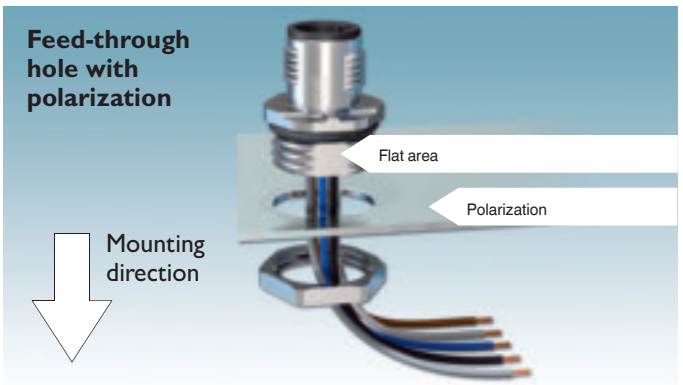
Front mounting, cable outlet can be positioned



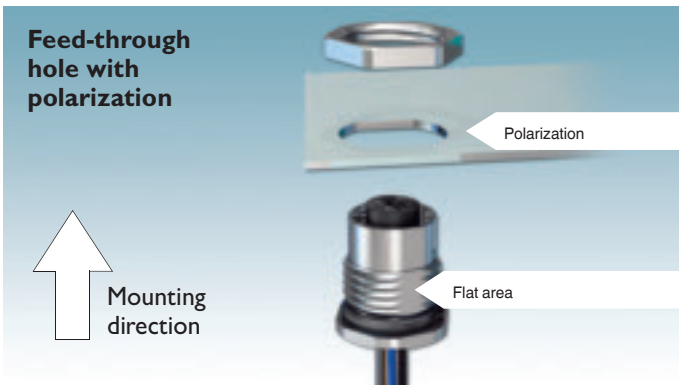
Feed-through hole for flat seal

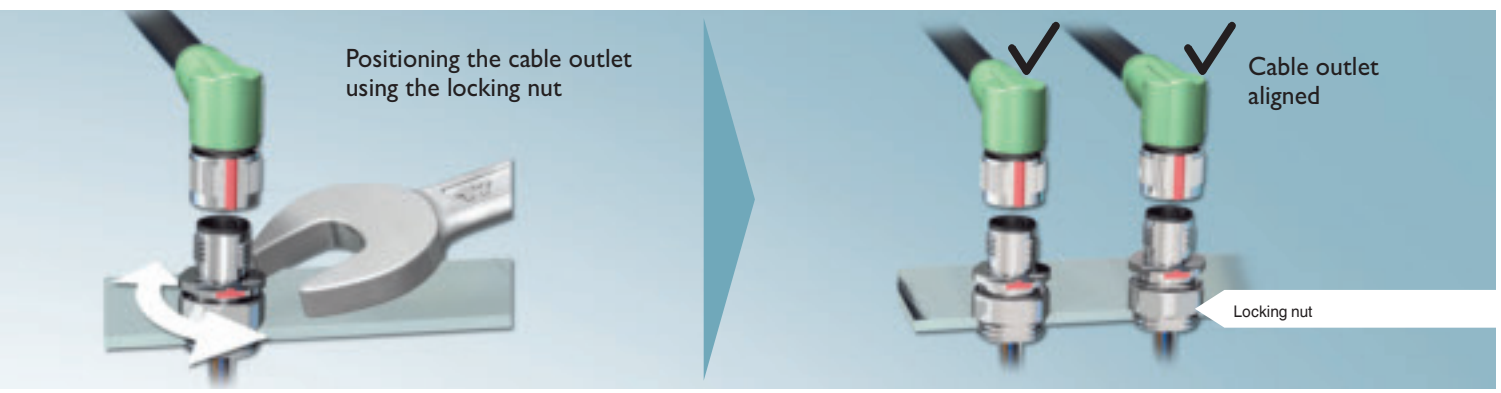


Feed-through hole with polarization



Feed-through hole with polarization





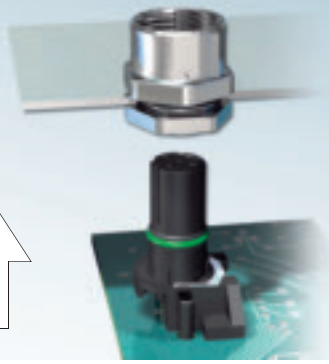
Two-piece rear mounting – standard application

Screw the housing together with the front plate

O-ring

Mounting direction

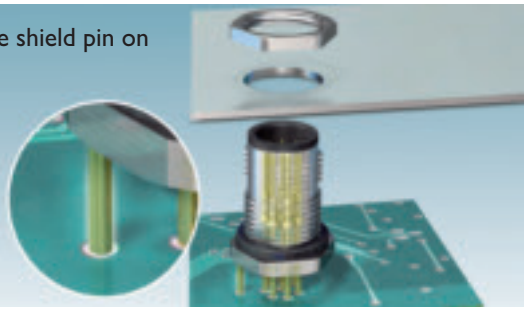
Insert the insulation body into the housing



Mounting direction

Easiest shield connection...

... through the shield pin on the PCB



... through the EMC nut on the front plate

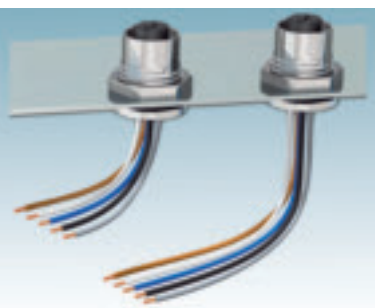
PCB connection – You have the choice

6 mm and 12 mm solder-in contacts for the wave solder process

Contact carriers for the wave solder process with a locking clip

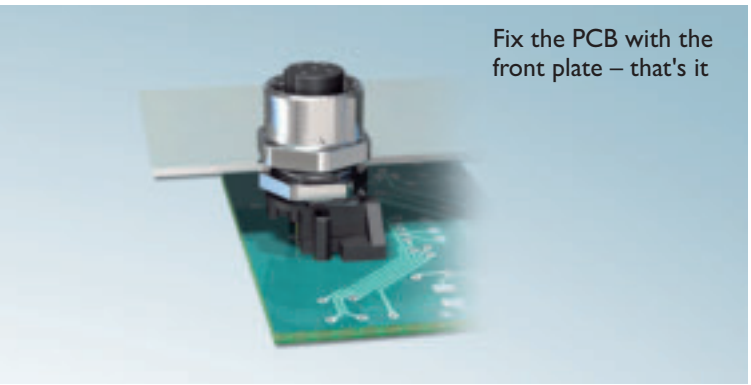
Individual service for your application

Specific litz wire lengths



Different assembly of core ends

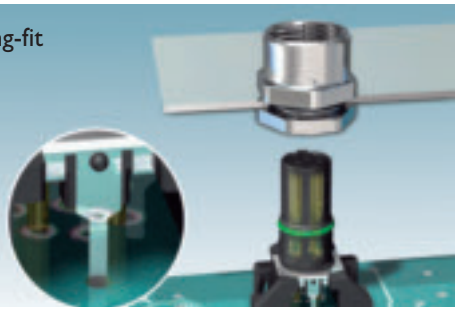
Fix the PCB with the front plate – that's it



Rear mounting of customer housing

Customer-specific housing integration

... through the spring-fit shield on the PCB



... through pre-assembled standard products

Contact carrier for the reflow process

Tray packaging

Pick-and-Place components for products for the reflow process

Different cable models

M5/M8, front mounting, with 0.5 m long halogen-free litz wires

For connector pin assignments, see page 60.

Flat nut recommended for housing wall thicknesses < 2.5 mm.

More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

M5 plug

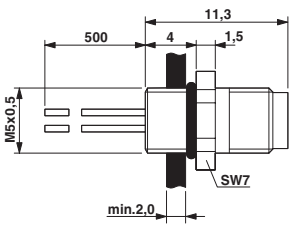
M5 socket

M8 male

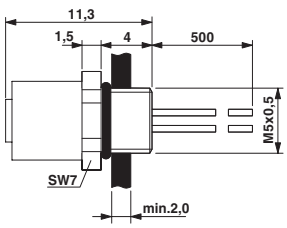
M8 socket

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	**1530582**	1	**1530605**	1	**1500334**	1	**1500350**	1
-	4	**1530595**	1	**1530618**	1	**1500347**	1	**1500363**	1
DeviceNet, with PVC litz wires	5	**-**	-	**-**	-	**1440119**	1	**1440106**	1
-	6	**-**	-	**-**	-	**1542664**	1	**1542677**	1
Flat nut M5	-	**1535901**	100	**1535901**	100	**-**	-	**-**	-
Flat nut M8	-	**-**	-	**-**	-	**1504071**	100	**1504071**	100

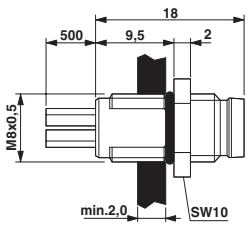
Technical data	M5, 3 and 4-pos.	M8, 3-pos.	M8, 4-pos.	M8, 5/6-pos.
Electrical data				
Rated voltage	60 V	60 V	30 V	30 V
Nominal current I_N	1 A	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Mechanical data				
Contact carrier material	PA 66	PUR / PA66	PUR / PA66	PUR / PA66
Material contact / contact surface	CuZn / Au	Cu alloy / Au	Cu alloy / Au	Cu alloy / Au
Inflammability class acc. to UL 94	HB	HB	HB	HB
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Individual wires	Individual wires	Individual wires	Individual wires
Conductor cross-section	0.14 mm²	0.25 mm²	0.25 mm²	0.14 mm²
Temperature data				
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



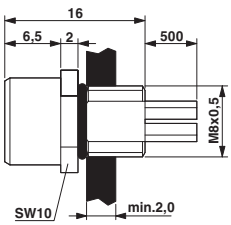
M5 flush-type connector



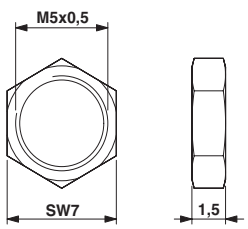
M5 flush-type socket



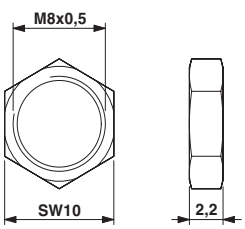
M8 flush-type connector



M8 flush-type socket



Flat nut M5



Flat nut M8

M5/M8, rear mounting, one-piece plug connector for wave soldering processes

For connector pin assignments, see page 60.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M5 plug

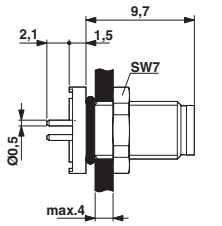
M5 socket

M8 male

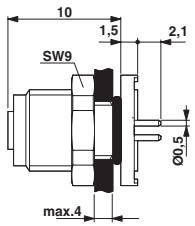
M8 socket

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	**1530621**	20	**1530647**	20	**1694334**	20	**1694363**	20
-	4	**1530634**	20	**1530650**	20	**1694347**	20	**1694376**	20
-	6	-	-	-	-	**1436521**	20	**1436534**	20

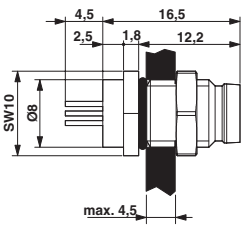
Technical data	M5, 3 and 4-pos.	M8, 3-pos.	M8, 4-pos.	M8, 6-pos.
Electrical data				
Rated voltage	60 V	60 V	30 V	30 V
Nominal current I_N	1 A	4 A	4 A	1.5 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Mechanical data				
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Material contact / contact surface	Cu alloy / Au	CuZn / Au	CuZn / Au	CuZn / Au
Inflammability class acc. to UL 94	HB	HB	HB	HB
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Solder pins	Solder pins	Solder pins	Solder pins
Temperature data				
Ambient temperature (operation)	-25°C ... 80°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



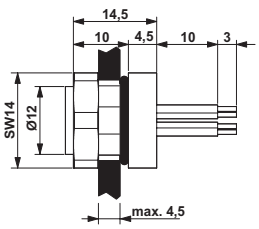
M5 flush-type connector, 3/4-pos.



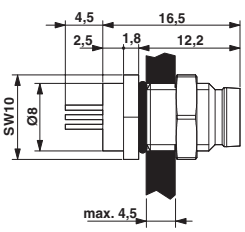
M5 flush-type socket, 3/4-pos.



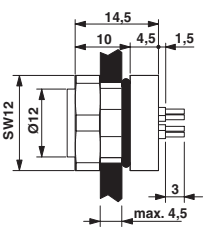
M8 flush-type connector, 3/4-pos.



M8 flush-type socket, 3/4-pos.



M8 flush-type connector, 6-pos.



M8 flush-type socket, 6-pos.

M8 flush-type sockets for wave soldering processes

For connector pin assignments, see page 60.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

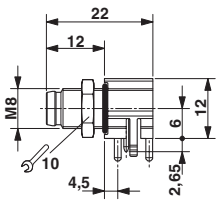
M8 socket, 180° connection

M8 socket, 90° connection

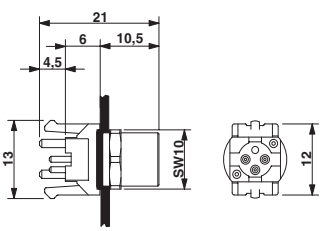
M8 pin, 90° connection

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	**1524776**	20	**1524788**	20	**1440070**	20
-	4	**1524789**	20	**1526169**	20	**1440096**	20

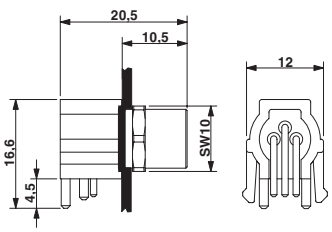
Technical data	3-pos.	4-pos.
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Contact carrier material	PA 66	PA 66
Material contact / contact surface	Cu alloy / Au	Cu alloy / Au
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Degree of protection	IP67	IP67
Type of connection	Solder pins	Solder pins
Temperature data		
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C



M8 flush-type connector, 90°connection, two-part flush-type connector



M8 flush-type socket, 180° connection, two-section flush-type connector



M8 flush-type socket, 90° connection, two-section flush-type connector

M12, front mounting, can be positioned, with 0.5 m long halogen-free litz wires

With M16 fastening thread, suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

M12 pin, M16 fastening thread

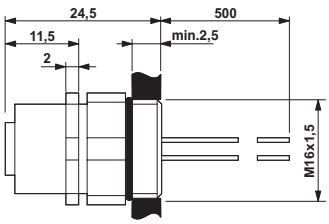
M12 socket, M16 fastening thread

M12 pin, Pg9 fastening thread

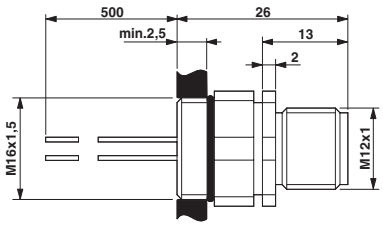
M12 socket, Pg9 fastening thread

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1523463**	1	**1523447**	1	**1693775**	1	**1693791**	1
-	4	D - data	**1552256**	1	**1535215**	1	**-**	-	**-**	-
-	5	A - standard	**1520068**	1	**1520042**	1	**1671124**	1	**1671108**	1
-	5	B - inverse	**1520026**	1	**1519998**	1	**1515057**	1	**1515044**	1
-	8	A - standard	**1523502**	1	**1523489**	1	**1513787**	1	**1513761**	1

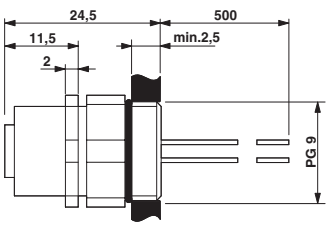
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Conductor cross-section	0.34 mm²	0.34 mm²	0.25 mm²
Cable type	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



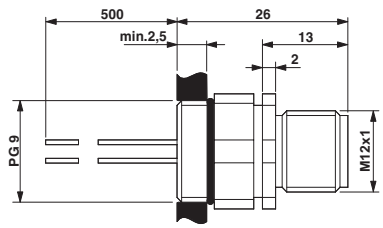
Flush-type socket M12, can be positioned, fastening thread M16



Flush-type connector M12, can be positioned, fastening thread M16



Flush-type socket M12, can be positioned, fastening thread Pg9



Flush-type connector M12, can be positioned, fastening thread Pg9

M12, front mounting, with 0.5 m long halogen-free litz wires

With M16 fastening thread, suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

Flat nut recommended for housing wall thicknesses < 2.5 mm.

More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

M12 pin, M16 fastening thread

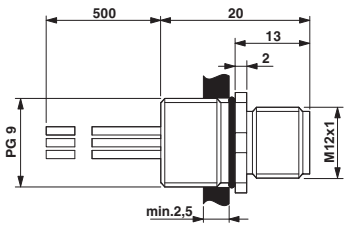
M12 socket, M16 fastening thread

M12 pin, Pg9 fastening thread

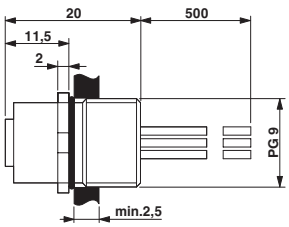
M12 socket, Pg9 fastening thread

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1523450**	1	**1523434**	1	**1693762**	1	**1693788**	1
-	4	D - data	**1551558**	1	**1535202**	1	**-**	-	**-**	-
-	5	A - standard	**1520055**	1	**1520039**	1	**1671111**	1	**1671098**	1
-	5	B - inverse	**1520013**	1	**1520000**	1	**-**	-	**-**	-
-	8	A - standard	**1523492**	1	**1523476**	1	**1513774**	1	**1513758**	1
-	12	A - standard	**1556265**	1	**1556252**	1	**-**	-	**-**	-
-	17	A - standard	**1556304**	1	**1556294**	1	**-**	-	**-**	-
Flat nut	-	-	**1504097**	100	**1504097**	100	**1504084**	100	**1504084**	100

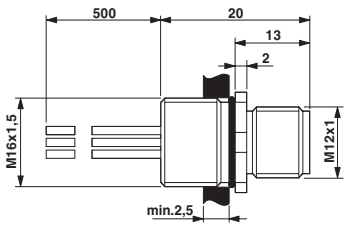
Technical data	4-pos.	5-pos.	8-pos.	12- / 17-pos.
Electrical data				
Rated voltage	250 V	60 V	30 V	30 V
Nominal current I_N	4 A	4 A	2 A	1.5 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Individual wires	Individual wires	Individual wires	Individual wires
Conductor cross-section	0.34 mm²	0.34 mm²	0.25 mm²	0.14 mm²
Cable type	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data				
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



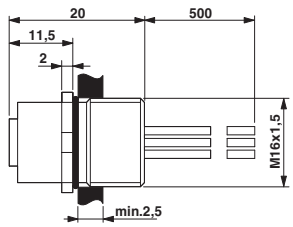
Flush-type connector M12, fastening thread Pg9



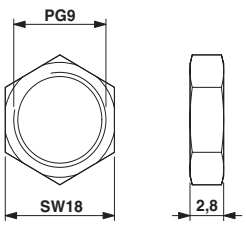
Flush-type socket M12, fastening thread Pg9



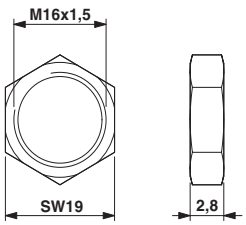
Flush-type connector M12, fastening thread M16



Flush-type socket M12, fastening thread M16



Flat nut Pg9



Flat nut M16

M12, rear mounting, with 0.5 m long halogen-free litz wires

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

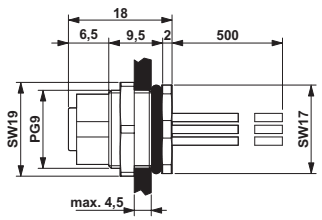
M12 plug, Pg9 fastening thread

M12 socket, Pg9 fastening thread

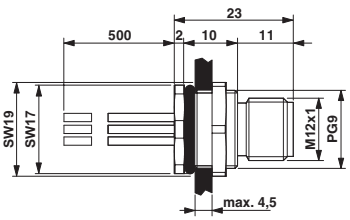
M12 plug, M12 fastening thread

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1556618**	1	**1556621**	1	**1551875**	1
-	4	D - data	**1551532**	1	**1551529**	1	**1551901**	1
-	5	A - standard	**1542703**	1	**1542729**	1	**1551888**	1
-	5	B - inverse	**1543663**	1	**1543676**	1	**1551891**	1
-	8	A - standard	**1542716**	1	**1542732**	1	**1551914**	1
-	12	A - standard	**1430459**	1	**1430446**	1	**1437122**	1
-	17	A - standard	**1430475**	1	**1430462**	1	**1437135**	1

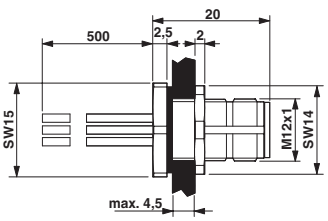
Technical data	4-pos.	5-pos.	8-pos.	12- / 17-pos.
Electrical data				
Rated voltage	250 V	60 V	30 V	30 V
Nominal current I_N	4 A	4 A	2 A	1.5 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Individual wires	Individual wires	Individual wires	Individual wires
Conductor cross-section	0.34 mm²	0.34 mm²	0.25 mm²	0.14 mm²
Cable type	TPE litz wire	TPE litz wire	TPE litz wire	TPE litz wire
Temperature data				
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



Flush-type socket M12, fastening thread Pg9



Flush-type connector M12, fastening thread Pg9



Flush-type connector M12, fastening thread M12

M12, rear mounting, one-piece connectors for wave soldering processes

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at: **www.phoenixcontact.net/catalog**

M12 pin, contact length: 6 mm

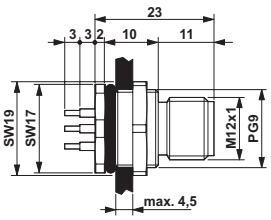
M12 socket, contact length: 6 mm

M12 plug, contact length: 12 mm

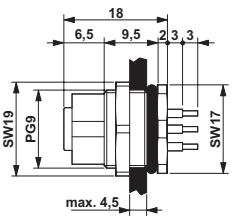
M12 socket, contact length: 12 mm

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1553459**	20	**1553462**	20	**1558535**	20	**1558522**	20
-	4	D - data	**1551516**	20	**1551503**	20	**1552308**	20	**1552272**	20
With a shield contact	4	D - data	**1553035**	20	**1553006**	20	**1558519**	20	**1558506**	20
-	5	A - standard	**1542745**	20	**1542761**	20	**1552311**	20	**1552285**	20
With a shield contact	5	A - standard	**1553048**	20	**1553019**	20	**1558551**	20	**1558548**	20
-	5	B - inverse	**1543647**	20	**1543650**	20	**1552324**	20	**1552298**	20
With a shield contact	5	B - inverse	**1553051**	20	**1553022**	20	**1558577**	20	**1558564**	20
-	8	A - standard	**1542758**	20	**1542774**	20	**-**	-	**-**	-
With a shield contact	8	A - standard	**1553873**	20	**1553860**	20	**-**	-	**-**	-
-	12	A - standard	**1559932**	20	**1559929**	20	**-**	-	**-**	-
With a shield contact	12	A - standard	**1436783**	20	**1436770**	20	**-**	-	**-**	-
-	17	A - standard	**1559961**	20	**1559958**	20	**-**	-	**-**	-
With a shield contact	17	A - standard	**1436819**	20	**1436806**	20	**-**	-	**-**	-
EMC nut Pg9	-	-	**1440177**	10	**1440177**	10	**1440177**	10	**1440177**	10

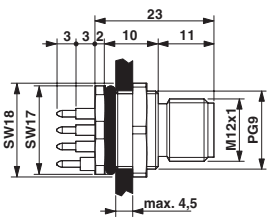
Technical data	4-pos.	5-pos.	8-pos.	12- / 17-pos.
Electrical data				
Rated voltage	250 V	60 V	30 V	30 V
Nominal current I_N	4 A	4 A	2 A	1.5 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Solder pins	Solder pins	Solder pins	Solder pins
Temperature data				
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



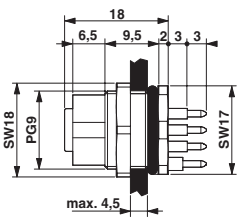
Flush-type M12 plug, contact length: 6 mm



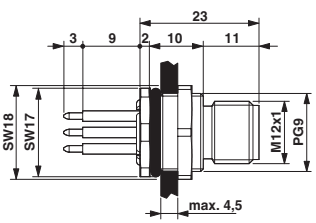
Flush-type M12 socket, contact length: 6 mm



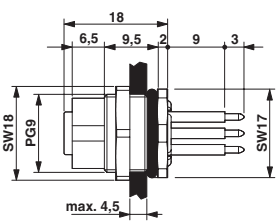
Flush-type M12 plug, contact length: 6 mm, shield contact



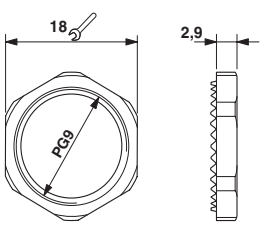
Flush-type M12 socket, contact length: 6 mm, shield contact



Flush-type M12 plug, contact length: 12 mm



Flush-type M12 socket, contact length: 12 mm



EMC nut Pg9

M12, rear mounting, one-piece connectors for wave soldering processes

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

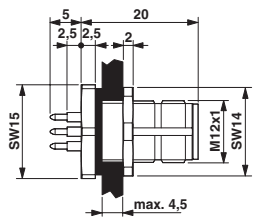
More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M12 pin, M12 fastening thread, without shield contact

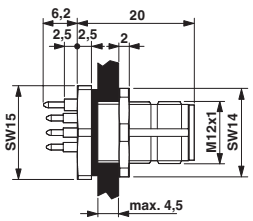
M12 pin, M12 fastening thread, with shield contact

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1551820**	20	**1552955**	20
-	4	D - data	**1551859**	20	**1552984**	20
-	5	A - standard	**1551833**	20	**1552968**	20
-	5	B - inverse	**1551846**	20	**1552971**	20
-	8	A - standard	**1551862**	20	**1552997**	20
-	12	A - standard	**1559945**	20	**1437106**	20
-	17	A - standard	**1559974**	20	**1437119**	20
EMC nut M12	-	-	**-**	-	**1440151**	10

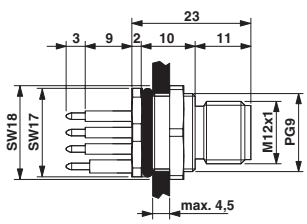
Technical data	4-pos.	5-pos.	8-pos.	12- / 17-pos.
Electrical data				
Rated voltage	250 V	60 V	30 V	30 V
Nominal current I_N	4 A	4 A	2 A	1.5 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Material contact / contact surface	Cu alloy / Au	Cu alloy / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP67	IP67
Type of connection	Solder pins	Solder pins	Solder pins	Solder pins
Temperature data				
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



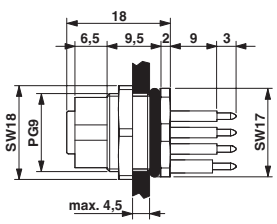
M12 one-part flush-type connector, without shield contact, for wave soldering processes



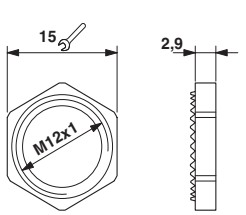
One-section flush-type connector M12, with a shield contact, for wave soldering processes



M12 flush-type connector, contact length: 12 mm, shield contact



M12 flush-type socket, contact length: 12 mm, shield contact



EMC nut M12

M12, rear mounting, two-piece connector for wave soldering processes

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

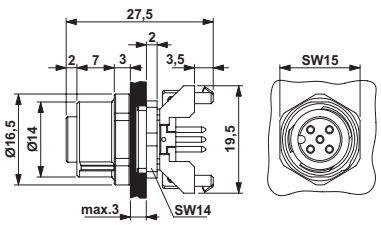
M12 socket, 180° connection

M12 pin, 90° connection

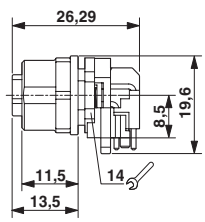
M12 socket, 90° connection

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	-	-	**1436589**	10	**1436564**	10
With a shield contact	4	A - standard	-	-	**1439913**	10	**1439900**	10
With a shield contact	4	D - data	**1542619**	10	**1436592**	10	**1436550**	10
-	5	A - standard	**1542570**	10	**1436602**	10	**1436563**	10
With a shield contact	5	A - standard	-	-	**1438037**	10	**1438024**	10
With a shield contact	5	B - inverse	**1542606**	10	**1436615**	10	**1436576**	10
-	8	A - standard	-	-	**1436961**	10	**1436974**	10
With a shield contact	8	A - standard	-	-	**1437012**	10	**1437025**	10

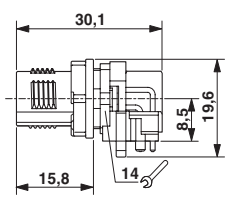
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Type of connection	Solder pins	Solder pins	Solder pins
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



Flush-type socket M12, 180° connection, SPEEDCON



M12 flush-type connector, socket, side view



M12 flush-type connector, plug, side view

M12, rear mounting, two-piece connector for wave soldering processes

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M12 pin, 180° connection

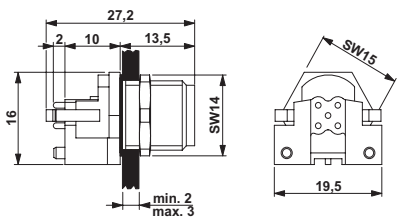
M12 socket, 180° connection

M12 pin, 90° connection

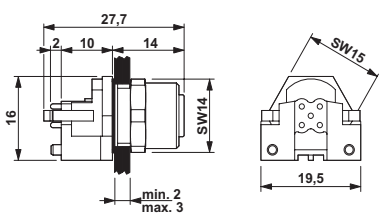
M12 socket, 90° connection

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
With a shield contact	4	D - data	-	-	1534627	10	1434866	10	1534630	10
-	5	A - standard	1694211	10	1694237	10	1694224	10	1694240	10
With a shield contact	5	A - standard	1437193	10	-	-	1440054	10	1440067	10
-	5	B - inverse	1514883	10	1515934	10	1527867	10	1527870	10
With a shield contact	5	B - inverse	1437203	10	1437180	10	-	-	-	-
-	8	A - standard	-	-	1556854	10	-	-	-	-

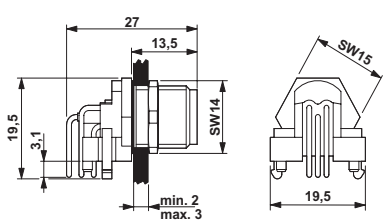
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	HB	HB	HB
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Type of connection	Solder pins	Solder pins	Solder pins
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



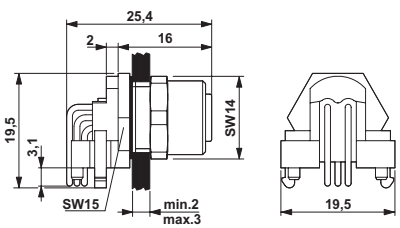
Flush-type connector M12, 180° connection



Flush-type socket M12, 180° connection



Flush-type connector M12, 90° connection



Flush-type socket M12, 90° connection

M12, rear mounting, two-piece connector for the reflow process

Suitable for SPEEDCON and M12 standard, see page: 68.

Machine tray packing

For connector pin assignments, see page 61.

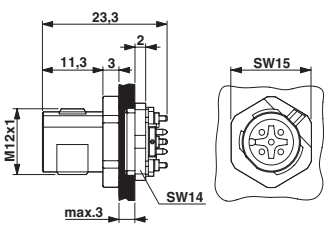
More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M12 connector, 180° connection

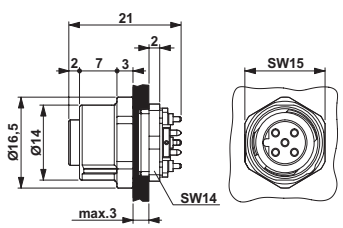
M12 socket, 180° connection

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1439971**	60	**1439997**	60
With a shield contact	4	A - standard	**1439984**	60	**1440009**	60
With a shield contact	4	D - data	**1552175**	60	**1542648**	60
-	5	A - standard	**1551752**	60	**1542622**	60
With a shield contact	5	A - standard	**1439968**	60	**1434879**	60
With a shield contact	5	B - inverse	**1552188**	60	**1542635**	60
-	8	A - standard	**1551765**	60	**1542790**	60
With a shield contact	8	A - standard	**1557578**	60	**1557549**	60

Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Type of connection	THR solder connection	THR solder connection	THR solder connection
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



Flush-type connector M12, 180° connection



Flush-type socket M12, 180° connection

M12 contact carrier for the reflow process and M12 housing screw connections

Suitable for SPEEDCON and M12 standard, see page: 68.

Machine tray packing

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at: **www.phoenixcontact.net/catalog**

M12 pin, 180° connection

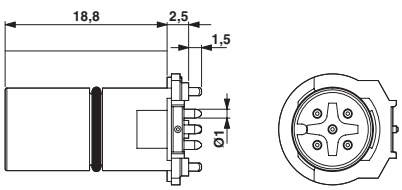
M12 socket, 180° connection

M12 pin, screw version

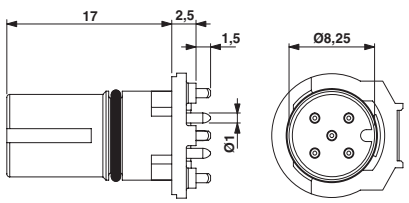
M12 socket, screw version

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1437164**	60	**1439942**	60	**-**	-	**-**	-
With a shield contact	4	A - standard	**1439939**	60	**1439955**	60	**-**	-	**-**	-
With a shield contact	4	D - data	**1552214**	60	**1551451**	60	**-**	-	**-**	-
-	5	A - standard	**1552227**	60	**1551448**	60	**-**	-	**-**	-
With a shield contact	5	A - standard	**1432350**	60	**1432363**	60	**-**	-	**-**	-
With a shield contact	5	B - inverse	**1552230**	60	**1551435**	60	**-**	-	**-**	-
-	8	A - standard	**1552269**	60	**1557808**	60	**-**	-	**-**	-
With a shield contact	8	A - standard	**1557581**	60	**1551422**	60	**-**	-	**-**	-
SPEEDCON compatible with an O-ring			**-**	-	**-**	-	**1551493**	60	**1552243**	60

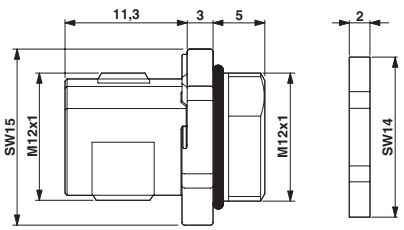
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Type of connection	THR solder connection	THR solder connection	THR solder connection
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



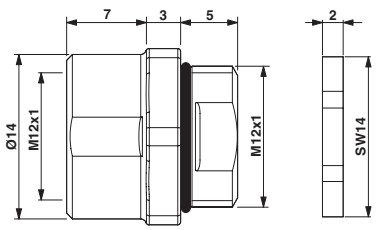
Pin contact carriers M12



Socket contact carriers M12



M12 pin, screw version, with O-ring



M12 socket, screw version, with O-ring

M12, contact carrier straight, for wave soldering processes and housing screw connections

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at: **www.phoenixcontact.net/catalog**

M12 socket contact carrier, 180° connection

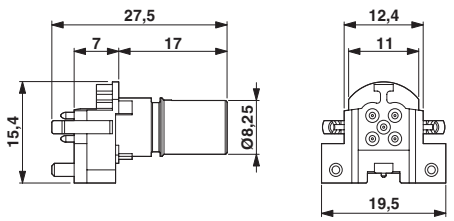
M12 socket, screw version

M12 socket, press-in version

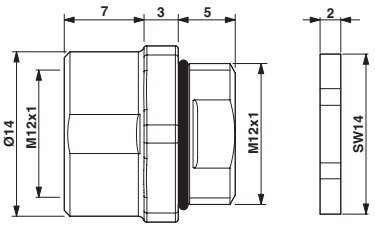
M12 pin, press-in version

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
With a shield contact	4	D - data	**1551480**	20	-	-	-	-	-	-
-	5	A - standard	**1551464**	20	-	-	-	-	-	-
With a shield contact	5	B - inverse	**1551477**	20	-	-	-	-	-	-
SPEEDCON compatible with an O-ring			-	-	**1552243**	60	-	-	-	-
Screw connection, for all straight and angled M12 contact carriers			-	-	-	-	**1437889**	10	**1437892**	10

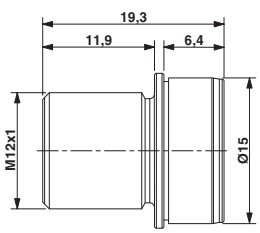
Technical data	4-pos.	5-pos.
Electrical data		
Rated voltage	250 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Type of connection	Solder connection	Solder connection
Temperature data		
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C



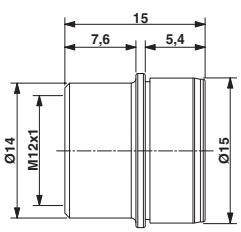
M12 contact carrier, 180° connection



M12 socket, screw version, with O-ring



M12 pin, press-in version



M12 socket, press-in version

M12, contact carrier angled, for wave soldering processes and housing screw connections

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M12 pin, 90° connection

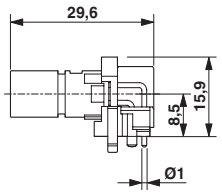
M12 socket, 90° connection

M12 pin, screw version

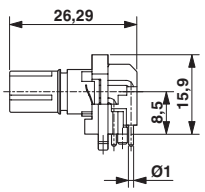
M12 socket, screw version

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1436660**	20	**1436628**	20	-	-	-	-
With a shield contact	4	A - standard	**1439887**	20	**1432444**	20	-	-	-	-
With a shield contact	4	D - data	**1436673**	20	**1432457**	20	-	-	-	-
-	5	A - standard	**1436686**	20	**1436644**	20	-	-	-	-
With a shield contact	5	A - standard	**1439890**	20	**1432431**	20	-	-	-	-
With a shield contact	5	B - inverse	**1436699**	20	**1432512**	20	-	-	-	-
-	8	A - standard	**1436987**	20	**1436990**	20	-	-	-	-
With a shield contact	8	A - standard	**1437038**	20	**1437009**	20	-	-	-	-
SPEEDCON compatible with flat seal			-	-	-	-	**1436709**	10	**1432460**	10

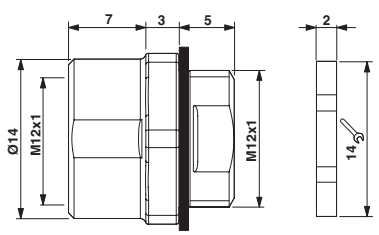
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Type of connection	Solder pins	Solder pins	Solder pins
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



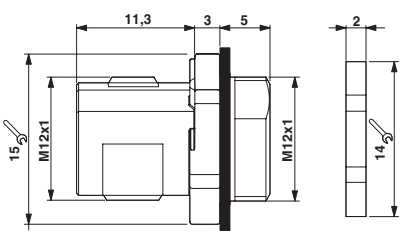
M12 flush-type connector, plug, contact carrier, side view



M12 flush-type connector, socket, contact carrier, side view



M12 socket, screw version, with flat seal



M12 pin, screw version, with flat seal

M12 contact carrier, plastic, with solder cups or PCB connection

For connector pin assignments, see page 61.

More technical data, installation dimensions and drilling diagrams at:
www.phoenixcontact.net/catalog

M12 pin, M16 fastening thread, with solder cups

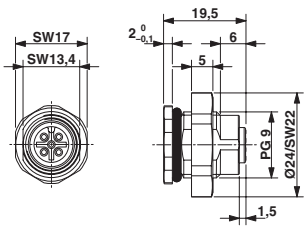
M12 pin, M12 fastening thread, with solder cups

M12 socket, Pg9 fastening thread, with solder cups

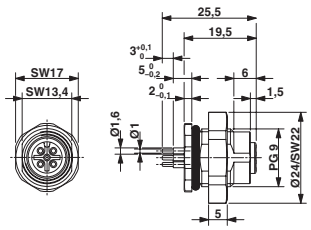
M12 socket, Pg9 fastening thread, PCB connection

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Front mounting	5	A - standard	**1436398**	20	**1436437**	20	**-**	-	**-**	-
Front mounting	8	A - standard	**1436408**	20	**1436440**	20	**-**	-	**-**	-
Rear mounting	5	A - standard	**-**	-	**-**	-	**1436314**	20	**1436330**	20
Rear mounting	8	A - standard	**-**	-	**-**	-	**1436327**	20	**1436343**	20

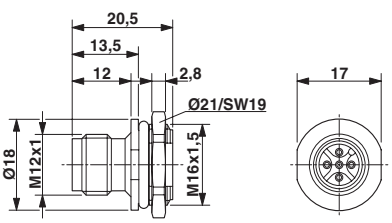
Technical data	5-pos.	8-pos.
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	2 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



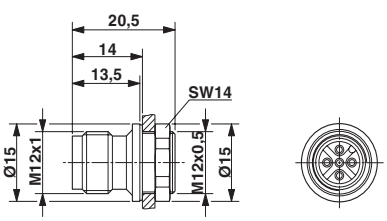
M12 socket, Pg9 fastening thread, solder cups



M12 socket, Pg9 fastening thread, PCB connection



M12 pin, M16 fastening thread, solder cups



M12 pin, M12 fastening thread, solder cups

M12 contact carrier, plastic, with 0.5 m TPE litz wire

For connector pin assignments, see page 61.

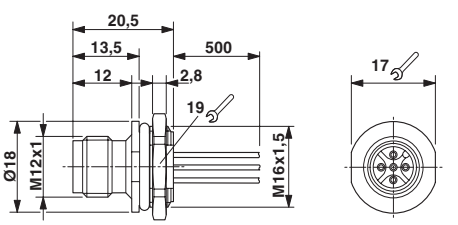
More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

**M12 pin,
M16 fastening thread**

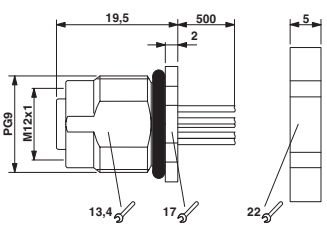
**M12 socket,
Pg9 fastening thread**

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Front mounting	5	A - standard	**1436411**	1	**-**	-
Front mounting	8	A - standard	**1436424**	1	**-**	-
Rear mounting	5	A - standard	**-**	-	**1436356**	1
Rear mounting	8	A - standard	**-**	-	**1436369**	1

Technical data	5-pos.	8-pos.
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	2 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Type of connection	Individual wires	Individual wires
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



**M12 pin,
M16 fastening thread**



**M12 socket,
Pg9 fastening thread**

M12 special connector

For connector pin assignments, see page 61.

More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

M12 pin, square flange

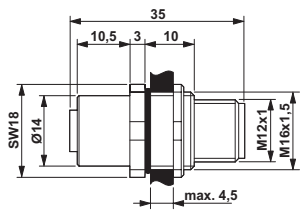
M12 socket, square flange

M12 pin, M12 fastening thread, angled

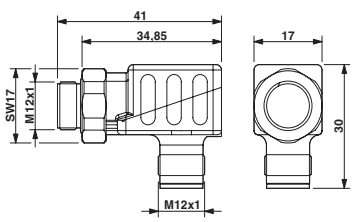
M12 plug/socket, M16 fastening thread, control cabinet feed-through

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	4	A - standard	**1525856**	1	**1525869**	1	**-**	-	**-**	-
-	5	A - standard	**1525872**	1	**1525885**	1	**-**	-	**1551671**	1
-	5	B - inverse	**-**	-	**-**	-	**-**	-	**1551684**	1
-	8	A - standard	**1514760**	1	**1515908**	1	**1543427**	1	**1551697**	1

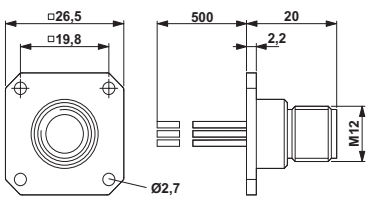
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II



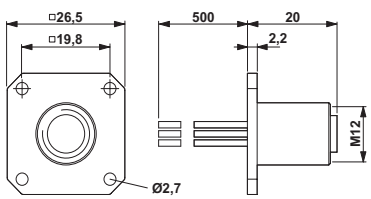
Control cabinet feed-through, M12 connection on both sides



M12 x 1 male connector, angled, shielded, SPEEDCON



M12 pin, square flange



M12 socket, square flange

Mini 7/8", front mounting with halogen-free litz wires

Flat nut recommended for housing wall thicknesses < 2.5 mm.

For connector pin assignments, see page 62.

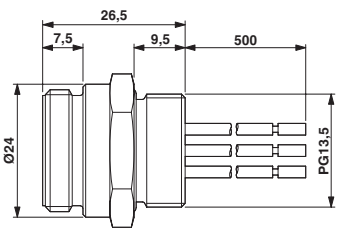
More technical data and installation dimensions at:
www.phoenixcontact.net/catalog

7/8'' pin, Pg13,5 fastening thread

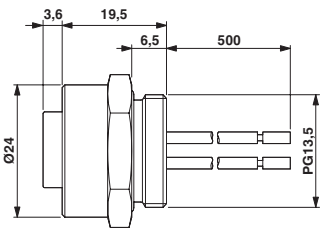
7/8" socket, Pg13,5 fastening thread

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	**1521410**	1	**1521407**	1
-	4	**1521436**	1	**1521423**	1
-	5	**1521452**	1	**1521449**	1
Flat nut Pg13.5	-	**1539143**	100	**1539143**	100

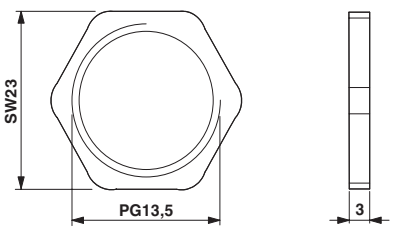
Technical data	3-pos.	4-pos.	5-pos.
Electrical data			
Rated voltage	250 V	250 V	250 V
Nominal current I_N	12 A	9 A	9 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PUR	PUR	PUR
Inflammability class acc. to UL 94	HB	HB	HB
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Type of connection	Individual wires	Individual wires	Individual wires
Conductor cross-section	0.75 mm²	0.75 mm²	0.75 mm²
Cable type	PE litz wires	PE litz wires	PE litz wires
Cable length	0.5 m	0.5 m	0.5 m
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-40°C ... 85°C



Flush-type connector 7/8''



Flush-type socket 7/8''



Flat nut Pg13.5

M8, unshielded, solder connection

Notes:

For connector pin assignments, see page 60.

For further technical data, see:
www.phoenixcontact.net/catalog

M8 pin, straight

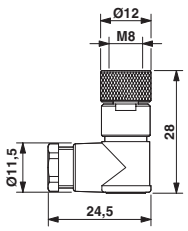
M8 socket, straight

M8 pin, angled

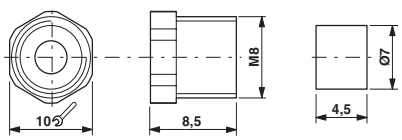
M8 socket, angled

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	3.50 - 5.00	**1681156**	1	**1681172**	1	**1699902**	1	**1529399**	1
-	4	3.50 - 5.00	**1681169**	1	**1681185**	1	**1554209**	1	**1513444**	1
Seal set for 2.5 ...3.5 mm cable diameter			**1436945**	5	**1436945**	5	**1436945**	5	**1436945**	5

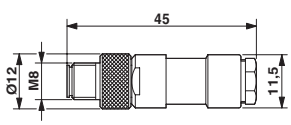
Technical data	3-pos.	4-pos.
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	Cu alloy / Au	Cu alloy / Au
Contact carrier material	PUR / PA66	PUR / PA66
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
Connection cross-section min/max	0.08 mm² / 0.34 mm²	0.08 mm² / 0.34 mm²
Connection cross-section AWG min/max	28 / 22	28 / 22
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



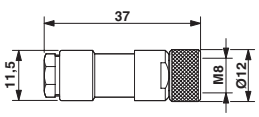
M8 pin, angled



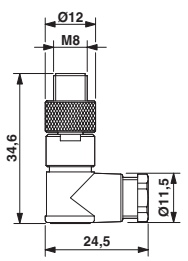
Seal set for 2.5 ...3.5 mm cable diameter



M8 connector, straight



M8 socket, straight



M8 socket, angled

M8, unshielded, screw and Piercecon® fast connection

Notes:

For connector pin assignments, see page 60.

For further technical data, see:
www.phoenixcontact.net/catalog

M8 plug, straight, screw connection

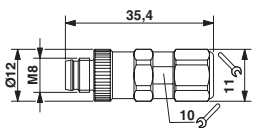
M8 socket, straight, screw connection

M8 pin, straight, Piercecon® connection

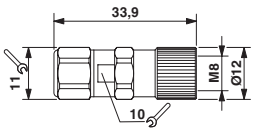
M8 socket, straight, Piercecon® connection

Description	No. of pos.	Cross-section [mm²]	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	3	0.14 - 0.50	3.50 - 5.00	**1501252**	1	**1506888**	1	**-**	-	**-**	-
-	3	0.14 - 0.38	3.00 - 5.00	**-**	-	**-**	-	**1506752**	1	**1506778**	1
-	4	0.14 - 0.50	3.50 - 5.00	**1501265**	1	**1506891**	1	**-**	-	**-**	-
-	4	0.14 - 0.38	3.00 - 5.00	**-**	-	**-**	-	**1506765**	1	**1506781**	1
Seal set for 2.5 ...3.5 mm cable diameter				**1436945**	5	**1436945**	5	**-**	-	**-**	-

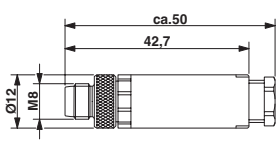
Technical data	3-pos., screw connection	4-pos., screw connection	3-pos., Piercecon® connection	4-pos., Piercecon® connection
Electrical data				
Rated voltage	60 V	30 V	60 V	30 V
Nominal current I_N	4 A	4 A	4 A	4 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Material contact / contact surface	Cu alloy / Au	Cu alloy / Au	CuZn / Au	CuZn / Au
Contact carrier material	PUR / PA66	PUR / PA66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP67	IP67	IP68	IP68
Connection data				
External diameter	3.5 mm ... 5 mm	3.5 mm ... 5 mm	3 mm ... 5 mm	3 mm ... 5 mm
Connection cross-section min/max	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²	0.14 mm² / 0.38 mm²	0.14 mm² / 0.38 mm²
Connection cross-section AWG min/max	26 / 20	26 / 20	22 / 26	22 / 26
Temperature data				
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-25°C ... 90°C	-25°C ... 90°C



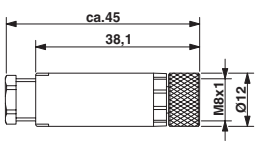
M8 plug, Piercecon® connection



M8 socket, Piercecon® connection



M8 plug, screw connection



M8 socket, screw connection

M8, shielded, solder connection

Notes:

For connector pin assignments, see page 60.

For further technical data, see:
www.phoenixcontact.net/catalog

M8 pin, straight

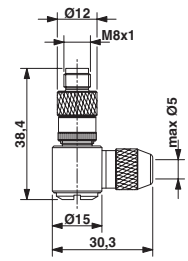
M8 socket, straight

M8 pin, angled

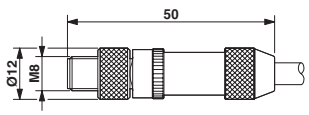
M8 socket, angled

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Metal housing	3	3.50 - 5.00	**1506901**	1	**1506927**	1	**1436453**	1	**1436479**	1
Metal housing	4	3.50 - 5.00	**1506914**	1	**1506930**	1	**1436466**	1	**1436482**	1

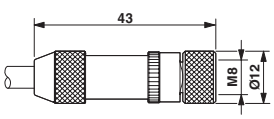
Technical data	3-pos., solder connection	4-pos., solder connection
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CuSn / Au	CuSn / Au
Contact carrier material	PUR / PA66	PUR / PA66
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
External diameter	3.5 mm ... 5 mm	3.5 mm ... 5 mm
Connection cross-section min/max	0.08 mm² / 0.34 mm²	0.08 mm² / 0.34 mm²
Connection cross-section AWG min/max	28 / 22	28 / 22
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



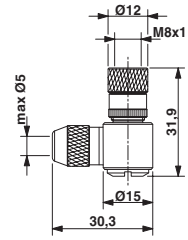
M8 pin, solder connection, angled



M8 pin, solder connection, straight



M8 socket, solder connection, straight



M8socket, solder connection, angled

M8, shielded, screw connection

Notes:

For connector pin assignments, see page 61.

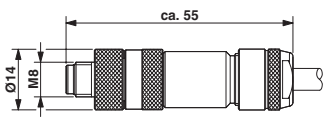
For further technical data, see:
www.phoenixcontact.net/catalog

M8 plug, straight, screw connection

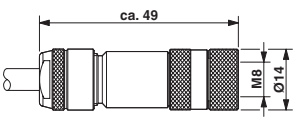
M8 socket, straight, screw connection

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Metal housing	3	3.50 - 5.20	**1542884**	1	**1542907**	1
Metal housing	4	3.50 - 5.20	**1542897**	1	**1542910**	1

Technical data	3-pos., screw connection	4-pos., screw connection
Electrical data		
Rated voltage	60 V	30 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
No. of pos.	3	4
Mechanical data		
Material contact / contact surface	CuSn / Au	CuSn / Au
Contact carrier material	PUR / PA66	PUR / PA66
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
External diameter	3.5 mm ... 5.2 mm	3.5 mm ... 5.2 mm
Connection cross-section min/max	0.14 mm² / 0.34 mm²	0.14 mm² / 0.34 mm²
Connection cross-section AWG min/max	26 / 22	26 / 22
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



M8 pin, screw connection



M8 socket, screw connection

M12, unshielded, spring-cage connection

Notes:

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

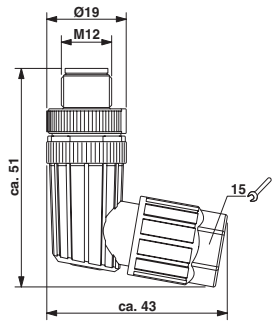
M12 socket, straight

M12 pin, angled

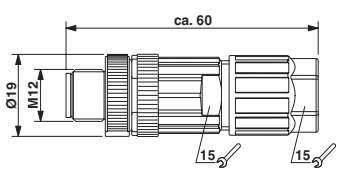
M12 socket, angled

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Plastic housing	4	4.00 - 8.00	**1432635**	1	**1432619**	1	**1432606**	1	**1432622**	1
Plastic housing	5	4.00 - 8.00	**1432567**	1	**1432583**	1	**1432570**	1	**1432596**	1

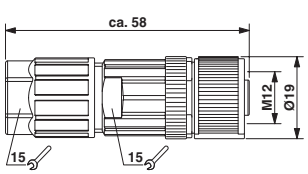
Technical data	4-pos.	5-pos.
Electrical data		
Rated voltage	250 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Encoding	A - standard	A - standard
Mechanical data		
Material contact / contact surface	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
External diameter	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min/max	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²
Connection cross-section AWG min/max	26 / 20	26 / 20
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



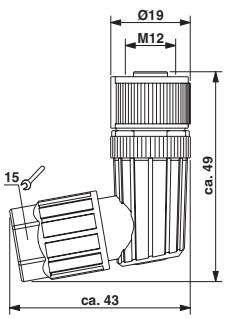
M12 SPEEDCON connector, angled



M12-SPEEDCON socket, straight



M12 SPEEDCON connector, straight



M12-SPEEDCON socket, angled

M12, unshielded, screw connection

Notes:

SPEEDCON and plastic knurls without key areas.

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

M12 socket, straight

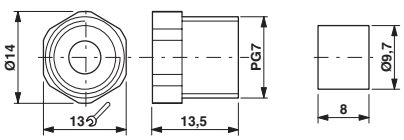
M12 pin, angled

M12 socket, angled

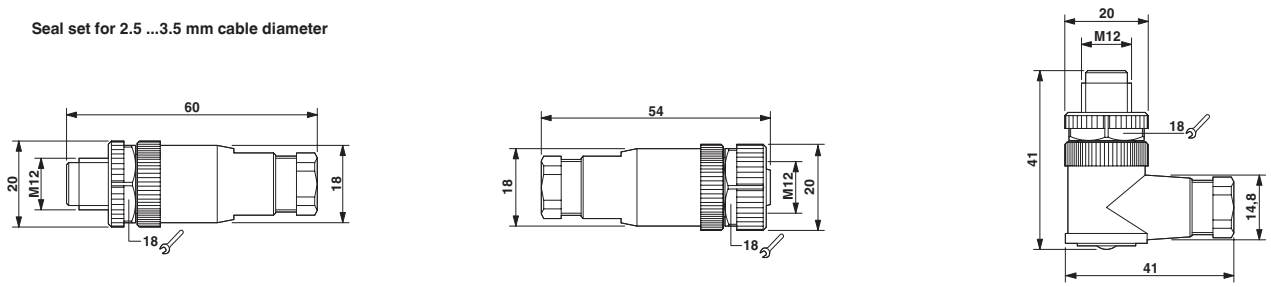
Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
SPEEDCON knurl	4	4.00 - 6.00	**1542952**	1	**1543029**	1	**1542981**	1	**1543058**	1
SPEEDCON knurl	5	4.00 - 6.00	**1542965**	1	**1543032**	1	**1542994**	1	**1543061**	1
SPEEDCON knurl	5	6.00 - 8.00	**1542978**	1	**1543045**	1	**1543003**	1	**1543414**	1
Metal knurl	4	4.00 - 6.00	**1662528**	1	**1681127**	1	**1681101**	1	**1681143**	1
Metal knurl	5	4.00 - 6.00	**1663116**	1	**1662968**	1	**1663129**	1	**1662984**	1
Metal knurl	5	6.00 - 8.00	**1681460**	1	**1681486**	1	**1681473**	1	**1681499**	1
Metal knurl	8	6.00 - 8.00	**1513334**	1	**1513347**	1	-	-	-	-
Plastic knurl	4	4.00 - 6.00	**1681088**	1	**1681114**	1	**1681091**	1	**1681130**	1
Plastic knurl	5	4.00 - 6.00	**1662256**	1	**1662298**	1	**1662269**	1	**1662308**	1
Plastic knurl	5	6.00 - 8.00	**1500774**	1	**1500787**	1	**1513431**	1	**1500790**	1
Seal set for 2.5 ...3.5 mm cable diameter			**1436505**	5	**1436505**	5	**1436505**	5	**1436505**	5

Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	8 mΩ	8 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Encoding	A - standard	A - standard	A - standard
Mechanical data			
Material contact / contact surface	Cu alloy / CuSnZn	Cu alloy / CuSnZn	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection data			
Connection cross-section min/max	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²
Connection cross-section AWG min/max	24 / 18	24 / 18	24 / 18
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-40°C ... 85°C

M12 socket, angled, metal knurl



Seal set for 2.5 ...3.5 mm cable diameter



M12 pin, straight, metal knurl

M12 socket, straight, metal knurl

M12 pin, angled, metal knurl

M12 DUO connector, unshielded, screw connection

Notes:

SPEEDCON and plastic knurls without key areas.

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

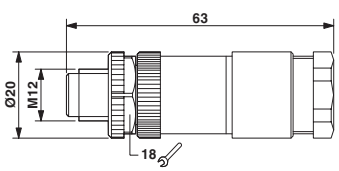
M12 pin, straight

M12 socket, straight

M12 pin, angled

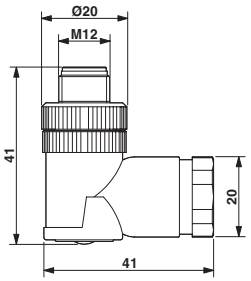
Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
SPEEDCON knurl	5	2 x 3.00 - 5.20	**1543016**	1	-	-	-	-
Metal knurl	4	2 x 3.00 - 5.20	**1507052**	1	-	-	-	-
Metal knurl	5	2 x 3.00 - 5.20	**1662748**	1	-	-	-	-
Plastic knurl	5	3.00 - 5.20	**1662285**	1	**1694596**	1	**1531044**	1

Technical data	4-pos.	5-pos.
Electrical data		
Rated voltage	250 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Encoding	A - standard	A - standard
Mechanical data		
Material contact / contact surface	CuZn / CuSnZn	CuZn / CuSnZn
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
Connection cross-section min/max	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²
Connection cross-section AWG min/max	24 / 18	24 / 18
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



M12 pin, straight, metal knurl

M12 socket, straight



M12 pin, angled

M12, unshielded, QUICKON fast connection technology

Notes:

For connector pin assignments, see page 61.

For description of connection method, see page 16.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight, conductor cross-section: 0.14 mm² ... 0.34 mm²

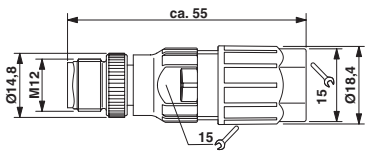
M12 socket, straight, conductor cross-section: 0.14 mm² ... 0.34 mm²

M12 pin, straight, conductor cross-section: 0.34 mm² ... 0.75 mm²

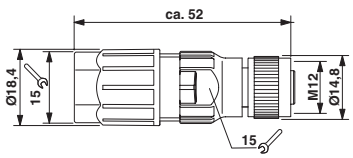
M12 socket, straight, conductor cross-section: 0.34 mm² ... 0.75 mm²

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
SPEEDCON knurl	4	3.50 - 6.00	**1521575**	1	**1521588**	1	-	-	-	-
SPEEDCON knurl	4	4.00 - 8.00	-	-	-	-	**1521591**	1	**1521601**	1
Metal knurl	4	3.50 - 6.00	**1641691**	1	**1641688**	1	-	-	-	-
Metal knurl	4	4.00 - 8.00	-	-	-	-	**1641785**	1	**1641772**	1
Plastic knurl	4	3.50 - 6.00	**1641714**	1	**1641701**	1	-	-	-	-
Plastic knurl	4	4.00 - 8.00	-	-	-	-	**1641769**	1	**1641756**	1

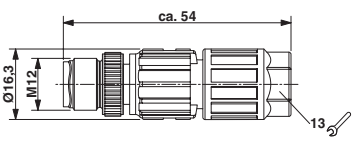
Technical data	0.34 mm²	0.75 mm²
Electrical data		
Rated voltage	125 V	250 V
Nominal current I_N	4 A	4 A
Volume resistance	5 mΩ	5 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP65/67	IP65/67
QUICKON connection data		
External diameter	3.5 mm ... 6 mm	4 mm ... 8 mm
Connection cross-section min/max	0.14 mm² / 0.34 mm²	0.34 mm² / 0.75 mm²
Connection cross-section AWG min/max	26 / 22	22 / 18
Temperature data		
Ambient temperature (operation)	-25°C ... 80°C	-25°C ... 80°C



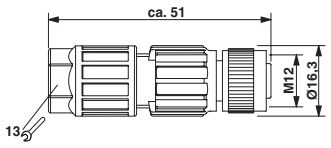
M12 pin, straight, QUICKON connection: 0.34 mm² ... 0.75 mm²



M12 socket, straight, QUICKON connection: 0.34 mm² ... 0.75 mm²



M12 pin, straight, QUICKON connection: 0.14 mm² ... 0.34 mm²



M12 socket, straight, QUICKON connection: 0.14 mm² ... 0.34 mm²

QUICKON cable connectors

Notes:

Cable connectors for 0.34 and 0.75 mm² for sensor/actuator applications.

Position identification 1-4 (without PE).

Version up to 1.5 mm² with and without PE marking.

Cable connector, black, with 2 QUICKON nuts

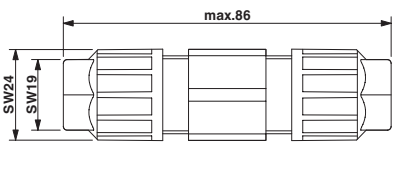
Cable connector, black, with 2 QUICKON nuts

Cable connector, black, with 2 QUICKON nuts

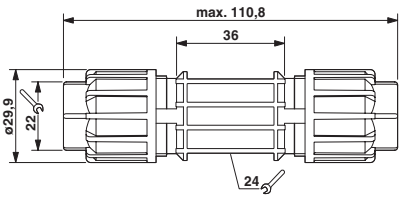
Cable connector, black, with 2 QUICKON nuts

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos., cable Ø: 3.5-6 mm	**1641879**	1	-	-	-	-	-	-
4-pos., cable Ø: 4-8 mm	-	-	**1642140**	1	-	-	-	-
4-pos., cable Ø: 6-12 mm	-	-	-	-	**1642153**	1	-	-
3+PE-pos., cable Ø: 6-10 mm	-	-	-	-	-	-	**1582211**	1
3+PE-pos., cable Ø: 9-14 mm	-	-	-	-	-	-	**1582214**	1

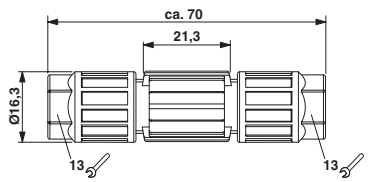
Technical data	0.34 mm²	0.75 mm²	1.5 mm²	2.5 mm²
Electrical data				
Rated voltage	125 V	250 V	500 V	-
Nominal current I_N	5 A	9 A	15 A	20 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	-
Surge voltage category	III	III	III	III
Mechanical data				
Material contact / contact surface	Steel / tin-plated	Steel / tin-plated	CuZn / tin-plated	CuZn / tin-plated
Contact carrier material	PA	PA	PA	PA
Inflammability class acc. to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Degree of protection	IP65/67	IP65/67	IP65/67	IP68, 24 h / 2 m
QUICKON connection data				
External diameter	3.5 mm ... 6 mm	4 mm ... 8 mm	6 mm ... 12 mm	-
Conductor cross-section [mm²] solid / stranded	0.14 mm² ... 0.25 mm² / 0.14 mm² ... 0.34 mm²	0.34 mm² ... 0.5 mm² / 0.34 mm² ... 0.75 mm²	0.75 mm² ... 1 mm² / 0.75 mm² ... 1.5 mm²	1 mm² ... 1.5 mm² / 1.5 mm² ... 2.5 mm²
Conductor cross-section [AWG]	26 ... 22	22 ... 18	18 ... 16	16 ... 14
Temperature data				
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C



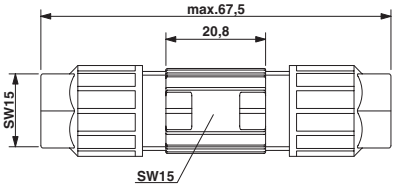
Cable connector, QUICKON connection: 0.75 mm² ... 1.5 mm²



Cable connector, QUICKON connection: 1.0 mm² ... 2.5 mm²



Cable connector, QUICKON connection: 0.14 mm² ... 0.34 mm²



Cable connector, QUICKON connection: 0.34 mm² ... 0.75 mm²

M12, shielded, spring-cage connection

Notes:

Suitable for SPEEDCON and M12 standard, see page: 68.

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

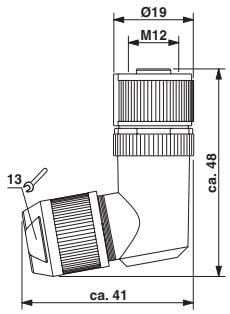
M12 socket, straight

M12 pin, angled

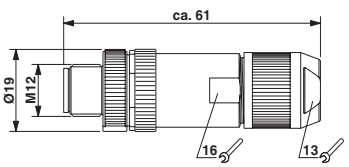
M12 socket, angled

Description	No. of pos.	Encoding	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Standard	4	A - standard	4.00 - 8.00	**1432729**	1	**1432745**	1	**1432732**	1	**1432758**	1
Standard	5	A - standard	4.00 - 8.00	**1432648**	1	**1432664**	1	**1432651**	1	**1432677**	1
Standard	5	B - inverse	4.00 - 8.00	**1432680**	1	**1432703**	1	**1432693**	1	**1432716**	1
PROFINET	4	D - data	4.00 - 8.00	**1436738**	1	**1436741**	1	**1436754**	1	**1436767**	1
CANopen, DeviceNet™	5	A - standard	4.00 - 8.00	**1432761**	1	**1432787**	1	**1432774**	1	**1432790**	1
Profibus	2	B - inverse	4.00 - 8.00	**1432842**	1	**1432868**	1	**1432855**	1	**1432871**	1
Interbus	5	B - inverse	4.00 - 8.00	**1432800**	1	**1432826**	1	**1432813**	1	**1432839**	1

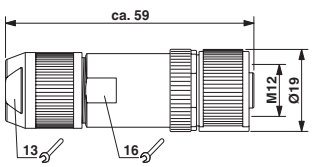
Technical data	4-pos.	5-pos.
Electrical data		
Rated voltage	60 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Contact carrier material	PA 66	PA 66
Material contact / contact surface	CuSn / Ni/Au	CuSn / Ni/Au
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP67	IP67
Connection data		
External diameter	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min/max	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²
Connection cross-section AWG min/max	26 / 20	26 / 20
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



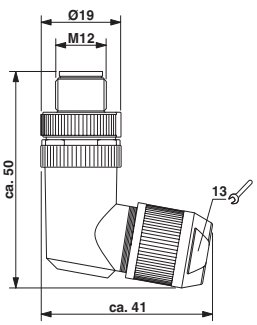
M12 pin, angled, shielded



M12 pin, straight, shielded



M12 socket, straight, shielded



M12 socket, angled, shielded

M12, shielded, screw connection

Notes:

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

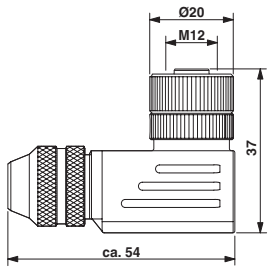
M12 socket, straight

M12 pin, angled

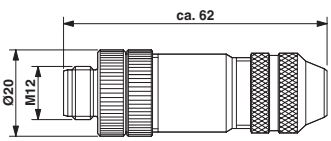
M12 socket, angled

Description	No. of pos.	Encoding	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Standard	4	A - standard	4.00 - 6.00	**1693830**	1	**1694295**	1	**1694279**	1	**-**	-
Standard	4	A - standard	6.00 - 8.00	**1501540**	1	**1515170**	1	**-**	-	**-**	-
Standard	5	A - standard	4.00 - 6.00	**1693416**	1	**1694305**	1	**1693429**	1	**-**	-
Standard	5	A - standard	6.00 - 8.00	**1694266**	1	**1694318**	1	**1694282**	1	**1430433**	1
Standard	5	B - inverse	6.00 - 8.00	**-**	-	**-**	-	**1430417**	1	**1430420**	1
Standard	8	A - standard	6.00 - 8.00	**1511857**	1	**1511860**	1	**-**	-	**-**	-
Ethernet	4	D - data	4.00 - 6.00	**1521258**	1	**-**	-	**-**	-	**-**	-
Ethernet	4	D - data	6.00 - 8.00	**1521261**	1	**-**	-	**-**	-	**-**	-
CANopen, DeviceNet™	5	A - standard	6.00 - 8.50	**1508352**	1	**1508365**	1	**-**	-	**-**	-
PROFIBUS, INTERBUS	5	B - inverse	6.00 - 8.50	**1507764**	1	**1507777**	1	**-**	-	**-**	-

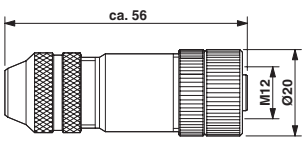
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	60 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection data			
Connection cross-section min/max	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²
Connection cross-section AWG min/max	24 / 18	24 / 18	24 / 18
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-40°C ... 85°C



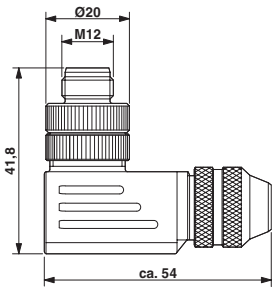
M12 socket, angled, shielded



M12 pin, straight, shielded



M12 socket, straight, shielded



M12 pin, angled, shielded

M12, shielded, IDC fast connection technology

Notes:

For connector pin assignments, see page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

For description of connection method, see page 186.

M12 pin, straight

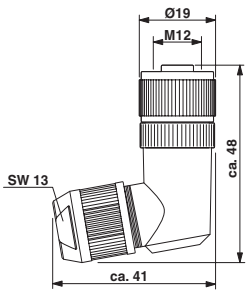
M12 socket, straight

M12 pin, angled

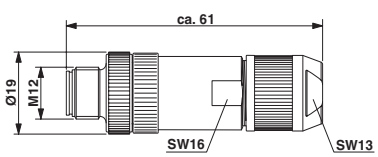
M12 socket, angled

Description	No. of pos.	Encoding	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Ethernet	4	D - data	4.00 - 8.00	**1543223**	1	**1553611**	1	**1553624**	1	**1553637**	1
Profinet	4	D - data	4.00 - 8.00	**1554513**	1	**1554526**	1	**1554539**	1	**1554542**	1
Varan	6	A - standard	4.00 - 8.00	**1429130**	1	**1429143**	1	**1429156**	1	**1429169**	1
Ethernet	8	A - standard	4.00 - 8.00	**1543236**	1	**1553640**	1	**1553653**	1	**1553666**	1

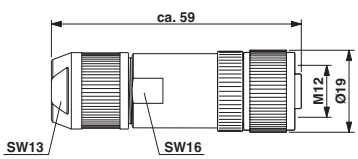
Technical data	4-pos.	6-pos.	8-pos.
Electrical data			
Rated voltage	60 V	30 V	30 V
Nominal current I_N	1.75 A	2 A	1.75 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuSn / Ni/Au	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection data			
External diameter	4 mm ... 8 mm	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min/max	0.14 mm² / 0.34 mm²	0.14 mm² / 0.34 mm²	0.14 mm² / 0.34 mm²
Connection cross-section AWG min/max	26 / 22	26 / 22	26 / 22
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-40°C ... 85°C



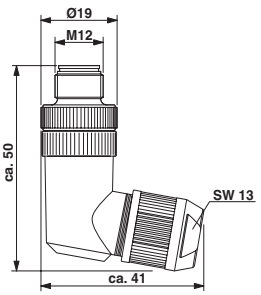
M12 socket, angled, shielded



M12 pin, straight, shielded



M12 socket, straight, shielded



M12 pin, angled, shielded

Mini 7/8", unshielded, screw connection

Notes:

For connector pin assignments, see page 62.

For further technical data, see:
www.phoenixcontact.net/catalog

7/8'' pin, straight

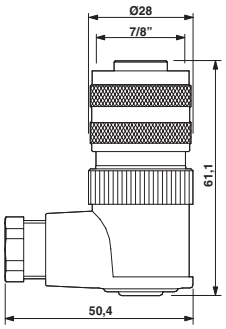
7/8" socket, straight

7/8" pin, angled

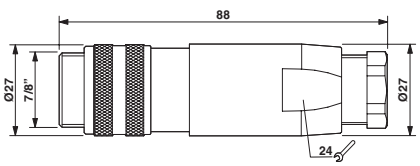
7/8'' socket, angled

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Metal knurl	3	6.00 - 8.00	**1521287**	1	**1521300**	1	**1521465**	1	**1521478**	1
Metal knurl	3	10.00 - 12.00	**1521290**	1	**1521313**	1	**-**	-	**-**	-
Metal knurl	4	6.00 - 8.00	**1521326**	1	**1521342**	1	**1521481**	1	**1521494**	1
Metal knurl	4	10.00 - 12.00	**1521339**	1	**1521355**	1	**-**	-	**-**	-
Metal knurl	5	6.00 - 8.00	**1521668**	1	**1521384**	1	**1521504**	1	**1521517**	1
Metal knurl	5	10.00 - 12.00	**1521371**	1	**1521397**	1	**-**	-	**-**	-
Metal knurl	5	12.00 - 14.00	**1559039**	1	**1559071**	1	**-**	-	**-**	-

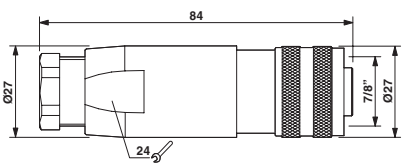
Technical data	3-pos.	4-pos.	5-pos.
Electrical data			
Rated voltage	250 V	250 V	250 V
Nominal current I_N	12 A	9 A	9 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Material contact / contact surface	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material	PUR / PA66	PUR / PA66	PUR / PA66
Inflammability class acc. to UL 94	HB	HB	HB
Pollution degree	3	3	3
Degree of protection	IP67	IP67	IP67
Connection data			
Connection cross-section min/max	0.34 mm² / 1.5 mm²	0.34 mm² / 1.5 mm²	0.34 mm² / 1.5 mm²
Connection cross-section AWG min/max	22 / 16	22 / 16	22 / 16
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C	-40°C ... 85°C



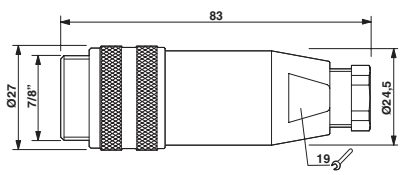
7/8" socket, angled, Pg9



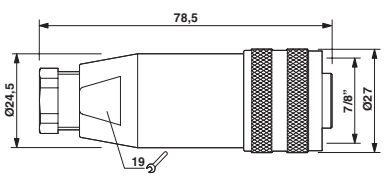
7/8" pin, straight, Pg13



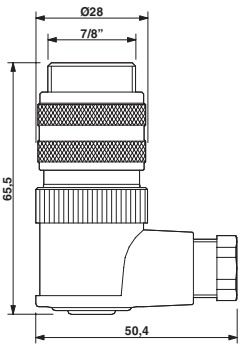
7/8" socket, straight, Pg13



7/8" pin, straight, Pg9



7/8" socket, straight, Pg9



7/8" pin, angled, Pg9

M23 signal/feedback connectors, RF series

The 12 and 17-pos. basic range of RF connectors has been adapted to feedback (signal) applications.
The cable clamping range for cables and coupler connectors is generously dimensioned with a maximum cable diameter (shielded) of 13.2 mm. Shield and cable clamping have been consistently developed for quick and easy assembly.

Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

RF-...S...N8A...DU

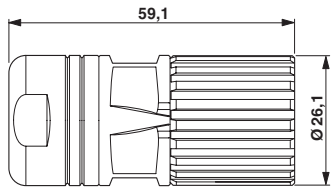
Socket assembly

RF-...P...N8A...DU

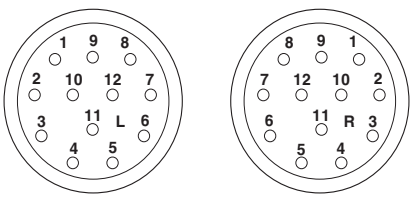
Pin assembly

Description	No. of pos.	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Feedback cable connector, straight, cable Ø 3 - 13.2 mm							
Standard direction of rotation, 12-pos.		**RF-12S1N8A80DU**	**1607276**	20	**RF-12P1N8A80DU**	**1607228**	20
Standard direction of rotation, 17-pos.		**RF-17S1N8A80DU**	**1607340**	20	**RF-17P1N8A80DU**	**1607323**	20
Opposite direction of rotation, 12-pos.		**RF-12S2N8A80DU**	**1607297**	20	**RF-12P2N8A80DU**	**1607252**	20
Opposite direction of rotation, 17-pos.		**RF-17S2N8A80DU**	**1607349**	20	**RF-17P2N8A80DU**	**1607331**	20
Feedback coupler connector, straight, cable Ø 3 - 13.2 mm							
Standard direction of rotation, 12-pos.		**RF-12S1N8A90DU**	**1607278**	20	**RF-12P1N8A90DU**	**1607231**	20
Standard direction of rotation, 17-pos.		**RF-17S1N8A90DU**	**1607343**	20	**RF-17P1N8A90DU**	**1607326**	20
Opposite direction of rotation, 12-pos.		**RF-12S2N8A90DU**	**1607302**	20	**RF-12P2N8A90DU**	**1607255**	20
Opposite direction of rotation, 17-pos.		**RF-17S2N8A90DU**	**1607352**	20	**RF-17P2N8A90DU**	**1607334**	20
Signal contacts, punched-rolled (C-HC), taped, 2500 pieces per roll, Ø 1 mm							
Connection cross-section: 0.08 - 0.2 mm²		**SF-10KS320**	**1607031**	1			
Connection cross-section: 0.2 - 0.56 mm²		**SF-10KS350**	**1607032**	1			
Angled signal contacts, single processing, Ø 1 mm							
Connection cross-section: 0.14 - 0.5 mm²		**SF-10KS004**	**1607356**	100	**SF-10KP004**	**1607355**	100
Connection cross-section: 0.5 - 1 mm²		**SF-6AS2000**	**1605557**	100	**SF-6AP2000**	**1605554**	100
Wire spring contact, cross-section: 0.14 - 1 mm²		**SF-10KS010**	**1605481**	100			

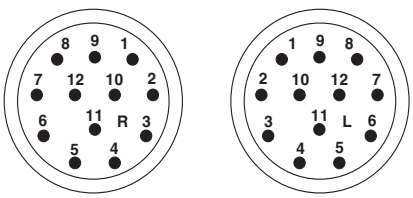
Technical data				
Electrical data in acc. with DIN EN 61984:2001	12-pos.	17-pos.	12-pos.	17-pos.
Rated voltage (III/3)	150 V	100 V	150 V	100 V
Rated current at 25°C	8 A	8 A	8 A	8 A



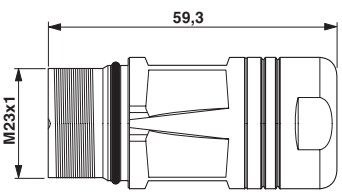
RF-12(17)...N8A80DU



Contact chamber numbering (view of plug-in side)
Standard socket – Socket counter direction



Contact chamber numbering (view of plug-in side)
Standard pin – Pin counter direction



RF-12(17)...N8A90DU

M23 appliance plug connectors, RF series

RF appliance plug connectors are available in straight and angled versions.
The angled, rotatable versions cover a progressive swiveling range of up to 310°.
The metallic twisting mechanism provides an EMC-effective, interruption-free connection of the angled flange with the housing.

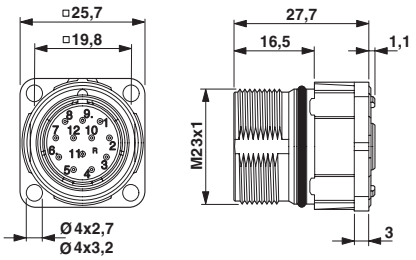
Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

RF-...S...N8AW...00
Socket assembly

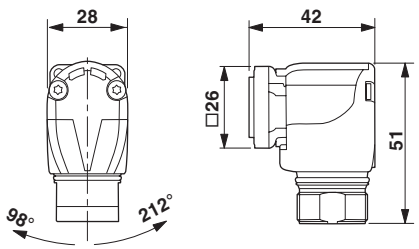
RF-...P...N8A...00
Pin assembly

Description	No. of pos.	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Feedback appliance plug connector, straight							
Standard direction of rotation, 12-pos.		**RF-12S1N8AWA00**	**1607283**	40	**RF-12P1N8AWA00**	**1607236**	40
Standard direction of rotation, 17-pos.		**RF-17S1N8AWA00**	**1607892**	40	**RF-17P1N8AWA00**	**1607860**	40
Opposite direction of rotation, 12-pos.		**RF-12S2N8AWA00**	**1607307**	40	**RF-12P2N8AWA00**	**1607260**	40
Opposite direction of rotation, 17-pos.		**RF-17S2N8AWA00**	**1607901**	40	**RF-17P2N8AWA00**	**1607882**	40
Feedback appliance plug connector straight, with contact carriers to snap in							
Standard direction of rotation, 12-pos.		**RF-12S1N8AWB00**	**1607830**	40	**RF-12P1N8AWB00**	**1607804**	40
Standard direction of rotation, 17-pos.		**RF-17S1N8AWB00**	**1607893**	40	**RF-17P1N8AWB00**	**1607863**	40
Opposite direction of rotation, 12-pos.		**RF-12S2N8AWB00**	**1607844**	40	**RF-12P2N8AWB00**	**1607817**	40
Opposite direction of rotation, 17-pos.		**RF-17S2N8AWB00**	**1607902**	40	**RF-17P2N8AWB00**	**1607883**	40
Feedback appliance plug connector angled, rotatable							
Standard direction of rotation, 12-pos.					**RF-12P1N8AAD00**	**1607233**	16
Standard direction of rotation, 17-pos.					**RF-17P1N8AAD00**	**1607328**	16
Opposite direction of rotation, 12-pos.					**RF-12P2N8AAD00**	**1607257**	16
Opposite direction of rotation, 17-pos.					**RF-17P2N8AAD00**	**1607337**	16
Signal contacts, punched-rolled (C-HC), taped, 2500 pieces per roll, Ø 1 mm							
Connection cross-section: 0.08 - 0.2 mm²		**SF-10KS320**	**1607031**	1			
Connection cross-section: 0.2 - 0.56 mm²		**SF-10KS350**	**1607032**	1			
Angled signal contacts, single processing, Ø 1 mm							
Connection cross-section: 0.14 - 0.5 mm²		**SF-10KS004**	**1607356**	100	**SF-10KP004**	**1607355**	100
Connection cross-section: 0.5 - 1 mm²		**SF-6AS2000**	**1605557**	100	**SF-6AP2000**	**1605554**	100
Wire spring contact, cross-section: 0.14 - 1 mm²		**SF-10KS010**	**1605481**	100			

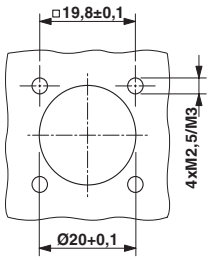
Technical data				
Electrical data in acc. with DIN EN 61984:2001	12-pos.	17-pos.	12-pos.	17-pos.
Rated voltage (III/3)	150 V	100 V	150 V	100 V
Rated current at 25°C	8 A	8 A	8 A	8 A



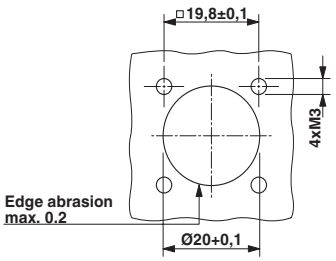
RF-...N8AWA00, RF-...N8AWB00



RF-...P...N8AAD00



Installation dimensions RF-...N8AWA00, RF-...N8AWB00



Installation dimensions RF-...P...N8AAD00

M23 power connectors, P30 series

P30 are M23 power connectors for transmission capacities of up to 250/630 V at 9/30 A.
Crimp contacts can be ordered separately depending on the desired connection cross-section. 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 signal contacts and four 2 mm contacts.

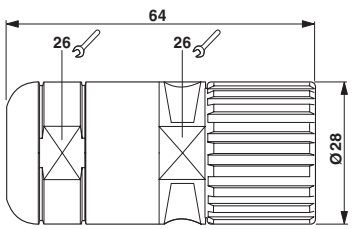
Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

SF-.ES1N8A8...
Socket assembly

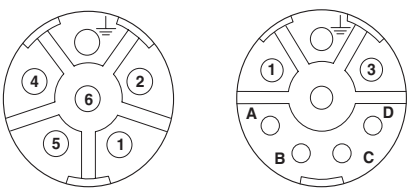
SF-.EP1N8A90..
Pin assembly

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Power connector P30, shielded, straight, short, cable Ø: 7.5 - 14 mm						
6-pos. (5+PE)	**SF-5ES1N8A80DU**	**1605532**	20	**SF-5EP1N8A90DU**	**1605499**	20
8-pos. (4+3+PE)	**SF-7ES1N8A80DU**	**1605602**	20	**SF-7EP1N8A90DU**	**1605575**	20
Signal contacts, punched-rolled (C-HC), taped, 2500 pieces per roll, Ø 1 mm						
Connection cross-section: 0.08 - 0.2 mm²	**SF-10KS320**	**1607031**	1			
Connection cross-section: 0.2 - 0.56 mm²	**SF-10KS350**	**1607032**	1			
Angled signal contacts, single processing, Ø 1 mm						
Connection cross-section: 0.14 - 0.5 mm²	**SF-10KS004**	**1607356**	100	**SF-10KP004**	**1607355**	100
Connection cross-section: 0.5 - 1 mm²	**SF-6AS2000**	**1605557**	100	**SF-6AP2000**	**1605554**	100
Connection cross-section: 0.5 - 1.5 mm²	**SF-6FS2000**	**1605566**	100	**SF-6DP2000**	**1607406**	100
Wire spring contact, cross-section: 0.14 - 1 mm²	**SF-10KS010**	**1605481**	100			
Contacts (C-HC), punched-rolled, taped, 1000 pieces per roll, Ø 2 mm						
Connection cross-section: 1.0 - 2.5 mm²	**SF-20KS350**	**1607034**	1			
Angled contacts, single processing, Ø 2 mm						
Connection cross-section: 0.25 - 1 mm²	**SF-7PS2000**	**1605636**	100	**SF-7PP2000**	**1605634**	100
Connection cross-section: 0.75 - 1.5 mm²	**SF-7NS2000**	**1605631**	100			
Connection cross-section: 1.0 - 2.5 mm²	**SF-7QS2000**	**1605643**	100	**SF-7QP2000**	**1605639**	100
Wire spring contact, cross-section: 0.75 - 2.5 mm²	**SF-20KS010**	**1605491**	100			

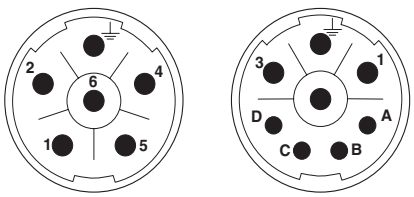
Technical data				
Electrical data in acc. with DIN EN 61984:2001	Signal contact	Power contact	Signal contact	Power contact
Rated voltage (III/3)	250 V	630 V	250 V	630 V
Rated current at 25°C	9 A	30 A	9 A	30 A



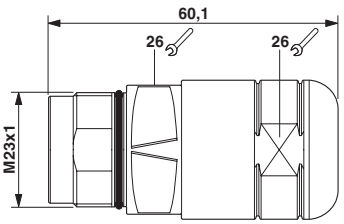
SF-...S1N8A80DU



Connector pin assignment 6 / 8-pos. socket assembly



Connector pin assignment 6 / 8-pos. pin assembly



SF-...P1N8A90DU

M23 appliance plug connectors, P30 series

The range offers various application-specific housing designs:
– Straight housing, even in flat design for space-saving installation
– Angled housing, rotatable

Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

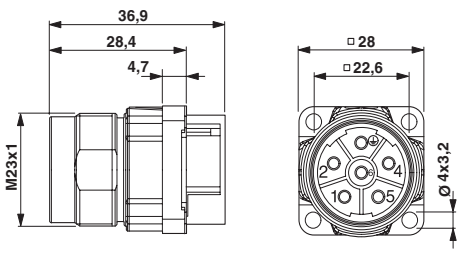
SF-...N8AW...00

SF-...N8AAD00

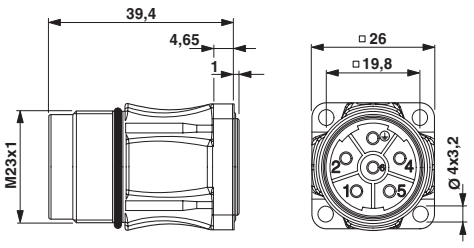
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Power appliance plug connector P30, low design, straight, external						
6-pos. (5+PE)	**SF-5EP1N8AWK00**	**1607043**	20			
8-pos. (4+3+PE)	**SF-7EP1N8AWK00**	**1605591**	20			
Power appliance plug connector P30, straight, external						
6-pos. (5+PE)	**SF-5EP1N8AWA00**	**1605520**	20			
8-pos. (4+3+PE)	**SF-7EP1N8AWA00**	**1605589**	20			
Power appliance plug connector P30, angled, rotatable, external						
6-pos. (5+PE)				**SF-5EP1N8AAD00**	**1605512**	16
8-pos. (4+3+PE)				**SF-7EP1N8AAD00**	**1605586**	16
Angled signal contacts, single processing, Ø 1 mm						
Connection cross-section: 0.14 - 0.5 mm²	**SF-10KP004**	**1607355**	100	**SF-10KP004**	**1607355**	100
Connection cross-section: 0.5 - 1 mm²	**SF-6AP2000**	**1605554**	100	**SF-6AP2000**	**1605554**	100
Connection cross-section: 0.5 - 1.5 mm²	**SF-6DP2000**	**1607406**	100	**SF-6DP2000**	**1607406**	100
Angled contacts, single processing, Ø 2 mm						
Connection cross-section: 0.25 - 1 mm²	**SF-7PP2000**	**1605634**	100	**SF-7PP2000**	**1605634**	100
Connection cross-section: 1.0 - 2.5 mm²	**SF-7QP2000**	**1605639**	100	**SF-7QP2000**	**1605639**	100

Technical data

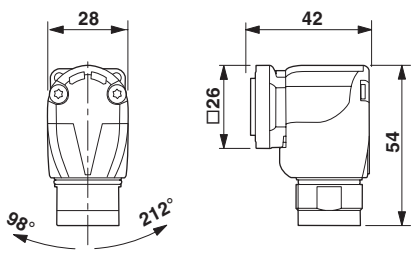
Electrical data in acc. with DIN EN 61984:2001	Signal contact	Power contact	Signal contact	Power contact
Rated voltage (III/3)	250 V	630 V	250 V	630 V
Rated current at 25°C	9 A	30 A	9 A	30 A



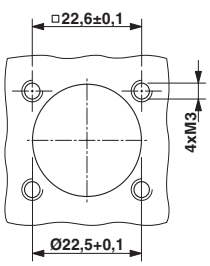
SF-...P1N8AWK00



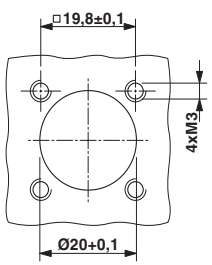
SF-...P1N8AWA00



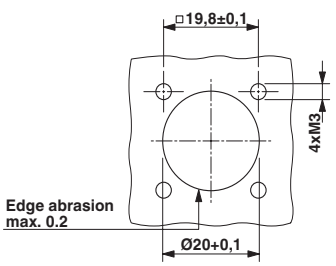
SF-.EP1N8AAD00



Installation dimensions SF-...P1N8AWK00



Installation dimensions SF-...P1N8AWA00



Installation dimensions: SF-.EP1N8AAD00

M40 power connectors, P70 series

P70 are M40 power connectors for higher transmission capacities and connection cross-sections. Electric capacities of up to 630 V and 70 A per contact feed-through can be transmitted for connection cross-sections of up to 10/16 mm^2 .

Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

SM-...N8A8003

Socket assembly

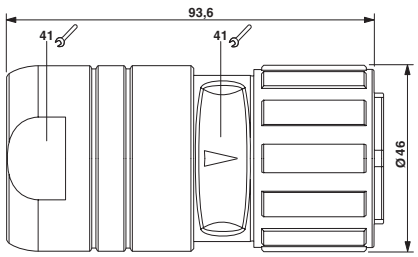
SM-...N8A9003

Pin assembly

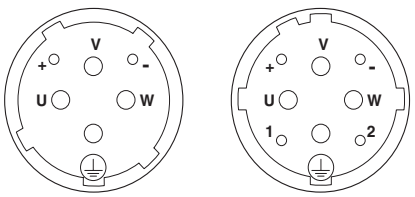
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Power connector P70, shielded, straight, short, cable Ø: 12.5 - 17 mm						
6-pos. (2+3+PE)	**SM-5ES1N8A8003**	**1605805**	12	**SM-5EP1N8A9003**	**1605771**	12
8-pos. (4+3+PE)	**SM-7ES1N8A8003**	**1605852**	12	**SM-7EP1N8A9003**	**1605826**	12
Angled contacts, single processing, Ø 2 mm						
Connection cross-section: 0.25 - 1 mm^2	**SF-7PS2000**	**1605636**	100	**SM-20KP006**	**1605738**	50
Connection cross-section: 1.0 - 2.5 mm^2	**SF-7QS2000**	**1605643**	100	**SM-20KP007**	**1605739**	50
Angled contacts, single processing, Ø 3.6 mm						
Connection cross-section: 2.5 - 4.0 mm^2	**SM-36KS002**	**1605758**	50	**SM-36KP006**	**1605750**	50
Connection cross-section: 4.0 - 6.0 mm^2	**SM-36KS003**	**1605760**	50	**SM-36KP008**	**1605754**	50

Technical data

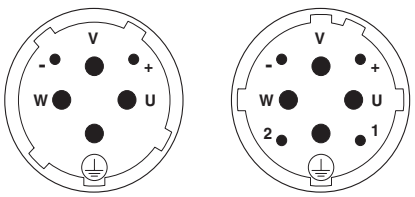
Electrical data in acc. with DIN EN 61984:2001	Signal contact	Power contact	Signal contact	Power contact
Rated voltage (III/3)	250 V	630 V	250 V	630 V
Rated current at 25°C	30 A	70 A	30 A	70 A



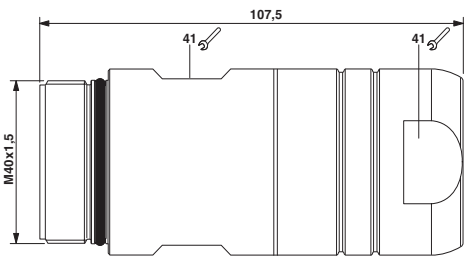
SM-...S1N8A8003



Connector pin assignment 6 / 8-pos. socket assembly



Connector pin assignment 6 / 8-pos. pin assembly



SM-...P1N8A9003

M40 appliance plug connectors, P70 series

P70 appliance plug connector series contains straight versions as well as the rotatable angular housings. No special tools are required for assembly.

Detailed assembly instructions can be found at:
www.phoenixcontact.net/download

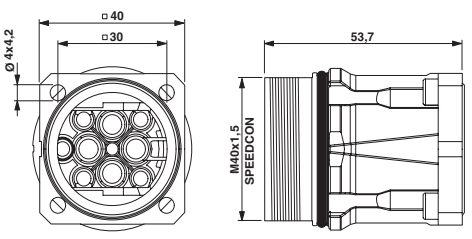
SM-...N8AWT00

SM-...N8AAD00S

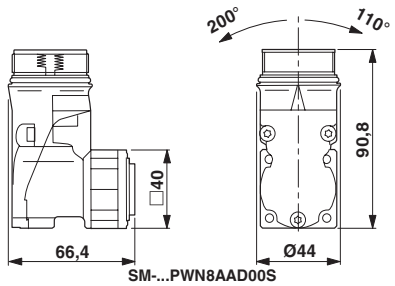
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Power appliance plug connector P70, straight						
6-pos. (2+3+PE)	**SM-5EPWN8AWT00**	**1613517**	12			
8-pos. (4+3+PE)	**SM-7EPWN8AWT00**	**1613527**	12			
Power appliance plug connector P70, angled, rotatable						
6-pos. (2+3+PE)				**SM-5EPWN8AAD00S**	**1607927**	6
8-pos. (4+3+PE)				**SM-7EPWN8AAD00S**	**1607931**	6
Angled contacts, single processing, Ø 2 mm						
Connection cross-section: 0.25 - 1 mm²	**SF-7PP2000**	**1605634**	100	**SF-7PP2000**	**1605634**	100
Connection cross-section: 1.0 - 2.5 mm²	**SF-7QP2000**	**1605639**	100	**SF-7QP2000**	**1605639**	100
Angled contacts, single processing, Ø 3.6 mm						
Connection cross-section: 1.0 - 2.5 mm²	**SM-36KP009**	**1607057**	50	**SM-36KP009**	**1607057**	50
Connection cross-section: 1.0 - 4.0 mm²	**SM-36KP002**	**1605744**	50	**SM-36KP002**	**1605744**	50
Connection cross-section: 4.0 - 6.0 mm²	**SM-36KP003**	**1605745**	50	**SM-36KP003**	**1605745**	50

Technical data

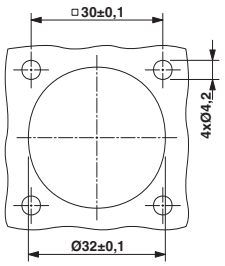
Electrical data in acc. with DIN EN 61984:2001	Signal contact	Power contact	Signal contact	Power contact
Rated voltage (III/3)	250 V	630 V	250 V	630 V
Rated current at 25°C	30 A	70 A	30 A	70 A



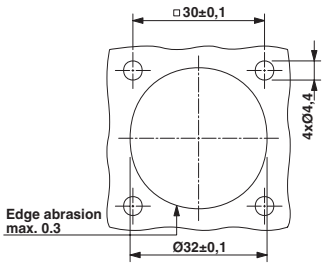
SM-...PWN8AWT00



SM-...PWN8AAD00S



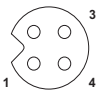
Installation dimensions for SM-...PWN8AWT00



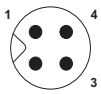
Installation dimensions for SM-...PWN8AAD00S

M5 flush-type connectors

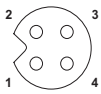
Pin assignments



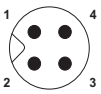
Socket, 3-pos.



Pin, 3-pos.



Socket, 4-pos.



Pin, 4-pos.

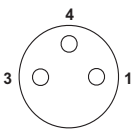
Litz wire colors

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

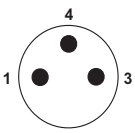
Assignment: M5 flush-type connectors/sockets

M8 flush-type connectors

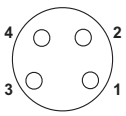
Pin assignments



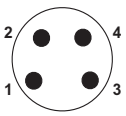
Socket, 3-pos.



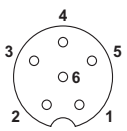
Pin, 3-pos.



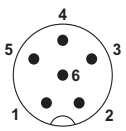
Socket, 4-pos.



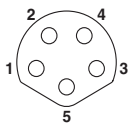
Pin, 4-pos.



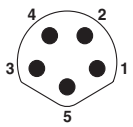
Socket, 6-pos.



Pin, 6-pos.



Socket, 5-pos., DeviceNet™, B-coded



Pin, 5-pos., DeviceNet™, B-coded

Litz wire colors

Pin	Conductor color					
	3-pos.		4-pos.		6-pos.	
1	BN		BN		BN	
2	–		WH		WH	
3	BU		BU		BU	
4	BK		BK		BK	
5	–		–		GY	
6	–		–		PK	

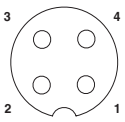
Assignment: M8 flush-type connectors/sockets

Pin	Conductor color		Signal DeviceNet
1	Shield		Drain
2	RD		V+
3	BK		V-
4	WH		CAN_H
5	BU		CAN_L

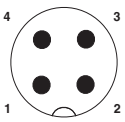
Assignment: CANopen/DeviceNet

M12 flush-type connectors

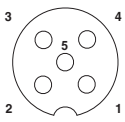
Pin assignments



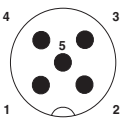
Socket, 4-pos.
A-coded



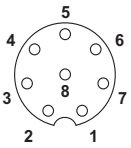
Pin, 4-pos.
A-coded



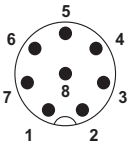
Socket, 5-pos.
A-coded



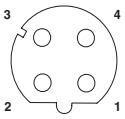
Pin, 5-pos.
A-coded



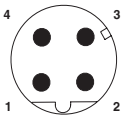
Socket, 8-pos.



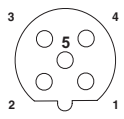
Pin, 8-pos.



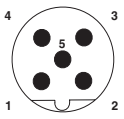
Socket, 4-pos.
D-coded



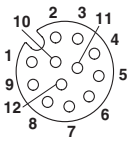
Pin, 4-pos.
D-coded



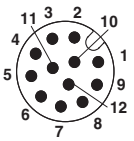
Socket, 5-pos.
B-coded



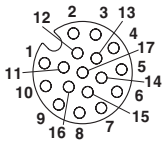
Pin, 5-pos.
B-coded



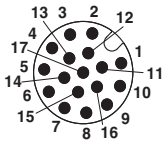
Socket, 12-pos.



Pin, 12-pos.



Socket, 17-pos.



Pin, 17-pos.

Litz wire colors

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

Assignment: M12 flush-type connectors/sockets

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

Assignment: M12 flush-type connectors/sockets

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	

Assignment: M12 flush-type connectors/sockets

Pin	Conductor color		Signal PROFIBUS
1	–		–
2	GN		A line
3	–		–
4	RD		B line
5	Filler litz wire		–
Shield on housing			

Assignment: PROFIBUS

Pin	Conductor color		Signal CANopen
1	Shield		–
2	RD		–
3	BK		CAN_GND
4	WH		CAN_H
5	BU		CAN_L
Shield on housing			

Assignment: CANopen

Pin	Conductor color		Signal DeviceNet
1	Shield		Drain
2	RD		V+
3	BK		V-
4	WH		CAN_H
5	BU		CAN_L
Shield on housing			

Assignment: DeviceNet

Pin	Conductor color		Signal ETHERNET
1	WHOG		TD+
2	WHGN		RD+
3	OG		TD–
4	GN		RD–
Shield on housing			

Assignment: ETHERNET

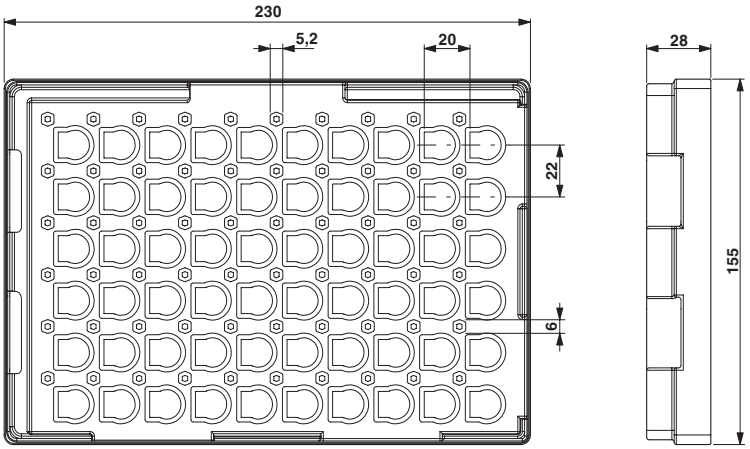
Pin	Conductor color		Signal INTERBUS
1	YE		DO
2	GN		DO
3	GY		DI
4	PK		DI
5	BN		COM
-	WH		NC
Shield on housing			

Assignment: INTERBUS

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

Assignment: M12 flush-type connectors/sockets

THR tray packaging



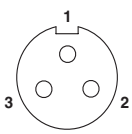
THR processing instructions

Information for THR processing	
PCB thickness	Maximum 1.6 mm
Residual ring	Recommended 0.5 mm
Overprinting on SMD stencils	Residual ring diameter - 0.1 mm
Thickness of SMD stencil	150 ... 120 mm
Solder profile	DIN EN 60068-2-58

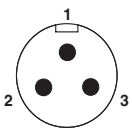
Miscellaneous information	
RoHs conformity	Exists

7/8" flush-type connectors

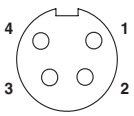
Pin assignments



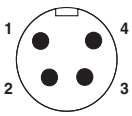
Socket, 3-pos.



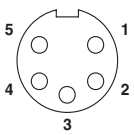
Pin, 3-pos.



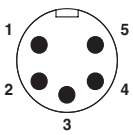
Socket, 4-pos.



Pin, 4-pos.



Socket, 5-pos.

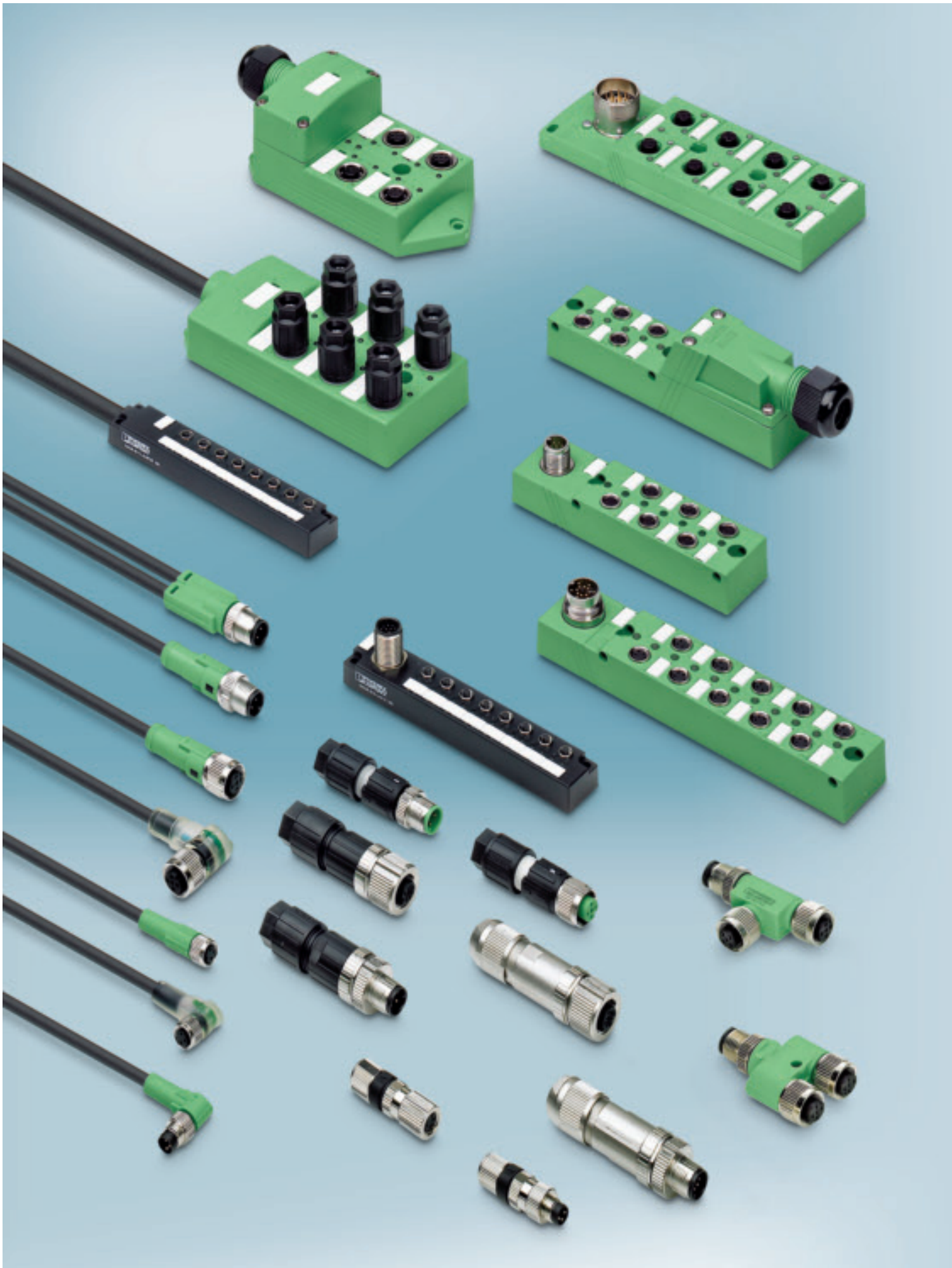


Pin, 5-pos.

Litz wire colors

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

Assignment: 7/8" flush-type connectors/sockets



Sensor/actuator cabling – PLUSCON field

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

In distributed connection methods, passive distributor systems connect the peripheral devices and the PLC controller. Phoenix Contact offers the most comprehensive range of sensor/actuator cabling on the market. Passive M5, M8 and M12 cabling, complete with distributor boxes, cables and connectors for assembly, is available from stock as standard. The 1/2" and 7/8" range for the North American market is available in the E-Shop.

Customer/sector-specific solutions

In order to be able to react flexibly to your wishes, conductors and boxes can be manufactured to suit with specific conductor lengths and types (e.g. other sheath color).

For the special requirements of the food and beverages industry, Phoenix Contact now offers a uniform range of sensor/actuator cabling. Components are made from special materials and hence the smooth surfaces do not provide a foothold or breeding ground to micro-organisms.

Faster mounting with SPEEDCON quick locking system

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

Due to 100% downward compatibility, redundant warehousing is not necessary. This makes it possible to gradually change products over to the new connection method.

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Sensor/actuator boxes	
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Sensor/actuator boxes – M8	**112**
Sensor/actuator boxes – M12, plastic thread	**114**
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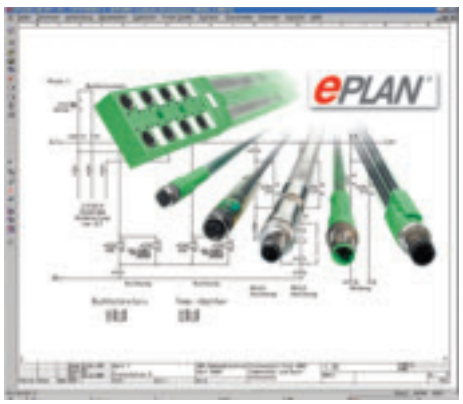
Our value added services for you

Convenient configuration with PLUSCON field Select

The PLUSCON field Select software makes it possible to search quickly and specifically for articles from the wide selection of sensor/actuator cabling, simply by clicking on the desired technical attributes. The effects that a decision will have on the number of results are always transparent. A knowledge-based product logic makes sure that the search does not produce a 'zero-result solution'.

You can find PLUSCON field Select on our website at:

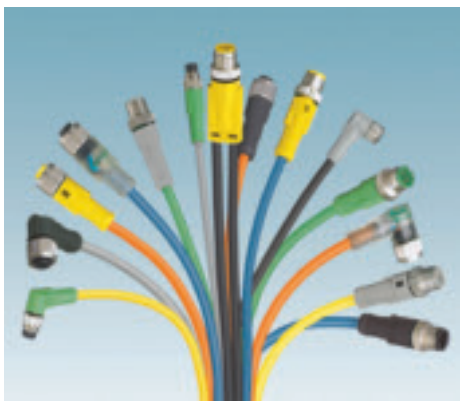
www.phoenixcontact.net/searchassistants



Quick linking with EPLAN

PLUSCON field Project supports the EPLAN 5 users in selecting the products for sensor/actuator cabling. Due to the use of predefined macros, the software can select the matching sensor/actuator boxes and cables automatically. The use of configurable user-specific settings and the product information stored in the software ensures that the selected sensor/actuator boxes and cables always match. The product information derived is then written back in the EPLAN 5 project.

The data can also be transferred to the CMS-MARK-WIN labeling software.



Customer-specific versions

In case of field cabling, a variable and cost-effective solution becomes more and more important. The variety of applications requires an extensive range of cables. For example, special welding spark-resistant cables are required for welding robots, but a PVC cable suffices for a simple application. Thanks to the version-specific cable manufacturing, every customer gets a tailor-made solution. Up to eleven different cable types with lengths from 0.2 to 40 m can be freely selected.

Quick locking system – SPEEDCON

SPEEDCON is the logical development of the M12 connector system that has been established and accepted for many years. Following the motto of 'Plug & Turn', the connection time for M12 connectors is cut by 90%. The SPEEDCON quick locking system is 100% compatible with all M12 connections available on the market. It goes without saying that the SPEEDCON connectors fulfill all the common standards and requirements of the current M12 connector systems.

- Pin assignment, requirements and testing in acc. with IEC 61076-2-101
- Encoding in acc. with IEC 60947-2
- IP65/67/69K IP degree of protection in acc. with EN 60529
- Vibration and shock resistance in acc. with IEC 60512-4

The range of products

Sensor/actuator cables

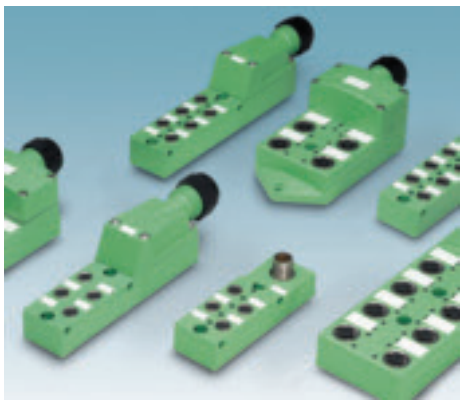
Phoenix Contact offers, not only for the machine and system engineering field, assembled M5, M8 and M12 sensor/actuator cables in 3 to 17-pos. versions depending on the design. A rugged, halogen-free PUR cable is used as a standard cable. Various other cables are available for your specific applications. For especially harsh requirements and increased EMC capability, these cables are also available in a shielded version.

In addition to the standard M12 product range, the 100% compatible SPEEDCON quick locking system is also available. This allows assembly time to be reduced by up to 90%.

From page 70

Sensor/actuator boxes

Phoenix Contact has replaced expensive parallel wiring in the field with a flexible and cost-effective cabling system compliant with the IP65/IP67/IP69k degrees of protection. Components like the sensor/actuator boxes contribute to a great extent in reducing error sources and installation costs. A master cable is used to connect the control unit to the sensor/actuator box installed in the field. Sensors and actuators are then connected to the box in the field using standardized sensor/actuator cables and thus bundled decentrally. Sensor/actuator boxes are available with 4, 6, 8 or 10 slots. In case of a double-occupied version with 8 slots, up to 16 sensors or actuators can be connected to the control system.



From page 112

Sensor/actuator connectors

In mechanical engineering for small lots or special purposes, practical, economical and flexible solutions are needed for quick wiring. The user prefers components that allow different cables to be connected quickly and without error. This is achieved with M12/M8 circular connectors as a straight and angled version. Flush-type connectors in sizes M12/M8 and M5 are available for the device-side connection. Versions with punched individual wires or solder contacts as well as M12 THR contact carriers for machine-capable processing are available. All connectors offer a consistently good signal transmission and, when plugged in, the high IP67 degree of protection, even under harsh ambient conditions.

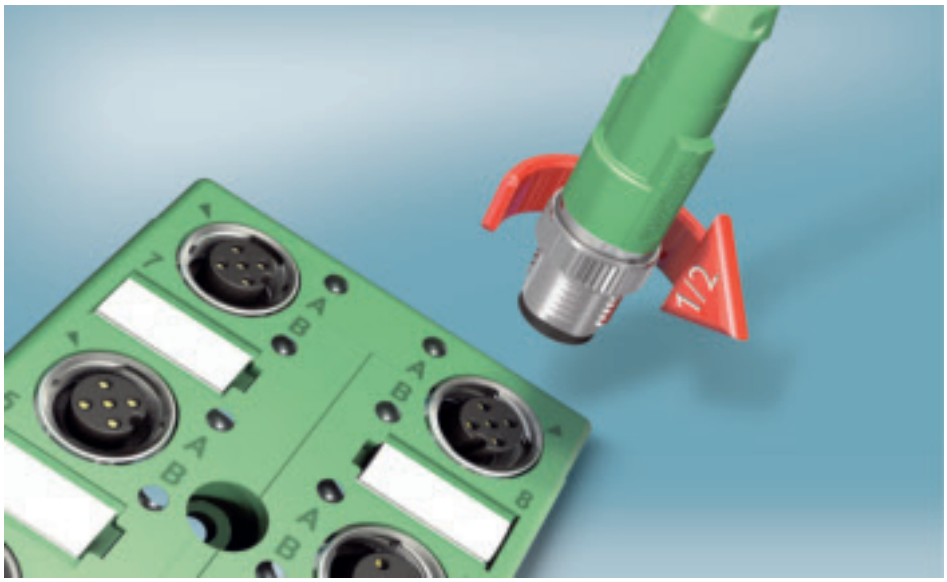
From page 40

Sensor/actuator cabling for the food and beverages industry

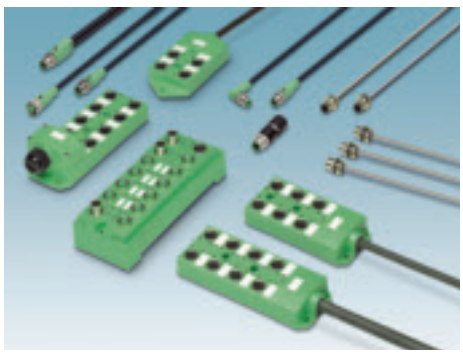
Phoenix Contact also offers a universal range of sensor/actuator cabling for the food and beverages industry. Hygienic safety is indispensable in the food and beverages industry. High-quality high-grade steel is used to rule out all risks. Smooth surfaces do not offer a foothold and breeding ground to micro-organisms. All metallic components are made from high-grade steel 1.4404 in order to fulfill these requirements. Plastics used must be toxicologically harmless, they should not migrate and change the appearance and taste of foodstuffs. Plastics used (PVC cables and handle materials) are listed in American FDA Guidelines (Food and Drug Administration). All articles are compliant with the IP69K IP degree of protection.

From page 148

SPEEDCON – The new standard



SPEEDCON is the logical development of the M12 connector system that has been established and accepted for many years. Following the motto of 'Plug & Turn', the connection time for M12 connectors is cut by 90%. The SPEEDCON quick locking system is 100% compatible with all M12 connections available on the market. It goes without saying that the SPEEDCON connectors fulfill all the common standards and requirements of the current M12 connector systems.



Complete product range

On the following pages, you will find the complete SPEEDCON product range comprising molded cables, connectors for assembly, flush-type connectors, adapters and passive distributor boxes. I/O modules with a SPEEDCON connection are given in the AUTOMATION catalog.

SPEEDCON system partners

Numerous renowned and multinational companies are convinced of the advantages and benefits of the SPEEDCON quick locking system and hence are opting for the new standard in the M12 world.

Amphenol
BERNSTEIN safe solutions
binder
BIZERBA
CONINVERS
FANUC
FESTO
INTER CONTROL
LUTZE
Leuze electronic
MATROX IMAGING
menerga
Mercedes-Benz
Miele
numatics
PEPPERL+FUCHS
pulsotronic
Rexroth Bosch Group
SCHUBERT
SEW EURODRIVE
SMA SOLAR TECHNOLOGY
SMC
TRUMPF
ThyssenKrupp Fahrtreppen
ThyssenKrupp

The benefits you get from using the SPEEDCON quick locking system

Compatibility

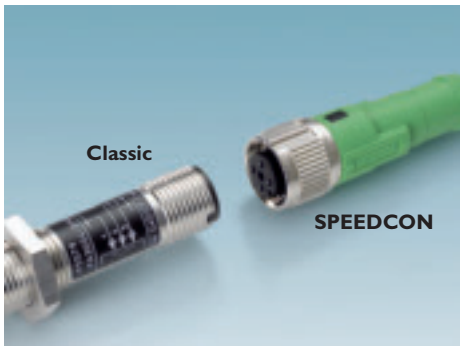
SPEEDCON is 100% compatible with all previous M12 connector systems. The user does not have to get used to anything new, since the 'Plug & Turn' principle has been retained.

Fast assembly

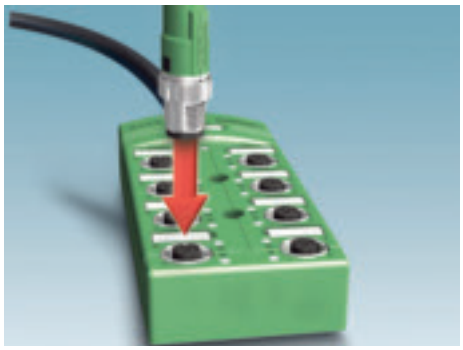
Just half a turn and SPEEDCON makes a perfect plug-in connection. The assembly time is reduced by 90% as a result.

Safe operation

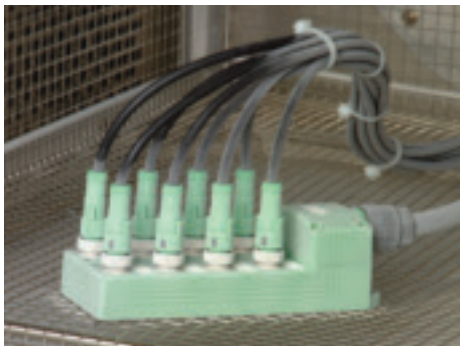
SPEEDCON has all the electrical and mechanical qualities required of the classical M12 connector systems.



Classic – SPEEDCON



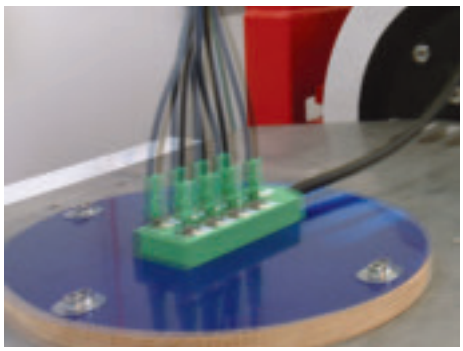
Plug in



Temperature

SPEEDCON – Classic

1/2 turn



Vibration and shock

SPEEDCON – SPEEDCON

Ready

Harmful gases

- Pin assignment, requirements and testing in acc. with IEC 61076-2-101
- Encoding in acc. with IEC 60947-2
- IP65/67/69K IP degree of protection in acc. with EN 60529
- Vibration and shock resistance in acc. with IEC 60512-4

M5 SAC cable, 3 and 4-pos.

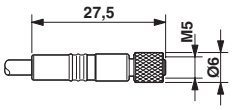
Notes:

For information about the cable qualities, see page: 150.

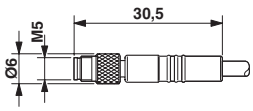
For further technical data, see:
www.phoenixcontact.net/catalog

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

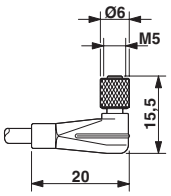
Cable description	Cable type	Color coding	Pin assignment 3-pos.	Color coding	Pin assignment 4-pos.
PUR/PVC - black	PUR M5	BN	1	BN	1
		BK	4	WH	2
		BU	3	BK	4
				BU	3



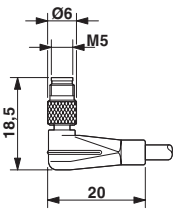
Dimensional drawing: M5 Socket x 0.5, straight



Dimensional drawing: M5 Connector x 0.5, straight



Dimensional drawing: M5 Socket x 0.5, angled



Dimensional drawing: M5 Connector x 0.5, angled

Technical data		M5 3-pos.	M5 4-pos.
Nominal current I_N	[A]	1	1
Rated voltage	[V]	125	125
Volume resistance		≤ 3 mΩ	≤ 3 mΩ
Contact material		CuZn	CuZn
Contact surface material		Au	Au
Material of grip body		PUR	PUR
Degree of protection		IP65/IP67	IP65/IP67
Ambient temperature			
Plug/socket	[°C]	-25 ... 80	-25 ... 80

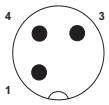
M8 SAC cable, Snap-in, 3 and 4-pos.

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 168.

For further technical data, see: **www.phoenixcontact.net/catalog**

	Free end		M12 connector, 3-pos.	
				
M8 socket, snap-in, 3-pos., straight		**Order No.**		**Order No.**
	Variable	**1697593**	Variable	**1696853**
M8 socket, snap-in, 3-pos., angled				
	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**		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1696853	PUR	4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

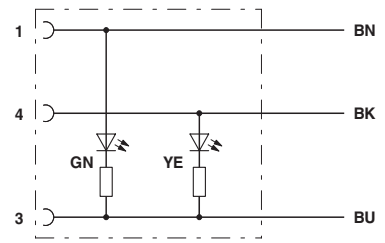
Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	3/4-pos.
PUR halogen-free - gray E221474	280	3-pos.
PUR/PVC - gray E221474	100	3/4-pos.
PUR/PVC - yellow E221474	140	3/4-pos.
TPE-U highly flexible - gray E221474	800	3/4-pos.

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

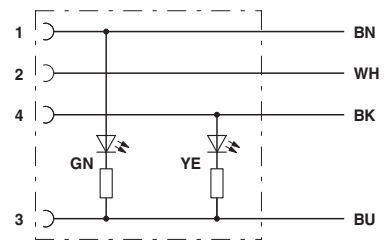
Color coding	Pin assignment 4-pos.
BN	1
WH	2
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

Technical data		M8 3-pos.	M8 3-pos., with LEDs	M8 4-pos.	M8 4-pos., with LED
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	60	24	30	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP67	IP65/IP67	IP65/IP67	IP65/IP67
Ambient temperature					
Plug/socket	[°C]	-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.

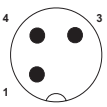
M8 and M12 SPEEDCON SAC cable, 3-pos.

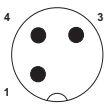
Notes:

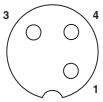
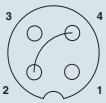
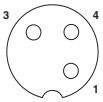
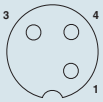
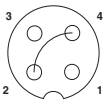
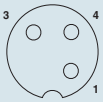
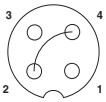
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.	M8 connector	Order No.		Order No.	M12-SPEEDCON connectors	Order No.		Order No.
			1.5 m	1681664	1.5 m	1681693	1.5 m	1518643	1.5 m	1518685
			3 m	1681677	3 m	1681703	3 m	1518656	3 m	1518698
			5 m	1681680	5 m	1681716	5 m	1518669	5 m	1518708
			10 m	1693584	10 m	1694114	10 m	1518672	10 m	1518711
			Variable	1697548	Variable	1697551	Variable	1523515	Variable	1523531
M8 socket, straight										
		1.5 m 1669712	0.3 m	1681907	0.3 m	1682029				
		3 m 1669725	0.6 m	1681910	0.6 m	1682032				
		5 m 1669628	1.5 m	1681923	1.5 m	1682045				
		10 m 1694101	3 m	1681936	3 m	1682058				
		Variable 1697580	Variable	1697632	Variable	1697661	Variable	1535736	Variable	1541856
M8 socket, angled										
		1.5 m 1669738	0.3 m	1681949	0.3 m	1682061				
		3 m 1669741	0.6 m	1681952	0.6 m	1682074				
		5 m 1669631	1.5 m	1681965	1.5 m	1682087				
		10 m 1694169	3 m	1681978	3 m	1682090				
		Variable 1697603	Variable	1697645	Variable	1697674	Variable	1540763	Variable	1541869
M8 socket, angled, with 2 LEDs										
		1.5 m 1671069	0.3 m	1681981	0.3 m	1682100				
		3 m 1671072	0.6 m	1681994	0.6 m	1682113				
		5 m 1671085	1.5 m	1682003	1.5 m	1682126				
		10 m 1683594	3 m	1682016	3 m	1682139				
		Variable 1697616	Variable	1697658	Variable	1697687	Variable	1535710	Variable	1541872
M12-SPEEDCON socket, straight										
							0.3 m	1518724	0.3 m	1518766
							0.6 m	1518737	0.6 m	1518779
							1.5 m	1518740	1.5 m	1518782
							3 m	1518753	3 m	1518795
		Variable 1535778	Variable	1541911	Variable	1541940	Variable	1523544	Variable	1523557
M12-SPEEDCON socket, straight, pin 2 - 4 bridged										
		Variable 1542046					Variable	1542091	Variable	1542130
M12-SPEEDCON socket, straight, with 2 LEDs										
		Variable 1542059	Variable	1541843	Variable	1553501	Variable	1542017	Variable	1542033
M12-SPEEDCON socket, angled										
		Variable 1536492	Variable	1541924	Variable	1541953	Variable	1542101	Variable	1542020
M12-SPEEDCON socket, angled, pin 2- 4 bridged										
		Variable 1542075					Variable	1542114	Variable	1542143
M12-SPEEDCON socket, angled, with 2 LEDs										
		Variable 1535752	Variable	1541937	Variable	1541966	Variable	1538225		
M12-SPEEDCON socket, angled, with 2 LEDs, pins 2 - 4 bridged										
		Variable 1542088					Variable	1542127	Variable	1542156

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523544	PUR	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

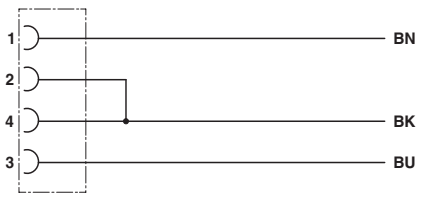
Minimum order = 25

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR halogen-free - gray E221474	280	M8 / M12
PUR/PVC - gray E221474	100	M8 / M12
PUR/PVC - yellow E221474	140	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

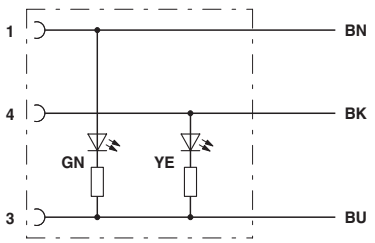
Color coding	Pin assignment
BN	1
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

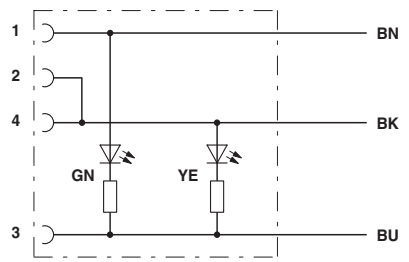
Technical data		M8 3-pos.	M8 3-pos., with LED	M12 3-pos.	M12 3-pos., with LEDs
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	60	24	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
Contact material		CuSn	CuSn	CuSn	CuSn
Contact surface material		Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature					
Plug/socket	[°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M12 socket bridged



Contact assignment of M8/M12 socket with two LEDs



Contact assignment of M12 socket with 2 LEDs, bridged

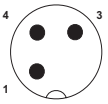
M8 and M12 SAC cable, 3-pos.

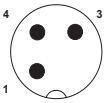
Notes:

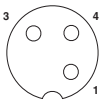
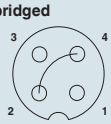
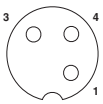
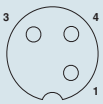
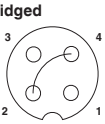
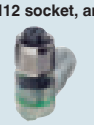
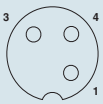
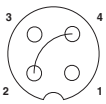
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.		Order No.		Order No.		Order No.		Order No.
			1.5 m	1681664	1.5 m	1681693	1.5 m	1668014	1.5 m	1668137
			3 m	1681677	3 m	1681703	3 m	1668027	3 m	1668140
			5 m	1681680	5 m	1681716	5 m	1668030	5 m	1668153
			10 m	1693584	10 m	1694114	10 m	1682566	10 m	1694444
			Variable	1697548	Variable	1697551	Variable	1696662	Variable	1696675
M8 socket, straight										
		1.5 m	1669712	0.3 m	1681907	0.3 m	1682029	0.3 m	1668797	0.3 m	1668878
		3 m	1669725	0.6 m	1681910	0.6 m	1682032	0.6 m	1668807	0.6 m	1668881
		5 m	1669628	1.5 m	1681923	1.5 m	1682045	1.5 m	1668810	1.5 m	1668894
		10 m	1694101	3 m	1681936	3 m	1682058	3 m	1668823	3 m	1668904
		Variable	1697580	Variable	1697632	Variable	1697661	Variable	1696840	Variable	1696895
M8 socket, angled										
		1.5 m	1669738	0.3 m	1681949	0.3 m	1682061	0.3 m	1668836	0.3 m	1668917
		3 m	1669741	0.6 m	1681952	0.6 m	1682074	0.6 m	1668849	0.6 m	1668920
		5 m	1669631	1.5 m	1681965	1.5 m	1682087	1.5 m	1668852	1.5 m	1668933
		10 m	1694169	3 m	1681978	3 m	1682090	3 m	1668865	3 m	1668946
		Variable	1697603	Variable	1697645	Variable	1697674	Variable	1696866	Variable	1696905
M8 socket, angled, with 2 LEDs										
		1.5 m	1671069	0.3 m	1681981	0.3 m	1682100	0.3 m	1694884		
		3 m	1671072	0.6 m	1681994	0.6 m	1682113	0.6 m	1694897		
		5 m	1671085	1.5 m	1682003	1.5 m	1682126	1.5 m	1694907		
		10 m	1683594	3 m	1682016	3 m	1682139	3 m	1694910		
		Variable	1697616	Variable	1697658	Variable	1697687	Variable	1696879		
M12 socket, straight										
		1.5 m	1694486	0.3 m	1682304	0.3 m	1682388	0.3 m	1681509		
		3 m	1694499	0.6 m	1682317	0.6 m	1682391	0.6 m	1681512		
		5 m	1683510	1.5 m	1682320	1.5 m	1682401	1.5 m	1681525		
		10 m	1693034	3 m	1682333	3 m	1682414	3 m	1681538		
		Variable	1696688	Variable	1697690	Variable	1697726	Variable	1696756		
M12 socket, straight, pin 2- 4 bridged										
		1.5 m	1668072					0.3 m	1668315	0.3 m	1668551
		3 m	1668085					0.6 m	1668328	0.6 m	1668564
		5 m	1668098					1.5 m	1668331	1.5 m	1668577
		10 m	1694208					3 m	1668344	3 m	1668580
		Variable	1696691					Variable	1696769	Variable	1696811
M12 socket, straight, with LED											
		1.5 m	1694185								
		3 m	1694198								
		5 m	1694787								
		10 m	1694790								
		Variable	1696701	Variable	1514197			Variable	1511802	Variable	1524763
M12 socket, angled											
		1.5 m	1694509	0.3 m	1682346	0.3 m	1682427	0.3 m	1681541		
		3 m	1694512	0.6 m	1682359	0.6 m	1682430	0.6 m	1681554		
		5 m	1694525	1.5 m	1682362	1.5 m	1682443	1.5 m	1681567		
		10 m	1694538	3 m	1682375	3 m	1682456	3 m	1681570		
		Variable	1696714	Variable	1697700	Variable	1697739	Variable	1696772		
M12 socket, angled, pin 2 - 4 bridged											
		1.5 m	1668195					0.3 m	1668399	0.3 m	1668632
		3 m	1668205					0.6 m	1668409	0.6 m	1668645
		5 m	1668218					1.5 m	1668412	1.5 m	1668658
		10 m	1681017					3 m	1668425	3 m	1668661
		Variable	1696727					Variable	1696785	Variable	1696824
M12 socket, angled with LED											
		1.5 m	1694392	0.3 m	1693351	0.3 m	1682469	0.3 m	1694554		
		3 m	1694402	0.6 m	1693364	0.6 m	1682472	0.6 m	1694567		
		5 m	1694415	1.5 m	1693380	1.5 m	1682485	1.5 m	1694570		
		10 m	1694428	3 m	1693403	3 m	1682498	3 m	1694583		
		Variable	1696730	Variable	1697713	Variable	1697742	Variable	1696798		
M12 socket, angled, with LED, pin 2 - 4 bridged											
		1.5 m	1668250					0.3 m	1668438		
		3 m	1668263					0.6 m	1668441		
		5 m	1668276					1.5 m	1668454		
		10 m	1681059					3 m	1668467		
		Variable	1696743					Variable	1696808	Variable	1696837

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1696756	PUR	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

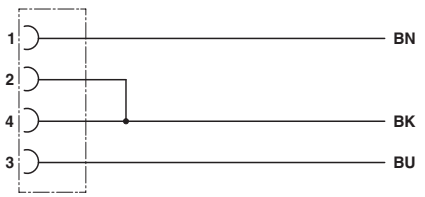
Minimum order = 25

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR halogen-free - gray E221474	280	M8 / M12
PUR/PVC - gray E221474	100	M8 / M12
PUR/PVC - yellow E221474	140	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

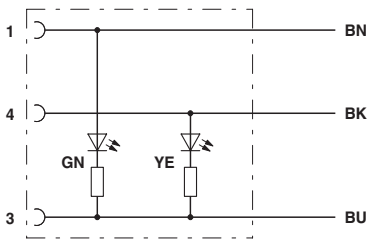
Color coding	Pin assignment
BN	1
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

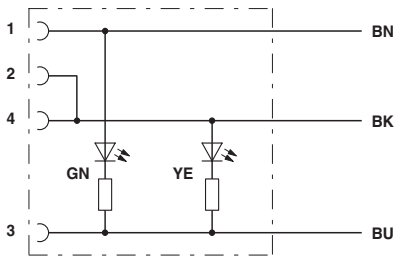
Technical data		M8 3-pos.	M8 3-pos., with LEDs	M12 3-pos.	M12 3-pos., with LEDs
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	60	24	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
Contact material		CuSn	CuSn	CuSn	CuSn
Contact surface material		Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, s elf-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature					
Plug/socket	[°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M12 socket bridged



Contact assignment of M8/M12 socket with two LEDs



Contact assignment of M12 socket with 2 LEDs, bridged

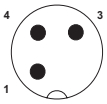
M12 SPEEDCON SAC cable, 3-pos., shielded

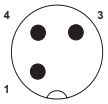
Notes:

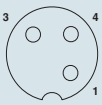
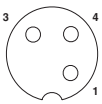
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**





Free end		Order No.	M12 connector, 360° shielded	Order No.		Order No.
			Variable	**1523706**	Variable	**1523719**
M12 socket, straight, 360° shielded						
	Variable	**1536528**	Variable	**1523748**	Variable	**1541801**
M12 socket, angled, 360° shielded						
	Variable	**1536557**	Variable	**1523751**	Variable	**1541814**

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.		Cable type		Length [m] Max. 40 m
1523748	/	**PUR**	/	**4.5**

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	**PUR**	M8 / M12
PUR/PVC - gray E221474	**100**	M12
PVC - black E221474	**PVC**	M12
PVC - gray E221474	**500**	M12

Color coding		Pin assignment
BN		1
BK		4
BU		3

Technical data		M12 3-pos., shielded
Nominal current I_N	[A]	4
Rated voltage	[V]	250
Volume 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/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

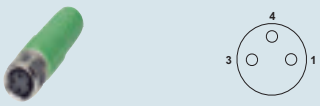
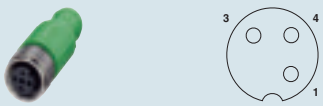
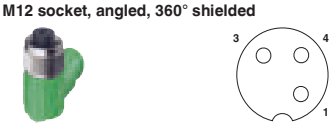
M8 and M12 SAC cable, 3-pos., shielded

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 168.

For further technical data, see:
www.phoenixcontact.net/catalog

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

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1536049	/ PUR	/ 4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR/PVC - gray E221474	100	M12
PVC - black E221474	PVC	M12
PVC - gray E221474	500	M12

Color coding	Pin assignment
BN	1
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

Technical data		M8 3-pos., shielded	M12 3-pos., shielded
Nominal current I_N	[A]	4	4
Rated voltage	[V]	60	250
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP67/IP69K	IP65/IP67/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

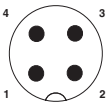
M8 and M12 SPEEDCON SAC cable, 4-pos.

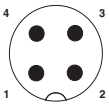
Notes:

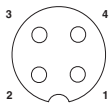
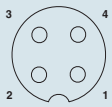
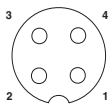
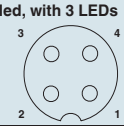
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.	M8 connector	Order No.		Order No.	M12-SPEEDCON connectors	Order No.		Order No.
			1.5 m	**1681787**	1.5 m	**1681813**	1.5 m	**1518805**	1.5 m	**1518847**
			3 m	**1681790**	3 m	**1681826**	3 m	**1518818**	3 m	**1518850**
			5 m	**1681800**	5 m	**1681839**	5 m	**1518821**	5 m	**1518863**
			10 m	**1694143**	10 m	**1694156**	10 m	**1518834**	10 m	**1518876**
			Variable	**1697755**	Variable	**1697768**	Variable	**1523560**	Variable	**1523573**
M8 socket, straight										
		1.5 m	**1681842**	0.3 m	**1682142**	0.3 m	**1682223**			
		3 m	**1681855**	0.6 m	**1682155**	0.6 m	**1682236**			
		5 m	**1681868**	1.5 m	**1682168**	1.5 m	**1682249**			
		10 m	**1683484**	3 m	**1682171**	3 m	**1682252**			
		Variable	**1697771**	Variable	**1697797**	Variable	**1697810**	Variable	**1535749**	Variable	**1542253**
M8 socket, angled										
		1.5 m	**1681871**	0.3 m	**1682184**	0.3 m	**1682265**			
		3 m	**1681884**	0.6 m	**1682197**	0.6 m	**1682278**			
		5 m	**1681897**	1.5 m	**1682207**	1.5 m	**1682281**			
		10 m	**1694172**	3 m	**1682210**	3 m	**1682294**			
		Variable	**1697784**	Variable	**1697807**	Variable	**1697823**	Variable	**1542279**		
M8 socket, angled, with 2 LEDs										
		Variable	**1517673**				Variable	**1535723**		
M12-SPEEDCON socket, straight										
		1.5 m	**1536285**				0.3 m	**1518889**	0.3 m	**1518928**
		3 m	**1536298**				0.6 m	**1518892**	0.6 m	**1518931**
		5 m	**1536308**				1.5 m	**1518902**	1.5 m	**1518944**
		10 m	**1536311**				3 m	**1518915**	3 m	**1518957**
		Variable	**1535781**	Variable	**1542240**		Variable	**1523586**	Variable	**1523599**
M12-SPEEDCON socket, straight, with 2 LEDs										
		Variable	**1542321**							
M12-SPEEDCON socket, angled										
		1.5 m	**1536405**							
		3 m	**1536418**							
		5 m	**1536421**							
		10 m	**1536434**							
		Variable	**1537734**	Variable	**1542266**	Variable	**1542282**	Variable	**1537747**	Variable	**1537828**
M12-SPEEDCON socket, angled, with 3 LEDs										
		Variable	**1535765**				Variable	**1535707**	Variable	**1542334**

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523586	/ PUR	/ 4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

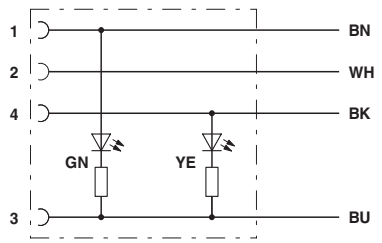
Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR halogen-free - yellow E221474	240	M12

Cable description	Cable type	Suitability
PUR halogen-free - gray E221474	280	M8 / M12
PUR/PVC - gray E221474	100	M8 / M12
PUR/PVC - yellow E221474	140	M8 / M12
PUR/PVC - black, 0.75 mm² E221474	186	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

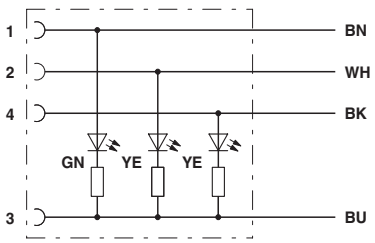
Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

Technical data		M8 4-pos.	M8 4-pos., with LED	M12 4-pos.	M12 4-pos., with LED
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	30	24	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature					
Plug/socket	[°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M8/M12 socket with LED



Contact assignment of M12 socket with 2 LED

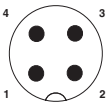
M8 and M12 SAC cable, 4-pos.

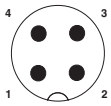
Notes:

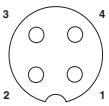
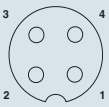
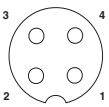
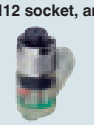
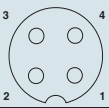
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**





Free end		Order No.	M8 connector		Order No.		Order No.	M12 connector		Order No.		Order No.
			1.5 m		**1681787**	1.5 m	**1681813**	1.5 m		**1668043**	1.5 m	**1668166**
			3 m		**1681790**	3 m	**1681826**	3 m		**1668056**	3 m	**1668179**
			5 m		**1681800**	5 m	**1681839**	5 m		**1668069**	5 m	**1668182**
			10 m		**1694143**	10 m	**1694156**	10 m		**1682993**	10 m	**1694457**
			Variable		**1697755**	Variable	**1697768**	Variable		**1696947**	Variable	**1696950**
M8 socket, straight												
		1.5 m	**1681842**	0.3 m	**1682142**	0.3 m	**1682223**	0.3 m		**1694923**		
		3 m	**1681855**	0.6 m	**1682155**	0.6 m	**1682236**	0.6 m		**1693076**		
		5 m	**1681868**	1.5 m	**1682168**	1.5 m	**1682249**	1.5 m		**1693089**		
		10 m	**1683484**	3 m	**1682171**	3 m	**1682252**	3 m		**1694936**		
		Variable	**1697771**	Variable	**1697797**	Variable	**1697810**	Variable		**1697072**	Variable	**1507874**
M8 socket, angled												
		1.5 m	**1681871**	0.3 m	**1682184**	0.3 m	**1682265**				0.3 m	**1671551**
		3 m	**1681884**	0.6 m	**1682197**	0.6 m	**1682278**				0.6 m	**1671564**
		5 m	**1681897**	1.5 m	**1682207**	1.5 m	**1682281**				1.5 m	**1671577**
		10 m	**1694172**	3 m	**1682210**	3 m	**1682294**				3 m	**1671580**
		Variable	**1697784**	Variable	**1697807**	Variable	**1697823**	Variable		**1697085**		
M8 socket, angled, with 2 LEDs												
		Variable	**1517673**					Variable		**1515031**		
M12 socket, straight												
		1.5 m	**1668108**					0.3 m		**1668357**	0.3 m	**1668593**
		3 m	**1668111**					0.6 m		**1668360**	0.6 m	**1668603**
		5 m	**1668124**					1.5 m		**1668373**	1.5 m	**1668616**
		10 m	**1683002**					3 m		**1668386**	3 m	**1668629**
		Variable	**1696963**	Variable	**1506697**			Variable		**1697001**	Variable	**1697030**
M12 socket, straight, with 2 LEDs												
		1.5 m	**1694800**									
		3 m	**1694813**									
		5 m	**1694826**									
		10 m	**1694839**									
		Variable	**1696976**									
M12 socket, angled												
		1.5 m	**1668221**					0.3 m		**1668470**	0.3 m	**1668713**
		3 m	**1668234**					0.6 m		**1668483**	0.6 m	**1668726**
		5 m	**1668247**					1.5 m		**1668496**	1.5 m	**1668739**
		10 m	**1681389**					3 m		**1668506**	3 m	**1668742**
		Variable	**1696989**	Variable	**1511718**			Variable		**1697014**	Variable	**1697043**
M12 socket, angled, with 3 LEDs												
		1.5 m	**1668289**					0.3 m		**1668519**	0.3 m	**1668755**
		3 m	**1668292**					0.6 m		**1668522**	0.6 m	**1668768**
		5 m	**1668302**					1.5 m		**1668535**	1.5 m	**1668771**
		10 m	**1681020**					3 m		**1668548**	3 m	**1668784**
		Variable	**1696992**					Variable		**1697027**	Variable	**1697056**

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1697001	PUR	4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

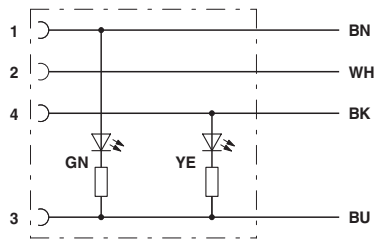
Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR halogen-free - yellow E221474	240	M12

Cable description	Cable type	Suitability
PUR halogen-free - gray E221474	280	M8 / M12
PUR/PVC - gray E221474	100	M8 / M12
PUR/PVC - yellow E221474	140	M8 / M12
PUR/PVC - black, 0.75 mm² E221474	186	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

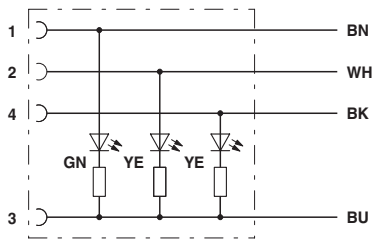
Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

Technical data		M8 4-pos.	M8 4-pos., with LED	M12 4-pos.	M12 4-pos., with LED
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	30	24	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature					
Plug/socket	[°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



Contact assignment of M8/M12 socket with LED



Contact assignment of M12 socket with 2 LED

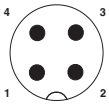
M12 SPEEDCON SAC cable, 4-pos., shielded

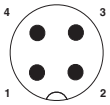
Notes:

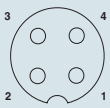
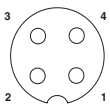
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**





Free end		Order No.	M12 connector, 360° shielded	Order No.		Order No.
			Variable	**1523764**	Variable	**1523777**
M12 socket, straight, 360° shielded						
		Variable **1536531**	Variable	**1523803**	Variable	**1542208**
M12 socket, angled, 360° shielded						
		Variable **1536560**	Variable	**1523816**	Variable	**1542211**

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523803	**PUR**	**4.5**

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	**PUR**	M8 / M12
PUR/PVC - gray E221474	**100**	M12
PVC - black E221474	**PVC**	M12
PVC - gray E221474	**500**	M12

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

Technical data		M12 4-pos., shielded
Nominal current I_N	[A]	4
Rated voltage	[V]	250
Volume 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/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

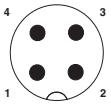
M8 and M12 SAC cable, 4-pos., shielded

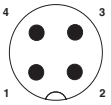
Notes:

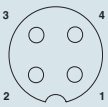
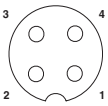
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 168.

For further technical data, see:
www.phoenixcontact.net/catalog





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

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.		Cable type		Length [m] Max. 40 m
1536081	/	**PUR**	/	**4.5**

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type	Suitability
PUR halogen-free - black E221474	**PUR**	M8 / M12
PUR/PVC - gray E221474	**100**	M12
PVC - black E221474	**PVC**	M12
PVC - gray E221474	**500**	M12

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

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

Technical data		M8 4-pos., shielded	M12 4-pos., shielded
Nominal current I_N	[A]	4	4
Rated voltage	[V]	30	250
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP67/IP69K	IP65/IP67/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

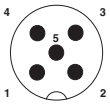
M12 SPEEDCON SAC cable, 5-pos.

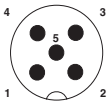
Notes:

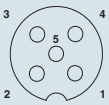
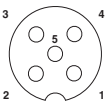
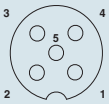
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.		Order No.		Order No.
			1.5 m	**1518960**	1.5 m	**1519008**
			3 m	**1518973**	3 m	**1519011**
			5 m	**1518986**	5 m	**1519024**
			10 m	**1518999**	10 m	**1519037**
			Variable	**1523609**	Variable	**1523612**
M12-SPEEDCON socket, straight						
		1.5 m	**1536324**	0.3 m	**1519040**	0.3 m	**1519082**
		3 m	**1536337**	0.6 m	**1519053**	0.6 m	**1519095**
		5 m	**1536340**	1.5 m	**1519066**	1.5 m	**1519105**
		10 m	**1536353**	3 m	**1519079**	3 m	**1519118**
		Variable	**1536489**	Variable	**1523625**	Variable	**1523638**
M12-SPEEDCON socket, angled						
		1.5 m	**1536447**				
		3 m	**1536450**				
		5 m	**1536463**				
		10 m	**1536476**				
		Variable	**1536515**	Variable	**1542415**	Variable	**1542389**
M12-SPEEDCON socket, angled, with 3 LEDs						
		Variable	**1542428**	Variable	**1542431**		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523625	/ PUR	/ 4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR halogen-free - black, 5th wire gray E221474	115
PUR/PVC - gray E221474	100
PUR/PVC - yellow E221474	140
PUR/PVC - black, 0.75 mm² E221474	186
TPE-U highly flexible - gray E221474	800
PUR irradiated - orange E221474	150
PVC - black E221474	PVC
PUR - black, 5th wire gray E221474	515
PVC - gray E221474	500
PVC 105° - yellow E221474	542

Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3
GNYE	5

Technical data		M12 5-pos.	M12 5-pos., with LED
Nominal current I_N	[A]	4	4
Rated voltage	[V]	60	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

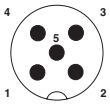
M12 SAC cable, 5-pos.

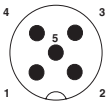
Notes:

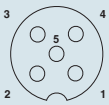
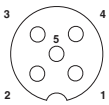
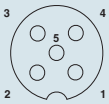
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end			Order No.		Order No.		Order No.
				1.5 m	**1669767**	1.5 m	**1669796**
				3 m	**1669770**	3 m	**1669806**
				5 m	**1669783**	5 m	**1669819**
				10 m	**1683361**	10 m	**1694460**
				Variable	**1697098**	Variable	**1697108**
M12 socket, straight							
		1.5 m	**1669822**	0.3 m	**1681583**		
		3 m	**1669835**	0.6 m	**1681596**		
		5 m	**1669848**	1.5 m	**1681606**		
		10 m	**1683374**	3 m	**1681619**		
		Variable	**1697111**	Variable	**1697140**	Variable	**1508734**
M12 socket, straight							
		1.5 m	**1669851**	0.3 m	**1681622**		
		3 m	**1669864**	0.6 m	**1681635**		
		5 m	**1669877**	1.5 m	**1681648**		
		10 m	**1694541**	3 m	**1681651**		
		Variable	**1697124**	Variable	**1697153**	Variable	**1529506**
M12 socket, angled, with 3 LEDs							
		1.5 m	**1669880**	0.3 m	**1694635**		
		3 m	**1669893**	0.6 m	**1694648**		
		5 m	**1669903**	1.5 m	**1694651**		
		10 m	**1694431**				
		Variable	**1697137**	Variable	**1697166**		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1697140	/ PUR	/ 4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR halogen-free - black, 5th wire gray E221474	115
PUR/PVC - gray E221474	100
PUR/PVC - yellow E221474	140
PUR/PVC - black, 0.75 mm² E221474	186
TPE-U highly flexible - gray E221474	800
PUR irradiated - orange E221474	150
PVC - black E221474	PVC
PUR - black, 5th wire gray E221474	515
PVC - gray E221474	500
PVC 105° - yellow E221474	542

Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3
GNYE	5

Technical data		M12 5-pos.	M12 5-pos., with LED
Nominal current I_N	[A]	4	4
Rated voltage	[V]	60	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

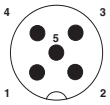
M12 SPEEDCON SAC cable, 5-pos., shielded

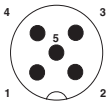
Notes:

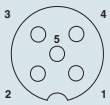
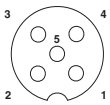
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**





Free end		Order No.	M12 connector, 360° shielded	Order No.		Order No.
			Variable	1523829	Variable	1523832
M12 socket, straight, 360° shielded						
	Variable	1536544	Variable	1523861	Variable	1542347
M12 socket, angled, 360° shielded						
	Variable	1536573	Variable	1523874	Variable	1542350

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523861	/ PUR	/ 4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR/PVC - gray E221474	100
PVC - black E221474	PVC
PVC - gray E221474	500

Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3
GY	5

Technical data		M12 5-pos., shielded
Nominal current I_N	[A]	4
Rated voltage	[V]	60
Volume 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/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

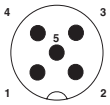
M12 SAC cable, 5-pos., shielded

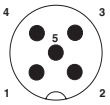
Notes:

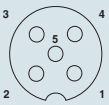
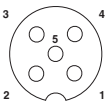
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





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**
M12 socket, straight, 360° shielded						
	1.5 m	**1682935**	0.3 m	**1500884**		
	3 m	**1682948**	0.6 m	**1500897**		
	5 m	**1682951**	1.5 m	**1500907**		
	10 m	**1500758**	3 m	**1500910**		
	Variable	**1697522**	Variable	**1536120**	Variable	**1536146**
M12 socket, angled, 360° shielded						
	1.5 m	**1682964**	0.3 m	**1501003**		
	3 m	**1682977**	0.6 m	**1501029**		
	5 m	**1682980**	1.5 m	**1501045**		
	10 m	**1500761**	3 m	**1501058**		
	Variable	**1697535**	Variable	**1536133**	Variable	**1536159**

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1536120	/ PUR	/ 4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR/PVC - gray E221474	100
PVC - black E221474	PVC
PVC - gray E221474	500

Color coding	Pin assignment
BN	1
WH	2
BK	4
BU	3
GY	5

Technical data		M12 5-pos., shielded
Nominal current I_N	[A]	4
Rated voltage	[V]	60
Volume 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/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

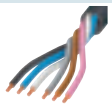
M8 SAC cable, 6-pos.

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 168.

For further technical data, see: **www.phoenixcontact.net/catalog**

Free end			Order No.	M8 connector		Order No.		Order No.
								
					1.5 m	**1522095**	1.5 m	**1522147**
					3 m	**1522105**	3 m	**1522150**
					5 m	**1522118**	5 m	**1522163**
					10 m	**1522121**	10 m	**1522176**
					Variable	**1522134**	Variable	**1522189**
M8 socket, straight								
		1.5 m	**1522192**					
		3 m	**1522202**					
		5 m	**1522215**					
		10 m	**1522228**					
		Variable	**1522231**					
M8 socket, angled								
		1.5 m	**1522244**					
		3 m	**1522257**					
		5 m	**1522260**					
		10 m	**1522273**					
		Variable	**1522286**					

Ordering example for sensor/actuator cabling 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 an open conductor end, the order data is as follows:

Order No.		Cable type		Length [m] Max. 40 m
1522134	/	**PUR**	/	**4.5**

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	**PUR**
PVC - black E221474	**PVC**

Color coding		Pin assignment
BN		1
WH		2
BU		3
BK		4
GY		5
PK		6

Technical data		M8 6-pos.
Nominal current I_N	[A]	1.5
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

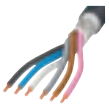
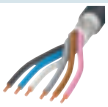
M8 SAC cable, 6-pos., shielded

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 168.

For further technical data, see:
www.phoenixcontact.net/catalog

Free end			M8 connector, 360° shielded			
						
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**
M8 socket, straight, 360° shielded						
		1.5 m	**1522396**			
		3 m	**1522406**			
		5 m	**1522419**			
		10 m	**1522422**			
		Variable	**1522435**			
M8 socket, angled, 360° shielded						
		1.5 m	**1522448**			
		3 m	**1522451**			
		5 m	**1522464**			
		10 m	**1522477**			
		Variable	**1522480**			

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1552010	/ PUR	/ 4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	PUR

Color coding		Pin assignment
BN		1
WH		2
BU		3
BK		4
GY		5
PK		6

Technical data		M8 6-pos., shielded
Nominal current I_N	[A]	1.5
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

M12 SPEEDCON SAC cable, 8-pos.

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**

Free end			M12-SPEEDCON connectors			
			Variable	1523641	Variable	1523654
M12-SPEEDCON socket, straight						
	Variable	1523667	Variable	1523683		
M12-SPEEDCON socket, angled						
	Variable	1523670	Variable	1523696		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523683	PUR	4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR/PVC - gray E221474	100
TPE-U highly flexible - gray E221474	800
PVC - black E221474	PVC
PVC - gray E221474	500

Color coding	Pin assignment
WH	1
BN	2
GN	3
YE	4
GY	5
PK	6
BU	7
RD	8

Technical data		M12 8-pos.
Nominal current I_N	[A]	2
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

M12 SAC cable, 8-pos.

Notes:

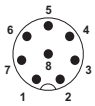
For information about the cable qualities, see page: 150.

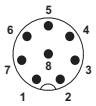
For dimensional drawings of connectors, refer to page: 169.

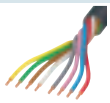
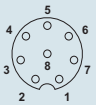
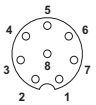
For further technical data, see:
www.phoenixcontact.net/catalog

Free end

M12 connector





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**
M12 socket, straight							
		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**		
M12 socket, angled							
		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**		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1522710	PUR	4.5

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR/PVC - gray E221474	100
TPE-U highly flexible - gray E221474	800
PVC - black E221474	PVC
PVC - gray E221474	500

Color coding		Pin assignment
WH		1
BN		2
GN		3
YE		4
GY		5
PK		6
BU		7
RD		8

Technical data		M12 8-pos.
Nominal current I_N	[A]	2
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

M12 SPEEDCON SAC cable, 8-pos., shielded

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog

Free end			M12 connector, 360° shielded			
Free end		**Order No.**		**Order No.**		**Order No.**
			Variable	**1523887**	Variable	**1523890**
M12 socket, straight, 360° shielded						
	Variable	**1523900**	Variable	**1523926**		
M12 socket, angled, 360° shielded						
	Variable	**1523913**	Variable	**1523939**		

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.		Cable type		Length [m] Max. 40 m
1523926	/	PUR	/	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Cable description	Cable type
PUR halogen-free - black E221474	PUR
PUR halogen-free - gray E221474	280
PVC - black E221474	PVC

Color coding		Pin assignment
WH		1
BN		2
GN		3
YE		4
GY		5
PK		6
BU		7
RD		8

Technical data		M12 8-pos., shielded
Nominal current I_N	[A]	2
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

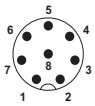
M12 SAC cable, 8-pos., shielded

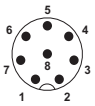
Notes:

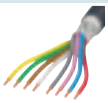
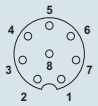
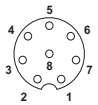
For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.		Order No.		Order No.
			1.5 m	**1522778**	1.5 m	**1522817**
			3 m	**1522781**	3 m	**1522820**
			5 m	**1526981**	5 m	**1522833**
			10 m	**1522794**	10 m	**1522846**
			Variable	**1522804**	Variable	**1522859**
M12 socket, straight, 360° shielded						
		1.5 m	**1522862**	0.3 m	**1522969**	
		3 m	**1522875**	0.6 m	**1522972**	
		5 m	**1522888**	1.5 m	**1522985**	
		10 m	**1522891**	3 m	**1522998**	
		Variable	**1522901**	Variable	**1523007**	
M12 socket, angled, 360° shielded						
		1.5 m	**1522914**	0.3 m	**1523010**	
		3 m	**1522927**	0.6 m	**1523023**	
		5 m	**1522930**	1.5 m	**1523036**	
		10 m	**1522943**	3 m	**1523049**	
		Variable	**1522956**	Variable	**1523052**	

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1523007	**PUR**	**4.5**

Minimum order = 25

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Cable description	Cable type
PUR halogen-free - black E221474	**PUR**
PUR halogen-free - gray E221474	**280**
PVC - black E221474	**PVC**

Color coding	Pin assignment
WH	1
BN	2
GN	3
YE	4
GY	5
PK	6
BU	7
RD	8

Technical data		M12 8-pos., shielded
Nominal current I_N	[A]	2
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Contact material		CuZn
Contact surface material		Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

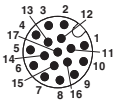
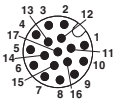
M12 SPEEDCON SAC cable, 12 and 17-pos. PVC cable

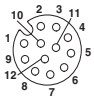
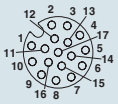
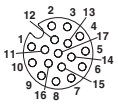
Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**

Free end		M12 connector, SPEEDCON, 12-pos.		M12 connector, SPEEDCON, 17-pos.	
					
Order No.		**Order No.**		**Order No.**	
	1.5 m	**1554775**	1.5 m	**1554814**	1.5 m	**1555266**	1.5 m	**1555305**
	3 m	**1554788**	3 m	**1554827**	3 m	**1555279**	3 m	**1555318**
	5 m	**1554791**	5 m	**1554830**	5 m	**1555282**	5 m	**1555321**
	10 m	**1554801**	10 m	**1554843**	10 m	**1555295**	10 m	**1555334**

M12 SPEEDCON socket, 12-pos., straight			
		1.5 m	**1554856**
		3 m	**1554869**
		5 m	**1554872**
		10 m	**1554885**
M12 SPEEDCON socket, 12-pos., angled			
		1.5 m	**1554898**
		3 m	**1554908**
		5 m	**1554924**
		10 m	**1554937**
M12 SPEEDCON socket, 17-pos., straight			
		1.5 m	**1555347**
		3 m	**1555350**
		5 m	**1555363**
		10 m	**1555376**
M12 SPEEDCON socket, 17-pos., angled			
		1.5 m	**1555389**
		3 m	**1555392**
		5 m	**1555402**
		10 m	**1555415**

Cable description	Cable type
PVC - black	**PVC**

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

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

Technical data		M12 12-pos.	M12 17-pos.
Nominal current I_N	[A]	1.5	1.5
Rated voltage	[V]	30	30
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

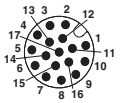
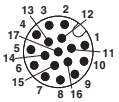
M12 SPEEDCON SAC cable, 12 and 17-pos. PUR cable

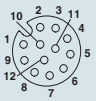
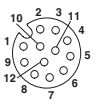
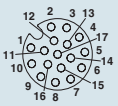
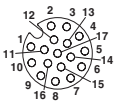
Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog

Free end	M12 connector, SPEEDCON, 12-pos.		M12 connector, SPEEDCON, 17-pos.	
				

Free end		Order No.		Order No.		Order No.		Order No.		Order No.
			1.5 m	**1430530**	1.5 m	**1430572**	1.5 m	**1430695**	1.5 m	**1430734**
			3 m	**1430543**	3 m	**1430585**	3 m	**1430705**	3 m	**1430747**
			5 m	**1430556**	5 m	**1430598**	5 m	**1430718**	5 m	**1430750**
			10 m	**1430569**	10 m	**1430608**	10 m	**1430721**	10 m	**1430763**
M12 SPEEDCON socket, 12-pos., straight										
			1.5 m	**1430611**						
			3 m	**1430624**						
			5 m	**1430637**						
			10 m	**1430640**						
M12 SPEEDCON socket, 12-pos., angled										
			1.5 m	**1430653**						
			3 m	**1430666**						
			5 m	**1430679**						
			10 m	**1430682**						
M12 SPEEDCON socket, 17-pos., straight										
			1.5 m	**1430776**						
			3 m	**1430789**						
			5 m	**1430792**						
			10 m	**1430802**						
M12 SPEEDCON socket, 17-pos., angled										
			1.5 m	**1430815**						
			3 m	**1430828**						
			5 m	**1430831**						
			10 m	**1430844**						

Cable description	Cable type
PUR halogen-free - black	**PUR**

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

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

Technical data		M12 12-pos.	M12 17-pos.
Nominal current I_N	[A]	1.5	1.5
Rated voltage	[V]	30	30
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
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
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90

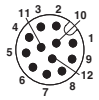
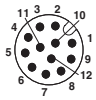
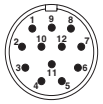
M12 SPEEDCON and M23 SAC cable, 12-pos., shielded

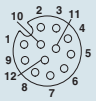
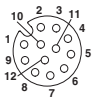
Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog

Free end	M12 connector, SPEEDCON, 360° shielded		M23 connector, 360° shielded
			

Free end		Order No.		Order No.		Order No.		Order No.	Order No.
			1.5 m	**1430048**	1.5 m	**1430080**			
			3 m	**1430051**	3 m	**1430093**			
			5 m	**1430064**	5 m	**1430103**			
			10 m	**1430077**	10 m	**1430116**			
M12 socket-SPEEDCON, straight, 360° shielded									
		0.5 m	**1437083**				0.5 m	**1437287**	
		1 m	**1434730**				1 m	**1437290**	
		1.5 m	**1430129**				2 m	**1437300**	
		3 m	**1430132**				5 m	**1437313**	
		5 m	**1430145**						
		10 m	**1430158**						
M12 SPEEDCON socket, angled, 360° shielded									
		1.5 m	**1430161**						
		3 m	**1430174**						
		5 m	**1430187**						
		10 m	**1430190**						
M23 socket, straight, 360° shielded									
				0.5 m	**1437326**				
				1 m	**1437339**				
				2 m	**1437342**				
				5 m	**1437355**				

Cable description	Cable type
PUR/PVC - black, twisted pair	**35T**

Color coding		Pin assignment M12	Pin assignment M23
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.
Nominal current I_N	[A]	1.5	1.5
Rated voltage	[V]	30	30
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	PUR
Degree of protection		IP65/IP68/IP69K	IP67
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-40 ... 125

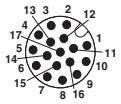
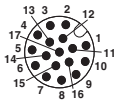
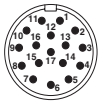
M12 SPEEDCON and M23 SAC cable, 17-pos., shielded

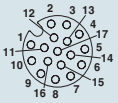
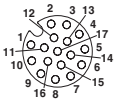
Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see:
www.phoenixcontact.net/catalog

Free end	M12 connector, SPEEDCON, 360° shielded		M23 connector, 360° shielded
			

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									
		1.5 m	**1430284**				0.5 m	**1437368**	
							1 m	**1437371**	
		3 m	**1430297**				2 m	**1437384**	
		5 m	**1430307**				5 m	**1437397**	
		10 m	**1430310**						
M12 SPEEDCON socket, angled, 360° shielded									
		1.5 m	**1430323**						
		3 m	**1430336**						
		5 m	**1430349**						
		10 m	**1430352**						
M23 socket, straight, 360° shielded									
				0.5 m	**1437407**				
				1 m	**1437410**				
				2 m	**1437423**				
				5 m	**1437436**				

Cable description	Cable type
PUR/PVC - black, twisted pair	**35T**

Color coding		Pin assignment M12	Pin assignment M23
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
YEBN		16	16
WHGY		17	17

Technical data		M12 17-pos.	M23 17-pos.
Nominal current I_N	[A]	1.5	1.5
Rated voltage	[V]	30	30
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	PUR
Degree of protection		IP65/IP68/IP69K	IP67
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-40 ... 125

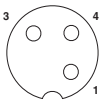
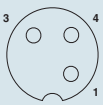
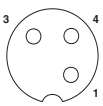
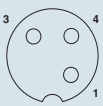
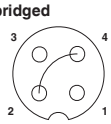
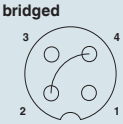
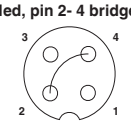
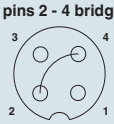
M12 Y SAC cable, two cable outlets

Notes:

For information about the cable qualities, see page: 150.

For dimensional drawings of connectors, refer to page: 169.

For further technical data, see: **www.phoenixcontact.net/catalog**

Free end		Y connector M12, Order No.		Y connector M12, SPEEDCON 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	
M8 socket, straight						
		0.3 m	1671331			
		0.6 m	1671344			
		1.5 m	1671357			
		3 m	1671360			
		Variable	1697399	Variable	1541885	
M8 socket, angled						
		0.3 m	1671373			
		0.6 m	1671386			
		1.5 m	1671399			
		3 m	1671409			
		Variable	1697409	Variable	1541898	
M8 socket, angled, with 2 LEDs						
		0.3 m	1671412			
		0.6 m	1671425			
		1.5 m	1671438			
		3 m	1671441			
		Variable	1697412	Variable	1541908	
M12 socket, straight						
		Variable	1699766			
M12-SPEEDCON socket, straight						
				Variable	1542198	
M12 socket, angled						
		Variable	1506419			
M12-SPEEDCON socket, angled						
				Variable	1542004	
M12 socket, straight, pin 2- 4 bridged						
		0.3 m	1668959			
		0.6 m	1668962			
		1.5 m	1668975			
		3 m	1668988			
		Variable	1697360			
M12 socket, angled, pin 2 - 4 bridged						
		0.3 m	1668991			
		0.6 m	1669000			
		1.5 m	1669013			
		3 m	1669026			
		Variable	1697373			
M12-SPEEDCON socket, angled, pin 2- 4 bridged						
				Variable	1542172	
M12 socket, angled, with LED, pins 2 - 4 bridged (2nd column socket M12 SPEEDCON)						
		0.3 m	1669039			
		0.6 m	1669042			
		1.5 m	1669055			
		3 m	1669068			
		Variable	1697386	Variable	1542185	

Ordering example for sensor/actuator cabling 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 order data is as follows:

Order No.	Cable type	Length [m] Max. 40 m
1697360	/ PUR	/ 4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

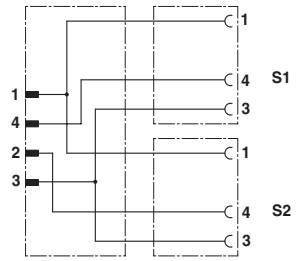
Cable description	Cable type	Suitability
PUR halogen-free - black E221474	PUR	M8 / M12
PUR halogen-free - gray E221474	280	M12

Cable description	Cable type	Suitability
PUR/PVC - gray E221474	100	M8 / M12
PUR/PVC - yellow E221474	140	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

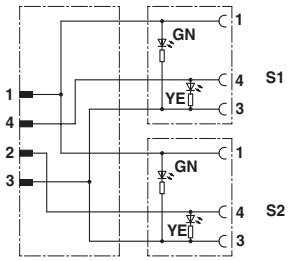
Color coding	Pin assignment, 3-pos. Connector	Socket
BN	1	1
BK	2 + 4	4
BU	3	3

If M12 and M8 connectors are combined, the limiting M8 value is applicable for the rated voltage.

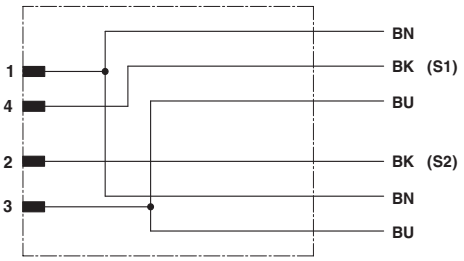
Technical data		Y-M8	Y-M8 with LEDs	Y-M12	Y-M12 with LEDs
Nominal current I_N	[A]	4	4	4	4
Rated voltage	[V]	60	24	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
Contact material		CuSn	CuSn	CuSn	CuSn
Contact surface material		Ni/Au	Ni/Au	Ni/Au	Ni/Au
Material of grip body		TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature					
Plug/socket	[°C]	-25 ... 90	-25 ... 90	-25 ... 90	-25 ... 90



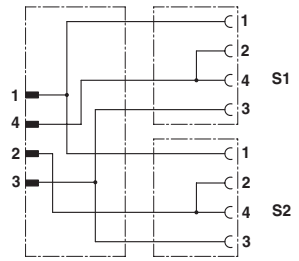
Contact assignment of the M12 connector and the M8/M12 sockets



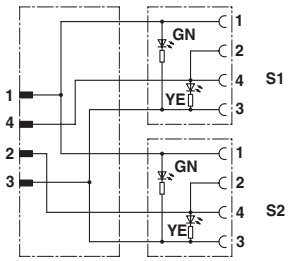
Contact assignment of the M12 connector and the M8 sockets, with LEDs



Contact assignment of the M12 Y plug 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

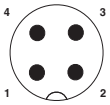
M12 Y SAC cable, one cable outlet

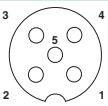
Notes:

For information about the cable qualities, see page: 150.

Further combinations on request.

For further technical data, see:
www.phoenixcontact.net/catalog



Y-connector with 2 x M12 SPEEDCON socket		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	Suitability
PUR halogen-free - black	**PUR**	M12 4-pos.

Color coding		Pin assignment		
		M12	M12-Y	
		4-pos.	S1	S2
BN		1	1	1
BK		4	4	–
WH		2	–	4
BU		3	3	3

Technical data		Y-M12
Nominal current I_N	[A]	4
Rated voltage	[V]	60
Volume resistance		≤ 5 mΩ
Contact material		CuSn
Contact surface material		Ni/Au
Contact carrier material		TPU GF
Degree of protection		IP65/67
Ambient temperature		
Plug/socket	[°C]	-25 ... 90

M8 and M12 Y distributor 3 and 5-pos.

Notes:

For circuit diagrams of connectors, refer to page 173.

For further technical data, see:
www.phoenixcontact.net/catalog

M8 plug on 2 x M8 socket, without LED

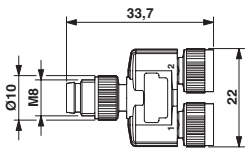
M12 plug on 2 x M8 socket, without LED

M12 plug on 2 x M12 socket, with LED

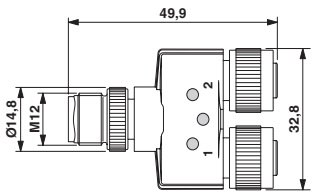
M12 plug on 2 x M12 socket, without LED

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
3-pos.	**1696183**	5	**1683471**	5	**1501304**	5	**-**	-
3-pos., SPEEDCON knurl	**-**	-	**1523984**	5	**-**	-	**-**	-
3-pos. + PE	**-**	-	**-**	-	**-**	-	**1683455**	5
3-pos. + PE, SPEEDCON knurl	**-**	-	**-**	-	**-**	-	**1523971**	5
3-pos. + PE, pin 2+4 bridged	**-**	-	**-**	-	**-**	-	**1683413**	5
3-pos. + PE, pin 2+4 bridged, SPEEDCON knurl	**-**	-	**-**	-	**-**	-	**1523968**	5
3-pos., parallel connection	**1696222**	5	**1683549**	5	**-**	-	**-**	-
5-pos., parallel connection	**-**	-	**-**	-	**-**	-	**1683468**	5
5-pos., parallel connection, SPEEDCON knurls	**-**	-	**-**	-	**-**	-	**1546068**	1

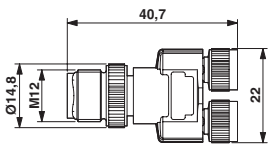
Technical data	M8 to M8 / M12 to M8	M12 to M12, without LED	M12 on M12, With LED
Electrical data			
Rated voltage	30 V	60 V	24 V
Nominal current I_N	4 A	4 A	4 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ
Mechanical data			
Material contact / contact surface	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material	TPU GF	TPU GF	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65/IP67	IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Ambient temperature (operation)	-25°C ... 90°C	-25°C ... 90°C	-25°C ... 90°C



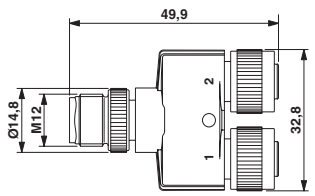
Dimensional drawing: M8 plug on 2 x M8 socket



Dimensional drawing: M12 plug on 2 x M12 socket, with LED



Dimensional drawing: M12 plug on 2 x M8 socket



Dimensional drawing: M12 plug on 2 x M12 socket, without LED

M12 T distributor M8 and M12 adapter, 3, 4 and 5-position

Notes:

For circuit diagrams of connectors, refer to page 173.

For further technical data, see:
www.phoenixcontact.net/catalog

T distributors, M12 plug on 2 x M12 socket

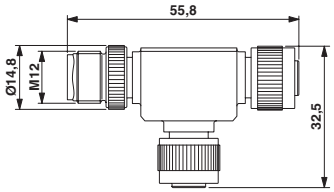
Adapter, M8 plug on M12 socket

Adapter, M12 plug on M8 socket

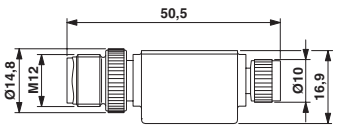
Adapter, M12 plug on M8 snap-in socket

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
3-pos. + PE, pin 2+4 bridged	**1519723**	1	-	-	-	-	-	-
5-pos., parallel	**1541186**	1	-	-	-	-	-	-
3-pos.	-	-	**1519749**	1	**1519752**	1	**1519781**	1
4-pos.	-	-	**1519736**	1	**1519765**	1	**1519778**	1

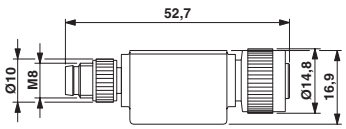
Technical data	T-distributor	Adapter, 3-pos.	Adapter, 4-pos.
Electrical data			
Rated voltage	60 V	60 V	30 V
Nominal current I_N	4 A	4 A	4 A
Volume resistance	5 mΩ	5 mΩ	5 mΩ
Mechanical data			
Material contact / contact surface	CuZn / Ni/Au	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	TPU GF	TPU GF	TPU GF
Material of grip body	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Degree of protection	IP65/IP67	IP65/IP67	IP65/IP67
Ambient temperature			
Ambient temperature (operation)	-25°C ... 90°C	-25°C ... 90°C	-25°C ... 90°C



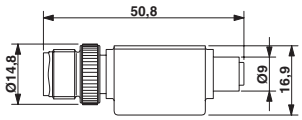
Dimensional drawing: T-distributor



Dimensional drawing: Adapter, M12 plug on M8 socket



Dimensional drawing: Adapter, M8 plug on M12 socket



Dimensional drawing: Adapter, M12 plug on M8 snap-in socket

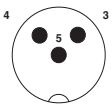
Valve connector with a free conductor end, M12 SPEEDCON connector, 3 and 5-pos.

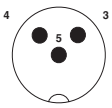
Notes:

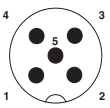
For dimensional drawings, refer to page: 171.

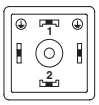
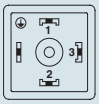
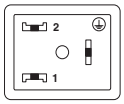
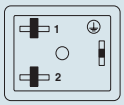
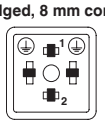
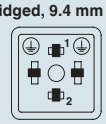
For information about the cable qualities, see page: 150.

For further technical data, see:
www.phoenixcontact.net/catalog





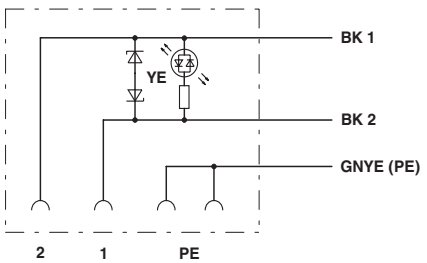


Valve connector type A, PE bridged, 18 mm contact spacing	Order No.		Order No.		Order No.		Order No.
	1.5 m	**1434989**	0.3 m	**1434882**	0.3 m	**1434934**	
	3 m	**1434992**	0.6 m	**1434895**	0.6 m	**1434947**	
	5 m	**1435001**	1.5 m	**1434905**	1.5 m	**1434950**	
	10 m	**1435014**	3 m	**1434918**	3 m	**1434963**	
Valve connector type for pressure switch, 18 mm contact spacing							
	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**
Valve connector type B, 10 mm contact spacing							
	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**	
Valve connector type BI, 11 mm contact spacing							
	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**	
Valve connector type C, PE bridged, 8 mm contact spacing							
	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**	
Valve connector type CI, PE bridged, 9.4 mm contact spacing							
	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**	

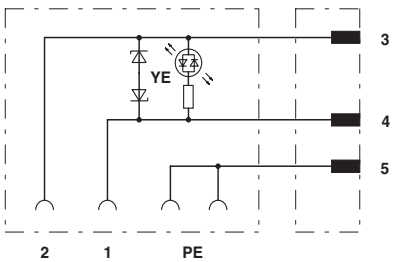
Cable description	Cable type	Number of positions
PUR halogen-free - black	PUR	3-pos.
PUR halogen-free - black	PUR	5-pos.

Color coding		Pin assignment M12 3-pos.	Pin assignment M12 5-pos.
BK1	1	3	1
BK2	2	4	2
BK3	3	-	4
BK4	4	-	3
GNYE		5	5

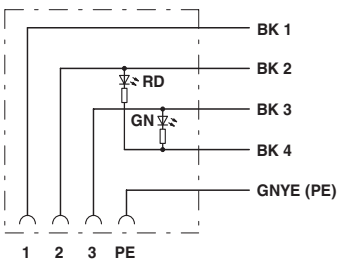
Technical data		3-pos.	5-pos.
Nominal current I_N	[A]	4	4
Rated voltage	[V]	24	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Material contact M12		CuSn	CuSn
Material contact valve connector		CuSn	CuSn
Material contact surface M12		Ni/Au	Ni/Au
Material contact surface valve plug		Sn	Sn
Material handle M12		TPU	TPU
Material housing valve connector		TPU	TPU
Degree of protection		IP65/IP67	IP65/IP67
Ambient temperature			
Plug/socket	[°C]	-25 ... 90	-25 ... 90
Valve connectors	[°C]	-20 ... 85	-20 ... 85



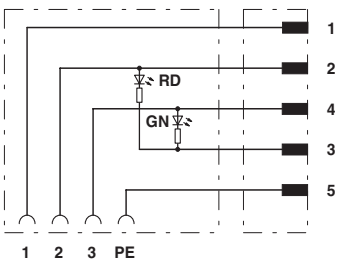
Contact assignment of valve connector



Contact assignment of M12 connectors / valve connectors



Contact assignment of valve connectors for pressure switches



Contact assignment of M12 connectors / valve connectors for pressure switches

Valve connector adapter with M12 plug

Notes:

For dimensional drawings of the valve connectors, refer to page 171.

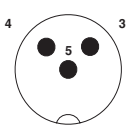
For further technical data, see:
www.phoenixcontact.net/catalog

SAC-3P-M12M.../A-1L-S

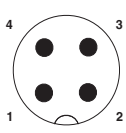
Valve connector type A

Description	Type	Order No.	Pcs. / Pkt.
Valve connector type A, PE bridged, 18 mm contact spacing			
- Vertical M12 connector	**SAC-3P-M12MS/A-1L-S**	**1505258**	5
- Horizontal M12 connector	**SAC-3P-M12MR/A-1L-S**	**1505261**	5
Valve connector type B, 10 mm contact spacing			
- Vertical M12 connector			
- Horizontal M12 connector			
Valve connector type BI, 11 mm contact spacing			
- Vertical M12 connector			
- Horizontal M12 connector			
DESINA valve connector type A, 18 mm contact spacing			
- Vertical M12 plug			

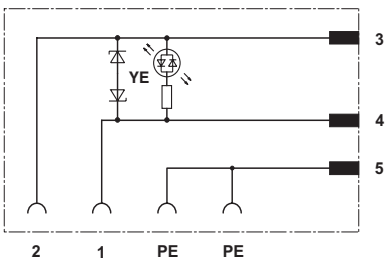
Technical data	
Electrical data in acc. with IEC 61076-2-101	
Nominal current I_N	4 A
Nominal voltage U_N	24 V AC/DC
Cut-off peak	≤ 55 V
Status display	Yellow LED
Material data	
Material, housing, valve connector	PBT
Contact material M12 male connector	CuSn
Contact surface material M12 male connector	Ni/Au
Contact material valve connectors	CuSn
Contact surface material valve connectors	Ag
Inflammability class acc. to UL 94	V0
Mechanical data	
Degree of protection	IP67
Temperature data	
Ambient temperature (operation)	-25°C ... 85°C (valve connector)



M12 connector, A-coded, (male view)



M12 connector, A-coded, (male view)



Circuit diagram: Valve connector type A

SAC-3P-M12M.../B-1L-S

Valve connector type B

SAC-3P-M12M.../BI-1L-S

Valve connector type BI

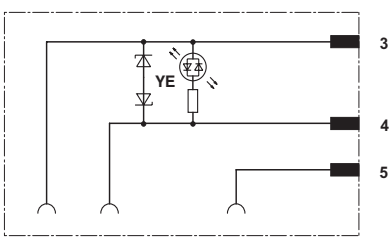
SAC-4P-M12MS/A-1L-S D

DESINA valve connector type A

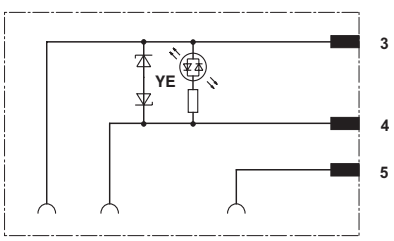
Type	Order No.	Pcs. / Pkt.
SAC-3P-M12MS/B-1L-S	1534106	5
SAC-3P-M12MR/B-1L-S	1534119	5
4 A		
24 V AC/DC		
≤ 55 V		
Yellow LED		
PBT		
CuSn		
Ni/Au		
CuSn		
Ag		
V0		
IP67		
-25°C ... 85°C (valve connector)		

Type	Order No.	Pcs. / Pkt.
SAC-3P-M12MS/BI-1L-S	1534122	5
SAC-3P-M12MR/BI-1L-S	1534135	5
4 A		
24 V AC/DC		
≤ 55 V		
Yellow LED		
PBT		
CuSn		
Ni/Au		
CuSn		
Ag		
V0		
IP67		
-25°C ... 85°C (valve connector)		

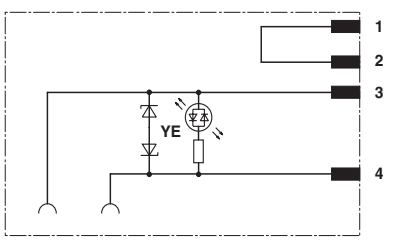
Type	Order No.	Pcs. / Pkt.
SAC-4P-M12MS/A-1L-S D	1696170	5
4 A		
24 V AC/DC		
≤ 55 V		
Yellow LED		
PBT		
CuSn		
Ni/Au		
CuSn		
Ag		
V0		
IP67		
-25°C ... 85°C (valve connector)		



Circuit diagram: Valve connector type B



Circuit diagram: Valve connector type BI



Circuit diagram: Valve connector type A, (Pin 1/2 = Diagnosis)

Valve connector with screw connection

Notes:

For further technical data, see:
www.phoenixcontact.net/catalog

Valve connectors Type A

Valve connectors Type A, with wiring

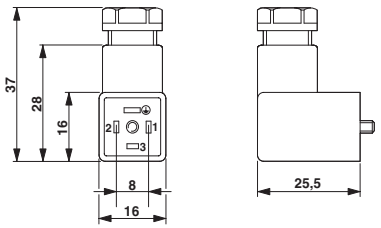
Valve connectors Type B,BI

Valve connectors Type C, CI

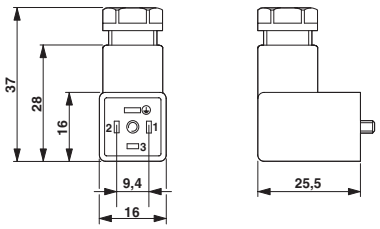
Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Without wiring, U_N=250 V, I_N=10 A	4	**1527883**	1	-	-	**1527980**	1	**1511967**	1
Without wiring, industrial standard, U_N=250 V, I_N=10 A	3	-	-	-	-	**1527993**	1	**1527977**	1
Without protective circuit, LED yellow, U_N=24 V, I_N=10 A	3	-	-	**1527906**	1	-	-	-	-
Protective circuit with varistor, LED yellow, U_N=24 V, I_N=10 A	3	-	-	**1527919**	1	-	-	-	-
Protective circuit with varistor and rectifier, LED yellow, U_N=24 V, I_N=2 A	3	-	-	**1533291**	1	-	-	-	-
With polarity reversal protection and free-wheeling diode, LED yellow, U_N=24 V, I_N=1 A	3	-	-	**1533314**	1	-	-	-	-
Protective circuit with varistor, LED yellow, U_N=120 V, I_N=10 A	3	-	-	**1527922**	1	-	-	-	-
Protective circuit with varistor, LED yellow, U_N=240 V, I_N=10 A	3	-	-	**1527935**	1	-	-	-	-
Pressure switch, LED red/green, U_N=24 V, I_N=4 A	5	-	-	**1527948**	1	-	-	-	-

Technical data

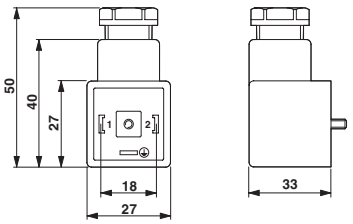
Electrical data				
Material housing valve connector	PA6	PA6	PA6	PA6
Inflammability class acc. to UL 94	HB	HB	HB	HB
Pollution degree	3	3	3	3
Degree of protection	IP65	IP65	IP65	IP65
External diameter	6 mm ... 8 mm	6 mm ... 8 mm	6 mm ... 8 mm	4 mm ... 6 mm
Connection cross-section min/max	0.34 mm² / 1.5 mm²	0.34 mm² / 1.5 mm²	0.34 mm² / 1.5 mm²	0.34 mm² / 1.5 mm²
Connection cross-section AWG min/max	22 / 16	22 / 16	22 / 16	22 / 16
Temperature data				
Ambient temperature (operation)	-25°C ... 120°C	-25°C ... 85°C	-25°C ... 120°C	-25°C ... 120°C



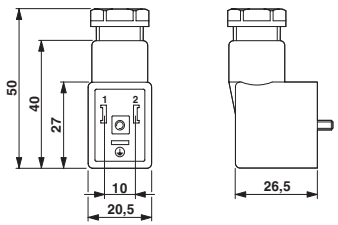
Type C, unwired



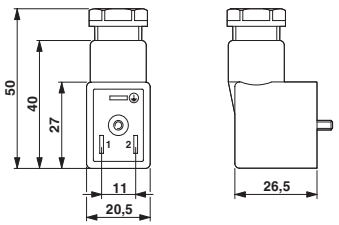
Type CI, unwired



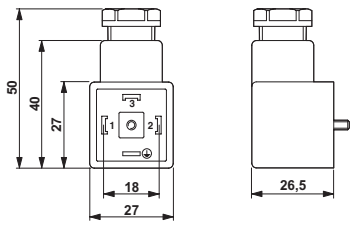
Type A, with rectifier or polarity reversal protection



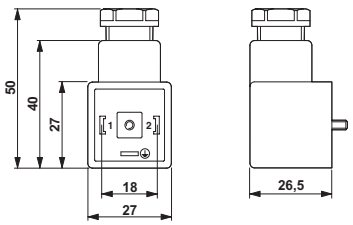
Type B, unwired



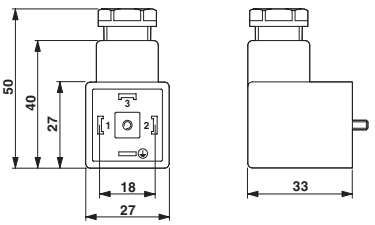
Type BI, unwired



Type A, unwired



Type A, wired



Type AD, pressure switch

Valve connector with screw connection

Notes:

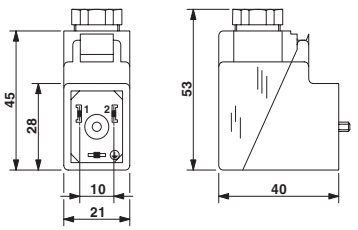
For further technical data, see:
www.phoenixcontact.net/catalog

Valve connectors Type A

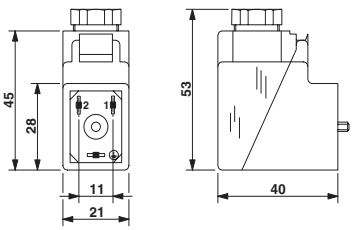
Valve connectors Type B,BI

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Protective circuit with Z diode, LED yellow, with Pg9 screw connection, U_N=24 V, I_N=4 A	3	**1671137**	1	-	-
Protective circuit with Z diode, LED yellow, with metric screw connection, U_N=24 V, I_N=4 A	3	**1544714**	1	-	-
Protective circuit with Z diode, LED yellow, U_N=24 V, I_N=4 A	3	-	-	**1671153**	5
Protective circuit with Z diode, LED yellow, Industrial standard (BI), U_N=24 V, I_N=4 A	3	-	-	**1671140**	5

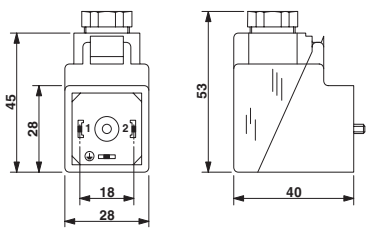
Technical data		
Electrical data		
Material housing valve connector	PA	PA
Inflammability class acc. to UL 94	HB	HB
Pollution degree	3	3
Degree of protection	IP65	IP65
External diameter	6 mm ... 8 mm	6 mm ... 8 mm
Connection cross-section min/max	0.34 mm² / 2.5 mm²	0.34 mm² / 2.5 mm²
Connection cross-section AWG min/max	22 / 13	22 / 13
Temperature data		
Ambient temperature (operation)	-25°C ... 60°C	-25°C ... 60°C



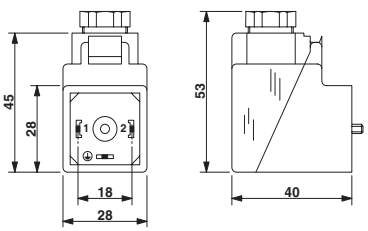
Type B, wired, Pg9 screw connection



Type BI, wired, Pg9 screw connection



Type A, wired, Pg9 screw connection



Type A, wired, M16 screw connection

M8 distributor with metal thread

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

M12 plug-in connection, vertical

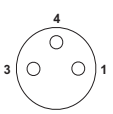
M16 plug-in connection, vertical

Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
With LED	pnp	24 V DC	4	-	-	-	1516234	-	1516182	-
With LED	pnp	24 V DC	4	5 m	1516014	-	-	-	-	-
With LED	pnp	24 V DC	4	10 m	1516027	-	-	-	-	-
With LED	pnp	24 V DC	4	Variable	1516137	-	-	-	-	-
With LED	pnp	24 V DC	6	-	-	-	1516247	-	1516195	-
With LED	pnp	24 V DC	6	5 m	1516030	-	-	-	-	-
With LED	pnp	24 V DC	6	10 m	1516043	-	-	-	-	-
With LED	pnp	24 V DC	6	Variable	1516140	-	-	-	-	-
With LED	pnp	24 V DC	8	-	-	-	-	-	1516205	-
With LED	pnp	24 V DC	8	5 m	1516056	1516111	-	-	-	-
With LED	pnp	24 V DC	8	10 m	1516069	1516124	-	-	-	-
With LED	pnp	24 V DC	8	Variable	1516153	1516179	-	-	-	-
With LED	pnp	24 V DC	10	-	-	-	-	-	1516218	-
With LED	pnp	24 V DC	10	5 m	1516072	-	-	-	-	-
With LED	pnp	24 V DC	10	10 m	1516085	-	-	-	-	-
With LED	pnp	24 V DC	10	Variable	1516166	-	-	-	-	-
Notes:										
For accessories, refer to page:					126		126		126	
For dimensional drawings, refer to page:					174		174		174	
For circuit diagrams, refer to page:					178		178		178	
For pin assignment, refer to page:					182		182		182	
For master cable data, see page:					162		-		-	
Technical data										
Rated current for each I/O signal				[A]	2		2		2	
Rated current per slot				[A]	2		2		2	
Rated current, total				[A]	6		4		6	
Degree of protection in acc. with IEC 60529/ EN 60529					IP65/IP67		IP65/IP67		IP65/IP67	
Ambient temperature (operation)				[°C]	-30 ... 80		-30 ... 80		-30 ... 80	
Ambient temperature of master cable										
Fixed installation				[°C]	-40 ... 90		-		-	
Flexible installation				[°C]	-5 ... 80		-		-	

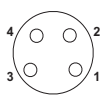
Ordering example for articles with variable master cable:

For a distributor with 4 single occupied slots and 34.5 m master cable length, the order data is as follows:

Order No.		Length [m]
1516137	/	34.5
		Step width: 0.5 m; **Maximum length:** 50 m

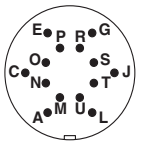


Connector pin assignment for M8 socket, 3-pos.



Connector pin assignment for M8 socket, 4-pos.

Connector pin assignment for M12 plug-in connection, 8-pos.



Connector pin assignment for M16 plug-in connection, 14-pos.

Spring-cage connection, horizontal

Pluggable screw connection, horizontal

Header for pluggable screw connection

Connector hood, with a master cable

Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
1503386	-	1503412	-	1516250	-	-	-
-	-	-	-	-	-	1516292	-
-	-	-	-	-	-	1516302	-
-	-	-	-	-	-	1516373	-
1503399	-	1503425	-	1516263	-	-	-
-	-	-	-	-	-	1516315	-
-	-	-	-	-	-	1516328	-
-	-	-	-	-	-	1516386	-
1511747	1503454	1511750	1503467	1516276	-	-	-
-	-	-	-	-	-	1516331	-
-	-	-	-	-	-	1516344	-
-	-	-	-	-	-	1516399	-
1503409	-	1503438	-	1516289	-	-	-
-	-	-	-	-	-	1516357	-
-	-	-	-	-	-	1516360	-
-	-	-	-	-	-	1516409	-
125		125		125		125	
174		174		174		174	
178		178		178		-	
182		182		182		182	
-		-		-		162	
2		2		2		-	
2		2		2		-	
6		8		8		-	
IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67	
-30 ... 80		-30 ... 80		-30 ... 80		-30 ... 80	
-		-		-		-40 ... 90	
-		-		-		-5 ... 80	

M12 distributor with plastic thread

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

M23 plug-in connection, vertical

M23 plug-in connection, horizontal

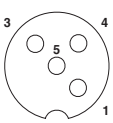
Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
Without LED	Universal	120 V	4	-	-	-	1692792	1692802	1692734	1692747
Without LED	Universal	120 V	4	5 m	1680940	1680885	-	-	-	-
Without LED	Universal	120 V	4	10 m	1680953	1680898	-	-	-	-
Without LED	Universal	120 V	6	-	-	-	1692815	1692828	1692750	1692763
Without LED	Universal	120 V	6	5 m	1680966	1680908	-	-	-	-
Without LED	Universal	120 V	6	10 m	1680979	1680911	-	-	-	-
Without LED	Universal	120 V	8	-	-	-	1692831	1692844	1692776	1692789
Without LED	Universal	120 V	8	5 m	1680982	1680924	-	-	-	-
Without LED	Universal	120 V	8	10 m	1680995	1680937	-	-	-	-
With LED	pnp	24 V DC	4	-	-	-	1692404	1692417	1692679	1692682
With LED	pnp	24 V DC	4	5 m	1695045	1695074	-	-	-	-
With LED	pnp	24 V DC	4	10 m	1695058	1695087	-	-	-	-
With LED	pnp	24 V DC	4	Variable	1695061	1695090	-	-	-	-
With LED	pnp	24 V DC	6	-	-	-	1692420	1692433	1692695	1692705
With LED	pnp	24 V DC	6	5 m	1695100	1695139	-	-	-	-
With LED	pnp	24 V DC	6	10 m	1695113	1695142	-	-	-	-
With LED	pnp	24 V DC	6	Variable	1695126	1695155	-	-	-	-
With LED	pnp	24 V DC	8	-	-	-	1692446	1692459	1692718	1692721
With LED	pnp	24 V DC	8	5 m	1695168	1695197	-	-	-	-
With LED	pnp	24 V DC	8	10 m	1695171	1695207	-	-	-	-
With LED	pnp	24 V DC	8	Variable	1695184	1695210	-	-	-	-
With LED	npn	24 V DC	4	-	-	-	-	-	-	-
With LED	npn	24 V DC	6	-	-	-	-	-	-	-
With LED	npn	24 V DC	8	-	-	-	-	-	-	-

Notes:				
For accessories, refer to page:		127	128	128
For dimensional drawings, refer to page:		176	176	176
For circuit diagrams, refer to page:		179	179	179
For pin assignment, refer to page:		182	182	182
For master cable data, see page:		163	-	-
Technical data				
Rated current for each I/O signal	[A]	2	2	2
Rated current per slot	[A]	4	4	4
Rated current, total	[A]	12	12	12
Total rated current for electrical isolation	[A]	-	-	-
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67	IP65/IP67	IP65/IP67
Ambient temperature (operation)	[°C]	-25 ... 75	-20 ... 75	-20 ... 75
Ambient temperature of master cable				
Fixed installation	[°C]	-40 ... 90	-	-
Flexible installation	[°C]	-5 ... 80	-	-

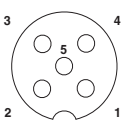
Ordering example for articles with variable master cable:

For a distributor with 4 single occupied slots and 34.5 m master cable length, the order data is as follows:

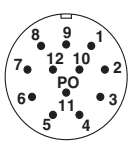
Order No.		Length [m]
1695061	/	34.5
		Step width: 0.5 m; **Maximum length:** 50 m



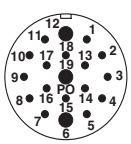
Connector pin assignment for M12 socket, 4-pos.



Connector pin assignment for M12 socket, 5-pos.



Connector pin assignment for M23 plug-in connection, 12-pos.



Connector pin assignment for M23 plug-in connection, 19-pos.

Spring-cage connection, horizontal

Pluggable screw connection, vertical

Pluggable screw connection, horizontal

Header for pluggable screw connection

Connector hood, with a master cable

Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
1681004	1692035	1695375	1695388	1692857	1692860	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
1692019	1692048	1695391	1695401	1692873	1692886	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
1692022	1692051	1695414	1695427	1692899	1692909	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
1671221	1680568	1695317	1695320	1692349	1692352	1698110	1698136	-	-
-	-	-	-	-	-	-	-	1503014	1503072
-	-	-	-	-	-	-	-	1503027	1503085
-	-	-	-	-	-	-	-	1698123	1698149
1671234	1680571	1695333	1695346	1692365	1692378	1695676	1698152	-	-
-	-	-	-	-	-	-	-	1503030	1503098
-	-	-	-	-	-	-	-	1503043	1503108
-	-	-	-	-	-	-	-	1695689	1698165
1671247	1680584	1695359	1695362	1692381	1692394	1698178	1698194	-	-
-	-	-	-	-	-	-	-	1503056	1503111
-	-	-	-	-	-	-	-	1503069	1503124
-	-	-	-	-	-	-	-	1698181	1698204
1680733	1680762	-	-	-	-	-	-	-	-
1680746	1680775	-	-	-	-	-	-	-	-
1680759	1680788	-	-	-	-	-	-	-	-
129		127		127		127		127	
177		177		177		177		177	
179		179		179		179		-	
182		182		182		182		182	
-		-		-		-		163	
2		2		2		2		-	
4		4		4		4		-	
12		10		10		10		-	
-		2x 8		2x 8		2x 8		-	
IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67		IP65/IP67	
-25 ... 75		-25 ... 75		-25 ... 75		-25 ... 75		-25 ... 75	
-		-		-		-		-40 ... 90	
-		-		-		-		-5 ... 80	

M12 distributor with metal thread, heavy-duty

Notes:

Suitable for SPEEDCON and M12 standard, see page: 68.

For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

With halogen-free master line

Pluggable screw connection, horizontal

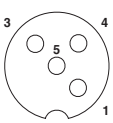
Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy	Single occupancy	Double occupancy
Without LED	Universal	120 V	4	-	-	-	-	-	1516849	1516852
Without LED	Universal	120 V	4	5 m	1516962	1516988	-	1517204	-	-
Without LED	Universal	120 V	4	10 m	1516975	1516991	-	1517217	-	-
Without LED	Universal	120 V	6	-	-	-	-	-	1516865	1516878
Without LED	Universal	120 V	6	5 m	1517000	1517026	-	1517220	-	-
Without LED	Universal	120 V	6	10 m	1517013	1517039	-	1517233	-	-
Without LED	Universal	120 V	8	-	-	-	-	-	1516881	1516894
Without LED	Universal	120 V	8	5 m	1517042	1517068	-	1517246	-	-
Without LED	Universal	120 V	8	10 m	1517055	1517071	-	1517259	-	-
With LED	pnp	24 V DC	4	-	-	-	-	-	1516784	1516797
With LED	pnp	24 V DC	4	5 m	1517084	1517107	-	1517262	-	-
With LED	pnp	24 V DC	4	10 m	1517097	1517110	-	1517275	-	-
With LED	pnp	24 V DC	4	Variable	1516904	1516917	-	-	-	-
With LED	pnp	24 V DC	6	-	-	-	-	-	1516807	1516810
With LED	pnp	24 V DC	6	5 m	1517123	1517149	-	1517288	-	-
With LED	pnp	24 V DC	6	10 m	1517136	1517152	-	1517291	-	-
With LED	pnp	24 V DC	6	Variable	1516920	1516933	-	-	-	-
With LED	pnp	24 V DC	8	-	-	-	-	-	1516823	1516836
With LED	pnp	24 V DC	8	5 m	1517165	1517181	-	1517301	-	-
With LED	pnp	24 V DC	8	10 m	1517178	1517194	-	1517314	-	-
With LED	pnp	24 V DC	8	Variable	1516946	1516959	-	-	-	-
With LED	npn	24 V DC	4	-	-	-	-	-	1537077	1537103
With LED	npn	24 V DC	4	Variable	1537019	1537048	-	-	-	-
With LED	npn	24 V DC	6	-	-	-	-	-	1537080	1537116
With LED	npn	24 V DC	6	Variable	1537022	1537051	-	-	-	-
With LED	npn	24 V DC	8	-	-	-	-	-	1537093	1537129
With LED	npn	24 V DC	8	Variable	1537035	1537064	-	-	-	-

Notes:				
For accessories, refer to page:		130	130	130
For dimensional drawings, refer to page:		176	176	176
For circuit diagrams, refer to page:		179	179	179
For pin assignment, refer to page:		182	182	182
For master cable data, see page:		163	165	-
Technical data				
Rated current for each I/O signal	[A]	2	2	2
Rated current per slot	[A]	4	4	4
Rated current, total	[A]	12	12	10
Total rated current for electrical isolation	[A]	-	-	2x 8
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67/IP69K	IP65/IP67/IP69K	IP65/IP67/IP69K
Ambient temperature (operation)	[°C]	-30 ... 90	-30 ... 90	-30 ... 80
Ambient temperature of master cable				
Fixed installation	[°C]	-40 ... 90	-40 ... 90	-
Flexible installation	[°C]	-5 ... 80	-5 ... 80	-

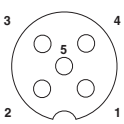
Ordering example for articles with variable master cable:

For a distributor with 4 single occupied slots and 34.5 m master cable length, the order data is as follows:

Order No.		Length [m]
1516904	/	34.5
		Step width: 0.5 m; **Maximum length:** 50 m



Connector pin assignment for M12 socket, 4-pos.



Connector pin assignment for M12 socket, 5-pos.

Header for pluggable screw connection

Connector hood, with a master cable

Single occupancy	Double occupancy	Single occupancy	Double occupancy
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
1516726	1516739	-	-
-	-	1516353	1516593
-	-	1516548	1516603
-	-	1516658	1516661
1516742	1516755	-	-
-	-	1516551	1516616
-	-	1516564	1516629
-	-	1516674	1516687
1516768	1516771	-	-
-	-	1516577	1516632
-	-	1516580	1516645
-	-	1516690	1516700
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-
130		130	
176		176	
179		-	
182		182	
-		163	
2		-	
4		-	
10		-	
2x 8		-	
IP65/IP67/IP69K		IP65/IP67/IP69K	
-30 ... 80		-30 ... 80	
-		-40 ... 90	
-		-5 ... 80	

QUICKON distributor, connection cross-section: 0.14 mm² ... 0.34 mm²

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

Pluggable screw connection, horizontal

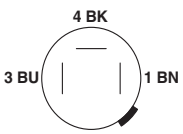
Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy
Without LED	Universal	48 V	4	-	-	-	1548354	1548419
Without LED	Universal	48 V	4	Variable	1548642	1548671	-	-
Without LED	Universal	48 V	6	-	-	-	1548367	1548422
Without LED	Universal	48 V	6	Variable	1548655	1548684	-	-
Without LED	Universal	48 V	8	-	-	-	1548370	1548435
Without LED	Universal	48 V	8	Variable	1548668	1548697	-	-
With LED	pnp	24 V DC	4	-	-	-	1548325	1548383
With LED	pnp	24 V DC	4	5 m	1548448	1548532	-	-
With LED	pnp	24 V DC	4	10 m	1548451	1548545	-	-
With LED	pnp	24 V DC	4	Variable	1548503	1548590	-	-
With LED	pnp	24 V DC	6	-	-	-	1548338	1548396
With LED	pnp	24 V DC	6	5 m	1548464	1548558	-	-
With LED	pnp	24 V DC	6	10 m	1548477	1548561	-	-
With LED	pnp	24 V DC	6	Variable	1548516	1548600	-	-
With LED	pnp	24 V DC	8	-	-	-	1548341	1548406
With LED	pnp	24 V DC	8	5 m	1548480	1548574	-	-
With LED	pnp	24 V DC	8	10 m	1548493	1548587	-	-
With LED	pnp	24 V DC	8	Variable	1548529	1548613	-	-

Notes:			
For accessories, refer to page:		132	132
For dimensional drawings, refer to page:		175	175
For circuit diagrams, refer to page:		180	180
For pin assignment, refer to page:		183	183
For master cable data, see page:		162	-
Technical data			
Rated current for each I/O signal	[A]	2	2
Rated current per slot	[A]	4	4
Rated current, total	[A]	12	10
Total rated current for electrical isolation	[A]	-	2x 8
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67/IP69K	IP65/IP67/IP69K
Ambient temperature (operation)	[°C]	-30 ... 80	-30 ... 80
Ambient temperature of master cable			
Fixed installation	[°C]	-40 ... 90	-
Flexible installation	[°C]	-5 ... 80	-

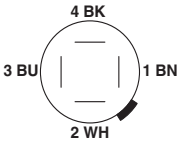
Ordering example for articles with variable master cable:

For a distributor with 4 single occupied QUICKON slots and 34.5 m master cable length, the order data is as follows:

Order No.		Length [m]
1548503	/	34.5
		Step width: 0.5 m; **Maximum length:** 50 m



Connector pin assignment for QUICKON connection, 3-pos.



Connector pin assignment for QUICKON connection, 4-pos.

QUICKON distributor, connection cross-section: 0.34 mm² ... 0.75 mm²

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

Spring-cage connection, horizontal

Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy
Without LED	Universal	120 V	4	-	-	-	1683633	-
Without LED	Universal	120 V	4	5 m	1683662	-	-	-
Without LED	Universal	120 V	4	10 m	1683675	-	-	-
Without LED	Universal	120 V	6	-	-	-	1683646	-
Without LED	Universal	120 V	6	5 m	1683688	-	-	-
Without LED	Universal	120 V	6	10 m	1683691	-	-	-
Without LED	Universal	120 V	8	-	-	-	1683659	-
Without LED	Universal	120 V	8	5 m	1683701	-	-	-
Without LED	Universal	120 V	8	10 m	1683714	-	-	-
With LED	pnp	24 V DC	4	-	-	-	1662939	-
With LED	pnp	24 V DC	4	5 m	1695223	-	-	-
With LED	pnp	24 V DC	4	10 m	1695236	-	-	-
With LED	pnp	24 V DC	4	Variable	1695249	-	-	-
With LED	pnp	24 V DC	6	-	-	-	1662942	-
With LED	pnp	24 V DC	6	5 m	1695252	-	-	-
With LED	pnp	24 V DC	6	10 m	1695265	-	-	-
With LED	pnp	24 V DC	6	Variable	1695278	-	-	-
With LED	pnp	24 V DC	8	-	-	-	1662955	-
With LED	pnp	24 V DC	8	5 m	1695281	-	-	-
With LED	pnp	24 V DC	8	10 m	1695294	-	-	-
With LED	pnp	24 V DC	8	Variable	1695304	-	-	-
With LED	npn	24 V DC	4	-	-	-	1680856	-
With LED	npn	24 V DC	6	-	-	-	1680869	-
With LED	npn	24 V DC	8	-	-	-	1680872	-

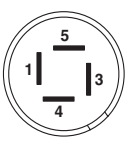
Notes:			
For accessories, refer to page:		133	133
For dimensional drawings, refer to page:		175	175
For circuit diagrams, refer to page:		181	181
For pin assignment, refer to page:		183	183
For master cable data, see page:		163	-

Technical data			
Rated current for each I/O signal	[A]	4	4
Rated current per slot	[A]	4	4
Rated current, total	[A]	12	12
Total rated current for electrical isolation	[A]	-	-
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67	IP65/IP67
Ambient temperature (operation)	[°C]	-25 ... 60	-25 ... 60
Ambient temperature of master cable			
Fixed installation	[°C]	-40 ... 90	-
Flexible installation	[°C]	-5 ... 80	-

Ordering example for articles with variable master cable:

For a distributor with 4 single occupied QUICKON slots and 34.5 m master cable length, the order data is as follows:

Order No.		Length [m]
1695249	/	34.5
		Step width: 0.5 m; **Maximum length:** 50 m



Connector pin assignment for QUICKON connection, 4-pos.

M12 distributor, shielded, metal

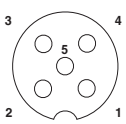
Note:
For further technical data, see:
www.phoenixcontact.net/catalog

With a master cable

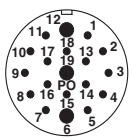
M23 plug-in connection, vertical

Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy
Without LED	Universal	48 V	4	-	-	-	-	**1695757**
Without LED	Universal	48 V	4	5 m	-	**1695786**	-	-
Without LED	Universal	48 V	4	10 m	-	**1695799**	-	-
Without LED	Universal	48 V	6	-	-	-	-	**1695760**
Without LED	Universal	48 V	6	5 m	-	**1695809**	-	-
Without LED	Universal	48 V	6	10 m	-	**1695812**	-	-
Without LED	Universal	48 V	8	-	-	-	-	**1695773**
Without LED	Universal	48 V	8	5 m	-	**1695825**	-	-
Without LED	Universal	48 V	8	10 m	-	**1695838**	-	-

Notes:			
For accessories, refer to page:		**131**	**131**
For dimensional drawings, refer to page:		**177**	**177**
For circuit diagrams, refer to page:		**179**	**179**
For pin assignment, refer to page:		**182**	**182**
For master cable data, see page:		**164**	-
Technical data			
Rated current for each I/O signal	[A]	2	2
Rated current per slot	[A]	4	4
Rated current, total	[A]	12	12
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67	IP65/IP67
Ambient temperature (operation)	[°C]	-25 ... 70	-25 ... 70
Ambient temperature of master cable			
Fixed installation	[°C]	-40 ... 90	-
Flexible installation	[°C]	-5 ... 80	-



Connector pin assignment for M12 socket, 5-pos.



Connector pin assignment for M23 plug-in connection, 19-pos.

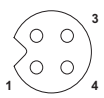
M5 distributor with metal thread

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

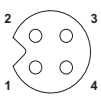
With a master cable

M12 plug-in connection, vertical

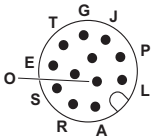
Status indication	Type of signal	Rated voltage	Slots	Cable length	Single occupancy	Double occupancy	Single occupancy	Double occupancy
With LED	pnp	24 V DC	4	-	-	-	1530760	-
With LED	pnp	24 V DC	4	5 m	1530663	1530702	-	-
With LED	pnp	24 V DC	4	10 m	1530676	1530715	-	-
With LED	pnp	24 V DC	8	-	-	-	1530773	-
With LED	pnp	24 V DC	8	5 m	1530689	1530744	-	-
With LED	pnp	24 V DC	8	10 m	1530692	1530757	-	-
Notes:								
For accessories, refer to page:					124		124	
For dimensional drawings, refer to page:					174		174	
For circuit diagrams, refer to page:					178		178	
For pin assignment, refer to page:					182		182	
Technical data								
Rated current for each I/O signal				[A]	1		1	
Rated current per slot				[A]	1		1	
Rated current, total				[A]	3		3	
Degree of protection in acc. with IEC 60529/ EN 60529					IP67		IP67	
Ambient temperature (operation)				[°C]	-25 ... 80		-25 ... 80	
Ambient temperature of master cable								
Fixed installation				[°C]	-30 ... 70		-	
Flexible installation				[°C]	-5 ... 70		-	



Connector pin assignment for M5 socket, 3-pos.



Connector pin assignment for M5 socket, 4-pos.



Connector pin assignment for M12 plug-in connection, 12-pos.

M12 distributor with metal thread for PLC system cabling

The sensor/actuator box has a flat-ribbon cable connector on the rear side allowing direct connection to all commonly used control systems in the market.

The sensor/actuator box is directly mounted on the control cabinet wall. A mounting cutout is the only preparation that is needed. The grommet at the rear side of the box is used for sealing.

The use of standardized and pre-assembled flat-ribbon conductors has exceptionally simplified PLC system cabling.

For power supply, a MINI COMBICON connector is provided at the rear side of the box.

The usual properties of the M12 distributor with metal thread and SPEEDCON are available outside the control cabinet. The box can be connected with sensors or actuators using standardized M12 connectors and sensor/actuator cables.

Notes:

Suitable for SPEEDCON and M12 standard, see page: 68.

For assembled system cables, refer to the INTERFACE catalog.

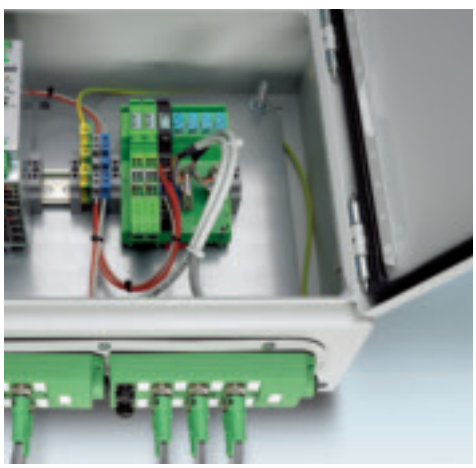
For further technical data, see:
www.phoenixcontact.net/catalog

SACB-8/8-L-PUR SCO FLK...

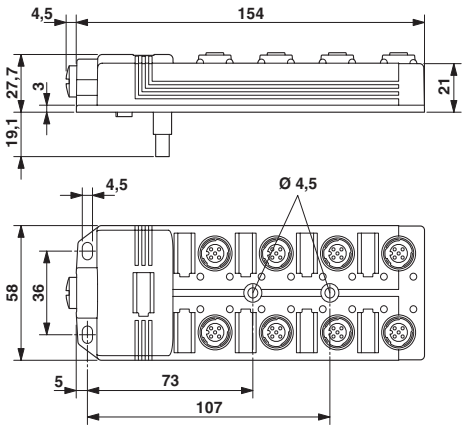
With rear-side FLK pin strip and MINI COMBICON connector

Description	Type	Order No.	Pcs. / Pkt.
Sensor/actuator box, with M12 SPEEDCON quick locking, eight slots, single-occupied, with LEDs, rear-side master cable connection through flat-ribbon cable pin strip and MINI COMBICON connectors for the PLC system cabling, with marking labels	**SACB-8/8-L-PUR SCO FLK14/MCV3P**	**1547928**	1
M12 screw plug with SPEEDCON quick locking For unoccupied M12 sockets of the sensor/actuator cables, boxes and flush-type connectors	**PROT-MS SCO**	**1553129**	5
Marker tags, 5-section, unprinted, labeling with X-PEN, CMS system or BKMT 17.5 x 8 label Lettering field size: 17.5 x 8 mm	**SS-ZB 17,5 WH**	**0804963**	50
Torque screwdriver With preset torque of 0.4 Nm and 4 mm hexagonal drive	**TSD 04 SAC**	**1208429**	1
Nut For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SAC BIT M12-D15**	**1208432**	1
Nut For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SACC BIT M12-D20**	**1208445**	1

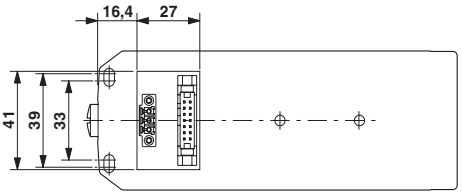
Technical data	
Electrical data	
Rated current for each I/O signal	0.5 A (1 A to 40°C)
Rated current per slot	0.5 A (1 A to 40°C)
Rated current, total	4 A
Rated current, total	8 A (up to 40°C)
Mechanical data	
Sensor/actuator connection system	M12-SPEEDCON-socket
Master cable connection method	FLK14 pin strip, MINI COMBICON 3-pos.
Temperature data	
Ambient temperature (operation)	-30°C ... 80°C



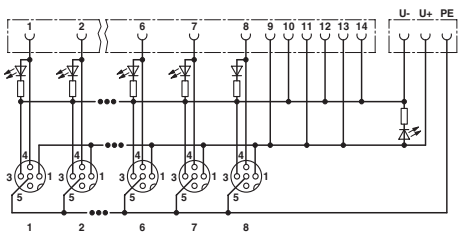
Technical information



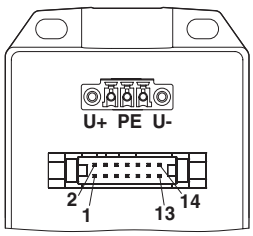
Dimensional drawing



Assembly drawing

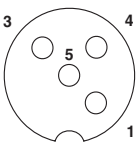


Circuit diagram



Connection assignment

FLK pin strip	M12 slot/pin
1	1 / 4
2	2 / 4
3	3 / 4
4	4 / 4
5	5 / 4
6	6 / 4
7	7 / 4
8	8 / 4
9	1-8 / 1 (+24 V)
11	1-8 / 1 (+24 V)
13	1-8 / 1 (+24 V)
10	1-8 / 3 (0 V)
12	1-8 / 3 (0 V)
14	1-8 / 3 (0 V)



Connector pin assignment of M12 socket, 4-pos.

Accessories for M5 distributor boxes

The PROT M5 screw plug must be used for protecting unoccupied slots against foreign bodies and water. The IP65/67 degree of protection is attained with the screw plug.

The 12-pos. master cable with an M12 socket allows universal pluggability for the distributor box with an M12 plug-in connection.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Type	Order No.	Pcs. / Pkt.
M12 socket, straight, 12-pos., with a connected master cable, for sensor/actuator box with M5 slots ①			
Conductor length: 5 m	**SAC-12P- 5,0-PUR/M12FS MC**	**1530786**	1
Conductor length: 10 m	**SAC-12P-10,0-PUR/M12FS MC**	**1530799**	1
M5 screw plug ② For unoccupied M5 sockets of the sensor/actuator cables, boxes and flush-type connectors	**PROT-M5**	**1533288**	10

Accessories for M8 distributor boxes with pluggable 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 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.

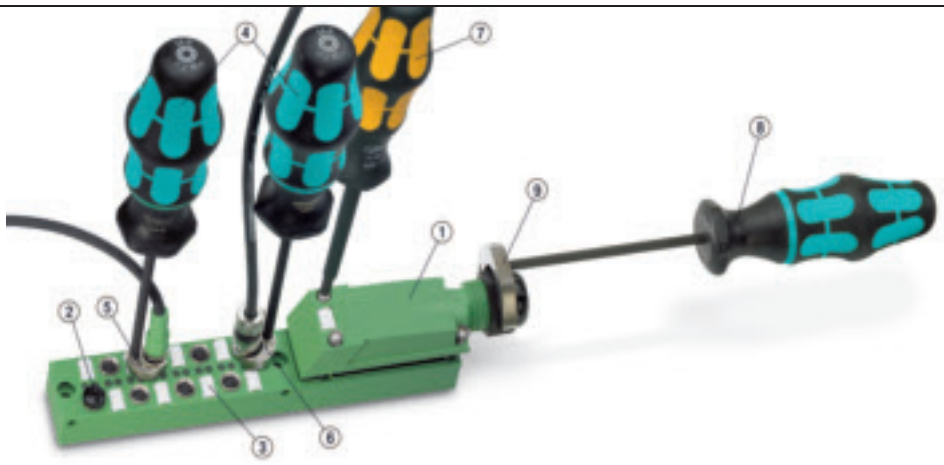
The screw plug PROT M8 – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Sensor/actuator connector hood, with marking label, for sensor/actuator box with: ①			
Four single-occupancy M8 slots	**SACB-C-H180- 4/3-M8**	**1521229**	1
Six single-occupancy M8 slots	**SACB-C-H180- 6/3-M8**	**1521216**	1
Eight 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
M8 screw plug ② For unoccupied M8 sockets of the sensor/actuator cable, boxes and flush-type connectors	**PROT-M8**	**1682540**	5
Zack marker strip flat, 10-section ③			
- Unprinted	**ZBF10:UNBEDRUCKT**	**0809997**	10
- Can be labeled	**ZBF10:SO/CMS**	**0809984**	1
Torque screwdriver ④ With preset torque of 0.2 Nm and 4 mm hexagonal drive	**TSD 02 SAC**	**1208487**	1
Nut ⑤ For mounting sensor/actuator cables with M8 connectors, for 4 mm hexagonal screwdriver	**SAC BIT M8-D10**	**1208461**	1
Nut ⑥ For mounting freely assembled SACC M8 connectors with lengthwise knurls, for 4 mm hexagonal screwdriver	**SACC BIT M8-D12**	**1208474**	1
Screwdriver ⑦ Size: PZ2 x 100 mm, length: 205 mm	**SZK PZ2**	**1206463**	10
Torque screwdriver ⑧ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	**TSD 25 SAC**	**1212315**	1
Nut ⑨ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	**SAC BIT HOOD-W 24**	**1212486**	1

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 labeled with Zack marker strips. These can be labeled by hand or with a plotter.

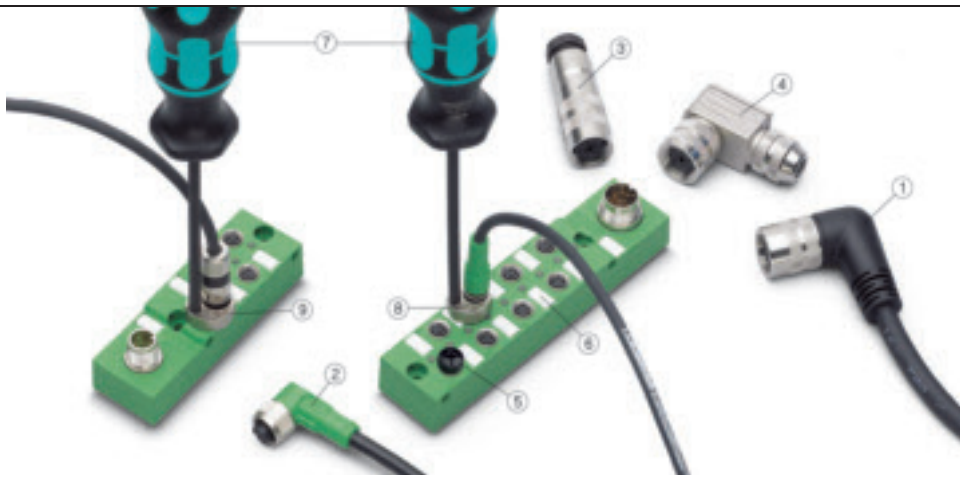
The torque screwdriver with matching nuts is the ideal tool for screwing together all M8 connectors with lengthwise knurl.

The screw plug PROT M8 – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description		Type	Order No.	Pcs. / Pkt.
M16 socket, angled, with a master cable, for sensor/actuator box with:	①			
4 slots, cable length: 5 m		**SAC-8P- 5,0-PUR/M16FR**	**1693681**	1
4 slots, cable length: 10 m		**SAC-8P-10,0-PUR/M16FR**	**1693694**	1
6 slots, cable length: 5 m		**SAC-10P- 5,0-PUR/M16FR**	**1693704**	1
6 slots, cable length: 10 m		**SAC-10P-10,0-PUR/M16FR**	**1693717**	1
8 slots, cable length: 5 m		**SAC-12P- 5,0-PUR/M16FR**	**1693720**	1
8 slots, cable length: 10 m		**SAC-12P-10,0-PUR/M16FR**	**1693733**	1
10 slots, cable length: 5 m		**SAC-14P- 5,0-PUR/M16FR**	**1693746**	1
10 slots, cable length: 10 m		**SAC-14P-10,0-PUR/M16FR**	**1693759**	1
M12 socket, angled, with a connected master cable, variable cable length (see ordering example), for sensor/actuator box with:	②			
Four slots		**SAC-6P-M12FR-PURMC/**	**1520987**	1
Six slots		**SAC-8P-M12FR-PURMC/**	**1520990**	1
M16 socket, 14-pos., straight, freely configurable, with solder connection, for an external cable diameter of 6.0 mm ... 8.0 mm	③	**SACC-M16FS-14CON-M**	**1500554**	1
M16 socket, 14-pos., angled, freely configurable, with solder connection, for an external cable diameter of 6.0 mm ... 8.0 mm	④	**SACC-M16FR-14CON-M**	**1500253**	1
M8 screw plug For unoccupied M8 sockets of the sensor/actuator cable, boxes and flush-type connectors	⑤	**PROT-M8**	**1682540**	5
Zack marker strip flat, 10-section	⑥			
- Unprinted		**ZBF10:UNBEDRUCKT**	**0809997**	10
- Can be labeled		**ZBF10:SO/CMS**	**0809984**	1
Torque screwdriver With preset torque of 0.2 Nm and 4 mm hexagonal drive	⑦	**TSD 02 SAC**	**1208487**	1
Nut For mounting sensor/actuator cables with M8 connectors, for 4 mm hexagonal screwdriver	⑧	**SAC BIT M8-D10**	**1208461**	1
Nut For mounting freely assembled SACC M8 connectors with lengthwise knurls, for 4 mm hexagonal screwdriver	⑨	**SACC BIT M8-D12**	**1208474**	1

Ordering example for socket with variable master cable:

For a box with 6 single occupied slots and 15 m master cable length, the order data is as follows:

Order No.		Length [m]
1520990	/	15,0

Accessories for M12 distributor boxes with plastic thread and pluggable screw connection

The torque screwdriver with an M12 nut is available for screwing in all M12 connectors with a lengthwise knurl.

The screw plug PROT M12 – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

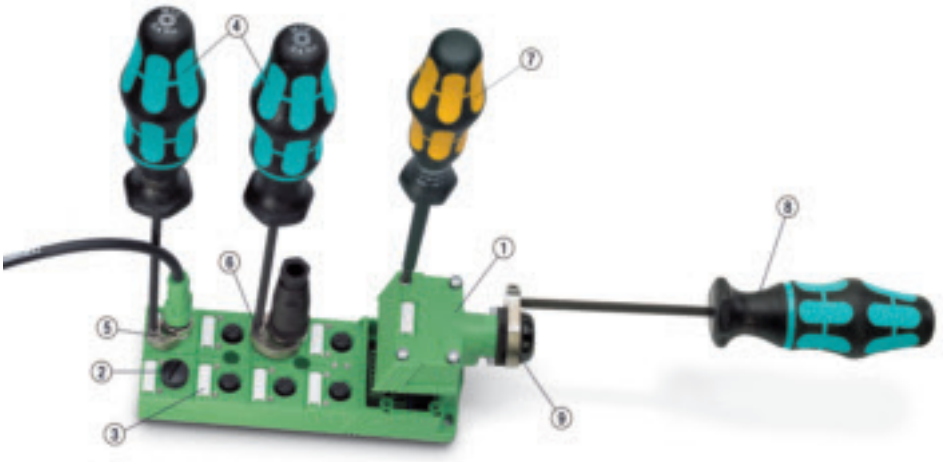
For the distributors, we offer a replacement connector hood, a matching screwdriver for fastening the hood as well as a torque screwdriver with a W24 nut for tightening the pressure nuts to a defined value.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Connector hood with an integrated connector for M12 sensor/actuator boxes with plastic thread and pluggable screw connection, for 4, 6 or 8 slots ①	**SACB-C-H180 8/16**	**1695977**	10
M12 screw plug ② For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors	**PROT-M12**	**1680539**	5
Labeling material ③ Zack marker strip, unprinted	**ZBN 18:UNBEDRUCKT**	**2809128**	10
Torque screwdriver ④ With preset torque of 0.4 Nm and 4 mm hexagonal drive	**TSD 04 SAC**	**1208429**	1
Nut ⑤ For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SAC BIT M12-D15**	**1208432**	1
Nut ⑥ For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SACC BIT M12-D20**	**1208445**	1
Screwdriver ⑦ Size: PZ2 x 100 mm, length: 205 mm	**SZK PZ2**	**1206463**	10
Torque screwdriver ⑧ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	**TSD 25 SAC**	**1212315**	1
Nut ⑨ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	**SAC BIT HOOD-W 24**	**1212486**	1

Accessories for M12 distributor boxes with plastic thread and M23 plug-in connection

We offer an extensive range of sockets for the M12 distributor with M23 plug-in connection. Pre-assembled straight and angled M23 sockets with a master cable and versions for free assembly are available. All versions are available for single (12-pos. design) or double-occupied (19-pos. design) distributor boxes.

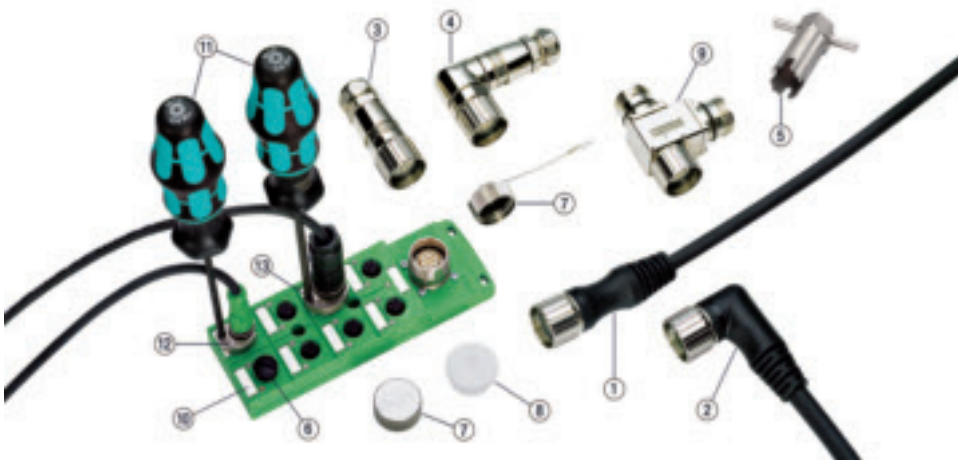
The screw plug PROT M12 for unoccupied slots and the metal protective cap MSK for the M23 plug-in connection protect the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The torque screwdriver with matching nuts is the ideal tool for screwing together all M12 connectors with lengthwise knurl.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description		Type	Order No.	Pcs. / Pkt.
M23 socket, straight	①			
12-pos., with a 5 m master cable		**RCK-TGUM/BL12/ 5,0PUR-U**	**1684014**	1
12-pos., with a 10 m master cable		**RCK-TGUM/BL12/10,0PUR-U**	**1684027**	1
19-pos., with a 5 m master cable		**RCK-TGUM/BL16+3/ 5,0PUR-U**	**1684056**	1
19-pos., with a 10 m master cable		**RCK-TGUM/BL16+3/10,0PUR-U**	**1684069**	1
M23 socket, angled	②			
12-pos., with a 5 m master cable		**RCK-TWUM/BL12/ 5,0PUR-U**	**1684030**	1
12-pos., with a 10 m master cable		**RCK-TWUM/BL12/10,0PUR-U**	**1684043**	1
19-pos., with a 5 m master cable		**RCK-TWUM/BL16+3/ 5,0PUR-U**	**1684072**	1
19-pos., with a 10 m master cable		**RCK-TWUM/BL16+3/10,0PUR-U**	**1684085**	1
M23 socket, straight, freely configurable, with solder connection	③			
12-pos., cable Ø: 8 mm … 12 mm		**V-RC/TGUM 11/KVD 11/LBL 12**	**1000041**	1
19-pos., cable Ø: 10 mm … 14 mm		**V-RC/TGUM 13/KVD 13/LBL 16+3**	**1000042**	1
M23 socket, angled, freely configurable, with solder connection	④			
12-pos., cable Ø: 8 mm … 12 mm		**V-RC/TWUM 11/KVD 11/LBL 12**	**1000043**	1
19-pos., cable Ø: 10 mm … 14 mm		**V-RC/TWUM 13/KVD 13/LBL 16+3**	**1000044**	1
Special pipe spanner	⑤			
Auxiliary tool for mounting the M23 connector housing that can be assembled		**PLUSCON-RCS**	**1665062**	1
M12 screw plug	⑥			
For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors		**PROT-M12**	**1680539**	5
M23 sealing cap made of metal, for unoccupied M23 connectors	⑦			
- without steel wire		**MSK 1**	**1665897**	1
- with steel wire		**MSK 2**	**1665907**	1
Sealing cap made of plastic, for unoccupied M23 connectors	⑧	**KSK 1**	**1685013**	10
M23 T distributor, 12-pos.,	⑨			
With an M23 socket and two M23 plugs		**RC-T 12/1BU2ST**	**1685107**	1
Labeling material	⑩			
Zack marker strip, unprinted		**ZBN 18:UNBEDRUCKT**	**2809128**	10
Torque screwdriver	⑪			
With preset torque of 0.4 Nm and 4 mm hexagonal drive		**TSD 04 SAC**	**1208429**	1
Nut	⑫			
For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver		**SAC BIT M12-D15**	**1208432**	1
Nut	⑬			
For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver		**SACC BIT M12-D20**	**1208445**	1

Accessories for M12 distributor boxes with plastic thread and spring-cage connection

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 screw plug PROT M12 – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

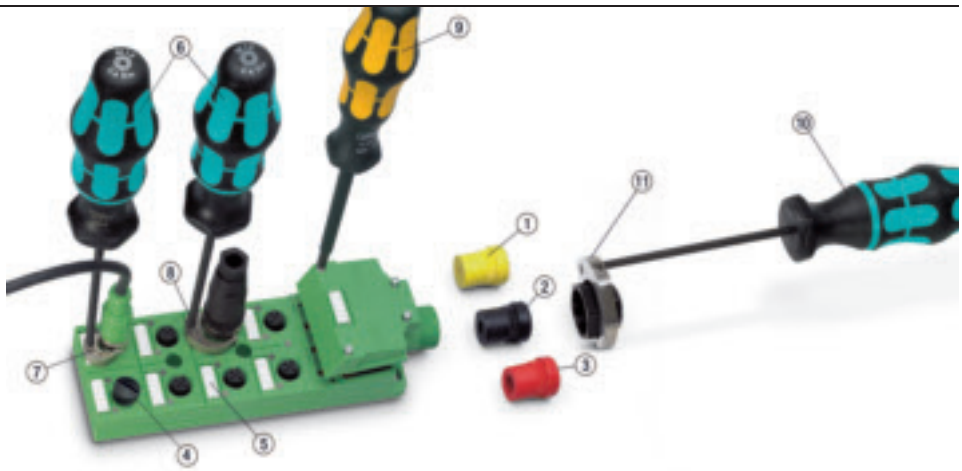
The torque screwdriver with an M12 nut is the ideal tool for screwing in all M12 connectors with lengthwise knurl.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Rubber seal for Pg screw connection 13.5 ① For cable Ø: 4.0 mm ... 6.5 mm	SACB-D PG 13,5 (4,0-6,5) YE	1680377	10
Rubber seal for Pg screw connection 13.5 ② For cable Ø: 6.5 mm ... 9.5 mm	SACB-D PG 13,5 (6,5-9,5) BK	1680380	10
Rubber seal for Pg screw connection 13.5 ③ For cable Ø: 9.0 mm ... 13.0 mm	SACB-D PG 13,5 (9,0-13,0) RD	1680393	10
M12 screw plug ④ For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors	PROT-M12	1680539	5
Labeling material ⑤ Zack marker strip, unprinted	ZBN 18:UNBEDRUCKT	2809128	10
Torque screwdriver ⑥ With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1
Nut ⑦ For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	SAC BIT M12-D15	1208432	1
Nut ⑧ For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	SACC BIT M12-D20	1208445	1
Screwdriver ⑨ Size: PZ1 x 80 mm, length: 161 mm	SZK PZ1	1206450	10
Torque screwdriver ⑩ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	TSD 25 SAC	1212315	1
Nut ⑪ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	SAC BIT HOOD-W 24	1212486	1

Accessories for M12 distributor boxes with metal thread and pluggable 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 screw plug PROT-MS SCO – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

Notes:

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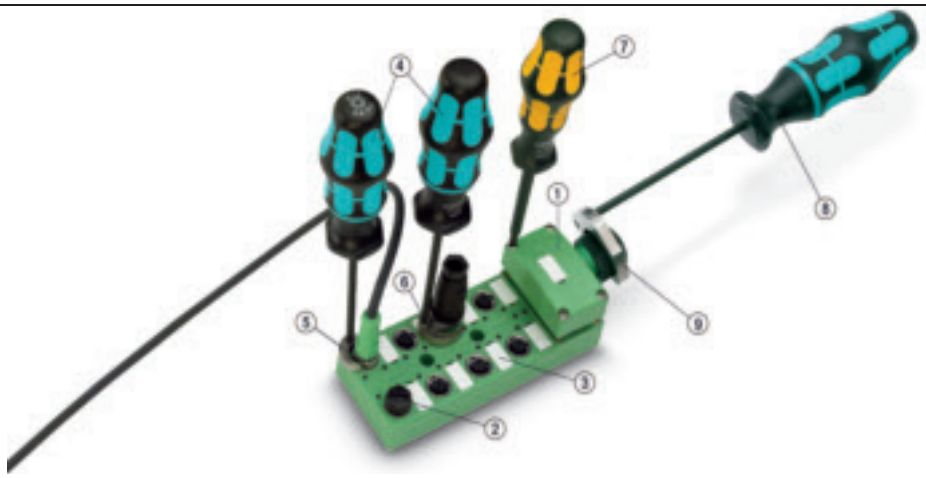
For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Connector hood with an integrated connector, for M12 sensor/actuator boxes with metal thread and pluggable screw connection, for 4, 6 or 8 slots ①	SACB-C-H180 8/16 SCO	1516713	10
M12 screw plug with SPEEDCON quick locking ② For unoccupied M12 sockets of the sensor/actuator cables, boxes and flush-type connectors	PROT-MS SCO	1553129	5
Marker tags, 5-section, unprinted, labeling with X-PEN, CMS system or BKMT 17.5 x 8 label ③ Lettering field size: 17.5 x 8 mm	SS-ZB 17,5 WH	0804963	50
Torque screwdriver ④ With preset torque of 0.4 Nm and 4 mm hexagonal drive	TSD 04 SAC	1208429	1
Nut ⑤ For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	SAC BIT M12-D15	1208432	1
Nut ⑥ For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	SACC BIT M12-D20	1208445	1
Screwdriver ⑦ Size: PZ1 x 80 mm, length: 161 mm	SZK PZ1	1206450	10
Torque screwdriver ⑧ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	TSD 25 SAC	1212315	1
Nut ⑨ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	SAC BIT HOOD-W 24	1212486	1

Accessories for shielded M12 distributor boxes

For the distributors, suitable shielded female connectors are available in angled design with a pre-assembled master cable. Further accessories include straight and angled M23 sockets for free assembly.

The screw plug PROT M12 SH – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

The torque screwdriver with matching nuts is the ideal tool for screwing together all M12 connectors with lengthwise knurl.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Type	Order No.	Pcs. / Pkt.
M23 socket, 19-pos., angled, shielded, with connected master cable ①			
Conductor length: 5 m	**RCK-TWGM/BL16+3/ 5,0PUR SH**	**1519529**	1
Conductor length: 10 m	**RCK-TWGM/BL16+3/10,0PUR SH**	**1511828**	1
M23 socket, 19-pos., angled, shielded, freely configurable, with solder connection, for cable Ø: 9.5 mm ... 14.5 mm ②	**RC/TGGM/KVD/LBL 16+3**	**1685505**	1
M23 socket, 19-pos., angled, shielded, freely configurable, with solder connection, for cable Ø: 9.5 mm ... 14.5 mm ③	**RC/TWGM/KVD/LBL 16+3**	**1685518**	1
Special pipe spanner ④ Auxiliary tool for mounting the M23 connector housing that can be assembled	**PLUSCON-RCS**	**1665062**	1
Screw plug M12, made of metal ⑤ For unoccupied M12 sockets of the shielded sensor/actuator cables, boxes and flush-type connectors	**PROT-M12 SH**	**1503302**	5
M23 sealing cap made of metal, for unoccupied M23 connectors ⑥			
- without steel wire	**MSK 1**	**1665897**	1
- with steel wire	**MSK 2**	**1665907**	1
Sealing cap made of plastic, for unoccupied M23 connectors ⑦	**KSK 1**	**1685013**	10
Labeling material ⑧ Zack marker strip, unprinted	**ZBN 18:UNBEDRUCKT**	**2809128**	10
Torque screwdriver ⑨ With preset torque of 0.4 Nm and 4 mm hexagonal drive	**TSD 04 SAC**	**1208429**	1
Nut ⑩ For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SAC BIT M12-D15**	**1208432**	1
Nut ⑪ For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SACC BIT M12-D20**	**1208445**	1

Accessories for QUICKON distributor boxes with a connection cross-section of 0.14 mm² … 0.34 mm²

The closing cap Q-PROT 9/11 – 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 connector hood, 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.

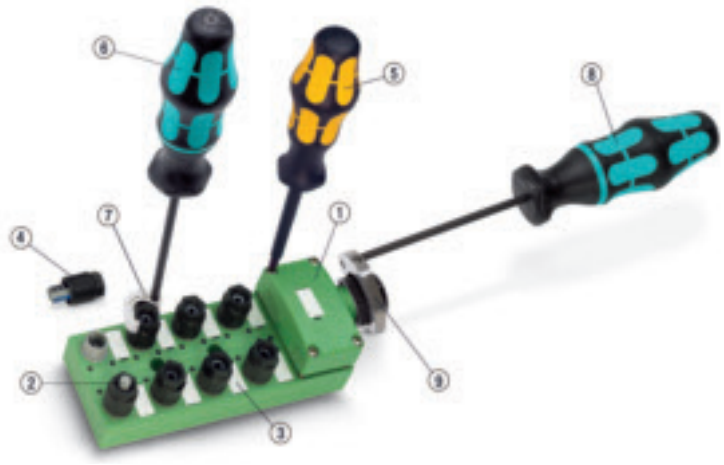
The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

The QUICKON set comprising a splice ring, a pressure nut, and a line seal serves for replacement purposes if necessary.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Connector hood with an integrated connector, for sensor/actuator boxes with QUICKON fast connection technology and pluggable screw connection, for 4, 6 or 8 slots ①	SACB-C-H180 8/4 QO-0,34	1560235	1
Closing cap ② For Pg9/ Pg11, to close unoccupied connections	Q-PROT 9/11	1670235	10
Marker tags, 5-section, unprinted, labeling with X-PEN, CMS system or BKMT 17.5 x 8 label ③ Lettering field size: 17.5 x 8 mm	SS-ZB 17,5 WH	0804963	50
QUICKON set for replacement purposes, consisting of splice ring, pressure nut and conductor seal ④	QO-SET	1548626	20
Screwdriver ⑤ Size:PZ1 x 80 mm, length: 161 mm	SZK PZ1	1206450	10
Torque screwdriver ⑥ With a preset torque of 2.0 Nm and 4 mm hexagonal drive	TSD 20 SAC	1212020	1
Nut ⑦ For the reliable tightening of the pressure nuts with a wrench size of 13 mm, for 4 mm hexagonal screwdriver	SAC BIT QUICKON-W13	1212033	1
Torque screwdriver ⑧ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	TSD 25 SAC	1212315	1
Nut ⑨ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	SAC BIT HOOD-W 24	1212486	1

Accessories for QUICKON distributor boxes with a connection cross-section of 0.34 mm² … 0.75 mm²

The 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.

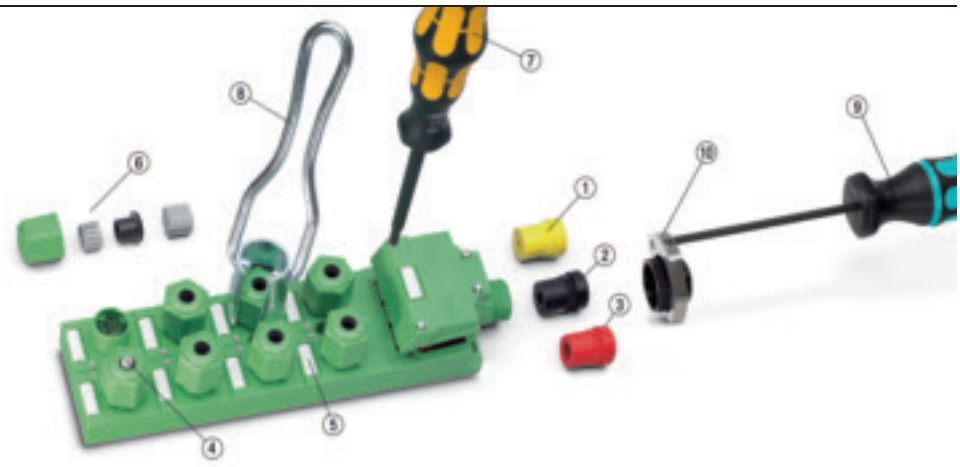
The closing cap Q-PROT 9/11 – for unoccupied slots – protects the distributors against foreign bodies and water. The IP65/67 degree of protection is attained.

The slots can be labeled with Zack marker strips. These can be labeled by hand or with a plotter.

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

For further technical data, see:
www.phoenixcontact.net/catalog



Description		Type	Order No.	Pcs. / Pkt.
Rubber seal for Pg screw connection 13.5 For cable Ø: 4.0 mm ... 6.5 mm	①	SACB-D PG 13,5 (4,0-6,5) YE	1680377	10
Rubber seal for Pg screw connection 13.5 For cable Ø: 6.5 mm ... 9.5 mm	②	SACB-D PG 13,5 (6,5-9,5) BK	1680380	10
Rubber seal for Pg screw connection 13.5 For cable Ø: 9.0 mm ... 13.0 mm	③	SACB-D PG 13,5 (9,0-13,0) RD	1680393	10
Closing cap for Pg9/ Pg11, to close unoccupied connections	④	Q-PROT 9/11	1670235	10
Labeling material Zack marker strip, unprinted	⑤	ZBN 18:UNBEDRUCKT	2809128	10
QUICKON set for replacement purposes, consisting of pressure nut, cap, conductor seal and splice ring	⑥	Q SET-11/4 COD1 SACB-Q	1670743	25
Screwdriver Size:PZ1 x 80 mm, length: 161 mm	⑦	SZK PZ1	1206450	10
Allen wrench, for loosening and fastening the QUICKON union nut, WAF 22 mm	⑧	QSS 22	1670206	1
Torque screwdriver With a preset torque of 2.5 Nm and 4 mm hexagonal drive	⑨	TSD 25 SAC	1212315	1
Nut 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

Cable rings for sensor cables

The standard SAC conductors are also available in cable rings of 100 meters for connecting the freely configurable M12/M8 connectors.

For further information on the range of conductors for sensor/actuator cables, refer to page 150.

SAC-...P-100,0-P...

Cable sheath: black

Description	Type	Order No.	Pcs. / Pkt.
Cable ring, PUR halogen-free, unshielded			
3 x 0.25 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PUR/0,25**	**1501689**	1
3 x 0.34 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PUR/0,34**	**1501650**	1
4 x 0.25 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PUR/0,25**	**1501692**	1
4 x 0.34 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PUR/0,34**	**1501663**	1
5 x 0.34 mm², conductor colors: brown / white / blue / black /green-yellow	**SAC-5P-100,0-PUR/0,34**	**1501676**	1
6 x 0.25 mm², conductor colors: brown / white / blue / black /gray / pink	**SAC-6P-100,0-PUR/0,25**	**1550614**	1
8 x 0.25 mm², conductor colors: white / brown / green / yellow / gray / pink / blue / red	**SAC-8P-100,0-PUR/0,25**	**1550630**	1
Cable ring, PUR halogen-free, shielded			
3 x 0.25 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PUR/SH-0,25**	**1526525**	1
3 x 0.34 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PUR/SH-0,34**	**1501702**	1
4 x 0.25 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PUR/SH-0,25**	**1535794**	1
4 x 0.34 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PUR/SH-0,34**	**1501715**	1
5 x 0.34 mm², conductor colors: brown / white / blue / black /green-yellow	**SAC-5P-100,0-PUR/SH-0,34**	**1501728**	1
6 x 0.14 mm², conductor colors: brown / white / blue / black /gray / pink	**SAC-6P-100,0-PUR/SH-0,14**	**1550627**	1
8 x 0.25 mm², conductor colors: white / brown / green / yellow / gray / pink / blue / red	**SAC-8P-100,0-PUR/SH-0,25**	**1550643**	1
Cable ring, PVC, unshielded			
3 x 0.25 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PVC/0,25**	**1501854**	1
3 x 0.34 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PVC/0,34**	**1501825**	1
4 x 0.25 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PVC/0,25**	**1501867**	1
4 x 0.34 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PVC/0,34**	**1501838**	1
5 x 0.34 mm², conductor colors: brown / white / blue / black /green-yellow	**SAC-5P-100,0-PVC/0,34**	**1501841**	1
6 x 0.25 mm², conductor colors: brown / white / blue / black /gray / pink	**SAC-6P-100,0-PVC/0,25**	**1550685**	1
8 x 0.25 mm², conductor colors: white / brown / green / yellow / gray / pink / blue / red	**SAC-8P-100,0-PVC/0,25**	**1550698**	1
Cable ring, PVC, shielded			
3 x 0.34 mm², conductor colors: brown / blue / black	**SAC-3P-100,0-PVC/SH-0,34**	**1550656**	1
4 x 0.34 mm², conductor colors: brown / white / blue / black	**SAC-4P-100,0-PVC/SH-0,34**	**1550669**	1
5 x 0.34 mm², shielded, conductor colors: brown / white / blue / black / gray	**SAC-5P-100,0-PVC/SH-0,34**	**1550672**	1
8 x 0.25 mm², conductor colors: white / brown / green / yellow / gray / pink / blue / red	**SAC-8P-100,0-PVC/SH-0,25**	**1550708**	1

Master cable rings for sensor/actuator boxes

The master cable rings of up to 50 m can be delivered for the distributor boxes with a spring-cage connection or a pluggable screw connection. The master cables can also be connected to the M23 sockets that can be assembled.

For further information on the conductor range for sensor/actuator boxes, please refer to page 162

Note:

More marking materials and tools can be found in the CLIPLINE catalog.

SACB-... PUR...

Master cable sheath: black

Description	Type	Order No.	Pcs. / Pkt.
Master cable ring with PE conductor, PUR/PVC, unshielded, length: 50 m			
4 x 0.34 mm² / 3 x 0.75 mm²	**SACB- 4X0,34/ 3X0,75-50,0 PUR**	**1503328**	1
6 x 0.34 mm² / 3 x 0.75 mm²	**SACB- 6X0,34/ 3X0,75-50,0 PUR**	**1503331**	1
8 x 0.34 mm² / 3 x 0.75 mm²	**SACB- 8X0,34/ 3X0,75-50,0 PUR**	**1503344**	1
8 x 0.5 mm² / 3 x 1.0 mm²	**SACB- 8X0,5/ 3X1,0-50,0 PUR**	**1503357**	1
12 x 0.5 mm² / 3 x 1.0 mm²	**SACB-12X0,5/ 3X1,0-50,0 PUR**	**1503360**	1
16 x 0.5 mm² / 3 x 1.0 mm²	**SACB-16X0,5/ 3X1,0-50,0 PUR**	**1503373**	1
Master cable ring with PE conductor, PUR/PVC, unshielded, length: 200 m			
16 x 0.5 mm² / 3 x 1.0 mm²	**SACB-16X0,5/ 3X1,0-200,0 PUR**	**1559893**	1
Master cable ring with PE conductor, PUR/PP, unshielded, length: 50 m			
16 x 0.5 mm² / 3 x 1.0 mm²	**SACB-16X0,5/ 3X1,0-50,0 VPUR**	**1430938**	1
Master cable ring without PE conductor, PUR/PVC, unshielded, length: 50 m			
4 x 0.34 mm² / 2 x 0.75 mm²	**SACB- 4X0,34/2X0,75-50 PUR**	**1517576**	1
6 x 0.34 mm² / 2 x 0.75 mm²	**SACB- 6X0,34/2X0,75-50 PUR**	**1517589**	1
8 x 0.34 mm² / 2 x 0.75 mm²	**SACB- 8X0,34/2X0,75-50 PUR**	**1517592**	1
10 x 0.34 mm² / 2 x 0.75 mm²	**SACB-10X0,34/2X0,75-50 PUR**	**1517602**	1
16 x 0.34 mm² / 2 x 0.75 mm²	**SACB-16X0,34/2X0,75-50 PUR**	**1539350**	1

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.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Type	Order No.	Pcs. / Pkt.
Torque screwdriver ① With preset torque of 0.2 Nm and 4 mm hexagonal drive	**TSD 02 SAC**	**1208487**	1
Nut ② For mounting sensor/actuator cables with M8 connectors, for 4 mm hexagonal screwdriver	**SAC BIT M8-D10**	**1208461**	1
Nut ③ For mounting freely assembled SACC M8 connectors with lengthwise knurls, for 4 mm hexagonal screwdriver	**SACC BIT M8-D12**	**1208474**	1
Torque screwdriver ④ With preset torque of 0.4 Nm and 4 mm hexagonal drive	**TSD 04 SAC**	**1208429**	1
Nut ⑤ For mounting sensor/actuator cables with M12 connectors and for M12 connectors with QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SAC BIT M12-D15**	**1208432**	1
Nut ⑥ For mounting freely assembled SACC M12 connectors, except QUICKON fast connection technology, for 4 mm hexagonal screwdriver	**SACC BIT M12-D20**	**1208445**	1

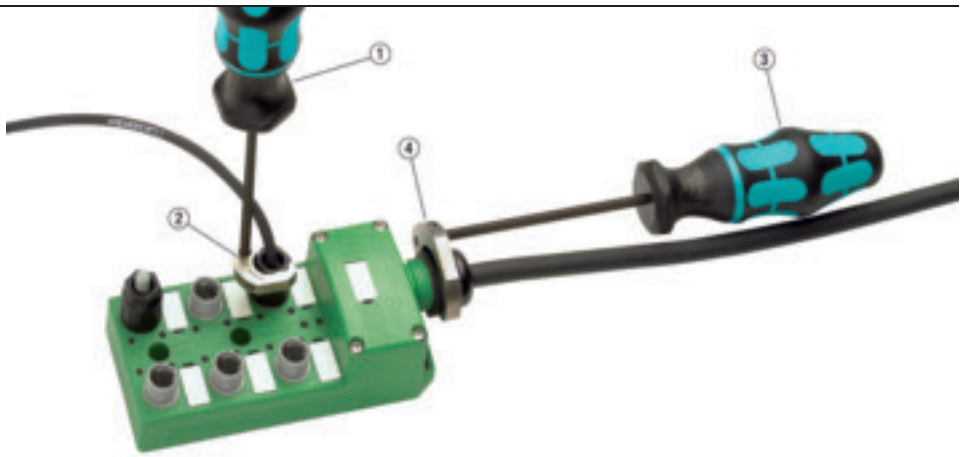
Assembly tools and marking material for the sensor/actuator cabling

Tightening of the cable gland to a defined extent is decisive for a safe strain relief and a high IP degree of protection. Torque screw drivers with a preset torque are available for this purpose. The top units help for a reliable transfer of the tightening forces. The handling is similar to that of the M8 and M12 top units and quick tracking is also possible.

Phoenix Contact delivers all sensor/actuator cables that have molded connectors with marker carriers. The use of marking labels enables easy and clear allocation of plug-in connections in the field.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog



Description	Type	Order No.	Pcs. / Pkt.
Torque screwdriver ① With a preset torque of 2.0 Nm and 4 mm hexagonal drive	**TSD 20 SAC**	**1212020**	1
Nut ② For the reliable tightening of the pressure nuts with a wrench size of 13 mm, for 4 mm hexagonal screwdriver	**SAC BIT QUICKON-W13**	**1212033**	1
Torque screwdriver ③ With a preset torque of 2.5 Nm and 4 mm hexagonal drive	**TSD 25 SAC**	**1212315**	1
Nut ④ For reliable tightening of the pressure nuts with a wrench size of 24 mm, for 4 mm hexagonal screwdriver	**SAC BIT HOOD-W 24**	**1212486**	1

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.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Type	Order No.	Pcs. / Pkt.
M5 screw plug ① For unoccupied M5 sockets of the sensor/actuator cables, boxes and flush-type connectors	**PROT-M5**	**1533288**	10
M8 screw plug ② For unoccupied M8 sockets of the sensor/actuator cable, boxes and flush-type connectors	**PROT-M8**	**1682540**	5
M12 screw plug ③ For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors	**PROT-M12**	**1680539**	5
M12 screw plug with SPEEDCON quick locking ④ For unoccupied M12 sockets of the sensor/actuator cables, boxes and flush-type connectors	**PROT-MS SCO**	**1553129**	5
M12 sealing cap ⑤ For unoccupied M12 connectors of the sensor/actuator cable, flush-type connectors and I/O devices in the field	**PROT-M12 FS**	**1560251**	5
Screw plug M12, made of metal ⑥ For unoccupied M12 sockets of the shielded sensor/actuator cables, boxes and flush-type connectors	**PROT-M12 SH**	**1503302**	5
Metal M12 sealing cap ⑦ For unoccupied M12 connectors of the sensor/actuator cable, flush-type connectors and I/O devices in the field	**PROT-M12 FS-M**	**1430488**	10
M12 screw plug made of high-grade steel ⑧ For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors for the food industry	**PROT-M12 FB**	**1555538**	5
Closing cap ⑨ For Pg9/ Pg11, to close unoccupied connections	**Q-PROT 9/11**	**1670235**	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.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Type	Order No.	Pcs. / Pkt.
Plastic screw plug with holding band, for closing unoccupied **sockets** ①			
M8	**PROT-M 8 MS-PA-CHAIN**	**1430860**	10
M12	**PROT-M12 MS-PA-CHAIN**	**1430899**	5
7/8"	**PROT-MINMS-PA-CHAIN**	**1430925**	10
Plastic sealing cap with holding band, for closing unoccupied **connectors** ②			
M8	**PROT-M 8 FS-PA-CHAIN**	**1430857**	10
M12	**PROT-M12 FS-PA-CHAIN**	**1430873**	5
7/8"	**PROT-MINFS-PA-CHAIN**	**1430912**	10
Metal sealing cap with fixing chain, for closing unoccupied **connectors** ③			
M12	**PROT-M12 FS-M-CHAIN**	**1430491**	10

Accessories for the flush-type connectors

Special fixing nuts are available for EMC-compliant installation of M12 flush-type connectors on coated or varnished housing surfaces. When tightened, these cut through the surface coating, thus establishing a contact between the housing and the connector.

Alternatively, flat seals can be used as a seal between the housing panel and the device connector. Flat seals must be preferred in case of thin walls as the housing cutouts need not be handled here.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

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

Hygiene safety is indispensable in the food industry as well as in medical engineering. In order to rule out all types of risks, the food and beverages industry, laboratories and manufacturers of production systems have been using high-grade steel for several decades. Smooth surfaces do not offer a foothold and breeding ground to micro-organisms, and therefore fulfill the most stringent hygiene-related requirements. Due to their corrosion resistance, they can be cleaned without any problem even using aggressive methods.

All metallic components in our range for the food and beverages industry are made from high-grade steel 1.4404 in order to fulfill these requirements.

An ever increasing number of our foodstuffs is marketed in packaged form. The variety of materials, shape and function of packaging is continuously increasing. There is a risk of foodstuffs getting contaminated due to the package components.

The packaging must fulfill the following requirements:

– Coloring agents (additives) must be toxicologically harmless
– Ingredients should not migrate.
– Ingredients should not change the appearance and taste of foodstuffs

During the manufacturing process of foodstuffs, it must however be ensured that the production machines also fulfill these requirements. The plastics used (PVC cables and handle materials) for sensor/actuator cables are listed in American FDA Guidelines (Food and Drug Administration). The task of the FDA is to protect the health of people in the USA. The FDA checks the safety and effectiveness of human and animal drugs, biological products, medical products, foodstuffs and radiating devices.

We have also tested the material resistance of the plastics and metals used for our sensor/actuator cables and distributor boxes against commonly used cleaning agents and disinfectants.

The material resistance was tested and passed using the following cleaning agents/ disinfectants:

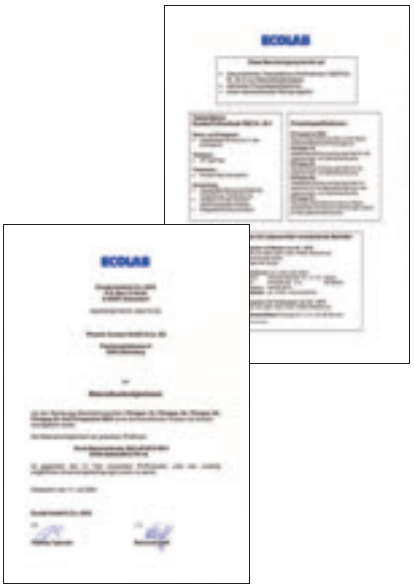
– P3-topactive DES: Acidic disinfectant based on hydrogen peroxide/peracetic acid

– P3-topax 19: Alkaline foam cleaning agent for food and beverages industry

– P3-topax 56: Acidic foam cleaning agent for food and beverages industry

– P3-topax 66: Alkaline foam cleaning agent with active chlorine for cleaning the systems in the food and beverages industry

– P3-topax 91: Neutral disinfectant based on quaternary ammonium compounds (QAV) for the food and beverages industry



M12 high-grade steel flush-type sockets and connectors with dip solder contacts and attached individual wires are available for PCB assembly for connection to the device side. Moreover, the range also includes high-grade steel connectors for free assembly as far as flexible solutions are concerned.

Our sensor/actuator cables with the 511 cable are manufactured using the FDA-approved materials. This ensures that a migration and contamination of foodstuffs is ruled out if one comes in contact with them. Cables are available in 4-pos. versions and with all commonly used connector and socket versions.

The housing of the sensor/actuator boxes for the food and beverages industry is made of 1.4404 high-grade steel. The box can be cleaned extremely well due to the use of good high-grade steel and distributors having 'feet'. The distributors fulfill the IP67k degree of protection.

The program covers double-occupied boxes with a 5 and 10 m long master cable.

M12, flush-type connectors, front and rear mounting

For connector pin assignments, see page 61.
Connector housing made of stainless steel 1.4404.
For further technical data, see:
www.phoenixcontact.net/catalog

Front mounting, with halogen-free litz wires

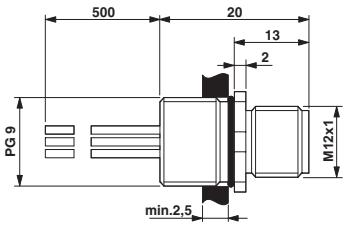
Front mounting, with halogen-free litz wires, can be positioned

Rear mounting, with halogen-free litz wires

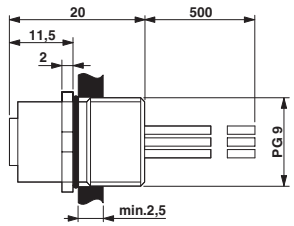
Rear mounting, wave soldering

Description	No. of pos.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
M12 pin	4	**1554555**	1	**1554610**	1	-	-	-	-
M12 socket	4	**1555448**	1	**1554649**	1	-	-	-	-
M12 pin	5	**1554568**	1	**1554623**	1	**1554681**	1	**1554746**	20
M12 socket	5	**1699863**	1	**1554652**	1	**1554717**	1	**1554733**	20
M12 pin	8	**1554571**	1	**1554636**	1	**1554694**	1	**1529807**	20
M12 socket	8	**1554607**	1	**1554665**	1	**1554720**	1	**1529797**	20

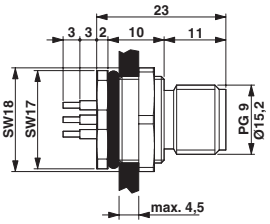
Technical data	4-pos.	5-pos.	8-pos.
Electrical data			
Rated voltage	250 V	60 V	30 V
Nominal current I_N	4 A	4 A	2 A
Volume resistance	3 mΩ	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II
Mechanical data			
Contact carrier material	PA66 GF	PA66 GF	PA66 GF
Material contact / contact surface	Cu alloy / Au	Cu alloy / Au	Cu alloy / Au
Inflammability class acc. to UL 94	V0	V0	V0
Pollution degree	3	3	3
Degree of protection	IP67/IP69K	IP67/IP69K	IP67/IP69K
Type of connection	Individual wires	Individual litz wires / solder connection	Individual litz wires / solder connection
Temperature data			
Ambient temperature (operation)	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C



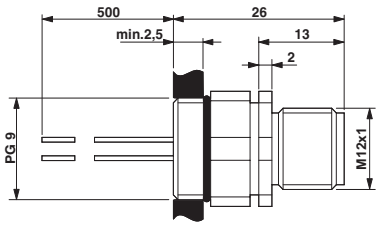
M12 flush-type connector, front mounting, with litz wires



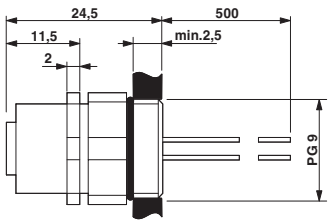
M12 flush-type socket, front mounting, with litz wires



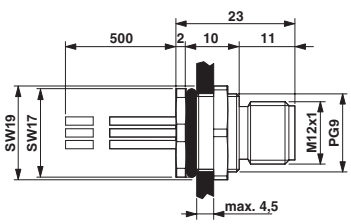
M12 flush-type connector, rear mounting, for wave soldering processes



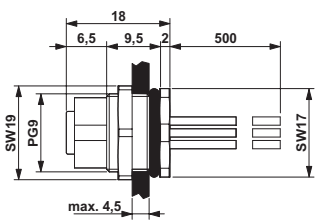
M12 flush-type connector, front mounting, can be positioned, with litz wires



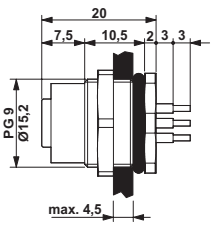
M12 flush-type socket, front mounting, can be positioned, with litz wires



M12 flush-type connector, rear mounting, with litz wires



M12 flush-type socket, rear mounting, with litz wires



M12 flush-type socket, rear mounting, for wave soldering processes

M12 connector, unshielded

For connector pin assignments, see page 61.
All M12 screw connections of high-grade steel 1.4404
For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

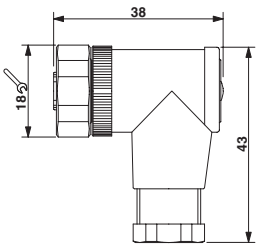
M12 socket, straight

M12 pin, angled

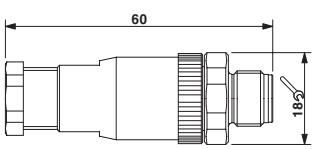
M12 socket, angled

Description	No. of pos.	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
Unshielded	4	4.00 - 6.00	**1553161**	1	**1553242**	1	**1553200**	1	**1553284**	1
Unshielded	4	6.00 - 8.00	**1553174**	1	**1553268**	1	**1553226**	1	**1553268**	1
Unshielded	5	4.00 - 6.00	**1553187**	1	**1553255**	1	**1553213**	1	**1553297**	1
Unshielded	5	6.00 - 8.00	**1553190**	1	**1553271**	1	**1553239**	1	**1553307**	1

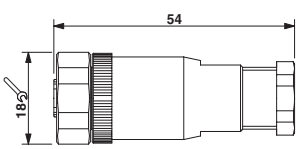
Technical data	4-pos.	5-pos.
Electrical data		
Rated voltage	250 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	3 mΩ	3 mΩ
Insulation resistance	100 MΩ	100 MΩ
Surge voltage category	II	II
Mechanical data		
Contact carrier material	PA 66	PA 66
Material contact / contact surface	CuZn / Au	CuZn / Au
Contact surface material	Au	Au
Inflammability class acc. to UL 94	V0	V0
Pollution degree	3	3
Degree of protection	IP67/IP69K	IP67/IP69K
Connection data		
Type of connection	Screw connection	Screw connection
Connection cross-section min/max	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²
Connection cross-section AWG min/max	24 / 18	24 / 18
Temperature data		
Ambient temperature (operation)	-40°C ... 85°C	-40°C ... 85°C



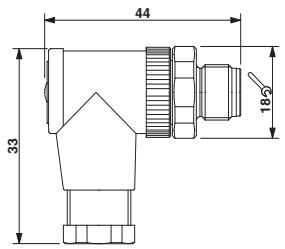
M12 socket, angled, unshielded, high-grade steel screw connection, 1.4404



M12 pin, straight, unshielded, stainless steel screw connection, 1.4404



M12 socket, straight, unshielded, stainless steel screw connection, 1.4404



M12 pin, angled, unshielded, stainless steel screw connection, 1.4404

M12 connector, shielded

For connector pin assignments, see page 61.

Connector housings and screw connections made of high-grade steel 1.4404.

For further technical data, see:
www.phoenixcontact.net/catalog

M12 pin, straight

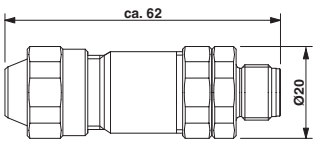
M12 socket, straight

M12 pin, straight

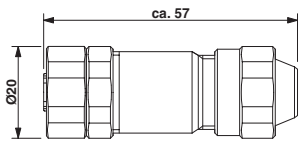
M12 socket, straight

Description	No. of pos.	Encoding	Cable passage [mm]	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
-	5	A - standard	3.00 - 5.00	**1440012**	1	**1440038**	1	**-**	-	**-**	-
-	5	A - standard	5.00 - 8.00	**1440025**	1	**1440041**	1	**-**	-	**-**	-
-	5	B - inverse	5.00 - 8.00	**-**	-	**-**	-	**1440148**	1	**1440135**	1

Technical data	5-pos.
Electrical data	
Rated voltage	60 V
Nominal current I_N	4 A
Volume resistance	3 mΩ
Insulation resistance	100 MΩ
Surge voltage category	II
Mechanical data	
Contact carrier material	PA 66
Material contact / contact surface	CuZn / Au
Contact surface material	Au
Inflammability class acc. to UL 94	V0
Pollution degree	3
Degree of protection	IP67/IP69K
Connection data	
Type of connection	Screw connection
Connection cross-section min/max	0.25 mm² / 0.75 mm²
Connection cross-section AWG min/max	24 / 18
Temperature data	
Ambient temperature (operation)	-40°C ... 85°C



M12 x 1 connector, straight, shielded



M12 x 1 socket, straight, shielded

Sensor/actuator cable for the food industry, 4-pos.

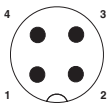
Notes:

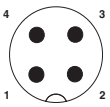
For information about the cable qualities, see page: 150.

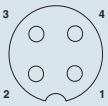
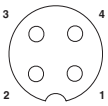
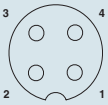
For dimensional drawings of connectors, refer to page: 169.

Variable line lengths:
Length of step from 0.2 m to 3 m = 0.1 m
Length of step > 3 m = 0.5 m, length max.: 40 m

For further technical data, see:
www.phoenixcontact.net/catalog





Free end		Order No.		Order No.		Order No.
			1.5 m	**1552463**	1.5 m	**1552586**
			3 m	**1552476**	3 m	**1552599**
			5 m	**1552489**	5 m	**1552609**
			10 m	**1552492**	10 m	**1552612**
			Variable	**1552748**	Variable	**1552751**
M12 socket, straight						
		1.5 m	**1552421**	0.3 m	**1552625**	
		3 m	**1552434**	0.6 m	**1552638**	
		5 m	**1552447**	1.5 m	**1552641**	
		10 m	**1552450**	3 m	**1552654**	
		Variable	**1552764**	Variable	**1552793**	
M12 socket, angled						
		1.5 m	**1552502**	0.3 m	**1552667**	
		3 m	**1552515**	0.6 m	**1552670**	
		5 m	**1552528**	1.5 m	**1552683**	
		10 m	**1552531**	3 m	**1552696**	
		Variable	**1552777**	Variable	**1552803**	
M12 socket, angled, with 3 LEDs						
		1.5 m	**1552544**	0.3 m	**1552706**	
		3 m	**1552557**	0.6 m	**1552719**	
		5 m	**1552560**	1.5 m	**1552722**	
		10 m	**1552573**	3 m	**1552735**	
		Variable	**1552780**	Variable	**1552816**	

Ordering example for sensor/actuator cabling with variable cable:

For a sensor/actuator cable, PVC 511, 4.5 m long, with a straight, 4-pos. M12 connector and free conductor end, the order data is as follows:

Cable description	Cable type
PVC - black Food & Beverage	511

Order no.	Cable type	Length [m]
1552748	511	4.5

The minimum order for a particular version is 25.

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

Technical data		M12 4-pos.	M12 4-pos., with LED
Nominal current I_N	[A]	4	4
Rated voltage	[V]	250	24
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Conductor cross-section	[mm²]	0.34	0.34
Conductor construction		42x 0.10 mm	42x 0.10 mm
Cable diameter	[mm]	5.2	5.2
Contact material		CuSn	CuSn
Contact surface material		Ni/Au	Ni/Au
Contact carrier material		TPU GF	TPU GF
Material, knurls		High-grade steel	High-grade steel
Degree of protection		IP65/IP68/IP69K	IP65/IP68/IP69K
Ambient temperature			
Fixed installation	[°C]	-40 ... 80	-40 ... 80
Flexible installation	[°C]	- ... -	- ... -
Plug/socket	[°C]	-25 ... 90	-25 ... 90

Stainless steel sensor/actuator boxes for the food industry

The housing of the sensor/actuator boxes for the food industry is made of 1.4404 high-grade steel. The high-grade steel distributor, which is provided with spacers, can be easily cleaned from all sides. The master cable sheath is made of PVC. This material is listed with the Food and Drug Administration. This means that the PVC does not present a hazard if it comes into contact with food.

The distributors fulfill the IP69K degree of protection. The program includes double-occupied boxes with a 5 and 10 m long master cable.

Notes:

For circuit diagrams, see page 179.

For pin assignment, refer to page 182.

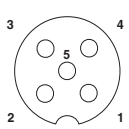
For further technical data, see:
www.phoenixcontact.net/catalog

SACB-8/16-L- ...PVC FB

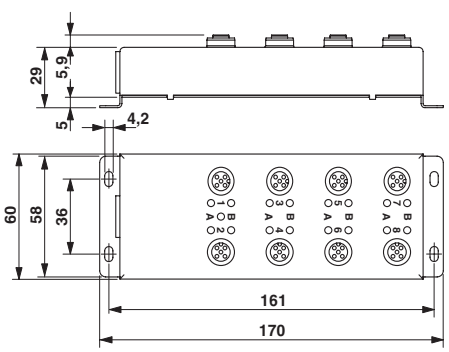
Sensor/actuator box, high-grade steel, with connected master cable, with LED

Description	Cable length	Type	Order No.	Pcs. / Pkt.
Sensor/actuator box, high-grade steel, with LED, with master cable and eight double-occupied slots				
	5 m	**SACB-8/16-L- 5,0PVC FB**	**1555541**	1
	10 m	**SACB-8/16-L-10,0PVC FB**	**1555554**	1
M12 screw plug made of high-grade steel For unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors for the food industry		**PROT-M12 FB**	**1555538**	5

Technical data		
Electrical data		
Rated voltage		24 V DC
Rated current for each I/O signal		2 A
Rated current per slot		4 A
Total rated current		12 A
Housing material		Stainless steel 1.4404
Degree of protection in acc. with IEC 60529/ EN 60529		IP65/IP67/IP69K
Max. conductor diameter		11.6 mm
Ambient temperature (operation)		-30°C ... 80°C
Ambient temperature of master cable		
Fixed installation	[°C]	-40 ... 90
Flexible installation	[°C]	-5 ... 80



Connector pin assignment for M12 socket, 5-pos.



Dimensional drawing

Halogen-free PUR for extreme stresses

Cables from page 151

Properties:

- Extremely good chemical resistance
- Extremely good resistance to oils and lubricants
- Extremely high wear resistance
- Suitable for drag chains > 4 million
- Halogen-free

TPE-U highly flexible

Cables from page 154

Properties:

- Extremely high temperature resistance
- Suitable for drag chains and robots > 10 million
- Halogen-free
- High flame resistance
- Welding spark-resistant
- Not irradiated and hence can be recycled

PUR irradiated, welding spark-resistant

Cables from page 155

Properties:

- High temperature resistance
- Suitable for robots > 5 million
- Extremely good welding spark resistance
- Halogen-free
- UV resistant

PUR/PVC for high stresses

Cables from page 156

Properties:

- Extremely good stripping capability
- Good chemical resistance
- Good resistance to oils and lubricants
- Minimal wear
- Suitable for drag chains, to a certain extent

PVC for medium mechanical stresses

Cables from page 158

Properties:

- Extremely good stripping capability
- Good chemical resistance
- Limited resistance to oils and lubricants
- Minimal wear

Key symbols

with UL-Style

suitable for drag chains

welding spark-resistant

UV resistant

flame resistant

high temperature resistance

good oil resistance

good chemical resistance

suitable for torsion stresses

halogen-free

suitable for the food and beverages industry

PUR halogen-free – PHOENIX CONTACT Standard

Permanently flexible control cables for usage in drag chains, rotary and swiveling tables as well as a machine control cable for extreme applications conditions. Suitable for alternating bending stresses with a long service life. The special PUR outer sheath has very good resistant properties for oils in accordance with DIN EN 60811-2-1, grease and cooling agents as well as other aggressive substances.

Further features: halogen and PVC-free, free from silicone and substances that would hinder coating with paint or varnish, hydrolysis and flame resistant in accordance with UL-FT2.

Outer sheath material	**PUR**
Bending cycles min.	**4 million**
Min. bending radius	**10 x D**
Traverse path	**10 m**
Acceleration	**10 m/s²**
Speed	**3 m/s**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR Black	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	72 74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	74 76 100
		Valve connectors	3 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
		M8 shielded	3 x 0.25 mm² (32x0.1 mm) Shielding: copper braid		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	79
		M12 shielded	3 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	78 79

Sensor/actuator cabling – PLUSCON field

Range of sensor/actuator cables

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR Black	**4-pos.**	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	72 80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	80 82 102
		M8 shielded	4 x 0.25 mm² (32x0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	85
		M12 shielded	4 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	84 85
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, green-yellow	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	86 87
		Valve connectors	5 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
		M12 shielded	5 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	88 89
	6-pos.	M8	6 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black, gray, pink	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	90
		M8 shielded	6 x 0.14 mm² (18x0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray, pink	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	91
	8-pos.	M12	8 x 0.25 mm² (32x0.1 mm)		In accordance with DIN 47100	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	92 93
		M12 shielded	8 x 0.25 mm² (32x0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	94 95
	12-pos.	M12	12 x 0.14 mm² (18x0.1 mm)		In accordance with DIN 47100	TPE	movable: -20°C ... 80°C fixed: -40°C ... 80°C	97

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR Black	**17-pos.**	M12	17 x 0.14 mm² (18x0.1 mm)		In accordance with DIN 47100	TPE	movable: -20°C ... 80°C fixed: -40°C ... 80°C	97
115 Black	**5-pos.**	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, gray	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	86 87
240 Yellow	**3-pos.**	Valve connectors	3 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
	4-pos.	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	80 82
	5-pos.	Valve connectors	5 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
280 Gray	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	72 74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	74 76 100
		Valve connectors	3 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
	4-pos.	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	80 82
	5-pos.	Valve connectors	5 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PP	movable: -15°C ... 80°C fixed: -40°C ... 80°C	106
	8-pos.	M12 shielded	8 x 0.25 mm² (32x0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PP	movable: -5°C ... 80°C fixed: -40°C ... 80°C	94 95
285 Gray Twisted pair	**8-pos.**	M12 shielded	4 x 2 x 0.25 mm² (32x0.1 mm) Shielding: copper braid and filler litz wire		White + brown, green + yellow, gray + pink, blue + red	PE	movable: -40°C ... 80°C fixed: -50°C ... 80°C	94 95

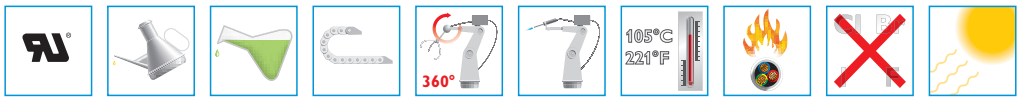
TPE-U highly flexible

Permanently flexible control cable with exceptional suitability for use in drag chains and industrial robots. This cable is used wherever extreme bending and torsion stresses act simultaneously and considerably longer service lives are desired. It is resistant to welding sparks, and there is no need of conventional irradiation due to the use of new materials. In addition to the price, the recycling ability of this cable is also advantageous. These cables fulfill the requirements of DIN EN ISO 14001. Other features: halogen and PVC-free, flame resistant in accordance with UL-FT1, VW1 and 1581 §1061, extremely good resistance to oils compliant with VDE 0250 Part 407, chemicals, lubricants, coolants and other aggressive substances.

Outer sheath material	**TPE-U**
Bending cycles min.	**10 million**
Min. bending radius	
fixed	**5 x D**
movable	**7.5 x D**
Traverse path	**5 m**
Acceleration	**20 m/s²**
Speed	**3.33 m/s**
Torsion	**+,- 360°**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
800 Gray	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	72 74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	74 76 100
	4-pos.	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	72 80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	80 82
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, gray	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	86 87
	8-pos.	M12	8 x 0.25 mm² (32x0.1 mm)		In accordance with DIN 47100	Polyester	movable: -30°C ... 90°C fixed: -40°C ... 90°C 120°C ... 3000 h	92 93

PUR irradiated, welding spark-resistant



The cross-linking of the PUR outer sheath has resulted in considerable improvements in the typical PUR properties like temperature, UV and welding spark resistance. Cables are suitable for rugged use in the field of robotics, especially for welding robots, and are characterized by their extremely long service lives.
Flame resistance in accordance with DIN VDE 0472, Part 804, test type B.

Outer sheath material	**PUR irradiated**
Bending cycles min.	**5 million**
Min. bending radius	**10 x D**
Traverse path	**10 m**
Acceleration	**10 m/s²**
Speed	**3 m/s**
Torsion	**+,- 360°**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
150 Orange	**3-pos.**	M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	Halogen-free polyester-based plastic	movable: -40°C ... 105°C fixed: -50°C ... 105°C	74 76 100
	4-pos.	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	movable: -40°C ... 105°C fixed: -50°C ... 105°C	80 82
	5-pos.	M12	4 x 0.34 mm² + 1 x 0.5 mm² (42x0.1 mm, 24x0.15 mm)		Brown, white, blue, black, green-yellow	Halogen-free polyester-based plastic	movable: -40°C ... 105°C fixed: -50°C ... 105°C	86 87
160 Yellow	**4-pos.**	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	Halogen-free polyester-based plastic	movable: -40°C ... 105°C fixed: -50°C ... 105°C	80 82 100

PUR / PVC (also applicable for PUR types for M5 connectors)

These cables are suitable for rugged use in the field of machine tools, assembly and production lines as well as metal-cutting production. They are free of silicone and substances that would hinder coating with paint or varnish and have a high degree of resistance to abrasion. In addition, the outer sheath is extremely resistant to oils and chemicals in accordance with DIN EN 60811-2-1 and is also flame-resistant as per DIN EN 50265. The outer sheath is manufactured using the co-extrusion process.

Outer sheath material	**PUR**
Inner sheath material	**PVC**
Bending cycles min.	**2 million**
Min. bending radius	**10 x D**
Traverse path	**5 m (for 35T = 10 m)**
Acceleration	**5 m/s² (for 35T = 10 m/s²)**
Speed	**3 m/s**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
100 Gray	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	72 74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
		M12 shielded	3 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	78 79
	4-pos.	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	72 80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
		M12 shielded	4 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	84 85
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, green-yellow	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87
		M12 shielded	5 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	88 89

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
100 Gray	**8-pos.**	M12	8 x 0.25 mm² (32x0.1 mm)		In accordance with DIN 47100	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	92 93
140 Yellow	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	72 74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
	4-pos.	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	72 80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, green-yellow	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87
186 Black	**4-pos.**	M12	4 x 0.75 mm² (24x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
	5-pos.	M12	5 x 0.75 mm² (24x0.1 mm))		Brown, white, blue, black, gray	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87
35T Black Twisted pair	**12-pos.**	M12 shielded	6 x 2 x 0.14 mm² (18x0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	98
	17-pos.	M12 shielded	7 x 2 x 0.14 mm² 1 x 3 x 0.14 mm² (18x0.1 mm) Shielding: copper braid		In accordance with DIN 47100	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	99
PUR Black **for M5**	**3-pos.**	M5	3 x 0.14 mm² (18x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -15°C ... 80°C	70
	4-pos.	M5	4 x 0.14 mm² (18x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -15°C ... 80°C	70

PVC - 80°C and 105°C

Only cable type 511

This extremely inexpensive cable quality is suitable for medium mechanical stresses in the dry area of machine tools and packaging machines as well as in assembly and production lines. This cable has limited resistance to oils, chemicals and wear. Flame-resistant VW-1 in accordance with UL standard 758. **VW-1** is the most difficult flame test for individual cables.

Outer sheath material PVC

Cable type 511:
special PVC FDA compliant, however without UL

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PVC Black	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
		M12 shielded	3 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	78 79
		Valve connectors	3 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	106
	4-pos.	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
		M12 shielded	4 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	84 85
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, green-yellow	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PVC Black	**5-pos.**	M12 shielded	5 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black, green-yellow	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	88 89
		Valve connectors	5 x 0.5 mm² (28x0.15 mm)		Black 1, black 2, black 3, black 4, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	106
	8-pos.	M12	8 x 0.25 mm² (32x0.1 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	92 93
		M12 shielded	8 x 0.25 mm² (32x0.1 mm) Shielding: copper braid and filler litz wire		White, brown, green, yellow, gray, pink, blue, red	PVC	movable: -5°C ... 105°C fixed: -25°C ... 105°C	94 95
	12-pos.	M12	12 x 0.14 mm² (18x0.1 mm)		In accordance with DIN 47100	PVC	movable: -5°C ... 90°C fixed: -40°C ... 90°C	96
	17-pos.	M12	17 x 0.14 mm² (18x0.1 mm)		In accordance with DIN 47100	PVC	movable: -5°C ... 90°C fixed: -25°C ... 90°C	96
500 Gray	**3-pos.**	M8	3 x 0.25 mm² (32x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
		M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
		M12 shielded	3 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	78 79
	4-pos.	M8	4 x 0.25 mm² (32x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
		M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
		M12 shielded	4 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	84 85

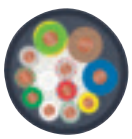
Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
500 Gray	**5-pos.**	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, green-yellow	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87
		M12 shielded	5 x 0.34 mm² (42x0.1 mm) Shielding: copper braid		Brown, white, blue, black, gray	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	88 89
	8-pos.	M12	8 x 0.25 mm² (32x0.1 mm)		White, brown, green, yellow, gray, pink, blue, red	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	92 93
511 Black	**4-pos.**	M12 Food & Beverage	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	147
515 Black	**5-pos.**	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, gray	PVC	movable: -5°C ... 80°C fixed: -40°C ... 80°C	86 87
540 Yellow	**3-pos.**	M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	74 76 100
	4-pos.	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	80 82
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, gray	PVC	movable: -5°C ... 80°C fixed: -25°C ... 80°C	86 87
542 Yellow	**3-pos.**	M12	3 x 0.34 mm² (42x0.1 mm)		Brown, blue, black	PVC	movable: -5°C ... 105°C fixed: -25°C ... 105°C	74 76 100
	4-pos.	M12	4 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black	PVC	movable: -5°C ... 105°C fixed: -25°C ... 105°C	80 82
	5-pos.	M12	5 x 0.34 mm² (42x0.1 mm)		Brown, white, blue, black, gray	PVC	movable: -5°C ... 105°C fixed: -25°C ... 105°C	86 87

PUR / PVC (for sensor/actuator boxes)

These cables are suitable for rugged use in the field of machine tools, assembly and production lines as well as metal-cutting production. They are free of silicone and substances that would hinder coating with paint or varnish and have a high degree of resistance to abrasion. In addition, the outer sheath is extremely resistant to oils and chemicals in accordance with VDE 0472 Part 803, is flame-resistant as per DIN EN 50265 and is also resistant to hydrolysis. The outer sheath is manufactured using the co-extrusion process.

Outer sheath material	**PUR**
Inner sheath material	**PVC**
Bending cycles min.	**1.5 ... 2 million**
Min. bending radius	**10 x D**
Traverse path	**2 m**
Speed	**2 m/s**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR/PVC Black	**3-pos., single-occupancy**	M8 and QUICKON Up to 0.34 mm² 4 slots	4 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	112 118
		M8 and QUICKON Up to 0.34 mm² 6 slots	6 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, pink, red, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	112 118
		M8 and QUICKON Up to 0.34 mm² 8 slots	8 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, pink, red, black, violet, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	112 118
		M8 10 slots	10 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, pink, red, black, violet, white-pink, pink-brown, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	112
	4-pos., double-occupancy	QUICKON Up to 0.34 mm² 4 slots	8 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	118
		QUICKON Up to 0.34 mm² 6 slots	12 x 0.34 mm² 2 x 0.75 mm²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	118
		M8 and QUICKON Up to 0.34 mm² 8 slots	16 x 0.34 mm² 2 x 0.75 mm²		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	movable: -5°C ... 80°C fixed: -40°C ... 90°C	112 118

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR/PVC Black	**4-pos., single-occupancy**	M12 and QUICKON Up to 0.75 mm² 4 slots	4 x 0.34 mm² 3 x 0.75 mm²		White, green, yellow, gray, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116 119
		M12 and QUICKON Up to 0.75 mm² 6 slots	6 x 0.34 mm² 3 x 0.75 mm²		White, green, yellow, gray, pink, red, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116 119
		M12 and QUICKON Up to 0.75 mm² 8 slots	8 x 0.34 mm² 3 x 0.75 mm²		White, green, yellow, gray, pink, red, black, violet, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116 119
	5-pos., double-occupancy	M12 4 slots	8 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116
		M12 6 slots	12 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116
		M12 8 slots	16 x 0.50 mm² 3 x 1.00 mm²		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	movable: -5°C ... 80°C fixed: -40°C ... 90°C	114 116

PUR / PVC shielded (for sensor/actuator boxes)

These cables are suitable for rugged use in the field of machine tools, assembly and production lines as well as metal-cutting production. Analog signals are protected against electromagnetic influences using the tin-plated copper braid with 85% coverage. These cables are free of silicone and substances that would hinder coating with paint or varnish and have a high degree of resistance to abrasion. In addition, the outer sheath is extremely resistant to oils and chemicals in accordance with VDE 0472 Part 803, is flame-resistant as per DIN EN 50265 and is also resistant to hydrolysis.

Outer sheath material	**PUR**
Inner sheath material	**PVC**
Bending cycles min.	**1.5 ... 2 million**
Min. bending radius	**10 x D**
Traverse path	**2 m**
Speed	**2 m/s**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR/PVC Shielded Black	**5-pos., double-occupancy**	M12 4 slots	8 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	120
		M12 6 slots	12 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PVC	movable: -5°C ... 80°C fixed: -40°C ... 90°C	120
		M12 8 slots	16 x 0.50 mm² 3 x 1.00 mm²		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	movable: -5°C ... 80°C fixed: -40°C ... 90°C	120

Halogen-free PUR (for sensor/actuator boxes)

Permanently flexible control cables for usage in drag chains as well as a machine control cable for extreme applications conditions. Suitable for alternating bending stresses with a long service life. The special PUR outer sheath has very good resistance properties for oils in accordance with VDE 0472 Part 803, lubricants and cooling agents as well as other aggressive substances. Further features: halogen and PVC-free, free from silicone and substances that would hinder coating with paint or varnish, hydrolysis and flame-resistant in accordance with DIN EN 50265.

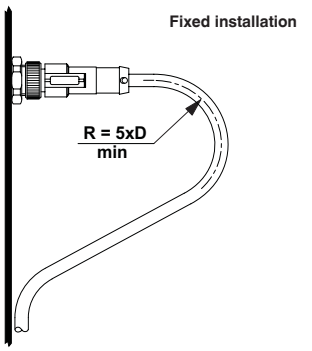
Outer sheath material	**PUR**
Bending cycles min.	**1.5 ... 2 million**
Min. bending radius	**10 x D**
Traverse path	**2 m**
Speed	**2 m/s**
Tested at	**20 ... 25°C**

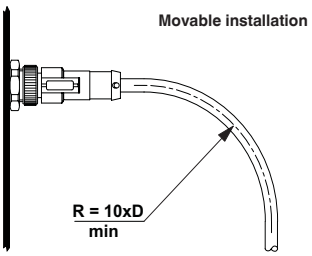
Type	Number of positions	Usage	Design	Cross-section	Conductor colors	Conductor insulation	Temperature range	Page
PUR Black	**5-pos., double-occupancy**	M12 4 slots	8 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, gray-pink, red-blue, white-green, brown-green, brown, blue, green-yellow	PP	movable: -5°C ... 80°C fixed: -40°C ... 90°C	116
		M12 6 slots	12 x 0.50 mm² 3 x 1.00 mm²		White, green, yellow, gray, pink, red, gray-pink, red-blue, white-green, brown-green, white-yellow, yellow-brown, brown, blue, green-yellow	PP	movable: -5°C ... 80°C fixed: -40°C ... 90°C	116
		M12 8 slots	16 x 0.50 mm² 3 x 1.00 mm²		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	movable: -5°C ... 80°C fixed: -40°C ... 90°C	116

An overview of the practical installation of SAC cables in harsh industrial environments, to guarantee a long service life and to reduce the costs, is given on the following pages.

Bending radius

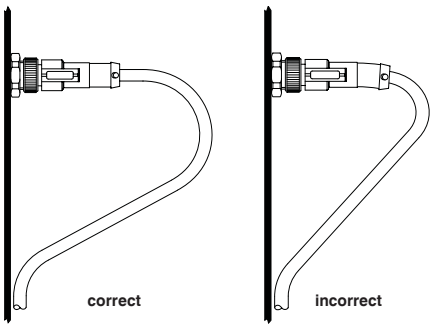
In case of movable installation, an adequately large design of the bending radius is advantageous since the higher the bending radius the lower are the induced stresses that develop due to movement. This extends the service life of the cable (the minimum cable-specific bending radii must be taken into account).





Stress

An adequate cable loop must be ensured at the connection point to prevent premature material fatigue and to provide sufficient elbow room to absorb stresses in case of additional loads.



Movable installation

In case of movable installation, adequate cable length must be ensured to be able to absorb the resulting tensile stresses in the best possible manner. This can be implemented using cable loops and C-drag chains.

Cable in power supply chains

Wherever possible, cables should be laid individually and loosely next to one another in the power supply chains. Isolating and/or intermediate segments must be inserted between the different cables or they must be arranged in separate bore holes in the neutral zone of the drag chain.

Laying the cables having outside diameters that deviate considerably next to one another or on top of one another is not recommended. However, if this cannot be avoided due to structural reasons, isolating and/or intermediate segments must be installed for a reasonable service life. If isolating segments cannot be installed between each cable, for our cables having an outside diameter of <10 mm, we recommend laying them loosely, combined as per similar cross-sections in a guide tube in the drag chain.

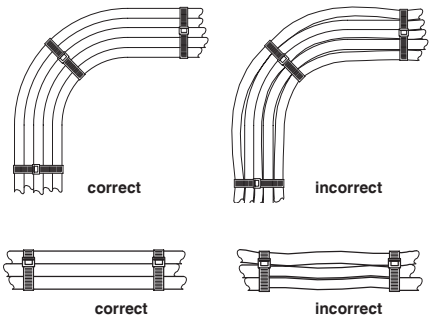
When distributing the cables, also ensure that heavy cables are laid on the outer side and, e.g. our lightweight SAC cables are laid on the inner side. Strain should be relieved on both their sides and at least on the movable end of the drag chain. A distance of 20 to 30 times the outside diameter of the cable between the end of the bending movement and the attachment must be considered as the recommended value.

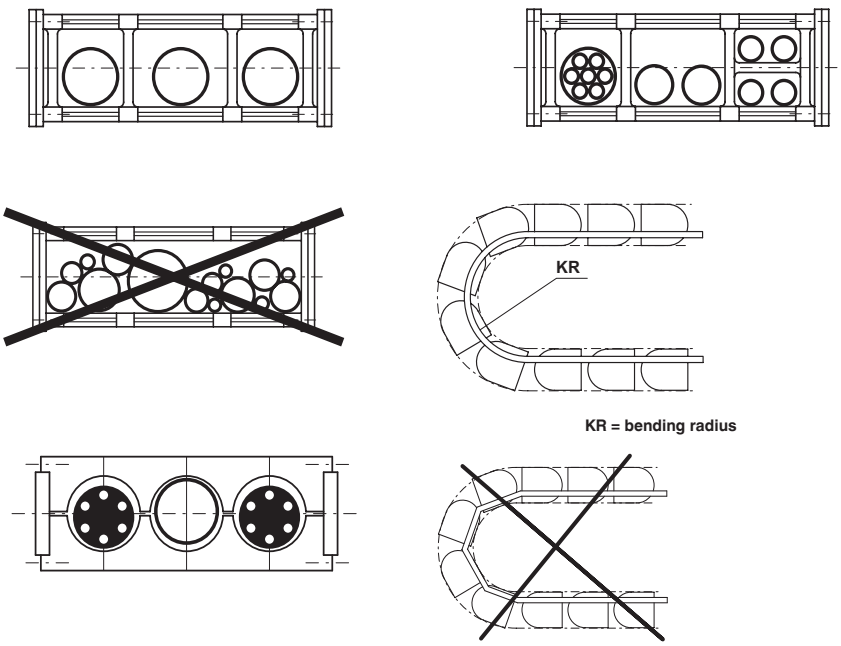
It must be possible to move the cables freely in the bending radius to ensure that the drag chain does not have a positively driven operation. Recommended value: 10% of the outside diameter must be available as free space.

Note: When laying the cables, observe the specifications of the drag chain manufacturer.

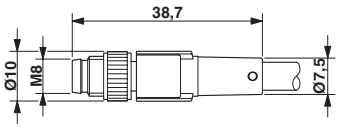
Cable bundling

When bundling multiple individual cables, ensure that the cables can move freely in the bundle. Cables should not be deformed. It is practical to lay circular cables having large differences in the outside diameter next to each other only using intermediate segments.

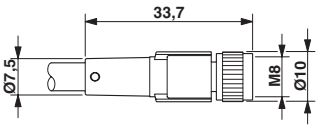




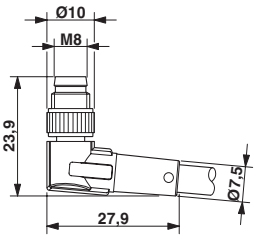
M8 with permanently connected cable



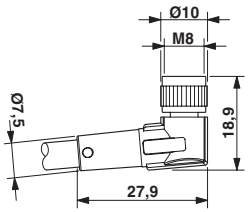
M8 connector x 1, straight



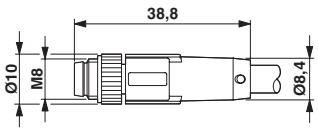
M8 socket x 1, straight



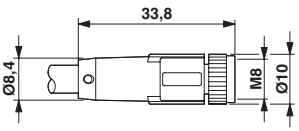
M8 connector x 1, angled



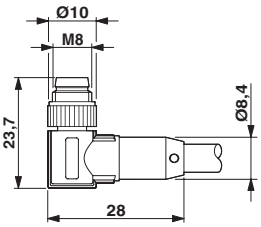
M8 socket x 1, angled



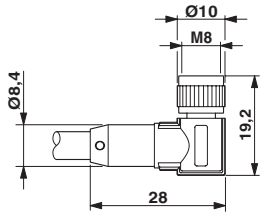
M8 connector x 1, straight, shielded



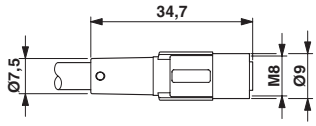
M8 socket x 1, straight, shielded



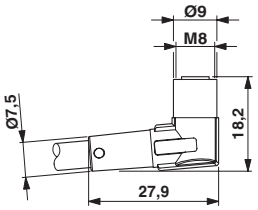
M8 connector x 1, angled, shielded



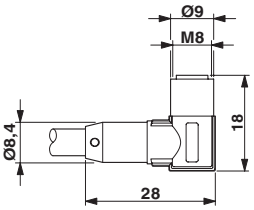
M8 socket x 1, straight, shielded, or LED



M8 snap-in socket x 1, straight

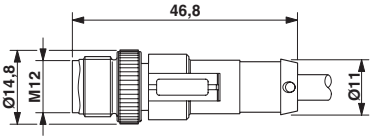


M8 snap-in socket x 1, angled

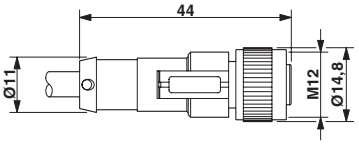


M8 snap-in socket x 1, angled, LED

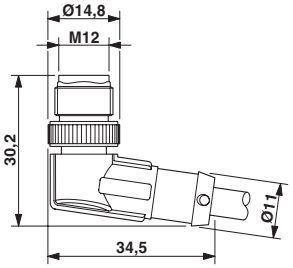
M12 with permanently connected cable



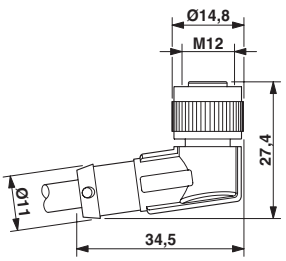
M12 connector x 1, straight



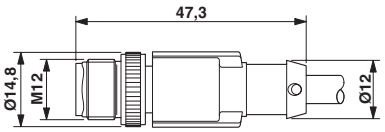
M12 socket x 1, straight



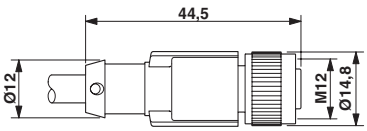
M12 connector x 1, angled



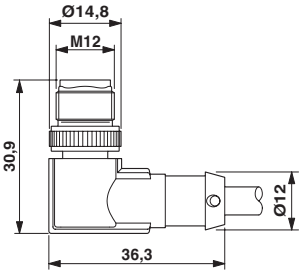
M12 socket x 1, angled



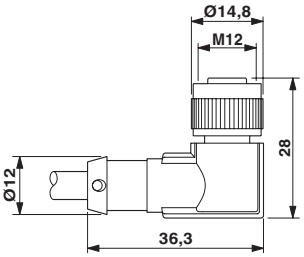
M12 connector x 1, straight, shielded



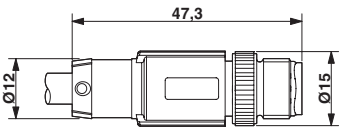
M12 socket x 1, straight, shielded



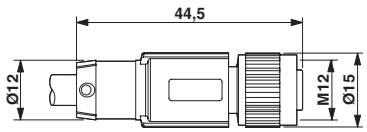
M12 connector x 1, angled, shielded



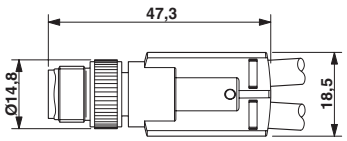
M12 socket x 1, angled, shielded, or LED



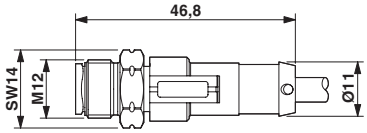
M12 connector x 1, straight 12-17-pos.



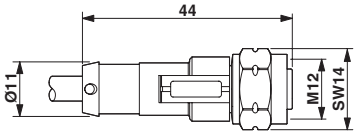
M12 socket x 1, straight 12-17-pos.



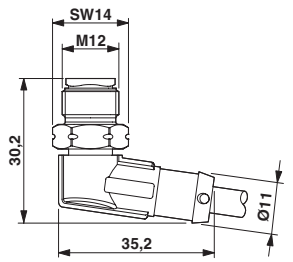
M12 Y connector x 1, two cable outlets



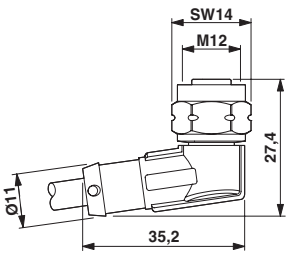
M12 connector x 1, straight with high-grade steel knurl



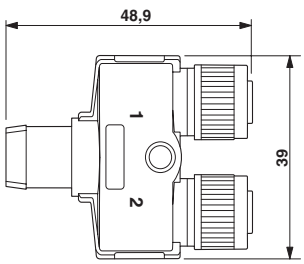
M12 socket x 1, straight with high-grade steel knurl



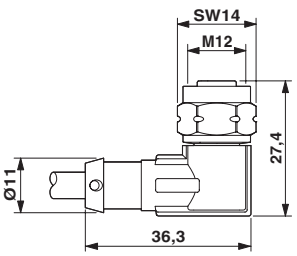
M12 connector x 1, angled with high-grade steel knurl



M12 socket x 1, angled with high-grade steel knurl

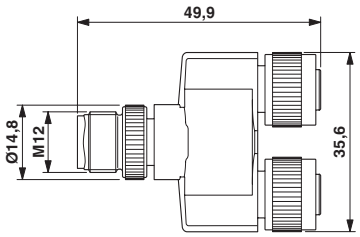


M12 Y connector x 1, one cable outlet

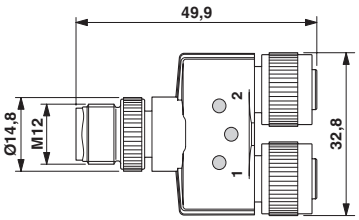


M12 socket x 1, angled with high-grade steel knurl and LED

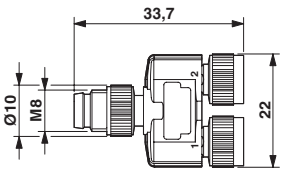
M12/M8 Y and T distributors/connectors



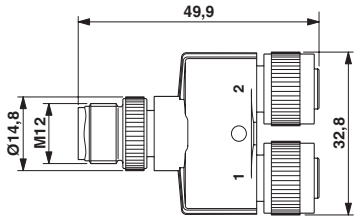
M12 Y distributor x 1 / M12 x 1
with 21 mm inner gauge



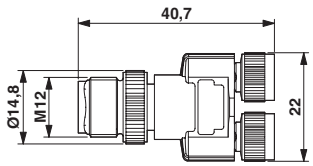
M12 Y distributor/connector x 1 / M12 x 1
with LED



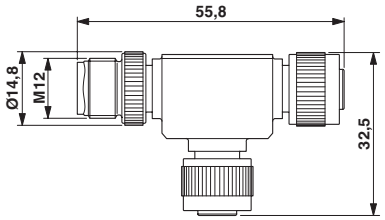
M8 Y distributor x 1



M12 Y distributor/connector x 1 / M12 x 1

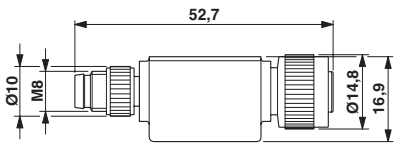


M12 Y distributor/connector x 1 / M8 x 1

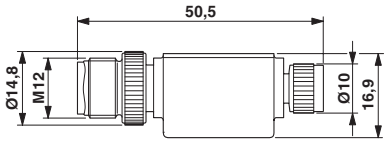


M12 T distributor-> 2 x M12
3-pos. + PE, PIN 2+4 bridged
5-pos. for CAN Bus

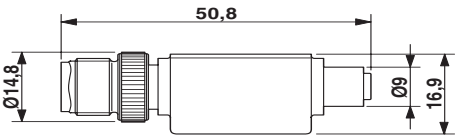
M12/M8 adapters



M8 adapter to M12

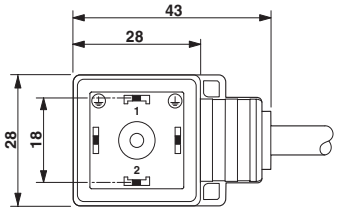


M12 adapter to M8

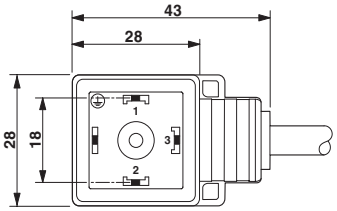


M12 adapter to M8 snap-in

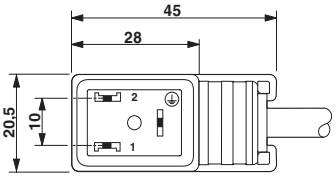
Valve connectors



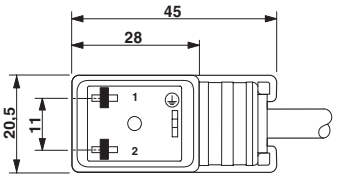
Valve connector, type A



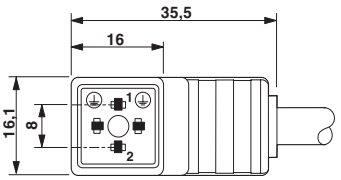
Valve connector, type A (pressure switch)



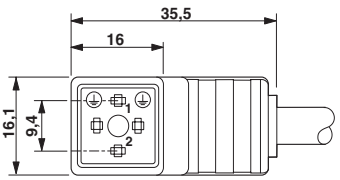
Valve connector, type B



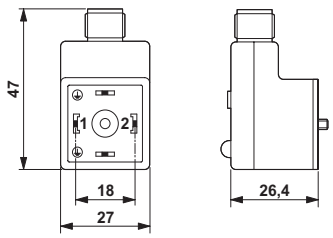
Valve connector, type BI



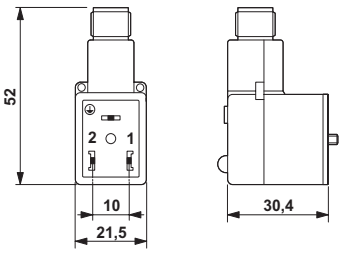
Valve connector, type C



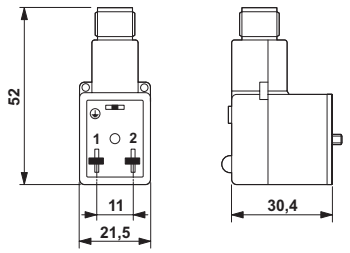
Valve connector, type CI



Valve connector, type A with horizontal M12 connector

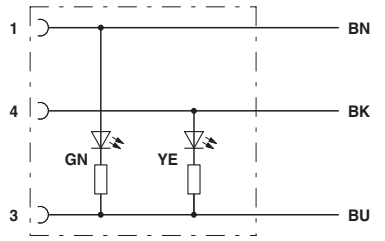


Valve connector, type B with horizontal M12 connector

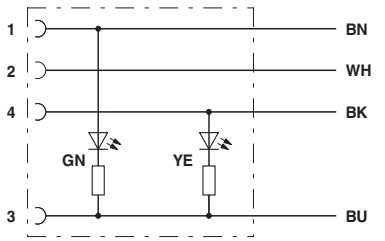


Valve connector, type BI with horizontal M12 connector

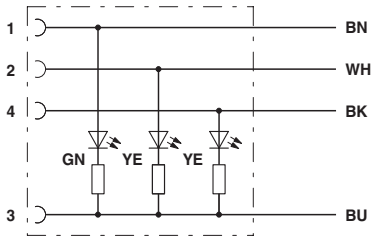
M12/M8 circuit diagrams of LED types



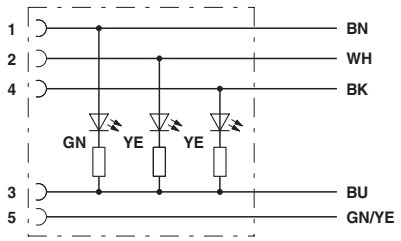
Contact assignment of the M8/M12 sockets with 2 LEDs, 3-pos. (with LED suitable for pnp sensors)



Contact assignment of the M8/M12 sockets with 2 LEDs, 4-pos. (with LED suitable for pnp sensors)

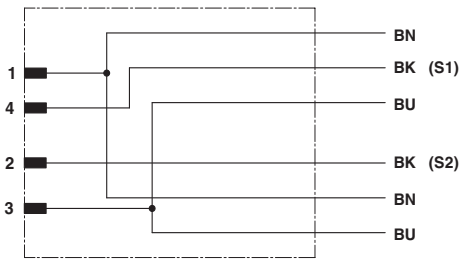


Contact assignment of the M8/M12 sockets with 3 LEDs, 4-pos. (with LED suitable for pnp sensors)

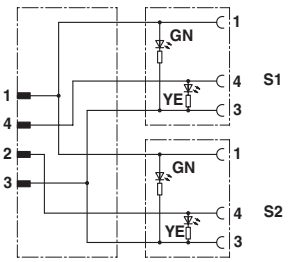


Contact assignment of the M8/M12 sockets with 3 LEDs, 5-pos. (with LED suitable for pnp sensors)

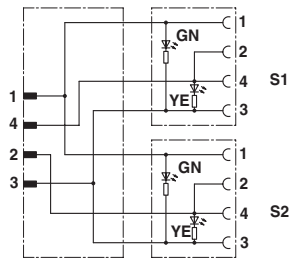
M12/M8 circuit diagrams of Y cables



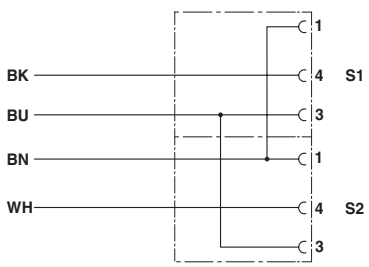
Contact assignment of the M12 Y connector, two cable outlets, open cable end



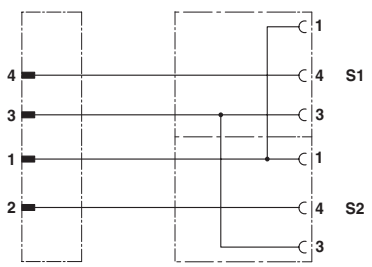
Contact assignment of the M12 Y connector, with LED, suitable for pnp sensors, two cable outlets



Contact assignment of the M12 Y connector, PIN 2+4 bridged, with LED, suitable for pnp sensors, two cable outlets

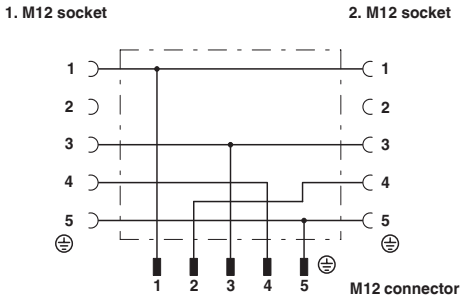


Contact assignment of the M12 Y connector, one cable outlet, open cable end

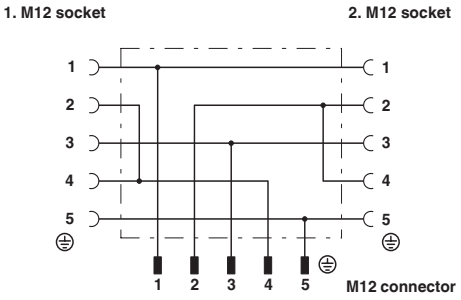


Contact assignment of the M12 Y connector, one cable outlet

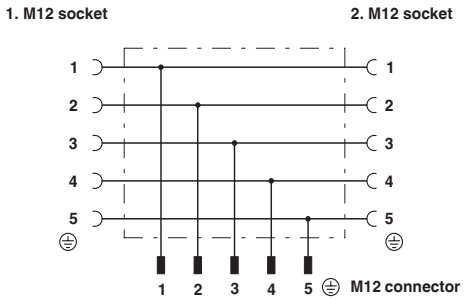
M12/M8 circuit diagrams of Y and T distributors



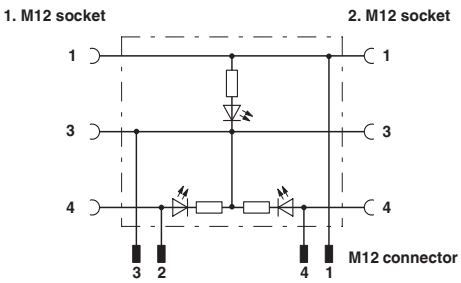
Contact assignment: 3-pos. distributor + PE



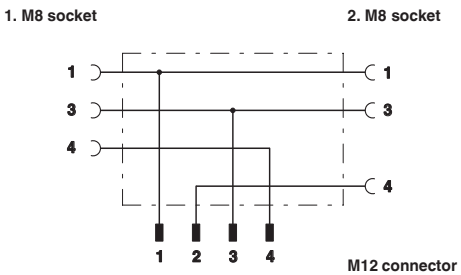
Contact assignment: 3-pos. T and Y distributors (pin 2+4 bridged) + PE



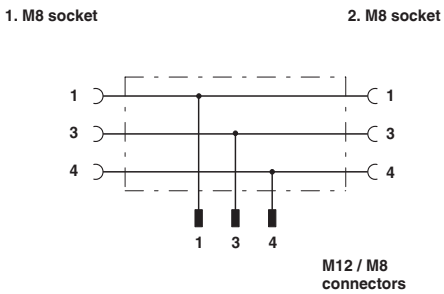
Contact assignment: 5-pos. Y distributor and 5-pos. T distributor for CAN bus



Contact assignment of the M12 Y distributor with 3 LEDs

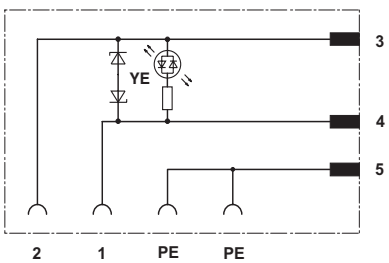


Contact assignment: 3-pos. distributor

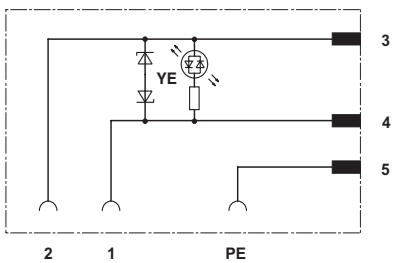


Contact assignment: 3-pos. connector

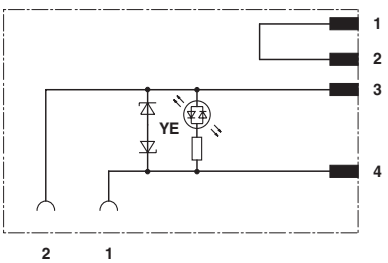
Circuit diagrams of valve connectors



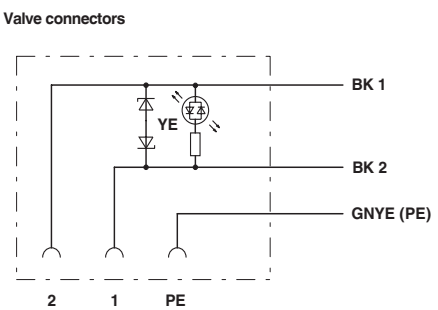
Contact assignment of the valve connector adapter, type A



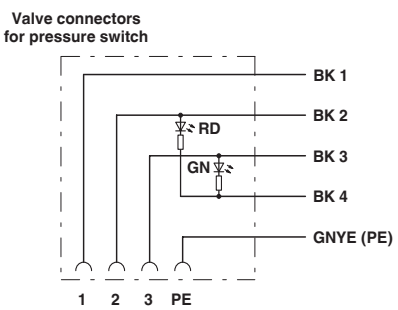
Contact assignment of the valve connector adapter, type B/BI



Contact assignment of the valve connector adapter, type A
(PIN 1 / PIN 2 = diagnostics)



Contact assignment of the actuator cable

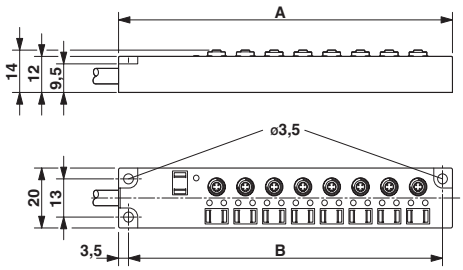


Contact assignment of the actuator cable (pressure switch)

M5 distributor with metal thread

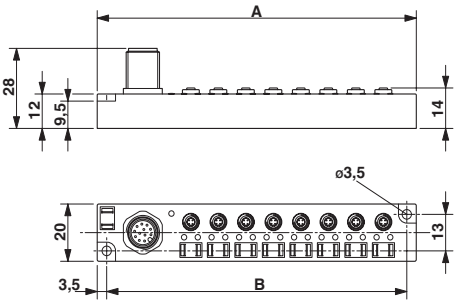
With master cable

Number of slots	A (mm)	B (mm)
4	76	69
8	116	109



With M12 plug connection, vertical

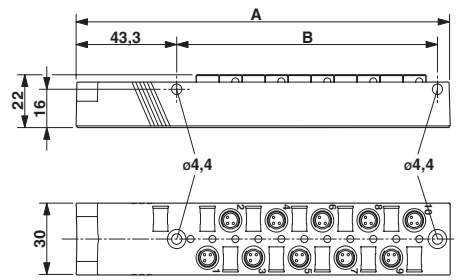
Number of slots	A (mm)	B (mm)
4	76	69
8	116	109



M8 distributor with metal thread

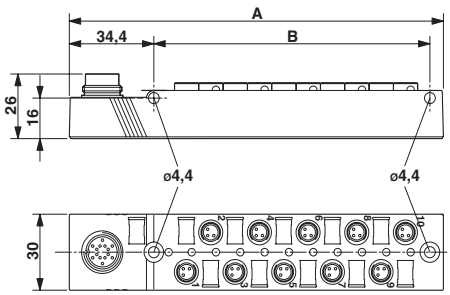
With master cable

Number of slots	A (mm)	B (mm)
4	102	53.4
6	122	73,2
8	141	93
10	161	112,3



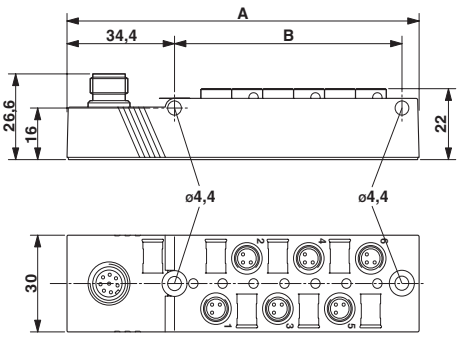
With M16 plug connection, vertical

Number of slots	A (mm)	B (mm)
4	93	53.4
6	113	73,2
8	132	93
10	152	112.3



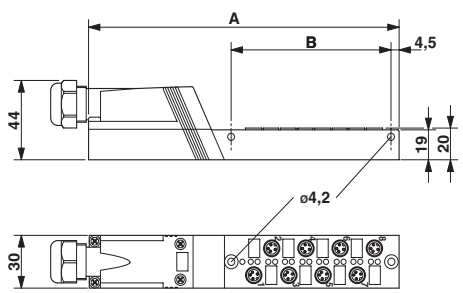
With M12 plug connection, vertical

Number of slots	A (mm)	B (mm)
4	93	53.4
6	113	73.2



With pluggable screw and spring-cage connection

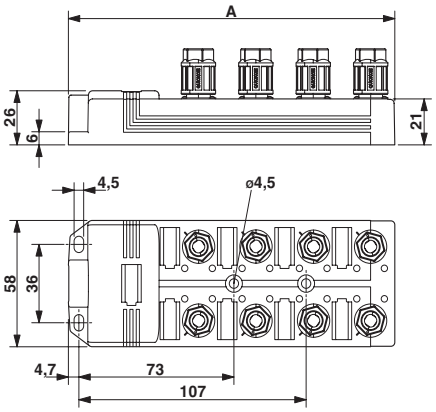
Number of slots	A (mm)	B (mm)
4	122	53,4
6	142	73,2
8	176	93
10	196	112.3



QUICKON distributor
Connection cross-section 0.14 mm² ... 0.34 mm²

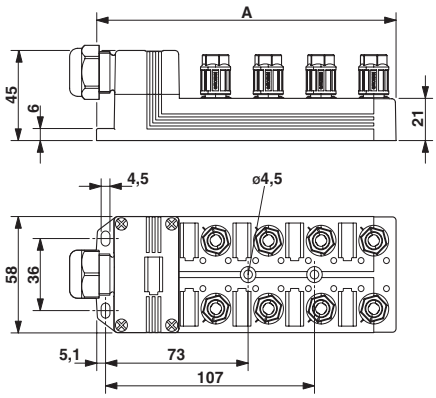
With master cable

Number of slots	A [mm]
4	116
6	126
8	153



With pluggable screw connection

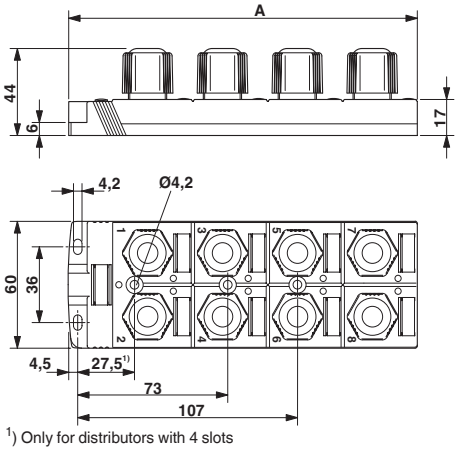
Number of slots	A [mm]
4	117
6	126
8	153



QUICKON distributor
Connection cross-section 0.34 mm² ... 0.75 mm²

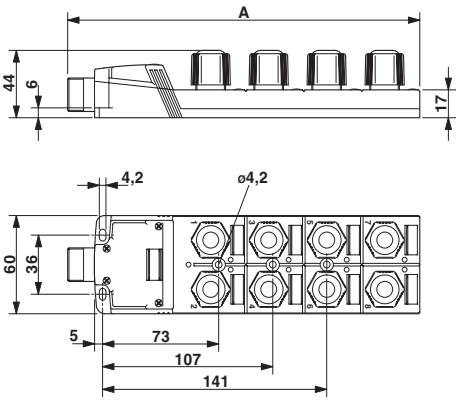
With master cable

Number of slots	A [mm]
4	97
6	134
8	170



With spring-cage connection

Number of slots	A [mm]
4	132
6	168
8	205

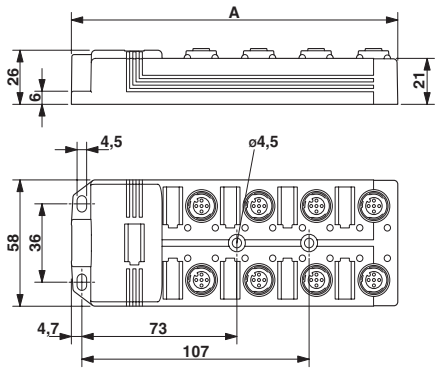


1) Only for distributors with 4 slots

M12 distributor with metal thread, heavy-duty

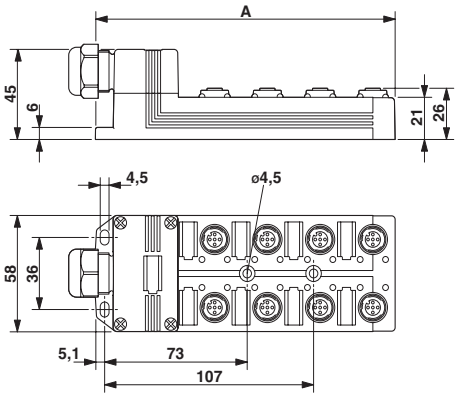
With master cable

Number of slots	A [mm]
4	116
6	126
8	153



With pluggable screw connection

Number of slots	A [mm]
4	117
6	126
8	153

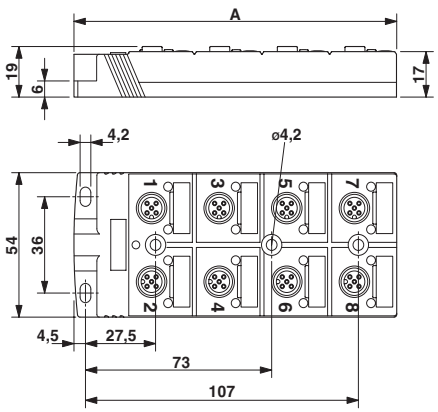


M12 distributor with plastic thread

With master cable

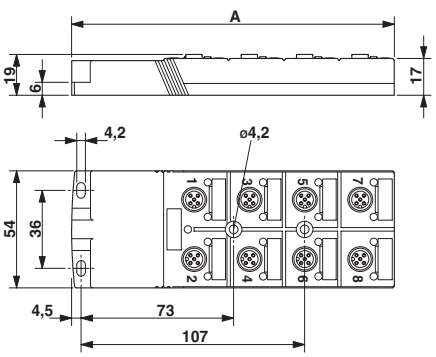
Single-occupancy

Number of slots	A [mm]
4	82
6	100
8	126.5



Double-occupancy

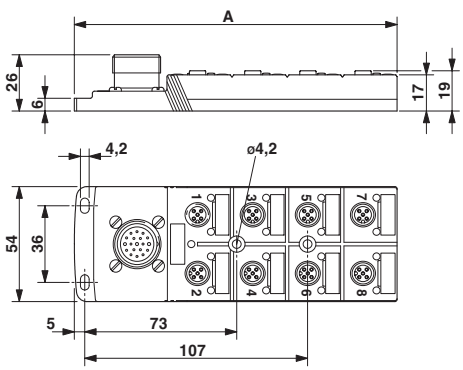
Number of slots	A [mm]
4	116.5
6	128,5
8	155.0



With M23 plug connection

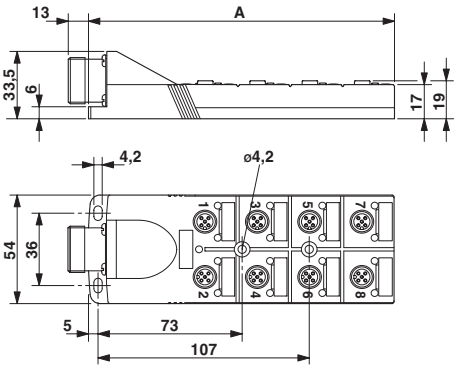
Plug connection, vertical

Number of slots	A [mm]
4	116.5
6	128.5
8	155.0



Plug connection, horizontal

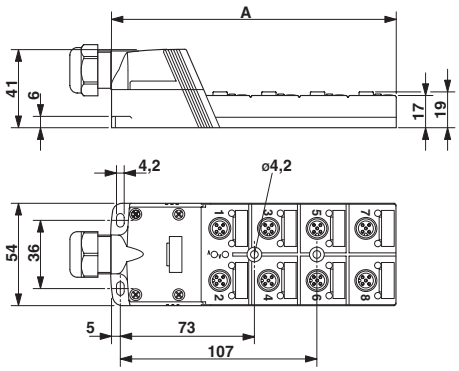
Number of slots	A [mm]
4	116.5
6	128.5
8	155.0



With pluggable screw connection

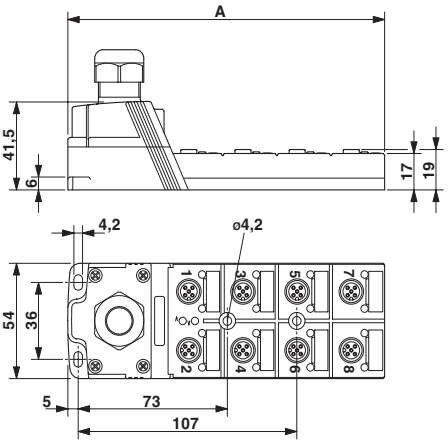
Master cable outlet, horizontal

Number of slots	A [mm]
4	116.5
6	128.5
8	155.0



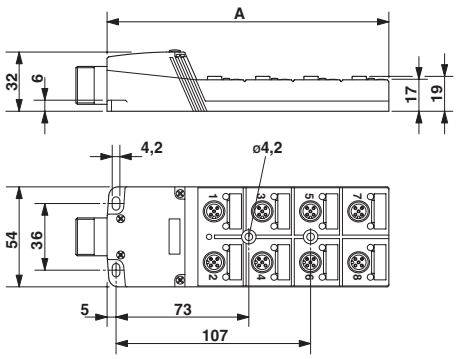
Master cable outlet, vertical

Number of slots	A [mm]
4	116.5
6	128.5
8	155.0



With spring-cage connection

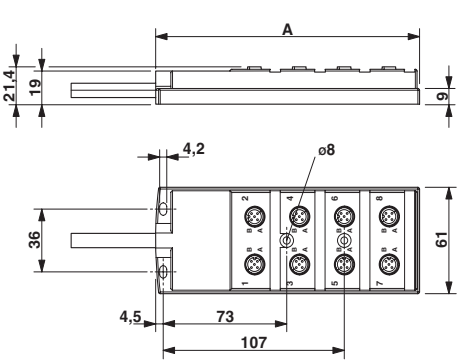
Number of slots	A [mm]
4	116,5
6	128,5
8	155,0



M12 distributor, shielded, made of metal

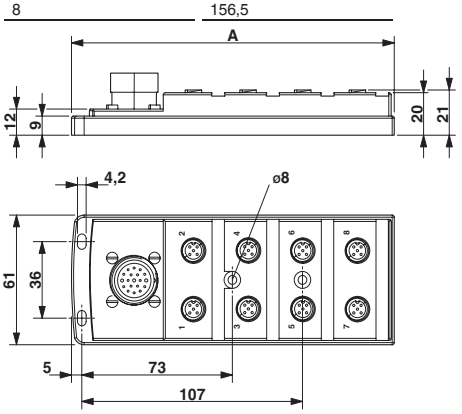
With master cable

Number of slots	A [mm]
4	115,9
6	129,4
8	155,9

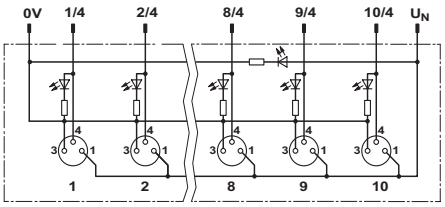


With M23 plug connection, vertical

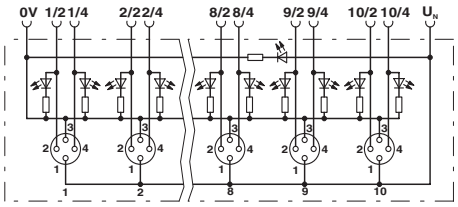
Number of slots	A [mm]
4	116,5
6	130,0
8	156,5



M5 distributor



Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.

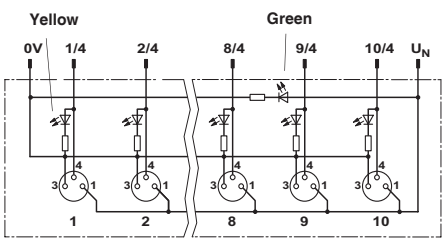


Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.

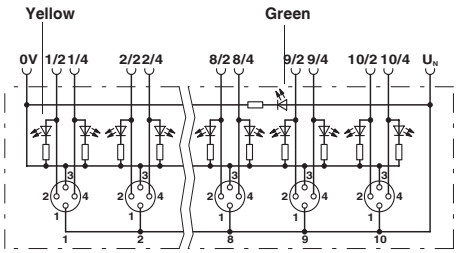
Pin assignment of M5 socket, 3-pos.

Pin assignment of M5 socket, 4-pos.

M8 distributor



Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.



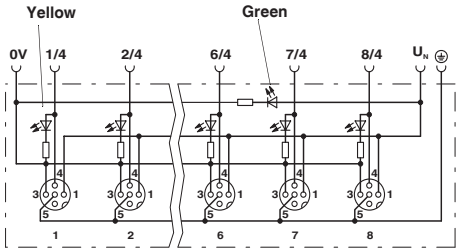
Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.

Pin assignment of M8 socket, 3-pos.

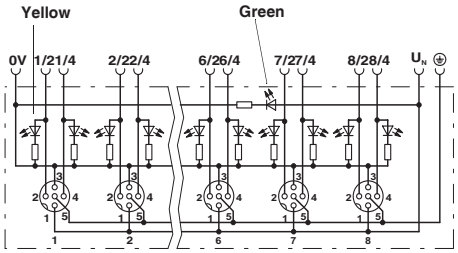
Pin assignment of M8 socket, 4-pos.

M12 distributor

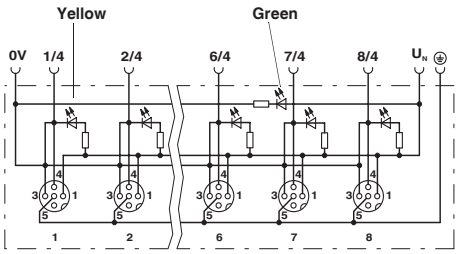
With master cable, M23 plug connection, spring-cage connection



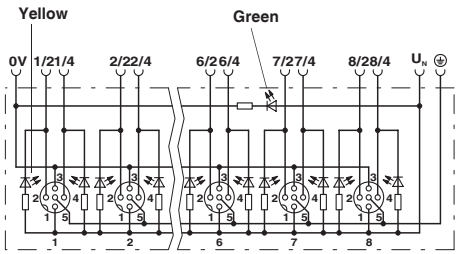
Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.



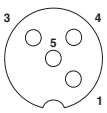
Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.



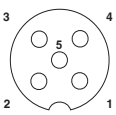
Circuit diagram of single-occupancy
(for NPN sensors/actuators)
For pin assignment, refer to page 182.



Circuit diagram of double-occupancy
(for NPN sensors/actuators)
For pin assignment, refer to page 182.

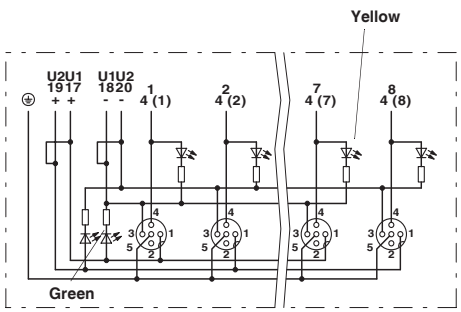


Pin assignment of M12 socket, 4-pos.

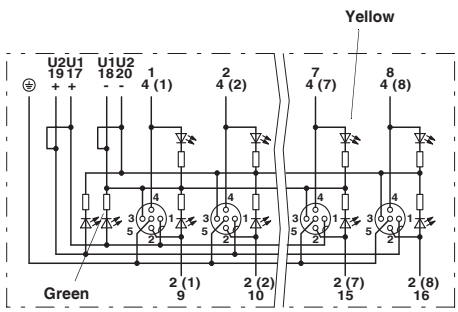


Pin assignment of M12 socket, 5-pos.

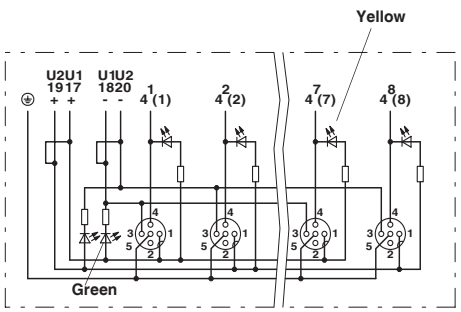
With pluggable screw connection



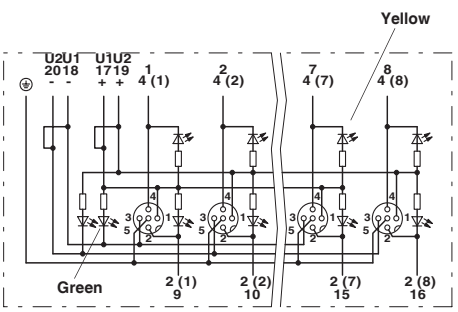
Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.



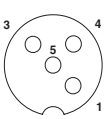
Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 182.



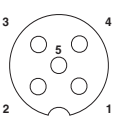
Circuit diagram of single-occupancy
(for NPN sensors/actuators)
For pin assignment, refer to page 182.



Circuit diagram of double-occupancy
(for NPN sensors/actuators)
For pin assignment, refer to page 182.



Pin assignment of M12 socket, 4-pos.

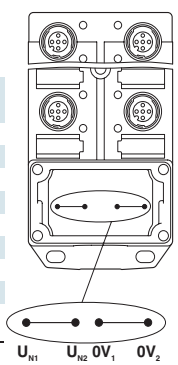


Pin assignment of M12 socket, 5-pos.

Potential U_{N1} and U_{N2} bridged
(Delivery state)

Potential	Slot
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	1
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	3
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	5
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	7
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	2
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	4
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	6
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	8

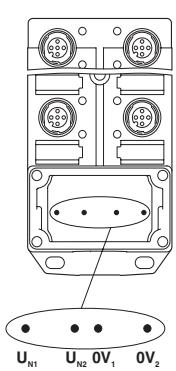
I_{tot} = 10 A



Electrically isolated

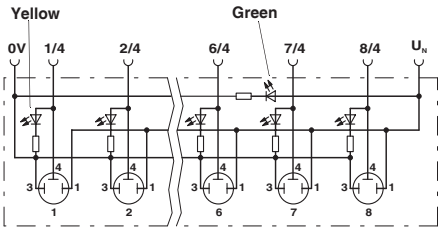
Potential	Slot
$U_{N1} / 0\,V_1$	1
$U_{N1} / 0\,V_1$	3
$U_{N1} / 0\,V_1$	5
$U_{N1} / 0\,V_1$	7
$U_{N2} / 0\,V_2$	2
$U_{N2} / 0\,V_2$	4
$U_{N2} / 0\,V_2$	6
$U_{N2} / 0\,V_2$	8

I_{tot} = 2 x 8 A

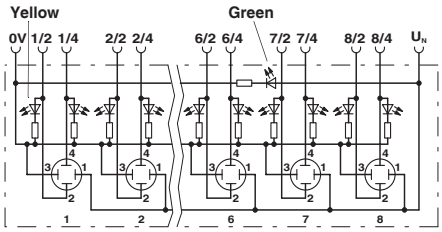


QUICKON distributor
Connection cross-section 0.14 mm² ... 0.34 mm²

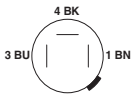
With master cable



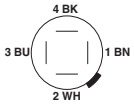
Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 183.



Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 183.

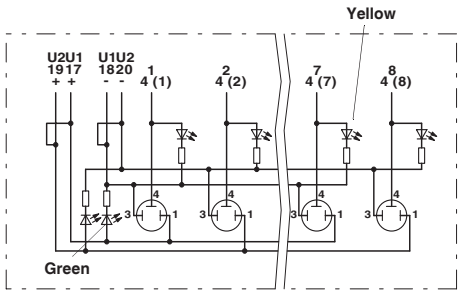


Pin assignment of QUICKON connection,
3-pos.

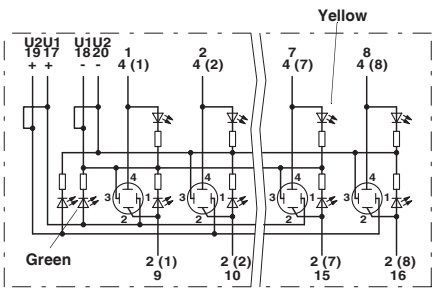


Pin assignment of QUICKON connection,
4-pos.

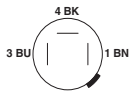
With pluggable screw connection



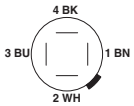
Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 183.



Circuit diagram of double-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 183.



Pin assignment of QUICKON connection,
3-pos.

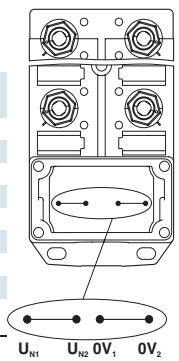


Pin assignment of QUICKON connection,
4-pos.

Potential U_{N1} and U_{N2} bridged
(Delivery state)

Potential	Slot
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	1
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	3
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	5
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	7
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	2
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	4
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	6
$U_{N1} = U_{N2} / 0\,V_1 = 0\,V_2$	8

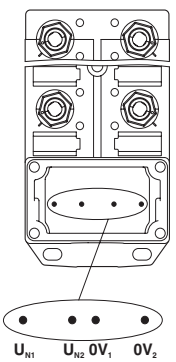
I_{tot} = 10 A



Electrically isolated

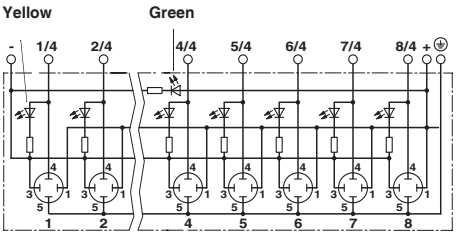
Potential	Slot
$U_{N1} / 0\,V_1$	1
$U_{N1} / 0\,V_1$	3
$U_{N1} / 0\,V_1$	5
$U_{N1} / 0\,V_1$	7
$U_{N2} / 0\,V_2$	2
$U_{N2} / 0\,V_2$	4
$U_{N2} / 0\,V_2$	6
$U_{N2} / 0\,V_2$	8

I_{tot} = 2 x 8 A

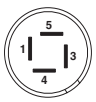


QUICKON distributor
Connection cross-section 0.34 mm² ... 0.75 mm²

With master cable, spring-cage connection

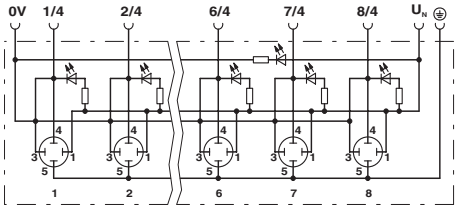


Circuit diagram of single-occupancy
(for PNP sensors/actuators)
For pin assignment, refer to page 183.

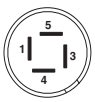


Pin assignment of QUICKON connection,
4-pos.

With spring-cage connection



Circuit diagram of single-occupancy
(for NPN sensors/actuators)
For pin assignment, refer to page 183.



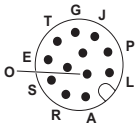
Pin assignment of QUICKON connection,
4-pos.

M5 distributor

M5 slot/pos. (potential)	Conductor color	M12 plug connection
1 / 4 (A)	WH	P
1 / 2 (B)	GYPK	
2 / 4 (A)	GN	J
2 / 2 (B)	RDBU	
3 / 4 (A)	YE	T
3 / 2 (B)	WHGN	
4 / 4 (A)	GY	S
4 / 2 (B)	BNGN	
5 / 4 (A)	PK	G
5 / 2 (B)	WHYE	
6 / 4 (A)	RD	R
6 / 2 (B)	YEBN	
7 / 4 (A)	BK	E
7 / 2 (B)	WHGY	
8 / 4 (A)	VT	O
8 / 2 (B)	GYBN	
1-8 / 1 (+ 24 V)	BN	A
1-8 / 3 (0 V)	BU	L

Pin assignment of M5 socket, 3-pos.

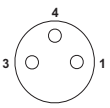
Pin assignment of - M5 socket, 4-pos.



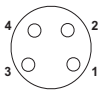
Pin assignment of M12 plug connection, 12-pos.

M8 distributor

Assignment	Master cable	M12/M16 plug connection		Pluggable screw connection	Spring-cage connection
M8 slot/pos. (potential)	Conductor color	Plug connection		Terminal point	Terminal point
		M12	M16		
1 / 4 (A)	WH	P	P	1 / 4	1 / 4
2 / 4 (A)	GN	J	J	2 / 4	2 / 4
3 / 4 (A)	YE	T	T	3 / 4	3 / 4
4 / 4 (A)	GY	S	S	4 / 4	4 / 4
5 / 4 (A)	PK	G	G	5 / 4	5 / 4
6 / 4 (A)	RD	R	R	6 / 4	6 / 4
7 / 4 (A)	BK	-	E	7 / 4	7 / 4
8 / 4 (A)	VT	-	O	8 / 4	8 / 4
9 / 4 (A)	WHPK	-	C	9 / 4	9 / 4
10 / 4 (A)	PKBN	-	N	10 / 4	10 / 4
1-10 / 1 (+ 24 V)	BN	A	A+M	U_N	U_N
1-10 / 3 (0 V)	BU	L	L+U	0V	0V

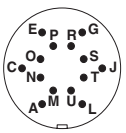


Pin assignment of M8 socket, 3-pos.



Pin assignment of M8 socket, 4-pos.

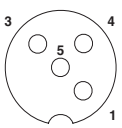
Pin assignment of M12 plug connection, 8-pos.



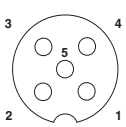
Pin assignment of M16 plug connection, 14-pos.

M12 distributor

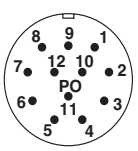
Assignment	Master cable	M23 plug connection		Pluggable screw connection	Spring-cage connection
M12 slot/pos. (potential)	Conductor color	Plug connection		Terminal point	Terminal point
		12-pos.	19-pos.		
1 / 4 (A)	WH	1	15	1 / 4	1 / 4
1 / 2 (B)	GYPK		7	1 / 2	1 / 2
2 / 4 (A)	GN	2	5	2 / 4	2 / 4
2 / 2 (B)	RDBU		4	2 / 2	2 / 2
3 / 4 (A)	YE	3	16	3 / 4	3 / 4
3 / 2 (B)	WHGN		8	3 / 2	3 / 2
4 / 4 (A)	GY	4	3	4 / 4	4 / 4
4 / 2 (B)	BNGN		14	4 / 2	4 / 2
5 / 4 (A)	PK	5	17	5 / 4	5 / 4
5 / 2 (B)	WHYE		9	5 / 2	5 / 2
6 / 4 (A)	RD	6	2	6 / 4	6 / 4
6 / 2 (B)	YEBN		13	6 / 2	6 / 2
7 / 4 (A)	BK	7	11	7 / 4	7 / 4
7 / 2 (B)	WHGY		10	7 / 2	7 / 2
8 / 4 (A)	VT	8	1	8 / 4	8 / 4
8 / 2 (B)	GYBN		18	8 / 2	8 / 2
1-8 / 1 (+ 24 V/120 V)	BN	11	19	U_N	U_N
1-8 / 3 (0 V)	BU	9+10	6	0 V	0 V
1-8 / 5 (PE)	GNYE	12	12	PE	PE



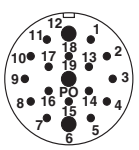
Pin assignment of M12 socket, 4-pos.



Pin assignment of M12 socket, 5-pos.



Pin assignment of M23 plug connection, 12-pos.

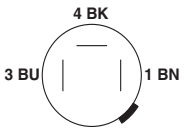


Pin assignment of M23 plug connection, 19-pos.

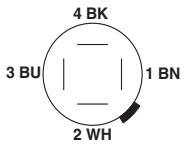
QUICKON distributor

Connection cross-section 0.14 mm² ... 0.34 mm²

Assignment QUICKON slot/ contact (potential)	Master cable Conductor color	Pluggable screw connection Terminal point
1 / 4 (A)	WH	1 / 4
1 / 2 (B)	GYPK	1 / 2
2 / 4 (A)	GN	2 / 4
2 / 2 (B)	RDBU	2 / 2
3 / 4 (A)	YE	3 / 4
3 / 2 (B)	WHGN	3 / 2
4 / 4 (A)	GY	4 / 4
4 / 2 (B)	BNGN	4 / 2
5 / 4 (A)	PK	5 / 4
5 / 2 (B)	WHYE	5 / 2
6 / 4 (A)	RD	6 / 4
6 / 2 (B)	YEBN	6 / 2
7 / 4 (A)	BK	7 / 4
7 / 2 (B)	WHGY	7 / 2
8 / 4 (A)	VT	8 / 4
8 / 2 (B)	GYBN	8 / 2
1-8 / 1 (+ 24 V/48 V)	BN	U_N
1-8 / 3 (0 V)	BU	0V



Pin assignment of QUICKON connection 3-pos.

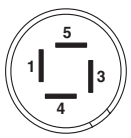


Pin assignment of QUICKON connection 4-pos.

QUICKON distributor

Connection cross-section 0.34 mm² ... 0.75 mm²

Assignment QUICKON slot/ contact (Potential)	Master cable Conductor color	Spring-cage connection Terminal point
1 / 4 (A)	WH	1 / 4
2 / 4 (A)	GN	2 / 4
3 / 4 (A)	YE	3 / 4
4 / 4 (A)	GY	4 / 2
5 / 4 (A)	PK	5 / 4
6 / 4 (A)	RD	6 / 2
7 / 4 (A)	BK	7 / 4
8 / 4 (A)	VT	8 / 2
1-8 / 1 (+24 V/120 V)	BN	U_N
1-8 / 3 (0 V)	BU	0 V
1-8 / 5 (PE)	GNYE	PE



1 U
3 0 V
4 Input/output
5 PE

Pin assignment of QUICKON connection, 4-pos.

Data connectors – PLUSCON data

In line with the decentralization of complex production systems and the increasing need for quick information and data transfer, standardized data interfaces are being used in industrial applications. Industrial ambient conditions place exacting demands on connectors, connection methods and cabling that are not comparable with the office environment. Classic fieldbuses like Interbus and Profibus, Industrial Ethernet, Profinet, USB, FireWire – with PLUSCON data, Phoenix Contact offers industry-compatible components with the IP20 and IP67 degrees of protection for classic communications interfaces.

Complete installation system

The product range consists of connectors, panel feed-throughs, cables for assembly, patch panels, terminal outlets as well as corresponding accessories, and thus forms a complete installation system. PLUSCON data is suitable for use inside the control cabinets, in field and industrial hall cabling as well as for the integration into the devices having a high degree of protection.

Simple field assembly

Easy-to-use fast connection technologies are available to enable the assembly of connectors even under the toughest conditions in an industrial environment. RJ45 Quickon and M12 Quickon can be assembled for Ethernet and Profinet cabling without using special tools.

Copper and fiber optics in the same design

SCRJ fiber optics connectors with IP20 and IP67 degrees of protection (designed by Reichle & De-Massari AG) that are especially suitable for Industrial Ethernet and Profinet are available for all commonly used fiber types and also equipped with proven fast connection technologies. The assembly tool sets contain all tools and materials needed for field assembly.

Program overview	**186**
Industrial Ethernet	
Basics and topology	**188**
RJ45 connectors, cables and patch panels	**192**
M12 connectors and flush-type connectors	**197**
Tools for copper-based cabling	**211**
SCRJ connectors and patch panels	**212**
PROFINET	
Basics and topology	**224**
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M12 connectors and flush-type connectors	**234**
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Power connectors	**246**
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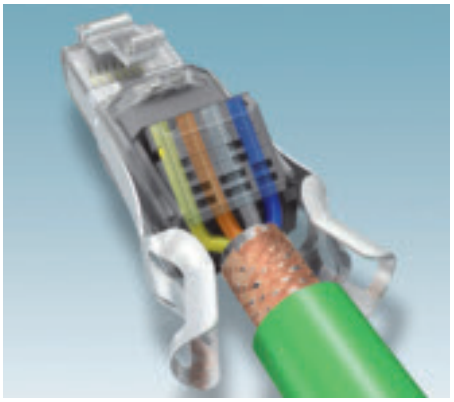
Fieldbuses	**256**
INTERBUS	**264**
PROFIBUS	**270**
CANopen and DeviceNet	**258**
AS-Interface	**260**
CC-Link	**262**
FOUNDATION Fieldbus	**262**
USB and Firewire	**308**
D-SUB based connectors	**314**
Service interface	**330**
Dimensional drawings	**334**

QUICKON fast connection for Ethernet and PROFINET



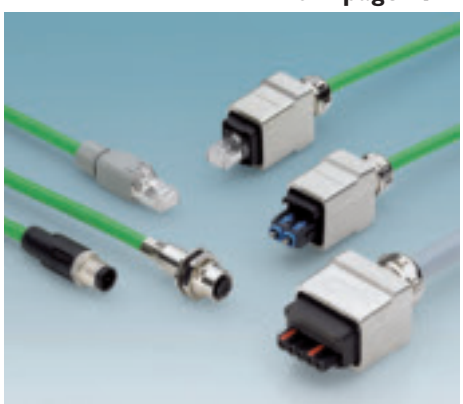
No special auxiliary tool is required for assembling the new RJ45-Quickon and M12-Quickon connectors. The connectors are in compliance with CAT5 pursuant to IEC 11801:2002 and CAT5e as per TIA 568B:2001 and are available as a 4-pos. version for Profinet and an 8-pos. version for Industrial Ethernet. The 8-pos. versions can also be used for Gigabit-Ethernet. The QUICKON connection method is also used for the new, rugged VARIOSUB Pusch-pull connector.

Industrial Ethernet

Industrial Ethernet installation systems with RJ45, M12 and SCRJ connectors provide users with complete cabling concepts for all industrial installation situations. All RJ45 and M12 components for Ethernet are in compliance with CAT5 pursuant to IEC 11801:2002 and CAT5e as per TIA 568B:2001. CAT6 compatible components are also available for future-oriented systems. The SCRJ FO connectors with fast connection technology can be used for all customary fiber types.

Another emerging trend is to use data and power in one connector. This technology is used in the VARAN system.

From page 192



PROFINET

The PROFIBUS user organization (PNO) has defined the RJ45 and M12 connectors with D-coding in combination with Profinet cables (AWG 22) for Profinet cabling. For fiber optics cabling, the SCRJ connector is used for the fiber types POF, HCS and glass fiber. Phoenix Contact offers these connectors with established quick connection methods and corresponding Profinet cables. The push-pull connector with the RJ45, SCRJ and Power (5-pos., 24 V) versions developed by Phoenix Contact was selected as the IP65/67 solution. The exceptionally rugged push-pull connector is extremely easy to use and available with a metal or plastic housing.

From page 226

The range of products

Fieldbuses

Versions with special characteristics adapted to the requirements of the fieldbus organizations, are available for the most common fieldbuses INTERBUS, PROFIBUS, CANopen, DeviceNet™ and AS-Interface, CC-Link and FOUNDATION Fieldbus™. Control cabinet feed-throughs, equipment connections, couplings and distributors can be easily created with components from the M12 and D-SUB range.
The D-SUB based fieldbus connectors with screw connection can be connected quickly even under field conditions. Special protection and terminating devices in accordance with the guidelines of the applicable fieldbus organization guarantee problem-free operation. The terminating resistor can be connected using a switch accessible from the outside.

From page 264

USB and FireWire

The USB and FireWire connectors have been specially developed for using the USB and FireWire interfaces on the machine and in the control cabinet. The rugged locking clip interlock opens up varied fields of applications in the industrial environment. Assembled cables compliant with IP20 and IP67 degrees of protection, panel mounting frames and contact inserts are available for users. Contact inserts with a rear flat-ribbon cable terminal strip are especially suitable for integration into IP67-protected devices; the socket/socket version is suitable for control cabinet feed-throughs. The USB memory stick compliant with IP67 degree of protection enables assembling a service interface in combination with the panel mounting frame and the protective cover.

From page 298

D-SUB based connector

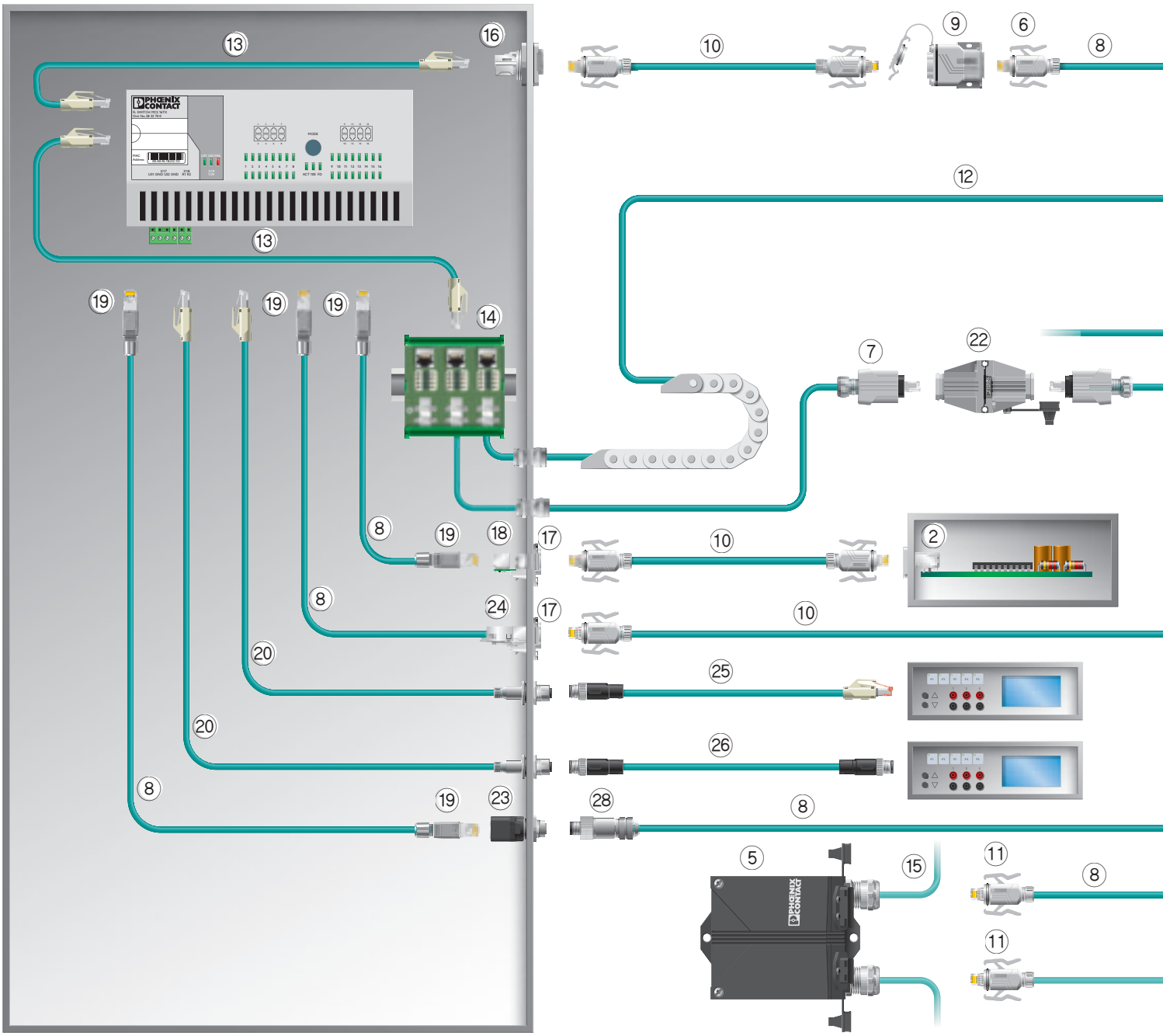
D-SUB is a product range that enables using D-SUB connectors in harsh environmental conditions. The sturdy sleeve housings and mounting frames can be used with standard D-SUB contact inserts, which allow for a wide range of applications. EMC inner sleeves can be additionally used in environments with strong EMC fields. Device connections, control cabinet feed-throughs or field cabling - no problem with the D-SUB range. Phoenix Contact offers an extensive product range for customary applications containing housings and contact inserts. Contact inserts are available as signal, power and coaxial versions as well as combined versions.

From page 318

Service interfaces

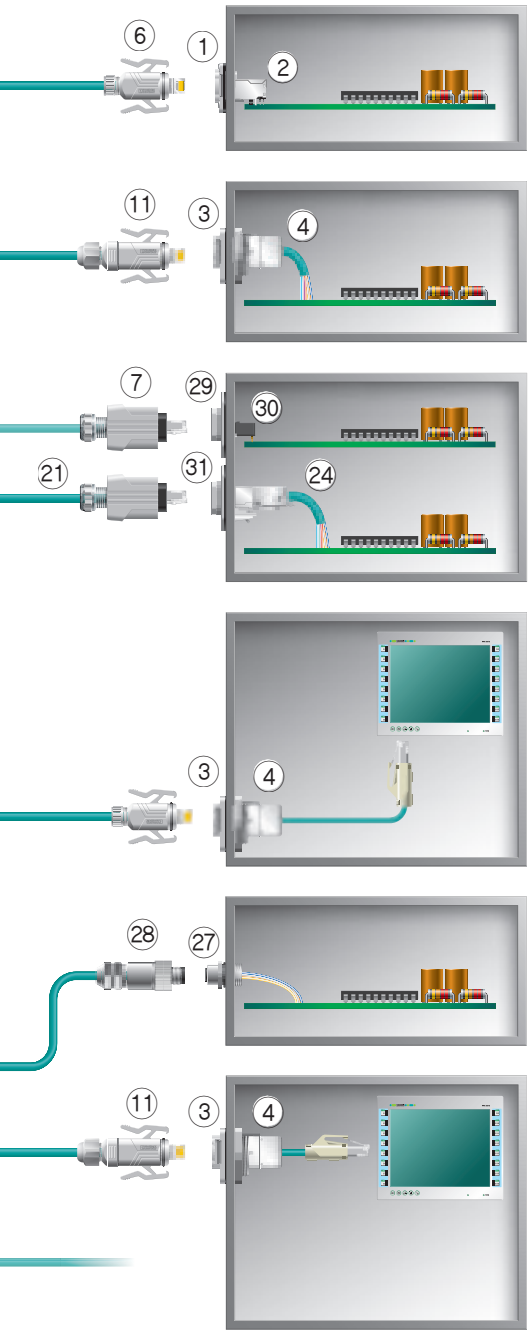
The new service interface is designed for use in control cabinets and devices in a harsh industrial environment. Single and dual metal frames are equipped with a transparent, interlockable cover that complies with the IP67 degree of protection when closed. In addition to front plates, completely assembled with contact inserts, unassembled plates for accommodating D-SUB, Keystone and Freenet contact inserts are available for equipping the metal frames. In this way D-SUB, RJ45, USB, FireWire and SCRJ interfaces can thus be combined as desired. Individual service interfaces can be designed in combination with socket inserts in different country-specific versions.

From page 330

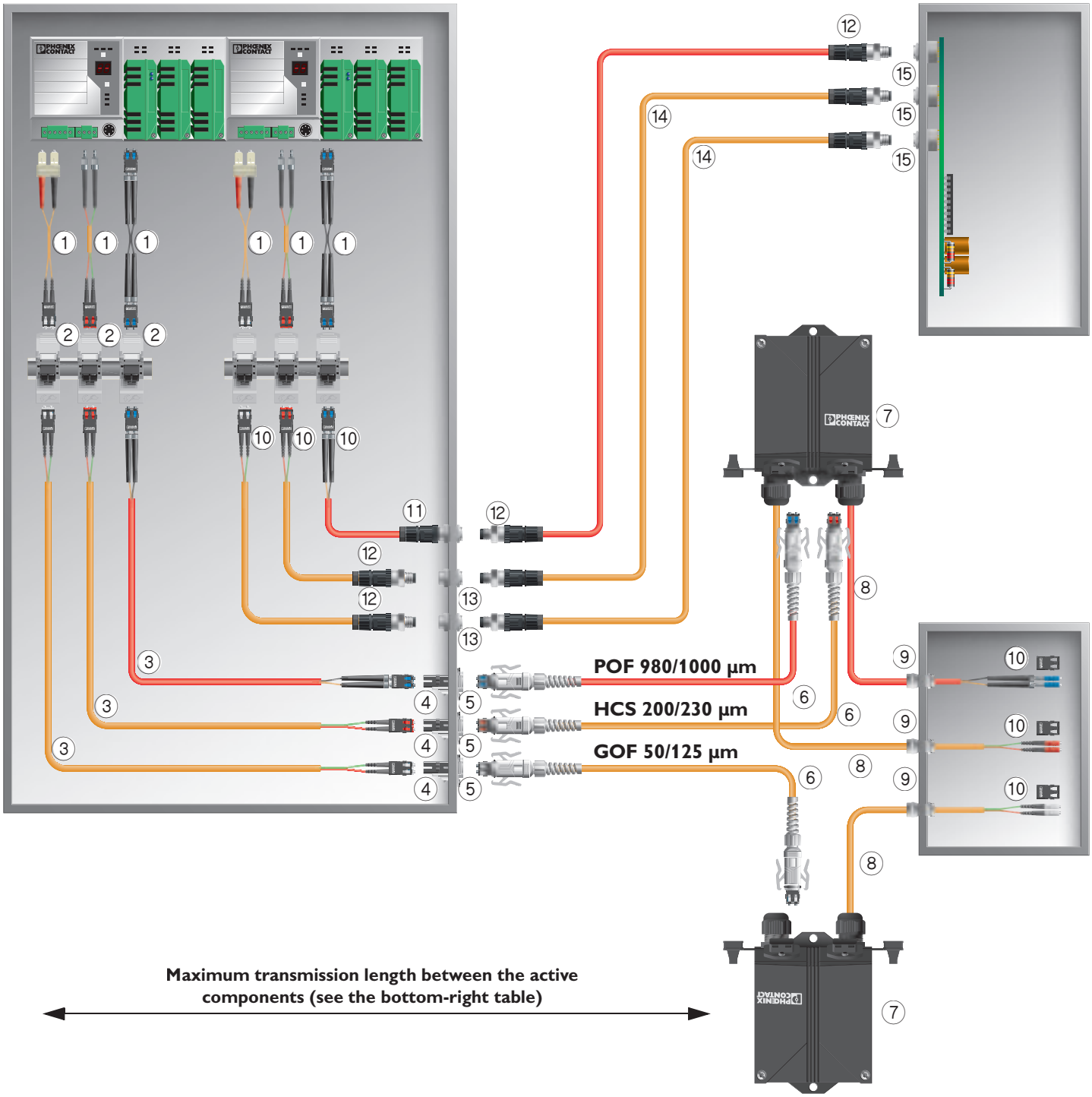


For loads like moisture, temperature, shock or vibration that occur in the production environment, solutions optimized for industrial use are required and these cannot be implemented using cabling concepts designed for office applications. When selecting the connectors and cables, the users must look for a rugged design in addition to transmission properties and the EMC protection. Components which are compliant with the IP67 degree of protection and which also provide a shock and vibration-resistant locking are required in the field. In addition, the assembly of data connectors in an industrial environment requires a simple and safe connection method that can be used even under the toughest conditions. Phoenix Contact offers RJ45 and M12 connectors with Quickon fast connection technology for Ethernet applications.

The components comply with CAT5 pursuant to IEC 11801: 2002 and CAT5e as per TIA 568B:2001 and are available as 4-pos. as well as 8-pos. versions. Popular installation situations in star topology are shown with the corresponding components in the above figure. However, these examples do not claim to be complete. For more information, please refer to the catalog pages containing detailed product descriptions.



No.	Order designation	Order No.	Page
1	IP67-compliant RJ45 panel mounting frame, for PCB mounting	1689446	195
2	RJ45 female insert for PCB mounting	1688586	195
3	IP67-compliant RJ45 panel mounting frame, for modular female inserts	1689844	196
4	RJ45 female insert with LSA connection	1689459	196
5	IP65-compliant RJ45 terminal outlet	1404278	200
6	IP67-compliant RJ45 connector comprising male insert and sleeve housing	1652716 1652732	192
7	IP67-compliant RJ45 push-pull connector, can be assembled without tools	1608016	194
8	Ethernet cable, for flexible laying, by the meter	1416402	202
9	IP67-compliant RJ45 coupling	1689268	201
10	Assembled Ethernet cable with IP67-compliant RJ45 connector	1406137	202
11	IP67-compliant RJ45 connector, 8-pos., can be assembled without tools	1656990	194
12	Ethernet cable, flexible cable conduit capable, by the meter	1416431	206
13	Assembled Ethernet cable with IP20-compliant RJ45 connectors	1407903	204
14	IP20-compliant RJ45 patch panel for mounting on DIN rail	1653045	198
15	Ethernet cable, for fixed laying, by the meter	1416415	210
16	RJ45 female insert socket/socket	1689064	193
17	IP67-compliant RJ45 panel mounting frame, for Freenet female inserts	1653744	195
18	RJ45 female insert, Freenet, socket/socket	1652952	199
19	IP20-compliant RJ45 connector, 8-pos., can be assembled without tools	1656725	192
20	M12 flush-type connector, with Ethernet cable and RJ45 connector	1412082	204
21	Assembled Ethernet cable with IP67-compliant RJ45 push-pull connectors	1412419	204
22	IP67-compliant RJ45 push-pull coupling	1405183	201
23	M12 on RJ45 control cabinet feed-through	1657494	197
24	RJ45 female insert Freenet, with IDC quick connection	1652936	195
25	M12 connector, with Ethernet cable and IP20-compliant RJ45 connector	1406056	197
26	Assembled Ethernet cable with M12 connectors, IP65/67	1412626	204
27	M12 flush-type connector, 4-pos., with litz wires	1534630	197
28	M12 connector, shielded, 4-pos., IP65/67, can be assembled without tools	1543223	197
29	IP67-compliant RJ45 panel mounting frame for push-pull locking, for PCB mounting	1608029	195
30	RJ45 female insert for PCB mounting	1653087	195
31	IP67-compliant RJ45 panel mounting frame for push-pull locking, for Freenet female inserts	1405358	195



For loads like moisture, temperature, shock or vibration that occur in the production environment, solutions optimized for industrial use are required and these cannot be implemented using cabling concepts designed for office applications. The SCRJ that is used as an FO connector for the industrial environment has established itself as the suitable solution in the market.
Thanks to its rugged SC ferrule, this small form factor connector is suitable for all fiber types and it also allows implementing quick assembly methods. In addition to the IP20 version for use in the control cabinet, a version compliant with the IP67 degree of protection is also available and it additionally offers shock and vibration-safe locking.

VARIOSUB SCRJ is a uniform installation concept comprising connectors, cables and panel feed-throughs for all fiber types. SCRJ adapter cables with connector types SC duplex and FSMA allow using the SCRJ installation system in devices without an SCRJ connection. Phoenix Contact's quick assembly methods for all fiber types allow simple and safe on-site assembly in the field. Panel feed-throughs, patch panels and terminal outlets for SCRJ can be used independent of the fiber type.

For more information, please refer to the catalog pages containing the product information.

No.	Order designation	Order No. (example)					
		POF	Page	HCS	Page	GOF	Page
1	SCRJ/IP20 adapter cable on FSMA (for POF / HCS) or SCRJ/IP20 on SC-Duplex (for GOF)	1656738	214	1654963	215	1654400	216
2	SCRJ/IP20 patch panel for mounting on DIN rail	1658121					221
3	Assembled industrial cable, assembled with SCRJ/IP20 connectors from both sides	1657601	214	1657614	215	1654727	216
4	SCRJ female insert for panel mounting frame	1652978					217
5	SCRJ/IP67 panel mounting frame	1653744					217
6	Assembled FO circular cable with IP67-compliant SCRJ connectors	1657135	214	1654905	215	1654439	216
7	IP67-compliant terminal outlet with 2 SCRJ/IP67 slots and integrated SCRJ female inserts	1404317					220
8	Industrial cable for fixed indoor installation	2744322	214	2799885	215	2799322	216
9	IP68-compliant cable gland	1690558					520
10	IP20-compliant SCRJ connector	1654879	212	1654866	213	1657070	213
11	Panel feed-through assembled with the cable	1416648	219	1416651	219	1416664	219
12	M12 connector	1416606	218	1416619	218	1416622	218
13	M12 panel feed-through	1416635					218
14	Cable, assembled with M12 connectors	1416680	219	1416693	219	1416703	219
15	M12 transceiver	1416716			218	1416729	218

Standard	Transmission speed	Fiber type	Wavelength	Length
–	10 Mbps	POF 980/1000 µm	660 nm	50 m*
–	10 Mbps	HCS 200/230 µm	660 nm	300 m
IEC 61784-5-3 (PROFINET)	100 Mbps	POF 980/1000 µm	660 nm	50 m*
IEC 61784-5-3 (PROFINET)	100 Mbps	HCS 200/230 µm	660 nm	100 m
100BASE-SX	100 Mbps	GOF 50/125 µm	850 nm	3,800 m
100BASE-FX	100 Mbps	GOF 50/125 µm	1300 nm	10,000 m
1000BASE-SX	1000 Mbps	GOF 50/125 µm	850 nm	550 m
1000BASE-LX	1000 Mbps	GOF 50/125 µm	1300 nm	550 m

* minus 10 meters per passive coupling like patch panel, panel feed-through or terminal outlet

RJ45 connector, IP20

VARIOSUB-RJ45 with IP20 degree of protection is suitable for use in devices and infrastructure components. The 8-pos. RJ45 QUICKON with fast connection technology enables connector assembly without the use of special tools even under industrial conditions. Moreover, different crimp connectors are available in CAT5e and CAT6.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08-RJ45-5-Q/IP20

RJ45 IP20 plug connectors with fast connection technology

VS-08-ST-H...RJ45

RJ45 male inserts and bending protection sleeves with IP20 protection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 connector, 8-pos., with Quickon fast connection technology, for AWG 26 ... 22, for cable diameter 4.5 mm ... 8.0 mm						
Military gray RAL 7042	**VS-08-RJ45-5-Q/IP20**	**1656725**	1			
Deep black RAL 9005	**VS-08-RJ45-5-Q/IP20 BK**	**1658008**	1			
Coding set, for color coding of the RJ45 QUICKON plug connector, consisting of 80 color rings (10 rings in each color)	**VS-08-RJ45-Q-COD-SET**	**1656893**	1			
Coding rings, for color coding of the RJ45 QUICKON plug connector, consisting of 10 color rings:						
Blue	**VS-08-RJ45-Q-COD-BU**	**1658134**	10			
Brown	**VS-08-RJ45-Q-COD-BN**	**1658147**	10			
Yellow	**VS-08-RJ45-Q-COD-YE**	**1658150**	10			
Gray	**VS-08-RJ45-Q-COD-GY**	**1658163**	10			
Green	**VS-08-RJ45-Q-COD-GN**	**1658176**	10			
Red	**VS-08-RJ45-Q-COD-RD**	**1658189**	10			
Violet	**VS-08-RJ45-Q-COD-VT**	**1658192**	10			
Black	**VS-08-RJ45-Q-COD-BK**	**1658202**	10			
RJ45 male insert, 8-pos., shielded, IDC connection system, for CAT5e, for litz wires of AWG 27 ... 26, for CAT6 for wires AWG 26 ... 25 and solid wires AWG 24, with strain relief						
CAT5e				**VS-08-ST-H11-RJ45**	**1652716**	5
CAT6				**VS-08-ST-H21-RJ45**	**1652729**	5
RJ45 male insert, 8-pos., shielded, IDC pierce connection, for litz wires AWG 27 ... 24, with strain relief						
CAT6				**VS-08-ST-H21P-RJ45**	**1404388**	5
RJ45 bend protection sleeve, for male insert VS-08-ST-H11-RJ45 and VS-08-ST-H21-RJ45, for cable diameters up to 7 mm						
Gray				**VS-08-KS-H/GY**	**1654743**	5
Green				**VS-08-KS-H/GN**	**1654756**	5
Crimp tool, pliers with die, for VS-08-ST-H…-RJ45				**VS-CT-RJ45-H**	**1653265**	1
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-08-RJ45-5-Q/IP20...	VS-08-ST-H...-RJ45
Electrical data		
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Surge voltage category	I	-
Material data		
Housing material	PA	-
Contact material	Copper alloy	Copper alloy
Inflammability class acc. to UL 94	V0	V2
Pollution degree	1	2
Insertion/withdrawal cycles	≥ 1000	≥ 200
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-25°C ... 60°C

RJ45 panel mounting frames with IP20 and female inserts

Corresponding panel mounting frames and female inserts suitable for the RJ-45 connectors with IP20 are available.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08-...-RJ45...

RJ45 female inserts and panel mounting frames IP20, modular system, keystone

Description	Type	Order No.	Pcs. / Pkt.
RJ45 female insert, 8-pos., shielded, socket on socket			
CAT5e	**VS-08-BU-RJ45/BU**	**1689064**	5
RJ45 female insert, 8-pos., shielded, with cable connection			
CAT5e	**VS-08-BU-RJ45/KA/LSA**	**1689459**	5
CAT6	**VS-08-BU-RJ45-6/KA/LSA**	**1653168**	5
RJ45 panel mounting frame, single, for modular female inserts (Keystone), without mounting screws	**VS-08-A-RJ45/MOD-1-IP20**	**1689433**	5
Split-core tool, for connecting the copper wires to the LSA Plus strips	**CT-WZ/A**	**2765505**	1
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-08-BU-RJ45/KA/LSA	VS-08-A-RJ45/MOD-1-IP20
Electrical data		
Rated current	1.5 A	-
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-
Material data		
Housing material	-	PA
Contact material	Copper alloy	-
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
No. of pos.	8	-
Type of connection	LSA	-
Conductor cross-section	0.13 mm² ... 0.32 mm² (solid)	-
Connection cross-section AWG	26 ... 22 (solid)	-
Temperature data		
Ambient temperature (operation)	-40°C ... 70°C	-40°C ... 80°C

RJ45 connector, IP67

The RJ45 connector with the IP67 degree of protection is suitable for use in a harsh industrial environment. The connector with push-pull locking described in IEC 61076-3-106 protects the plug-in connection from mechanical strains and is available as a crimp connector and as an RJ45 QUICKON connector that can be assembled without using any tools.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08...-RJ45...

RJ45 IP67 plug connectors
with fast connection technology

VS-PPC-C1-RJ45-...-PG9-...

Push-pull RJ45 IP67 connectors
with fast connection technology

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 connector, 8-pos., with Quickon fast connection technology, for AWG 26 ... 22						
Military gray RAL 7042	**VS-08-RJ45-5-Q/IP67**	**1656990**	1			
Deep black RAL 9005	**VS-08-RJ45-5-Q/IP67-BK**	**1658493**	1			
Connector RJ45, IP67, with push-pull locking, CAT5e, 8-pos., with QUICKON fast connection technology						
Metal housing				**VS-PPC-C1-RJ45-MNNA-PG9-8Q5**	**1608016**	1
Plastic housing				**VS-PPC-C1-RJ45-POBK-PG9-8Q5**	**1657834**	1
Connector RJ45, IP67, with push-pull locking, CAT6, 8-pos., with IDC connection method						
Metal housing				**VS-PPC-C1-RJ45-MNNA-PG9-8I6**	**1608113**	1
Plastic housing				**VS-PPC-C1-RJ45-POBK-PG9-8I6**	**1608139**	1
RJ45 male insert, 8-pos., shielded, IDC connection system, for CAT5e, for litz wires of AWG 27 ... 26, for CAT6 for wires AWG 26 ... 25 and solid wires AWG 24, with strain relief						
CAT5e	**VS-08-ST-H11-RJ45**	**1652716**	5			
CAT6	**VS-08-ST-H21-RJ45**	**1652729**	5			
RJ45 male insert, 8-pos., shielded, IDC pierce connection, for litz wires AWG 27 ... 24, with strain relief						
CAT6	**VS-08-ST-H21P-RJ45**	**1404388**	5			
RJ45 sleeve housing for male insert VS-08-ST-H...-RJ45, with push-pull interlock for panel mounting frames, for cable diameters 5.0 mm … 8.5 mm						
Military gray RAL 7042	**VS-08-T-H-RJ45/IP67**	**1652732**	5			
Deep black RAL 9005	**VS-08-T-H-RJ45/IP67-BK**	**1658671**	5			
Crimp tool, pliers with die, for VS-08-ST-H…-RJ45	**VS-CT-RJ45-H**	**1653265**	1			
Marker label set, consisting of 4 sheets (white, blue, yellow, orange) each with 50 labels for marking sleeve housings and panel mounting frames with IP67 protection	**VS-ZBFM-8-SET**	**0814775**	1			
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1			

Technical data	VS-08-RJ45-5-Q/IP67...	VS-PPC-C1-RJ45-...-PG9-8Q5
Electrical data		
Rated voltage	50 V	50 V
Rated current	1.75 A	1.75 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Surge voltage category	I	I
Material data		
Housing material	PA	Zinc die-cast
Contact material	Copper alloy	Copper alloy
Inflammability class acc. to UL 94	V0	V0
Pollution degree	2	2
Connection data		
Type of connection	IDC fast connection	IDC fast connection
Connection cross-section AWG	26 ... 22 (solid)	26 ... 22 (solid)
Connection cross-section AWG	26 ... 22 (stranded)	26 ... 22 (stranded)
External cable diameter	5 mm ... 8 mm	5 mm ... 8 mm
Insertion/withdrawal cycles	≥ 1000	≥ 250
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 70°C

IP67 RJ45 panel mounting frame and female inserts

Various panel mounting frames and female inserts are available for the integration into devices and control cabinets.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-F...

RJ45 female inserts and panel mounting frames IP67, Freenet system

VS-08-...-RJ45...

RJ45 female inserts and panel mounting frames IP67 with PCB connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 female insert, 8-pos., shielded, with cable connection						
CAT5e	**VS-08-BU-RJ45-5-F/PK**	**1652936**	1			
CAT6	**VS-08-BU-RJ45-6-F/PK**	**1652949**	1			
RJ45 female insert, CAT5e, 8-pos., shielded, socket on socket						
For metal panel mounting frame	**VS-08-BU/BU-RJ45-F**	**1405617**	1			
RJ45 female insert, for PCB mounting, CAT5e, 8-pos., shielded, with angled solder pins						
				VS-08-BU-RJ45/LP-1	**1688586**	5
RJ45 female insert, single, for PCB mounting, CAT6, 8-pos., shielded						
Straight solder pins				**VS-08-BU-RJ45-6/LV-1**	**1653090**	5
Angled solder pins				**VS-08-BU-RJ45-6/LH-1**	**1653087**	5
Panel mounting frame, for round assembly opening, with grommet, without mounting screws						
Military gray RAL 7042	**VS-A-F-IP67**	**1653744**	5			
Deep black RAL 9005	**VS-A-F-IP67-BK**	**1658668**	5			
RJ45 panel mounting frame, for rectangular assembly opening, with seal, without mounting screws, black variant for outdoor applications						
Military gray RAL 7042				**VS-08-A-RJ45/LP-1-IP67**	**1689446**	5
Deep black RAL 9005				**VS-08-A-RJ45/LP-1-IP67-BK**	**1658655**	5
RJ45 panel mounting frame, IP67, for push-pull locking, metal, with Freenet system, for round mounting cutout, with seal						
	VS-PPC-F1-RJ45-MNNA-1C-F	**1405222**	1			
RJ45 panel mounting frame, IP67, for push-pull locking, for rectangular mounting cutout, with seal, without mounting screws, for Freenet system						
Metal housing	**VS-PPC-F1-RJ45-MNNA-1R-F**	**1405358**	1	**VS-PPC-F1-RJ45-MNNA-1R-PHA**	**1608029**	1
Plastic housing	**VS-PPC-F1-RJ45-POBK-1R-F**	**1608197**	1	**VS-PPC-F1-RJ45-P0BK-1R-PHA**	**1657847**	1
Protective cover, flat, for covering the contact insert in the panel mounting frame						
Military gray RAL 7042	**VS-08-SD-F**	**1652606**	5	**VS-08-SD-F**	**1652606**	5
Deep black RAL 9005	**VS-08-SD-F-BK**	**1658066**	5	**VS-08-SD-F-BK**	**1658066**	5
Protective cover, IP67, with a push-pull interlock to cover the contact insert in the push-pull panel mounting frames RJ45 and SCRJ						
Metal housing	**VS-PPC-C1-PC67-MNNA**	**1608142**	1	**VS-PPC-C1-PC67-MNNA**	**1608142**	1
Plastic housing	**VS-PPC-C1-PC67-POBK**	**1608155**	1	**VS-PPC-C1-PC67-POBK**	**1608155**	1
Filler plug, to cover the contact insert in the RJ45 and SCRJ push-pull panel mounting frames	**VS-PPC-C1-PC-ROBK**	**1404773**	1	**VS-PPC-C1-PC-ROBK**	**1404773**	1
Snap-on cap, with additional snap-lock, IP65/IP67, for the panel mounting frame, push-pull locking	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-08-BU-RJ45-6-F/PK	VS-A-F-IP67...	VS-08-BU-RJ45/LP-...	VS-08-A-RJ45/LP-1-IP67...
Electrical data				
Rated voltage	50 V	-	150 V	-
Rated current	1 A	-	1.5 A	-
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-
Housing material	-	PA	-	PA
Contact material	Copper alloy	-	Copper alloy	-
Inflammability class acc. to UL 94	V0	V0	V0	V0
No. of pos.	8	-	8	-
Type of connection	IDC	-	Solder connection	-
Connection cross-section AWG	24 ... 22 (solid)	-	-	-
Insertion/withdrawal cycles	≥ 750	≥ 1000	≥ 750	≥ 1000
Temperature data				
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 80°C	-40°C ... 85°C	-40°C ... 80°C

IP67 RJ45 panel mounting frame and female inserts

Panel mounting frames for standard keystones enable easy system integration in the industrial field.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08-...-RJ45/...

RJ45 female inserts and panel mounting frames IP67, modular system, keystone

Description	Type	Order No.	Pcs. / Pkt.
RJ45 female insert, 8-pos., shielded, with cable connection			
CAT5e	**VS-08-BU-RJ45/KA/LSA**	**1689459**	5
CAT6	**VS-08-BU-RJ45-6/KA/LSA**	**1653168**	5
RJ45 female insert, 8-pos., shielded, socket on socket			
CAT5e	**VS-08-BU-RJ45/BU**	**1689064**	5
CAT6	**VS-08-BU-RJ45-6-MOD/BU**	**1653155**	5
Female insert RJ11, modular (Keystone), 6-pos., unshielded			
RJ11, CAT3	**VS-RJ11-BU-MOD/BU**	**1656356**	1
RJ45 panel mounting frame, for round mounting cutout, with grommet, with thread and union nut			
Military gray RAL 7042	**VS-08-A-RJ45/MOD-1-R-IP67**	**1689844**	5
Deep black RAL 9005	**VS-08-A-RJ45/MOD-1-R-IP67 BK**	**1658053**	5
RJ45 panel mounting frame, with square mounting cutout, with grommet, 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
Protective cover, flat, for covering the contact insert in the panel mounting frame			
Military gray RAL 7042	**VS-08-SD-F**	**1652606**	5
Deep black RAL 9005	**VS-08-SD-F-BK**	**1658066**	5
Split-core tool, for connecting the copper wires to the LSA Plus strips	**CT-WZ/A**	**2765505**	1
Punch-out tool, pliers, universal	**VS-LWZH**	**1689514**	1
Punch-out tool, die, for VS-08-A-..RJ45/MOD-1-IP67..., to be used with VS-LWZH	**VS-LWZH/24,6/20,1**	**1689527**	1
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-08-RJ5...	VS-08-A-RJ45/MOD-1-...IP67...
Electrical data		
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-
Surge voltage category	I	-
Material data		
Housing material	PA	PA
Contact material	Copper alloy	-
Inflammability class acc. to UL 94	V0	V0
Pollution degree	2	2
Insertion/withdrawal cycles	≥ 1000	≥ 1000
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 80°C

M12 connectors and flush-type connectors

The M12 profile with D-coding as a 4-pos. version in accordance with IEC 61076-2-101 Amendment 1 requires very little space despite the IP67 degree of protection and is therefore especially suitable for use in small-sized devices. The product range comprises connectors and assembled cables with 4 and 8-pos. versions.

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

SACC-M12MS...SH
M12 connector
with QUICKON connection method

SACC-DSI...-FS...-L...
Flush-type sockets
for PCB mounting

Description	Number of positions	Coding	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Fieldbus connector, shielded M12, QUICKON connection								
Plug, straight	4	D-coded	**SACC-M12MSD-4Q SH**	**1543223**	1			
Plug, angled	4	D-coded	**SACC-M12MRD-4Q SH**	**1553611**	1			
Socket, straight	4	D-coded	**SACC-M12FSD-4Q SH**	**1553624**	1			
Socket, angled	4	D-coded	**SACC-M12FRD-4Q SH**	**1553637**	1			
Plug, straight	8	A-coded	**SACC-M12MS-8QO SH**	**1543236**	1			
Plug, angled	8	A-coded	**SACC-M12MR-8QO SH**	**1553640**	1			
Socket, straight	8	A-coded	**SACC-M12FS-8QO SH**	**1553653**	1			
Socket, angled	8	A-coded	**SACC-M12FR-8QO SH**	**1553666**	1			
Flush-type socket, two-piece								
Wave soldering, straight version, SPEEDCON	4	D-coded				**SACC-DSIV-FSD-4CON-L180 SCO**	**1542619**	1
Wave soldering, angled version	4	D-coded				**SACC-DSIV-M12FSD-4CON-L90**	**1534630**	1
THR, straight version, SPEEDCON	4	D-coded				**SACC-DSIV-FSD-4CON-L180 SCOTHR**	**1542648**	1
THR, straight version, SPEEDCON	8	A-coded				**SACC-DSIV-FS-8CON-L180 SCOTHR**	**1557549**	1
Flush-type socket, one-piece, straight, SPEEDCON, wave soldering, contact length:								
6 mm	4	D-coded				**SACC-DSI-FSD-4CON-L180 SCO**	**1551503**	1
12 mm	4	D-coded				**SACC-DSI-FSD-4CON-L180/12 SCO**	**1552272**	1
6 mm, shield contact	4	D-coded				**SACC-DSI-FSD-4CON-L180/SCO SH**	**1553006**	1
6 mm, shield contact	8	A-coded				**SACC-DSI-FS-8CON-L180/SCO SH**	**1553860**	1
Control cabinet feed-through, M12 on RJ45 socket, IP65/67								
Socket input 90°	4	D-coded	**VS-BH-M12FSD-RJ45/90**	**1657261**	1			
Socket input 180°	4	D-coded	**VS-BH-M12FSD-RJ45/180**	**1657494**	1			
Socket input 90°	8	A-coded	**VS-BH-M12FSD-8CON-RJ45/90**	**1405057**	1			
Socket input 180°	8	A-coded	**VS-BH-M12FSD-8CON-RJ45/180**	**1405060**	1			

Technical data	SACC-M12MS...QO SH	VS-BH-M12FSD-...	4-pos.	8-pos.
Electrical data				
Nominal current I_N	1.75 A	1 A	4 A	2 A
Nominal voltage U_N	30 V (60 V for 4-pos.)	50 V	250 V	30 V
Transmission characteristics (category)	-	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-	-
Contact resistance	≤ 5 mΩ	–	≤ 3 mΩ	≤ 3 mΩ
Insulation resistance	≥ 100 MΩ	–	≥ 100 MΩ	≥ 100 MΩ
Surge voltage category	II	-	II	II
Material data				
Contact material	CuSn	CU alloy	CU alloy	CU alloy
Contact surface material	NI/Au	-	Au	Au
Contact carrier material	PA 66	-	PA 66	PA 66
Material for screw connection	Zinc die-cast, nickel-plated	-	Zinc die-cast, nickel-plated	Zinc die-cast, nickel-plated
Sealing material	Neoprene	-	NBR	NBR
Inflammability class according to UL 94	V0	V0	V0	V0
Mechanical data				
Pollution degree	3	-	3	3
Degree of protection	IP67	IP65/IP67	IP67	IP67
Connection method	QUICKON fast connection	-	PCB connection	PCB connection
Outside diameter	4 mm ... 8 mm	-	-	-
Temperature data				
Ambient temperatures (operation)	-40°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C	-25°C ... 85°C

RJ45 patch panel IP20

The RJ45 patch panels represent the transition from the permanent cabling (horizontal cabling) to the control cabinet-internal cabling with patch cables. These can be easily mounted on DIN rails.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-PP-R-...XRJ45/5-LSA

Patch panels with LSA,
screw and socket-socket connection

VS-PP-F-RJ45-CAT6

Patch panel
with IDC fast connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Patch panel, RJ45, DIN rail mounting, IP20, CAT5e, shielding selectable via jumper						
For 1 channel	**VS-PP-R-1XRJ45/5-LSA**	**1653032**	1			
For 3 channels	**VS-PP-R-3XRJ45/5-LSA**	**1653045**	1			
For 8 channels	**VS-PP-R-8XRJ45/5-LSA**	**1654895**	1			
Patch panel, RJ45, DIN rail mounting, IP20, CAT5e, shielding selectable via jumper						
For 1 channel	**VS-PP-R-1XRJ45/5-SC**	**1656398**	1			
For 3 channels	**VS-PP-R-3XRJ45/5-SC**	**1656408**	1			
For 8 channels	**VS-PP-R-8XRJ45/5-SC**	**1656411**	1			
Patch panel, RJ45, on RJ45, DIN rail mounting, IP20						
For 1 channel	**VS-PP-R-1XRJ45/RJ45**	**1404391**	1			
RJ45 patch panel, DIN rail mounting, IP20, CAT6						
For 1 channel				**VS-PP-F-RJ45-CAT6**	**1658118**	1

Technical data	VS-PP-R-...LSA	VS-PP-R-...SC	
Electrical data			
Rated voltage	60 V	60 V	50 V
Rated current	1 A	1 A	1 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT6
Material data			
Housing material	PC	PC	PC-GF
Contact material	Copper alloy	Copper alloy	Copper alloy
Inflammability class acc. to UL 94	V0	V0	V0
Mechanical data			
No. of pos.	8	8	8
Color	Green	Green	Gray
Degree of protection	IP20	IP20	IP20
Type of connection	LSA-PLUS	Screw connection	IDC fast connection
Conductor cross-section	0.14 mm² ... 0.34 mm² (solid)	0.14 mm² ... 0.5 mm²	0.2 mm² ... 0.32 mm²
Connection cross-section AWG	26 ... 22 (solid)	26 ... 20	24 ... 22
Temperature data			
Ambient temperature (operation)	0°C ... 70°C	0°C ... 70°C	-10°C ... 60°C

RJ45 patch panel and terminal outlet IP20

A patch panel with fast connection modules is available for integration into 19'' systems. Various IP20 outlets are offered for installation in buildings.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...F...

Patch panel for 19" rack

VS-TO-...-F-9010

Terminal outlets IP20 for surface-mounted and flush-type as well as suitable RJ45 female inserts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Patch panel, 19" mounting, IP20, 16 slots for Freenet contact inserts	**VS-PP-19-1HE-16-F**	**1652994**	1			
Terminal outlet, IP20, with slots for Freenet contact inserts						
Flush-type socket, two slots				**VS-TO-IW-2-F-9010**	**1653016**	1
Surface-mounted socket, two slots				**VS-TO-OW-2-F-9010**	**1653003**	1
Surface-mounted socket, six slots				**VS-TO-0W-6-F-9010**	**1653029**	1
RJ45 female insert, 8-pos., shielded, socket on socket						
CAT5e	**VS-08-BU-RJ45-5-F/BU**	**1652952**	5			
RJ45 female insert, 8-pos., shielded, with cable connection						
CAT5e	**VS-08-BU-RJ45-5-F/PK**	**1652936**	1	**VS-08-BU-RJ45-5-F/PK**	**1652936**	1
CAT6	**VS-08-BU-RJ45-6-F/PK**	**1652949**	1	**VS-08-BU-RJ45-6-F/PK**	**1652949**	1

Technical data	VS-PP-19-1HE-16-F	VS-08-BU-RJ45-5-F/PK	VS-TO-OW-2-F-9010	VS-08-BU-RJ45-6-F/PK
Electrical data				
Rated voltage	-	50 V	-	50 V
Rated current	-	1 A	-	1 A
Transmission characteristics (category)	-	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	-	CAT6
Material data				
Housing material	PC-GF	-	PC+ABS	-
Contact material	-	Copper alloy	-	Copper alloy
Inflammability class acc. to UL 94	V0	V0	HB	V0
Mechanical data				
No. of pos.	-	8	-	8
Color	Gray	-	Pure white RAL 9010	-
Degree of protection	IP20	IP20	IP20	IP20
Type of connection	-	IDC	-	IDC
Conductor cross-section	-	0.2 mm² ... 0.32 mm² (solid)	-	0.2 mm² ... 0.32 mm²
Connection cross-section AWG	-	24 ... 22 (solid)	-	24 ... 22
Temperature data				
Ambient temperature (operation)	5°C ... 55°C	-20°C ... 70°C	5°C ... 55°C	-20°C ... 70°C

RJ45 terminal outlets IP67

The transition from fixed to flexible cabling in the field is carried out as per IEC 11801 or IEC 24702 using industrial terminal outlets.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-TO-RO-MCBK-F14...

Terminal outlet IP67
with RJ45 slots

VS-TO-RO-MONA-F1422/1422

Terminal outlet IP67
with M12 slots

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Terminal outlet IP65/67, 2 slots, with protective plugs, 2 cable entries Push-pull with 2xRJ45	**VS-TO-RO-MCBK-F1411/1411**	**1404281**	1			
Terminal outlet RJ45 IP65/67, 2 slots version 6, with protective plugs, 2 cable entries	**VS-TO-RO-MCBK-F1418/1418**	**1404278**	1			
Terminal outlet IP65/67, 2 slots, with protective plugs, 2 cable entries Push-pull with 1 x Power and 1 x RJ45	**VS-TO-RO-MCBK-F1411/1413**	**1404333**	1			
Terminal outlet M12 IP65/67, 2 slots 8-pos. A-coded, with protective plugs, 2 cable entries				**VS-TO-RO-MCBK-F1422/1422**	**1404304**	1
Technical data						
Electrical data						
Transmission characteristics (category)	CAT6			CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)		
Material data						
Housing material	Aluminum cast alloy, powder-coated			Aluminum cast alloy, powder-coated		
Mechanical data						
Color	Black			Black		
Degree of protection	IP65/67			IP65/67		

RJ45 couplings IP67

In order to connect different Ethernet cables in the field, coupling systems for version 6 and version 14 are available. Cables in drag chains can thus be easily replaced.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08-KU-IP67...

RJ45 coupling IP67
with protective cover

VS-PPC-J-1-RJ45-MNBK

RJ45 push-pull coupling IP67
with protective cover

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 coupling, IP67, CAT5e, with protective cover						
Military gray RAL 7042	**VS-08-KU-IP67**	**1689268**	1			
Deep black RAL 9005	**VS-08-KU-IP67-BK**	**1658684**	1			
RJ45 push-pull coupling, IP67, CAT5e, with protective cover						
Nickel-plated				**VS-PPC-J-1-RJ45-MNBK**	**1405183**	1
Technical data						
Electrical data						
Rated voltage	50 V			50 V		
Rated current	1 A			1 A		
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)			CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)		
Material data						
Housing material	PBT			Zinc die-cast		
Contact material	Copper alloy			Copper alloy		
Inflammability class acc. to UL 94	V0			-		
Mechanical data						
No. of pos.	8			8		
Degree of protection	IP67			IP67		
Temperature data						
Ambient temperature (operation)	-10°C ... 60°C			-40°C ... 70°C		

Assembled cables type 93E, 4-pos., stranded, CAT5e, shielded

Often, pre-assembled Ethernet cables cannot be used in complex systems. With the new ordering system, Phoenix Contact now offers the option of an easy and customer-specific implementation of most varied cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		RJ45 connector IP67	
		OE		IP20		IP67
		Order no.		Order no.		Order no.
Free end			1 m	1405633	2 m	1405675
OE	100 m	1416295				
	Variable	1416402	Variable	1416402	Variable	1416402
RJ45 connector, IP20			1 m	1405882	2 m	1405921
IP20			Variable	1416402	Variable	1416402
RJ45 connector IP67					5 m	1406137
IP67					Variable	1416402
RJ45 connector, IP67, black						
IP67B						
RJ45 push-pull, metal						
PPCME						
RJ45 push-pull, plastic						
PPCPL						
M12 connector						
M12MS						

Ordering example:

For an Ethernet cable equipped with an **RJ 45 connector** at one end and an IP67-compliant **RJ 45 connector** at the other end and the **length 4.5 m,** the order data is as follows:

Order No.		Connector 1		Connector 2		Length [m] Max. 100 m
1416402	/	IP67	/	IP20	/	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color	Signal
M12	RJ45		
1	1	WHOG	TD+
3	2	OG	TD–
2	3	WHGN	RD+
4	6	GN	RD–

Notes:

OE	Free end
IP20	RJ 45 connector in compliance with IP20
IP67	RJ 45 connector in compliance with IP67
IP67B	RJ 45 connector in compliance with IP67, black
PPCME	Push-pull RJ 45 connector in compliance with IP67, made of metal
PPCPL	Push-pull RJ 45 connector in compliance with IP67, made of plastic, black
M12MS	M12 connector, straight
M12FSEC	M12 flush-type socket, front mounting
M12FSBP	M12 flush-type socket, rear mounting

RJ45 connector, IP67, black		RJ45 push-pull, metal		RJ45 push-pull, plastic		M12 connector		M12 flush-type socket, front mounting		M12 flush-type socket, rear mounting	
	IP67B		PPCME		PPCPL		M12MS		M12FSEC		M12FSBP
	Order no.		Order no.		Order no.		Order no.		Order no.		Order no.
						2 m	1405798	2 m	1405837	2 m	1405866
5 m	1405714	5 m	1405743	5 m	1405772						
Variable	1416402	Variable	1416402	Variable	1416402	Variable	1416402				
2 m	1405950					2 m	1406056			2 m	1406085
		5 m	1405992	5 m	1406030						
Variable	1416402	Variable	1416402	Variable	1416402	Variable	1416402				
						2 m	1406218			2 m	1406247
						Variable	1416402				
5 m	1406289					2 m	1406360			2 m	1406399
Variable	1416402					Variable	1416402				
						2 m	1406483			2 m	1406519
		5 m	1406438								
		Variable	1416402			Variable	1416402				
						2 m	1406577			2 m	1406603
				5 m	1406551						
				Variable	1416402	Variable	1416402				
						2 m	1406632				
						Variable	1416402				

Technical data		Ethernet cable
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Cable structure		2x2xAWG26/7; SF/UTP
Conductor cross-section		0.14 mm²
Conductor structure for signal		7x 0.16 mm
AWG signal line		26
Cable diameter		5.90 mm
Conductor resistance		≤ 284 Ω/km
Type of shield		Plastic-coated aluminum foil, tinned copper braided shield
Conductor material		Bare Cu litz wires
Material of outer sheath		PUR
Color of outer sheath		Water blue RAL 5021
Color, single wire		White/orange-orange, White/green-green
Ambient temperature		
Fixed installation	[°C]	-25 ... 80
Flexible installation	[°C]	-5 ... 60

Assembled cables type 94B, 8-pos., stranded, CAT5e, shielded

Often, pre-assembled Ethernet cables cannot be used in complex systems. With the new ordering system, Phoenix Contact now offers the option of an easy and customer-specific implementation of most varied cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		RJ45 connector IP67	
		OE		IP20		IP67
		Order no.		Order no.		Order no.
Free end						
OE	100 m Variable	**1416567** **1416428**	5 m Variable	**1407699** **1416428**	5 m Variable	**1407725** **1416428**
RJ45 connector, IP20						
IP20			5 m Variable	**1407903** **1416428**	5 m Variable	**1407932** **1416428**
RJ45 connector IP67						
IP67					5 m Variable	**1412118** **1416428**
RJ45 connector, IP67, black						
IP67B						
RJ45 push-pull, metal						
PPCME						
RJ45 push-pull, plastic						
PPCPL						
M12 connector						
M12MS						

Ordering example:

For an Ethernet cable equipped with an **RJ45 connector** at one end and an **IP67-compliant RJ45 connector** on the other, with **CrossOver** wiring and the **length 4.5 m**, the order data is as follows:

Order No.	Connector 1	Connector 2	Wiring	Length [m] Max. 100 m
1416428	/ IP67	/ IP20	/ CO	/ 4.5
			CO = Crossover LI = line	**Step widths:** 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color
M12	**RJ45*)**	
6	1	WHOG
4	2	OG
1	5	WHBU
7	4	BU
5	3	WHGN
8	6	GN
2	7	WHBN
3	8	BN

*) RJ45 assignment as per TIA574B

Notes:

OE	Free end
IP20	RJ45 connector in compliance with IP20
IP67	RJ45 connector in compliance with IP67
IP67B	RJ45 connector in compliance with IP67, black
PPCME	Push-pull RJ45 connector in compliance with IP67, made of metal
PPCPL	Push-pull RJ45 connector in compliance with IP67, made of plastic, black
M12MS	M12 connector, straight
M12FSBP	M12 flush-type socket, rear mounting

RJ45 connector, IP67, black		RJ45 push-pull, metal		RJ45 push-pull, plastic		M12 connector		M12 flush-type socket, rear mounting	
	IP67B		PPCME		PPCPL		M12MS		M12FSBP
	Order no.		Order no.		Order no.		Order no.		Order no.
5 m	1407754	5 m	1407783	5 m	1407819	5 m	1407848	5 m	1407877
Variable	1416428	Variable	1416428	Variable	1416428	Variable	1416428		
5 m	1407961	5 m	1407990	5 m	1412024	5 m	1412053	5 m	1412082
Variable	1416428	Variable	1416428	Variable	1416428	Variable	1416428		
						5 m	1412202	5 m	1412231
						Variable	1416428		
5 m	1412260					5 m	1412354	5 m	1412383
Variable	1416428					Variable	1416428		
		5 m	1412419			5 m	1412477	5 m	1412503
		Variable	1416428			Variable	1416428		
				5 m	1412532	5 m	1412561	5 m	1412590
				Variable	1416428	Variable	1416428		
						5 m	1412626		
						Variable	1416428		

Technical data		Ethernet cable
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Cable structure		4x2xAWG26/7; S-UTP
Conductor cross-section		0.14 mm²
Conductor structure for signal		7x 0.16 mm
AWG signal line		26
Cable diameter		6.10 mm
Conductor resistance		≤ 284 Ω/km
Type of shield		Plastic-coated aluminum foil, tinned copper braided shield
Conductor material		Bare Cu litz wires
Material of outer sheath		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	[°C]	-20 ... 70
Flexible installation	[°C]	-5 ... 60

Assembled cables type 94C, 8-pos., flexible cable conduit capable, CAT5e, shielded

Often, pre-assembled Ethernet cables cannot be used in complex systems. With the new ordering system, Phoenix Contact now offers the option of an easy and customer-specific implementation of most varied cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end	RJ45 connector, IP20	RJ45 connector IP67
	OE	IP20	IP67
	Order no.	Order no.	Order no.
Free end		5 m **1412655**	2 m **1412671**
OE	100 m **1416318** Variable **1416431**	Variable **1416431**	Variable **1416431**
RJ45 connector, IP20		2 m **1412859**	2 m **1412888**
IP20		Variable **1416431**	Variable **1416431**
RJ45 connector IP67			10 m **1413146**
IP67			Variable **1416431**
RJ45 connector, IP67, black			
IP67B			
RJ45 push-pull, metal			
PPCME			
RJ45 push-pull, plastic			
PPCPL			
M12 connector			
M12MS			

Ordering example:

For an Ethernet cable equipped with an **RJ 45 connector** at one end and an **IP67-compliant RJ 45 connector** on the other, with **CrossOver** wiring and the **length 4.5 m**, the order data is as follows:

Order No.	Connector 1	Connector 2	Wiring	Length [m] Max. 100 m
1416431	/ IP67	/ IP20	/ CO	/ 4.5
			CO = Crossover LI = line	**Step widths**: 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color
M12	RJ45*)	
6	1	WHOG
4	2	OG
1	5	WHBU
7	4	BU
5	3	WHGN
8	6	GN
2	7	WHBN
3	8	BN

*) RJ45 assignment as per TIA574B

Notes:

OE	Free end
IP20	RJ 45 connector in compliance with IP20
IP67	RJ 45 connector in compliance with IP67
IP67B	RJ 45 connector in compliance with IP67, black
PPCME	Push-pull RJ 45 connector in compliance with IP67, made of metal
PPCPL	Push-pull RJ 45 connector in compliance with IP67, made of plastic, black
M12MS	M12 connector, straight
M12FSBP	M12 flush-type socket, rear mounting

RJ45 connector, IP67, black		RJ45 push-pull, metal		RJ45 push-pull, plastic		M12 connector		M12 flush-type socket, rear mounting	
	IP67B		PPCME		PPCPL		M12MS		M12FSBP
	Order no.		Order no.		Order no.		Order no.		Order no.
2 m	1412707	2 m	1412736	2 m	1412765	2 m	1412794	2 m	1412820
Variable	1416431	Variable	1416431	Variable	1416431	Variable	1416431		
2 m	1412914	2 m	1412943	2 m	1412972	2 m	1413007	2 m	1413095
Variable	1416431	Variable	1416431	Variable	1416431	Variable	1416431		
						2 m	1413298	2 m	1413324
						Variable	1416431		
						2 m	1413447	2 m	1413476
10 m	1413340								
Variable	1416431					Variable	1416431		
						2 m	1413560	2 m	1413599
		10 m	1413492						
		Variable	1416431			Variable	1416431		
						2 m	1413654	2 m	1413683
				10 m	1413612				
				Variable	1416431	Variable	1416431		
						2 m	1413722		
						Variable	1416431		

Technical data		Ethernet cable
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Cable structure		4x2xAWG26/19; S/FTP
Conductor cross-section		0.16 mm²
Conductor structure for signal		19X 0.10 mm
AWG signal line		26
Cable diameter		7.70 mm
Conductor resistance		max 125 Ω/km
Type of shield		Braided shielding made of tin-plated copper wires
Conductor material		Bare Cu litz wires
Material of outer sheath		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	[°C]	-20 ... 60
Flexible installation	[°C]	0 ... 50

Assembled cables type 94F, 8-pos., stranded, CAT6, shielded

Often, pre-assembled Ethernet cables cannot be used in complex systems. With the new ordering system, Phoenix Contact now offers the option of an easy and customer-specific implementation of most varied cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		RJ45 connector IP67	
		OE		IP20		IP67
		Order no.		Order no.		Order no.
Free end						
OE	100 m	1416347	2 m	1415255	5 m	1415298
	Variable	1416457	Variable	1416457	Variable	1416457
RJ45 connector, IP20						
IP20			2 m	1415458	5 m	1415490
			Variable	1416457	Variable	1416457
RJ45 connector IP67						
IP67					5 m	1415649
					Variable	1416457
RJ45 connector, IP67, black						
IP67B						
RJ45 push-pull, metal						
PPCME						
RJ45 push-pull, plastic						
PPCPL						

Ordering example:

For an Ethernet cable equipped with an **RJ 45 connector** at one end and an **IP67-compliant RJ 45 connector** on the other, with **CrossOver** wiring and the **length 4.5 m**, the order data is as follows:

Order No.	Connector 1	Connector 2	Wiring	Length [m] Max. 100 m
1416457	/ IP67	/ IP20	/ CO	/ 4.5
			CO = Crossover LI = line	**Step widths:** 0.2 ... 3 m = 0.1 m > 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color
M12	RJ45*)	
6	1	WHOG
4	2	OG
1	5	WHBU
7	4	BU
5	3	WHGN
8	6	GN
2	7	WHBN
3	8	BN

*) RJ45 assignment as per TIA574B

Notes:

OE	Free end
IP20	RJ 45 connector in compliance with IP20
IP67	RJ 45 connector in compliance with IP67
IP67B	RJ 45 connector in compliance with IP67, black
PPCME	Push-pull RJ 45 connector in compliance with IP67, made of metal
PPCPL	Push-pull RJ 45 connector in compliance with IP67, made of plastic, black
FS6	RJ45 socket

RJ45 connector, IP67, black		RJ45 push-pull, metal		RJ45 push-pull, plastic		RJ45 socket	
	IP67B		PPCME		PPCPL		FC6
	Order no.		Order no.		Order no.		Order no.
5 m	1415322	5 m	1415351	5 m	1415403	2 m	1415429
Variable	1416457	Variable	1416457	Variable	1416457	Variable	1416457
5 m	1415526	5 m	1415555	5 m	1415584	2 m	1415607
Variable	1416457	Variable	1416457	Variable	1416457	Variable	1416457
						5 m	1415733
						Variable	1416457
5 m	1415762					5 m	1415856
Variable	1416457					Variable	1416457
		5 m	1415885			5 m	1415953
		Variable	1416457			Variable	1416457
				5 m	1415982	5 m	1416017
				Variable	1416457	Variable	1416457

Technical data		Ethernet cable
Transmission characteristics (category)		CAT6
Cable structure		4x2xAWG26/7; S-FTP
Conductor cross-section		14 mm²
Conductor structure for signal		7x 0.16 mm
AWG signal line		26
Cable diameter		6.70 mm
Conductor resistance		≤ 150 mΩ/m
Type of shield		Braided shielding made of tin-plated copper wires
Conductor material		Bare Cu litz wires
Material of outer sheath		PUR
Color of outer sheath		Water blue RAL 5021
Color, single wire		White-blue, white-orange, White-green, white-brown
Ambient temperature		
Fixed installation	[°C]	-40 ... 70
Flexible installation	[°C]	-10 ... 50

Ethernet cables, by the meter

Four-pair cables are available in CAT5 and CAT6 versions. The heavy-duty installation cables with solid conductors are especially suitable for permanent cabling. They connect the patch panel in the control cabinet to the terminal outlet in the field. The flexible cables are used for mobile cabling.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-OE-OE-94...

Ethernet cable, four-pair, CAT5e

VS-OE-OE-94E...

Ethernet cable, four-pair, CAT6a

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
CAT5e-SF/UTP cable, 4 x 2 x 24 AWG, solid, (1-wire) shielded, outer sheath: PUR halogen-free, outside diameter 6.8 mm						
100 m cable ring	**VS-OE-OE-94A-100,0**	**1416305**	1			
Variable cable length	**VS-94A/...**	**1416415**	1			
CAT5e-SF/UTP cable, 4 x 2 x 26 AWG, stranded (7-wire), shielded, outer sheath: PVC, outer diameter 6.4 mm						
100 m cable ring	**VS-OE-OE-94D-100,0**	**1416334**	1			
Variable cable length	**VS-94D/...**	**1416444**	1			
CAT6a-S/STP cable, 4 x 2 x 23 AWG, solid (1-wire), shielded, outer sheath: PUR halogen-free, outer diameter 8.0 mm						
100 m cable ring				**VS-OE-OE-94E-100,0**	**1416350**	1
Variable cable length				**VS-94E/...**	**1416460**	1

Technical data		VS-...94A-...	VS-...94D-...	VS-...94E-...
Electrical data				
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT6
Mechanical data				
Material of outer sheath		PUR	PVC (reinforced) UV-resistant	PUR
External sheath, color		Water blue RAL 5021	Deep black RAL 9005	Water blue RAL 5021
Conductor cross-section		0.2 mm²	0.14 mm²	0.32 mm²
Temperature data				
Cable, fixed installation	[°C]	-20 ... 70	-40 ... 80	-20 ... 80
Cable, flexible installation	[°C]	-20 ... 70	-40 ... 80	-20 ... 80

Ordering example for Ethernet cables with **variable cable length:**

For an Ethernet cable with a cable length of 34.0 m, the order data is as follows:

Order No.		**Length [m] Max. 100 m**
1416415	/	**34.0**
1416444 **1416460**		**Step width:** 1.0 m ... 100 m = **1.0 m**

Tools for copper-based cabling

Various tools and aids are available for the copper-based Ethernet cabling. The stripping tool can strip Fieldbus, Ethernet, Profinet and coaxial cables in up to three stages.

The LSA split-core tool enables an especially fast and easy conductor connection on patch panels, terminal outlets as well as female inserts with LSA connection.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-CABLE-STRIP-VARIO

Stripping tool

VS-LWZH...

Hand punch pliers and a suitable die

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1			
Crimp tool, pliers with die, for VS-08-ST-H…-RJ45	**VS-CT-RJ45-H**	**1653265**	1			
Split-core tool, for connecting the copper wires to the LSA Plus strips	**CT-WZ/A**	**2765505**	1			
Punch-out tool, pliers, universal				**VS-LWZH**	**1689514**	1
Punch-out tool, die, for VS-08-A-..RJ45/MOD-1-IP67..., to be used with VS-LWZH				**VS-LWZH/24,6/20,1**	**1689527**	1

Fiber optics connectors - SCRJ, POF, HCS, GOF

With SCRJ, fiber optics moves into the harsh industrial environment.

As a result, there is, for example, nothing to stop the use of Industrial Ethernet on an FO basis with high EMC loads and long transmission paths.

Thanks to the 2.5 mm ferrule, the small form factor plug connector SCRJ pursuant to IEC 61754-24 and EN 50377-6-1 is suitable for HCS fibers, polymer fibers and glass fibers up to gigabit Ethernet transmissions. Commercially available cables and test devices from the office sector can continue to be used without complex adapters, thanks to the SC Simplex compatible 2.5 mm ferrule pursuant to IEC 61754-4.

Connectors with IP20 and IP67 protection that can be configured in the field, as well as corresponding configuration tools, are available for the common fiber types. As a result, POF, HCS and (as of recently) fiberglass connectors can also be configured easily in the field.

Device connections and wall feedthroughs can be easily implemented in combination with the product array displayed on the following pages.

The range of plug connectors is supplemented by a range of accessories including marking materials and tools.

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-SCRJ-POF-FA-IP...

SCRJ plug connector
for polymer fiber 980/1000 µm

Description	Type	Order No.	Pcs. / Pkt.
FO connector SCRJ, duplex, with fast connection			
IP20	**VS-SCRJ-POF-FA-IP20**	**1654879**	1
IP67	**VS-SCRJ-POF-FA-IP67**	**1657009**	1
FO connector, SC-duplex, IP20, with fast connection technology			
Polishing tool set SCRJ, for polymer fiber, for field assembly of plug connectors SCRJ/IP20 and SCRJ/IP67 with fast connection system	**VS-SCRJ-POF-KONFTOOL-POLISH**	**1658820**	1
SCRJ cutting tool set, for polymer fiber, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-KONFTOOL-CUT**	**1657096**	1
HCS DIY case for SCRJ quick mounting connector, including two SCRJ quick mounting connectors, stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope			
Assembly tool set for glass fiber, for the field assembly of the SCRJ and SC-Duplex connectors, with a fast connection technology			
EU version			
US version			
Marker label set, consisting of 4 sheets (white, blue, yellow, orange) each with 50 labels for marking sleeve housings and panel mounting frames with IP67 protection	**VS-ZBFM-8-SET**	**0814775**	1
Protective cover SCRJ/IP67, for covering the SCRJ male insert on the SCRJ/IP67 sleeve housing	**VS-SCRJ-PC**	**1653757**	5

Technical data	**IP20**	**IP67**
Material data		
Housing material	PBT	PA
Ferrule material	Copper alloy	Copper alloy
Ferrule holder color	Blue	Blue
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Degree of protection	IP20	IP67
External cable diameter	-	5 mm ... 8.5 mm
Fiber	980/1000 µm	980/1000 µm
Wire diameter	2.2 mm	2.2 mm
Ferrule diameter	2.50 mm	2.50 mm
Optical data		
Attenuation	≤ 1.5 dB (insertion loss)	≤ 1.5 dB (insertion loss)
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-20°C ... 70°C

VS-SCRJ-HCS-FA-IP...

SCRJ plug connector
for HCS fiber 200/230 µm

VS-SCRJ-GOF-FA-IP...

SCRJ connector
for glass fiber multimode 50/125 µm and 62.5/125 µm

VS-SCDU-GOF-FA-IP20

SC duplex connector
for glass fiber multimode 50/125 µm and 62.5/125 µm

Type	Order No.	Pcs. / Pkt.
VS-SCRJ-HCS-FA-IP20	1654866	1
VS-SCRJ-HCS-FA-IP67	1657012	1
PSM-HCS-KONFTOOL/SC-RJ	2708876	1
VS-ZBFM-8-SET	0814775	1
VS-SCRJ-PC	1653757	5

IP20	IP67
PBT	PA
Copper alloy	Copper alloy
Red	Red
V0	V0
IP20	IP67
-	5 mm ... 8.5 mm
200/230 µm	200/230 µm
2.9 mm	2.9 mm
2.50 mm	2.50 mm
≤ 1 dB (insertion loss)	≤ 1 dB (insertion loss)
-20°C ... 70°C	-20°C ... 70°C

Type	Order No.	Pcs. / Pkt.
VS-SCRJ-GOF-FA-IP20	1657070	1
VS-SCRJ-GOF-FA-IP67	1657083	1
VS-GOF-FA-KONFTOOL-EU	1658228	1
VS-GOF-FA-KONFTOOL-US	1658231	1
VS-ZBFM-8-SET	0814775	1
VS-SCRJ-PC	1653757	5

IP20	IP67
PBT	PA
Zirconia ceramics	Zirconia ceramics
White	White
V0	V0
IP20	IP67
-	5 mm ... 8.5 mm
50/125 µm and 62.5/125 µm	50/125 µm and 62.5/125 µm
2.9 mm	2.9 mm
2.50 mm	2.50 mm
≤ 0.5 dB (insertion loss)	≤ 0.5 dB (insertion loss)
-20°C ... 70°C	-20°C ... 70°C

Type	Order No.	Pcs. / Pkt.
VS-SCDU-GOF-FA-IP20	1658529	1
VS-GOF-FA-KONFTOOL-EU	1658228	1
VS-GOF-FA-KONFTOOL-US	1658231	1

PPO
Zirconia ceramics
White
V0
IP20
-
50/125 µm and 62.5/125 µm
2.9 mm
2.50 mm
< 0.5 dB (insertion loss)
-25°C ... 70°C

Assembled fiber optics cables – SCRJ, IP20 / IP67, POF

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end	SCRJ connector, IP20	SCRJ connector, IP67

Free end	Order No.	Order No.	Order No.	Order No.	Order No.
	Variable **2744322**				
FSMA connector, IP20					
		1 m **1657106** 2 m **1657119** 5 m **1657122**			
SCRJ connector, IP20					
		1 m **1656738** 2 m **1645741** 5 m **1656479**			
		Variable **1657601**		Variable **1657601**	
SCRJ connector, IP67					
				5 m **1657135** 10 m **1657148** 20 m **1657151**	
				Variable **1657601**	

Ordering example for cable **with** connector assembly

25 m Polymer fiber 980/1000 µm of type: **PSM-LWL-RUGGED-980/1000** assembled with: **SCRJ IP67** at one end of the cable and **preconfigured SCRJ** at the other end.

Order No.	Assembly	Length [m]
1657601 /	**C41** /	**25**

C26	≙ SCRJ IP67	/ SCRJ IP67	
C34	≙ SCRJ IP67	/ SCRJ	
C41	≙ SCRJ IP67	/ SCRJ preass.	
C47	≙ SCRJ preass.	/ SCRJ preass.	
C90	≙ SCRJ	/ SCRJ	

Min.	1.0 m
Max.	100.0 m
Step width	1.0 m

Key	Note:
SCRJ preass.	Only the ferrules are pre-assembled on the cable. The SCRJ housing (IP20) is enclosed loose. **Advantage:** The cable can be routed through a cable screw connection.

Ordering example for cable **without** connector assembly:

25 m, 980/1000 µm polymer fiber cable, **by the meter (OE /OE)**

Order No.	Length [m]
2744322 /	**34.0** /

Min.	1.0 m
Max.	100.0 m
Step width	1.0 m

Technical data		FSMA connector	SCRJ connector	SCRJ connector, IP67
Housing material		PBT/nickel silver	PBT	PA
Ferrule material		Copper alloy	Copper alloy	Copper alloy
Outer sheath, material		PE	PE	PUR
Fiber type		Polymer fiber	Polymer fiber	Polymer fiber
External cable diameter		Twin conductor (2.2 x 4.4 mm)	Twin conductor (2.2 x 4.4 mm)	8 mm ±0.5 mm
Individual wire diameter	[mm]	2.2	2.2	2.2
Degree of protection		IP20	IP20	IP67
Insertion loss		< 1.7 dB (with 660 nm)	< 1.7 dB (with 660 nm)	≤ 2.5 dB (with 660 nm)
Ambient temperature				
Plug/socket	[°C]	-20 ... 70	-20 ... 70	-20 ... 70

Assembled fiber optics cables – SCRJ, IP20 / IP67, HCS

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end	Order No.	SCRJ connector, IP20	Order No.	SCRJ connector, IP67	Order No.
Variable	2799885				
FSMA connector, IP20					
		1 m	1654963		
		2 m	1654976		
		5 m	1654989		
SCRJ connector, IP20					
		1 m	1654934		
		2 m	1654947		
		5 m	1654950		
		Variable	1657614	Variable	1657614
SCRJ connector, IP67					
				5 m	1654905
				10 m	1654918
				20 m	1654921
				Variable	1657614

Ordering example for cable **with** connector assembly

25 m, 200/230 µm HCS cable of type: **PSM-LWL-HCS-RUGGED-200/230** assembled with:
SCRJ IP67 at one end of the cable and **preconfigured SCRJ** at the other end.

Order No.		Assembly		Length [m]
1657614	/	C41	/	25

C26	≙ SCRJ IP67	/ SCRJ IP67	
C34	≙ SCRJ IP67	/ SCRJ	
C41	≙ SCRJ IP67	/ SCRJ preass.	
C47	≙ SCRJ preass.	/ SCRJ preass.	
C90	≙ SCRJ	/ SCRJ	

Min.	1.0 m
Max.	100.0 m
Step width	1.0 m

Key	Note:
SCRJ preass.	Only the ferrules are pre-assembled on the cable. The SCRJ housing (IP20) is enclosed loose. **Advantage:** The cable can be routed through a cable screw connection.

Ordering example for cable **without** connector assembly:

25 m, 200/230 µm HCS cable, **by the meter (OE /OE)**

Order No.		Length [m]
2799885	/	34.0

/	**Min.**	1.0 m
	Max.	100.0 m
	Step width	1.0 m

Technical data		FSMA connector	SCRJ connector	SCRJ connector, IP67
Housing material		PBT/nickel silver	PBT	PA
Ferrule material		Copper alloy	Copper alloy	Copper alloy
Outer sheath, material		TPE-O	TPE-O	PUR
Fiber type		HCS fiber	HCS fiber	HCS fiber
External cable diameter		Twin conductor (3.9 x 6.8 mm)	Twin conductor (3.9 x 6.8 mm)	8 mm ±0.5 mm
Individual wire diameter	[mm]	2.9	2.9	2.9
Degree of protection		IP20	IP20	IP67
Insertion loss		≤ 1.2 dB (with 850 nm)	≤ 1.2 dB (with 850 nm)	< 1.2 dB (with 850 nm)
Ambient temperature				
Plug/socket	[°C]	-20 ... 70	-20 ... 70	-20 ... 70

Assembled fiber optics cables – SCRJ, IP20 / IP67, GOF

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end	SCRJ connector, IP20	SCRJ connector, IP67

Free end		Order No.		Order No.		Order No.		Order No.		Order No.
	Variable	2799322								
SC duplex connector, IP20										
			1 m	1654400						
			2 m	1654413						
			5 m	1654426						
SCRJ connector, IP20										
			1 m	1654374						
			2 m	1654387						
			5 m	1654390						
			Variable	1654727			Variable	1654727		
SCRJ connector, IP67										
							5 m	1654439		
							10 m	1654442		
							20 m	1654455		
							Variable	1654727		

Ordering example for cable **with** connector assembly

25 m, 50/125 µm glass fiber cable of type: **PSM-LWL-GDM-RUGGED-50/125** assembled with:
SCRJ IP67 at one end of the cable and **preconfigured SCRJ** at the other end.

Order No.		Assembly		Length [m]
1654727	/	C41	/	25

C26	≙ SCRJ IP67	/ SCRJ IP67	
C34	≙ SCRJ IP67	/ SCRJ	
C41	≙ SCRJ IP67	/ SCRJ preass.	
C47	≙ SCRJ preass.	/ SCRJ preass.	
C90	≙ SCRJ	/ SCRJ	

Min.	1.0 m
Max.	100.0 m
Step width	1.0 m

Key	Note:
SCRJ preass.	Only the ferrules are pre-assembled on the cable. The SCRJ housing (IP20) is enclosed loose. **Advantage:** The cable can be routed through a cable screw connection.

Ordering example for cable **without** connector assembly:

25 m, 50/125 µm glass fiber cable, **by the meter (OE /OE)**

Order No.		Length [m]
2744322	/	34.0

/	**Min.**	1.0 m
	Max.	100.0 m
	Step width	1.0 m

Technical data		SCDU connector	SCRJ connector	SCRJ connector, IP67
Housing material		PBT	PBT	PA
Ferrule material		Zirconia ceramics	Zirconia ceramics	Zirconia ceramics
Outer sheath, material		LSZH	LSZH	PUR
Fiber type		Multimode glass fibers	Multimode glass fibers	Multimode glass fibers
External cable diameter		Twin conductor (2.8 x 5.7 mm)	Twin conductor (2.8 x 5.7 mm)	8 mm ±0.5 mm
Individual wire diameter	[mm]	2.8	2.8	2.9
Degree of protection		IP20	IP20	IP67
Insertion loss		≤ 0.5 dB	≤ 0.5 dB	≤ 0.5 dB
Ambient temperature				
Plug/socket	[°C]	-5 ... 70	-5 ... 70	-20 ... 70

Fiber optics panel feed-throughs

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-...F...

SCRJ female insert for IP67 panel mounting frame, Freenet system, for SCRJ IP67 connectors

VS-...-F...

IP67 panel mounting frame, for SCRJ female inserts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
SCRJ female insert, duplex, for panel mounting frame VARIOSUB IP67, can be used for glass, multi-mode, HCS and polymer	**VS-SCRJ-GOF-BU/BU**	**1652978**	1			
Panel mounting frame, for round assembly opening, with grommet, without mounting screws Military gray RAL 7042				**VS-A-F-IP67**	**1653744**	5
Protective cover, flat, for covering the contact insert in the panel mounting frame Military gray RAL 7042				**VS-08-SD-F**	**1652606**	5

Technical data		
Material data		
Housing material	PBT	PA
Ferrule material	Zirconia ceramics	-
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Color	-	Gray
Degree of protection	IP20	IP67
Insertion/withdrawal cycles	≥ 500	≥ 1000
Temperature data		
Ambient temperature (operation)	-25°C ... 70°C	-40°C ... 80°C

M12 fiber optics connectors, panel feed-throughs, transceivers

Thanks to SAC M12 LWL, especially small fiber optics connectors are now available for harsh industrial environments in the IP65 and IP67 degrees of protection. Due to the 2.5 mm ferrules, they are suitable for PCF, polymer and glass fibers; they facilitate the assembly of the aforementioned fibers in the field. Integrated transceivers allow direct opto-electrical conversion to the PCB for all fiber types.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

SACFO-C-POBK-SPG9-...

M12-FO connectors
for POF cables

SACFO...MNNA-...

SAC-FO panel feed-through
for POF, HCS and GOF cables

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
M12 fiber optics connector, duplex, with crimp connection method, IP65 degree of protection						
for POF fibers A4a	**SACFO-C-POBK-SPG9-A4AP**	**1416606**	1			
for PCF fibers A3c	**SACFO-C-POBK-SPG9-A3CG**	**1416619**	1			
for GOF-MM fibers A1a	**SACFO-C-POBK-SPG9-A1AG**	**1416622**	1			
M12 fiber optics coupling, duplex, suitable for all fibers, with wall bracket, IP65 degree of protection				**SACFO-J-MNNA-2**	**1416677**	1
M12 fiber optics transceiver, duplex, for POF and PCF fibers, for PCB mounting, M16 fastening thread, with sealing cap						
Wavelength: 650 nm				**SACFO-T-MNNA-M16-650-S**	**1416716**	1
Wavelength: 1300 nm				**SACFO-T-MNNA-M16-1300-S**	**1416729**	1

Technical data		
Material data		
Ferrule material	Copper alloy	-
Inflammability class acc. to UL 94	V0	V0
Degree of protection	IP65/67	IP65/67
External cable diameter	4 mm ... 8 mm	-
Ferrule diameter	2.50 mm	-
Attenuation	≤ 1.5 dB	-
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-20°C ... 70°C

Assembled fiber optics cables M12 – POF, HCS, GOF

Pre-assembled cables and panel feed-throughs with a pre-connected cable for all fiber types in the IP65 and IP67 degree of protection allow fast and safe assembly of your fiber optics transmission path. The M16 mounting can be implemented quickly in the housing panel.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

SACFO-.../5,0

Fiber optics cable,
assembled with M12 fiber optics connectors

SACFO-BHC-.../5,0

Fiber optics cable,
assembled with fiber optics panel feed-through M12 and SCRJ/IP20

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Assembled fiber optics cable, round cable, M12 FO on M12 FO, for laying within buildings, length: 5 m						
POF fiber 980/1000 µm	**SACFO-P1605-P1605-C1009/5,0**	**1416680**	1			
PCF fiber 200/230 µm	**SACFO-P1606-P1606-C1011/5,0**	**1416693**	1			
GOF-MM fiber 50/125 µm	**SACFO-P1607-P1607-C1012/5,0**	**1416703**	1			
Assembled fiber optics cable, round cable, fiber optics panel feed-through M12 on SCRJ/IP20, for laying within housings, length: 5 m						
POF fiber 980/1000 µm				**SACFO-BHC-P1217-0-C1009/5,0**	**1416648**	1
PCF fiber 200/230 µm				**SACFO-BHC-P1218-0-C1011/5,0**	**1416651**	1
GOF-MM fiber 50/125 µm				**SACFO-BHC-P1219-0-C1012/5,0**	**1416664**	1
Technical data						
Material data						
Ferrule material	Copper alloy			Copper alloy		
Degree of protection	IP65/67			IP65/67		
Ferrule diameter	2.50 mm			-		
Temperature data						
Ambient temperature (operation)	-20°C ... 70°C			-20°C ... 70°C		

Fiber optics panel feed-throughs, terminal outlets and patch panel

Device connections and panel feed-throughs of protection type IP20 and IP67 can be easily implemented with SCRJ.

Patch panels in 19"' or DIN rail technology are available for routing in control cabinets. Terminal outlets of the structured cabling accomplish the transition from fixed to flexible cabling in the field.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-SCRJ-A-TC-IP67

VS-SCRJ panel mounting frame for transceivers

VS-TO-RO-MONA-F1420/1420

Terminal outlet IP67, with 2xSCRJ slots, with 2 protective plugs

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
VS-SCRJ panel mounting frame, for use with an AVAGO transceiver, type: AFBR 5978Z	**VS-SCRJ-A-TC-IP67**	**1658545**	1			
Terminal outlet SCRJ IP65/67, 2 slots version 6, with protective plugs, 2 cable entries				**VS-TO-RO-MCBK-F1420/1420**	**1404317**	1
SCRJ patch panel, DIN rail mounting, IP20, 1 slot						
Patch panel, 19" mounting, IP20, 16 slots for Freenet contact inserts						
Terminal outlet, IP20, with slots for Freenet contact inserts Flush-type socket, two slots Surface-mounted socket, two slots Surface-mounted socket, six slots						
SCRJ coupling, for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F						

Technical data		
Material data		
Housing material	PA	Aluminum cast alloy, powder-coated
Ferrule material	-	Zirconia ceramics
Inflammability class acc. to UL 94	V0	-
Mechanical data		
Color	Gray	Black
Degree of protection	IP65/IP67	IP65/67
Fiber type	-	GOF, HCS, POF
Insertion/withdrawal cycles	-	≥ 500
Temperature data		
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 70°C

VS-PP-F-SCRJ

Patch panel SCRJ female/female, can be used for the fiber types glass multi-mode, HCS and polymer

VS-...F...

Patch panel for 19" rack

VS-SCRJ-GOF-KU

SCRJ coupling for IP20 terminal outlets and 19" patch panels and front plate with Freenet slots

Type	Order No.	Pcs. / Pkt.
VS-PP-F-SCRJ	**1658121**	1

Type	Order No.	Pcs. / Pkt.
VS-PP-19-1HE-16-F	**1652994**	1
VS-TO-IW-2-F-9010	**1653016**	1
VS-TO-OW-2-F-9010	**1653003**	1
VS-TO-0W-6-F-9010	**1653029**	1

Type	Order No.	Pcs. / Pkt.
VS-SCRJ-GOF-KU	**1654358**	1

	VS-PP-19-1HE-16-F	VS-TO-IW-2-F-9010	
	PC-GF	PC+ABS	PBT
	-	-	Zirconia ceramics
	V0	HB	V0
	Gray	Pure white RAL 9010	-
	IP20	IP20	IP20
	-	-	GOF, HCS, POF
	-	-	≥ 500
	5°C ... 55°C	5°C ... 55°C	-25°C ... 70°C

Tools for FO cabling, POF

The assembly tool sets can be used to assemble the SCRJ fiber optics connectors for polymer fiber in an industrial environment. The sets contain all the necessary tools and equipment. The VS-SCRJ-KONFTOOL-CUT version with a cutting tool enables assembly without polishing.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-SCRJ-POF-...-POLISH

VS-SCRJ-POF-KONFTOOL-CUT

Description	Type	Order No.	Pcs. / Pkt.
Polishing tool set SCRJ, for polymer fiber, for field assembly of plug connectors SCRJ/IP20 and SCRJ/IP67 with fast connection system	**VS-SCRJ-POF-KONFTOOL-POLISH**	**1658820**	1
Refill set for VS-SCRJ-POF-KONFTOOL-POLISH, consisting of two polishers and a polishing disc	**VS-SCRJ-POF-POLISH**	**1656673**	1
SCRJ cutting tool set, for polymer fibers, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-KONFTOOL-CUT**	**1657096**	1
SCRJ cutting tool, for polymer fibers, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-TOOL-CUT**	**1405507**	1

Tools for FO cabling, HCS

The PSM-HCS-KONFTOOL/SC-RJ assembly tool set can be used to assemble the SCRJ fiber optics connectors for HCS fiber even under extreme conditions in an industrial environment using the scoring-breaking procedure. The set contains all the tools and appliances necessary for field assembly.

PSM-HCS-KONFTOOL/SCRJ

Description	Type	Order No.	Pcs. / Pkt.
HCS DIY case for SCRJ quick mounting connector, including two SCRJ quick mounting connectors, stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope	**PSM-HCS-KONFTOOL/SC-RJ**	**2708876**	1

Tools for FO cabling, GOF

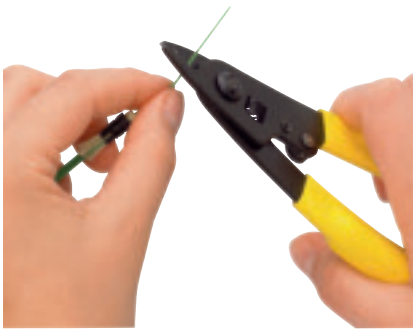
With the assembly tool sets VS-GOF-FA-KONFTOOL-.., the SCRJ and SC-Duplex FO connectors for glass fiber can be assembled even under adverse conditions in the industrial environment. The sets contain all the tools necessary for field assembly of glass fiber and are available as EU version (230 V) and US version (115 V). The specially designed tool bag can be worn comfortably around the waist and makes it possible to work in confined spaces. The assembly process uses conventional adhesives, which makes the multi-functional tool field-capable. Consumables such as polishing foils and adhesive powder cartridges can be ordered from stock.

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

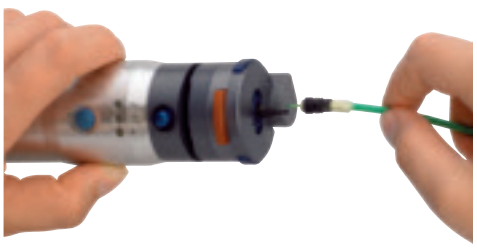
VS-GOF-FA-KONFTOOL-...

Description	Type	Order No.	Pcs. / Pkt.
Assembly tool set for glass fiber, for the field assembly of the SCRJ and SC-Duplex connectors, with a fast connection technology			
EU version	**VS-GOF-FA-KONFTOOL-EU**	**1658228**	1
US version	**VS-GOF-FA-KONFTOOL-US**	**1658231**	1
Consumables for VS-GOF-FA-KONFTOOL-…			
Glue cartridge	**VS-GOF-FA-KONFTOOL-ADHESIVE**	**1658244**	1
50 polishing foils, 1 µm, for single mode	**VS-GOF-FA-KONFTOOL-POLISH-SM**	**1658257**	1
50 polishing foils, 3 µm, for multi-mode and single mode	**VS-GOF-FA-KONFTOOL-POLISH-MM**	**1658260**	1
50 pre-polishing foils, 5 µm, for multi-mode and single mode	**VS-GOF-FA-KONFTOOL-PREPOLISH**	**1658273**	1
10 cleaning tissues	**VS-GOF-FA-KONFTOOL-CLEANING**	**1658286**	1

Assembly steps (extract)



Prepare the fiber optics cables

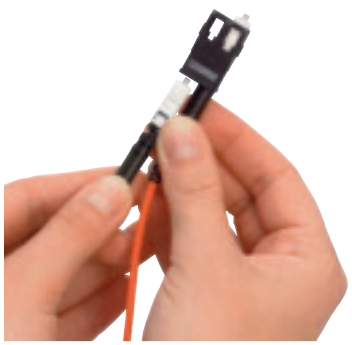


Apply the adhesive powder to fibers

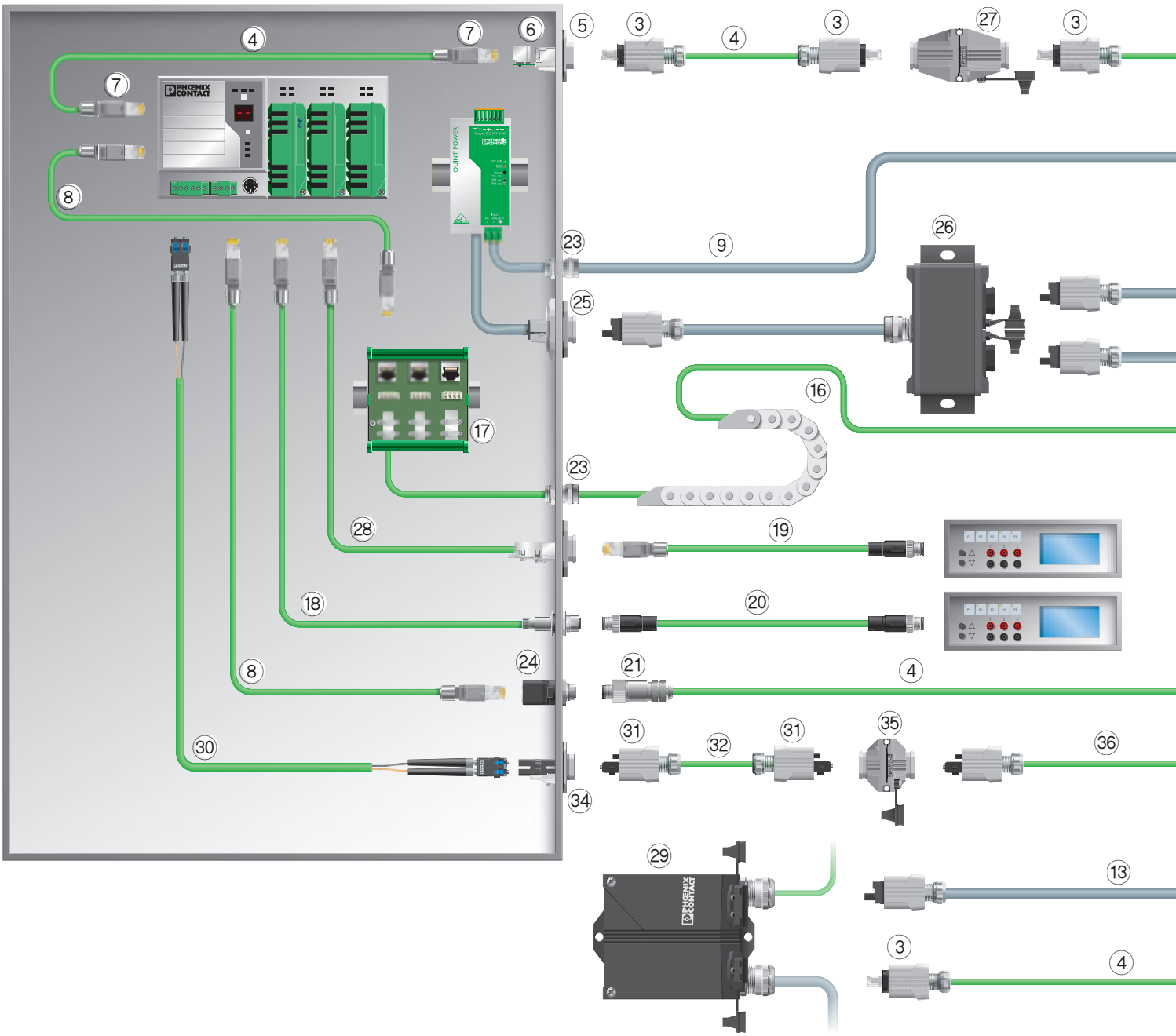
Connect the fibers with ferrules

Cleave and break the fibers

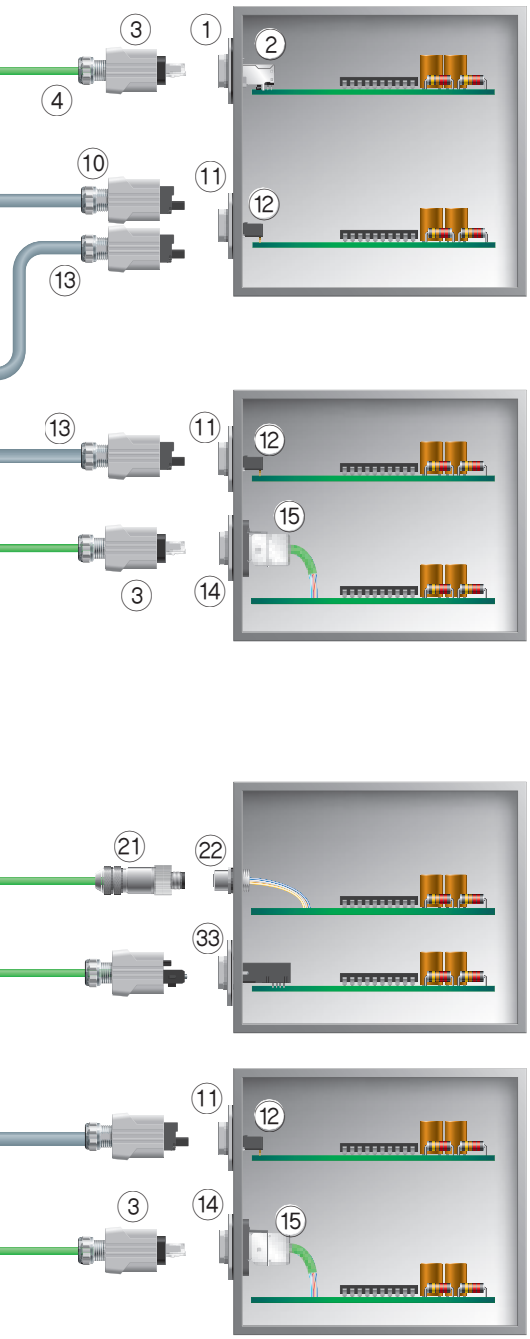
Process the fiber end surfaces



Mount the connector housing



No.	Order designation	Order no. POF	Page	Order no. HCS	Page
30	Assembled fiber optics cable with IP20-compliant SCRJ connector	1656738	**244**	1654934	**245**
31	IP67-compliant SCRJ push-pull connector, with fast connection technology	1608032	**242**	1608045	**242**
32	PROFINET fiber optics cable, for flexible laying, by the meter	1609413	**242**	1609426	**242**
33	IP67-compliant SCRJ panel mounting frame for push-pull locking, for transceiver for PCB mounting	1608061	**243**	1608061	**243**
34	IP67-compliant SCRJ panel mounting frame for push-pull locking, with SCRJ coupling, Freenet system	1608210	**243**	1608210	**243**
35	IP67-compliant SCRJ coupling for push-pull locking	1405206	**243**	1405206	**243**
36	Assembled fiber optics cable with IP67-compliant SCRJ connector	1608757	**244**	1608702	**244**

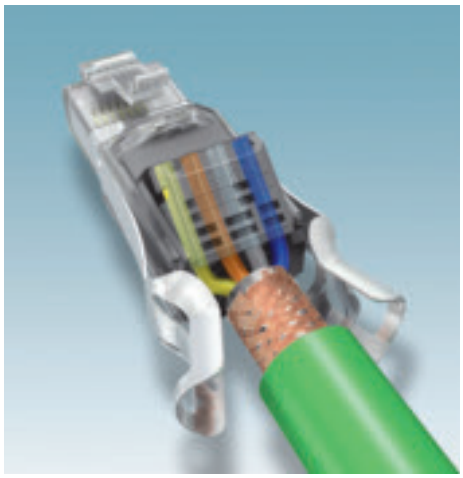


Popular installation situations in star topology are shown with the corresponding components in the above figure. However, these examples do not claim to be complete.

For more information, please refer to the following catalog pages containing detailed product descriptions.

No.	Order designation	Order no.	Page
1	IP67-compliant RJ45 panel mounting frame for push-pull locking, for PCB mounting	1608029	229
2	RJ45 female insert for PCB mounting	1653087	229
3	IP67-compliant RJ45 push-pull connector, can be assembled without tools	1608016	194
4	PROFINET cables, for flexible laying, by the meter	1416499	236
5	IP67-compliant RJ45 panel mounting frame for push-pull locking, for Freenet female inserts	1405358	229
6	RJ45 female insert, socket/socket, Freenet	1405604	229
7	IP20-compliant RJ45 connectors, can be assembled without tools	1658435	226
8	Assembled cables with IP20-compliant RJ45 connectors	1416131	236
9	Power cables, for flexible laying, by the meter	1609510	246
10	IP67-compliant MSTB push-pull connector for 24 V, 5-pos., for free assembly	1608074	246
11	IP67-compliant MSTB panel mounting frame for 24 V, for push-pull locking	1608087	246
12	MSTB contact insert for 24 V, for PCB mounting	1657915	246
13	Assembled 24 V cable with IP67-compliant MSTB push-pull connectors	1609170	248
14	IP67-compliant RJ45 panel mounting frame for push-pull locking	1608197	229
15	RJ45 female insert, with cable connection, can be assembled without tools, Freenet	1652936	229
16	PROFINET cables, for continuously movable applications, flexible cable conduit capable, by the meter	1416509	238
17	IP20-compliant RJ45 patch panel for mounting on DIN rail	1658613	230
18	M12 flush-type connector, with Profinet cable and RJ45 connector for assembly	1416212	238
19	M12 connector, with Profinet cable and RJ45 connector for assembly	1416188	238
20	Assembled cable with M12 connectors, IP65/67	1416200	238
21	M12 connector, IP65/67, shielded, can be assembled without tools	1554513	234
22	M12 flush-type connector, with litz wires	1535202	234
23	IP68-compliant cable gland	1690558	521
24	M12/RJ45 control cabinet feed-through, 180°	1657494	234
25	IP67-compliant MSTB panel mounting frame for 24 V, for push-pull locking, with contact insert for conductor connection	1608249	246
26	IP67-compliant power Y distributor, with push-pull locking	1405154	247
27	IP67-compliant RJ45 coupling for push-pull locking	1405183	200
28	Assembled cables with IP20-compliant RJ45 connector and socket	1416499	236
29	Terminal outlet with 1 x RJ45, 1 x IP67-compliant power connection, for push-pull locking	1404333	200

RJ45 connector, IP20



The RJ45 QUICKON is the ideal plug connector for PROFINET.

Assembly using insulation displacement connection system does not require any special tools. In this way, the connector can be connected in the field even under the toughest conditions.

The RJ45 plug connector, which is shielded against electromagnetic loads, fulfills the CAT5 requirements in acc. with EN 50173:2002 and those of CAT5e in acc. with TIA 568-B:2002.

4-wire PROFINET conductors with their 22 AWG wire cross-section, either solid or stranded, can be easily positioned on the basis of the printed wire colors. This job becomes considerably easier when the removing tool VS-PN-CABLE-STRIP is used.

Different colored coding rings can be used for making quick and secure assignments in the system.

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-PN-RJ45-5-Q/IP20

RJ45 connector IP20 with fast connection technology and matching key rings

Description	Type	Order No.	Pcs. / Pkt.
RJ45 connector, 4-pos., with QUICKON fast connection technology, for AWG 26 ... 22, for cable diameter 4.5 mm ... 8.0 mm, color: Gray	**VS-PN-RJ45-5-Q/IP20**	**1658435**	1
Coding set, for color coding of the RJ45 QUICKON plug connector, consisting of 80 color rings (10 rings in each color)	**VS-08-RJ45-Q-COD-SET**	**1656893**	1
Coding rings, for color coding of the RJ45 QUICKON plug connector, consisting of 10 color rings:			
Blue	**VS-08-RJ45-Q-COD-BU**	**1658134**	10
Brown	**VS-08-RJ45-Q-COD-BN**	**1658147**	10
Yellow	**VS-08-RJ45-Q-COD-YE**	**1658150**	10
Gray	**VS-08-RJ45-Q-COD-GY**	**1658163**	10
Green	**VS-08-RJ45-Q-COD-GN**	**1658176**	10
Red	**VS-08-RJ45-Q-COD-RD**	**1658189**	10
Violet	**VS-08-RJ45-Q-COD-VT**	**1658192**	10
Black	**VS-08-RJ45-Q-COD-BK**	**1658202**	10
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-PN-RJ45-5-Q/IP20
Electrical data	
Rated voltage	50 V
Rated current	1.75 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Surge voltage category	I
Material data	
Housing material	PA
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Mechanical data	
No. of pos.	4
Color	Gray
Pollution degree	1
Degree of protection	IP20
Conductor cross-section	0.13 mm² ... 0.32 mm² (solid)
Connection cross-section AWG	26 ... 22 (solid)
Conductor cross-section	0.14 mm² ... 0.36 mm² (stranded)
Connection cross-section AWG	26 ... 22 (stranded)
External cable diameter	4.5 mm ... 8 mm
Insertion/withdrawal cycles	≥ 1000
Temperature data	
Ambient temperature (operation)	-10°C ... 60°C

RJ45 panel mounting frame and IP20 female inserts

Devices and panel feed-throughs can be set up with modular RJ45 female inserts combined with the mounting frames. RJ45 female inserts for the horizontal or vertical PCB mounting facilitate the setup of PROFINET-conform devices.

RJ45 and RJ45 push-pull are provided in the installation guideline of the PNO for PROFINET networks.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-08-...-RJ45...

RJ45 female inserts and panel mounting frame IP20, modular system, keystone

VS-08-BU-RJ45...

RJ45 female inserts with PCB connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 female insert, 8-pos., shielded, socket on socket						
CAT5e	**VS-08-BU-RJ45/BU**	**1689064**	5			
RJ45 female insert, 8-pos., shielded, with cable connection						
CAT5e	**VS-08-BU-RJ45/KA/LSA**	**1689459**	5			
CAT6	**VS-08-BU-RJ45-6/KA/LSA**	**1653168**	5			
RJ45 panel mounting frame, single, for modular female inserts (Keystone), without mounting screws						
	VS-08-A-RJ45/MOD-1-IP20	**1689433**	5			
RJ45 female insert, single, for PCB mounting, CAT6, 8-pos., shielded						
Straight solder pins				**VS-08-BU-RJ45-6/LV-1**	**1653090**	5
RJ45 female insert, for PCB mounting, CAT5e, 8-pos., shielded, with angled solder pins						
				VS-08-BU-RJ45/LP-1	**1688586**	5
Double				**VS-08-BU-RJ45/LP-2**	**1688599**	5
4x				**VS-08-BU-RJ45/LP-4**	**1688609**	5
6x				**VS-08-BU-RJ45/LP-6**	**1688612**	5
8x				**VS-08-BU-RJ45/LP-8**	**1688625**	5
Split-core tool, for connecting the copper wires to the LSA Plus strips	**CT-WZ/A**	**2765505**	1			
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1			

Technical data	VS-08-BU-RJ45-6/KA/LSA	VS-08-A-RJ45/MOD-1-IP20	VS-08-BU-RJ45-6/...	VS-08-BU-RJ45/LP...
Electrical data				
Rated voltage	-	-	125 V	150 V
Rated current	-	-	1 A	1.5 A
Transmission characteristics (category)	CAT6	-	CAT6	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Surge voltage category	II	-	-	II
Material data				
Housing material	-	PA	Copper alloy	-
Contact material	Copper alloy	-	Copper alloy	Copper alloy
Contact surface material	Gold over nickel	-	Gold over nickel	Gold over nickel
Inflammability class acc. to UL 94	V0	V0	V0	V0
Mechanical data				
Color	-	Gray	-	-
Pollution degree	2	-	1	2
Degree of protection	IP20	IP20	IP20	IP20
Type of connection	LSA	-	Solder connection	Solder connection
Conductor cross-section	0.13 mm² ... 0.32 mm² (solid)	-	-	-
Connection cross-section AWG	26 ... 22 (solid)	-	-	-
Conductor cross-section	0.14 mm² ... 0.36 mm² (stranded)	-	-	-
Connection cross-section AWG	26 ... 22 (stranded)	-	-	-
Insertion/withdrawal cycles	-	-	≥ 750	≥ 750
Temperature data				
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 80°C	-25°C ... 80°C	-40°C ... 85°C

RJ45 connector, IP67

Devices with PROFINET interface in the IP67 environment are connected to the network with VARIOSUB push-pulls and provided there with power. These heavy-duty connectors with their easy-to-operate and space-saving design are available in metal and plastic. The data connector is available in versions with either the RJ45 or the SCRJ and therefore allows the user to use the concept for all device and network types.

The same tool-free connection method as in the RJ45-QUICKON is used in the RJ45 design.

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-PPC-C1-RJ45...PG9-4Q5

Pusch-pull RJ45 IP67 connectors with fast connection technology

Description	Type	Order No.	Pcs. / Pkt.
Connector RJ45, IP67, with push-pull locking, CAT5e, 4-pos., with QUICKON fast connection technology			
Metal housing	**VS-PPC-C1-RJ45-MNNA-PG9-4Q5**	**1608100**	1
Plastic housing	**VS-PPC-C1-RJ45-POBK-PG9-4Q5**	**1608126**	1
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	
Electrical data	
Rated voltage	50 V
Rated current	1.75 A
Transmission characteristics (category)	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Surge voltage category	I
Material data	
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Mechanical data	
Color	Silver
Pollution degree	2
Degree of protection	IP65/67
Connection data	
Type of connection	IDC fast connection
Conductor cross-section	0.13 mm² ... 0.32 mm² (solid)
Connection cross-section AWG	26 ... 22 (solid)
Conductor cross-section	0.14 mm² ... 0.36 mm² (stranded)
Connection cross-section AWG	26 ... 22 (stranded)
External cable diameter	5 mm ... 8 mm
Insertion/withdrawal cycles	≥ 250
Temperature data	
Ambient temperature (operation)	-40°C ... 70°C

RJ45 panel mounting frame and IP67 female inserts,

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-...RJ45...

RJ45 female inserts and push-pull panel mounting frame IP67 with PCB connection

VS-...-RJ45...-F...

RJ45 female inserts and push-pull panel mounting frame with Freenet system

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
RJ45 female insert, single, for PCB mounting, CAT6, 8-pos., shielded						
Straight solder pins	**VS-08-BU-RJ45-6/LV-1**	**1653090**	5			
Angled solder pins	**VS-08-BU-RJ45-6/LH-1**	**1653087**	5			
RJ45 female insert, 8-pos., shielded, with cable connection						
CAT5e				**VS-PN-BU-RJ45-5-F/PK**	**1404786**	1
RJ45 female insert, CAT5e, 8-pos., shielded, socket on socket						
For metal panel mounting frame				**VS-08-BU/BU-RJ45-F**	**1405617**	1
RJ45 panel mounting frame, IP67, for push-pull locking, for rectangular mounting cutout, with seal, without mounting screws						
Metal housing	**VS-PPC-F1-RJ45-MNNA-1R-PHA**	**1608029**	1			
Plastic housing	**VS-PPC-F1-RJ45-P0BK-1R-PHA**	**1657847**	1			
RJ45 panel mounting frame, IP67, for push-pull locking, for rectangular mounting cutout, with seal, without mounting screws, for Freenet system						
Metal housing				**VS-PPC-F1-RJ45-MNNA-1R-F**	**1405358**	1
Plastic housing				**VS-PPC-F1-RJ45-POBK-1R-F**	**1608197**	1
RJ45 panel mounting frame, IP67, for push-pull locking, metal, with Freenet system, for round mounting cutout, with seal				**VS-PPC-F1-RJ45-MNNA-1C-F**	**1405222**	1
Protective cover, IP67, with a push-pull interlock to cover the contact insert in the push-pull panel mounting frames RJ45 and SCRJ						
Metal housing	**VS-PPC-C1-PC67-MNNA**	**1608142**	1	**VS-PPC-C1-PC67-MNNA**	**1608142**	1
Plastic housing	**VS-PPC-C1-PC67-POBK**	**1608155**	1	**VS-PPC-C1-PC67-POBK**	**1608155**	1
Filler plug, to cover the contact insert in the RJ45 and SCRJ push-pull panel mounting frames	**VS-PPC-C1-PC-ROBK**	**1404773**	1	**VS-PPC-C1-PC-ROBK**	**1404773**	1
Snap-on cap, with additional snap-lock, IP65/IP67, for the panel mounting frame, push-pull locking	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1
Stripping tool, for multiple-stage repositioning of shielded conductors				**VS-CABLE-STRIP-VARIO**	**1657407**	1

Technical data	VS-08-BU-RJ45-6/...	VS-PPC-...-MNNA-1R-PHA	VS-08-BU-RJ45-6-F/PK	VS-PPC-F1-RJ45-POBK-1R-F
Electrical data				
Rated voltage	125 V	-	50 V	-
Rated current	1 A	-	1 A	-
Material data				
Housing material	Copper alloy	Zinc die-cast	-	PA-GF
Contact material	Copper alloy	-	Copper alloy	-
Contact surface material	Gold over nickel	-	Gold over nickel	-
Contact carrier material	PBT	-	PC	-
Inflammability class acc. to UL 94	V0	V0	V0	V0
Mechanical data				
Color	-	Nickel-plated	-	Black
Pollution degree	1	2	1	2
Degree of protection	IP20	IP65/67	IP20	IP65/IP67
Connection data				
Type of connection	Solder connection	-	IDC	-
Conductor cross-section	-	-	0.2 mm² ... 0.32 mm²	-
Connection cross-section AWG	-	-	24 ... 22	-
Insertion/withdrawal cycles	≥ 750	≥ 500	≥ 750	≥ 500
Temperature data				
Ambient temperature (operation)	-25°C ... 80°C	-40°C ... 70°C	-20°C ... 70°C	-40°C ... 70°C

RJ45 patch panel IP20

The PROFINET patch panel series provides an ideal connection from horizontal cabling to cabling with patch cables inside the control cabinet. A wide range of connection methods are available, e.g. IDC, LSA or screw connection.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-PP-PN-R-.../5-IDC03

RJ45 patch panel,
with an IDC connection

VS-PP-PN-R-.../5-LSA

RJ45 patch panel,
with an LSA connection

Description	Number of slots	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Patch panel, RJ45, DIN rail mounting, IP20, CAT5e, shielding selectable via jumper							
	1	**VS-PP-PN-R-1XRJ45/5-IDC03**	**1658613**	1	**VS-PP-PN-R-1XRJ45/5-LSA**	**1658558**	1
	3	**VS-PP-PN-R-3XRJ45/5-IDC03**	**1658626**	1	**VS-PP-PN-R-3XRJ45/5-LSA**	**1658561**	1
	8	**VS-PP-PN-R-8XRJ45/5-IDC03**	**1658639**	1	**VS-PP-PN-R-8XRJ45/5-LSA**	**1658574**	1
Technical data							
Electrical data							
Rated voltage		60 V			60 V		
Material data							
Housing material		PC			PC		
Inflammability class acc. to UL 94		V0			V0		
Mechanical data							
Conductor cross-section		0.13 mm² ... 0.34 mm² (solid)			0.14 mm² ... 0.34 mm² (solid)		
Connection cross-section AWG		26 ... 22 (solid)			26 ... 22 (solid)		
Conductor cross-section		0.22 mm² ... 0.34 mm² (stranded)			-		
Connection cross-section AWG		24 ... 22 (stranded)			-		
External cable diameter		5 mm ... 8.5 mm			5 mm ... 8.5 mm		
Temperature data							
Ambient temperature (operation)		0°C ... 70°C			0°C ... 70°C		

RJ45 patch panel IP20

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-PP-PN-R-.../5-SC

RJ45 patch panel,
with a screw connection

VS-PP-F-RJ45-CAT6

Patch panel
with IDC fast connection

Description	Number of slots	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Patch panel, RJ45**,** DIN rail mounting, IP20, CAT5e, shielding selectable via jumper							
	1	**VS-PP-PN-R-1XRJ45/5-SC**	**1658587**	1			
	3	**VS-PP-PN-R-3XRJ45/5-SC**	**1658590**	1			
	8	**VS-PP-PN-R-8XRJ45/5-SC**	**1658600**	1			
RJ45 patch panel, DIN rail mounting, IP20, CAT6							
For 1 channel	1				**VS-PP-F-RJ45-CAT6**	**1658118**	1

Technical data		
Electrical data		
Rated voltage	60 V	50 V
Material data		
Housing material	PC	PC-GF
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Conductor cross-section	0.14 mm² ... 0.5 mm²	0.2 mm² ... 0.32 mm²
Connection cross-section AWG	26 ... 20	24 ... 22
External cable diameter	5 mm ... 8.5 mm	4.5 mm ... 8 mm
Temperature data		
Ambient temperature (operation)	0°C ... 70°C	-10°C ... 60°C

RJ45 terminal outlet and coupling IP67

The transition from fixed to flexible cabling in the field can be realized with the help of terminal outlets. An IP67 coupling is available for field connection. It enables easy transitions from fixed cabling to flexible cable conduits, for example.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-TO-RO-MCBK-F14...

Terminal outlet IP67
with RJ45 slots

VS-PPC-J-1-RJ45-MNBK

RJ45 push-pull coupling IP67
with protective cover

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Terminal outlet IP65/67, 2 slots, with protective plugs, 2 cable entries						
Push-pull with 2xRJ45	**VS-TO-RO-MCBK-F1411/1411**	**1404281**	1			
M12 with 2 x socket, 4-pos., D-coded	**VS-TO-RO-MCBK-F1421/1421**	**1404294**	1			
Push-pull with 1 x Power and 1 x RJ45	**VS-TO-RO-MCBK-F1411/1413**	**1404333**	1			
RJ45 push-pull coupling, IP67, CAT5e, with protective cover						
Nickel-plated				**VS-PPC-J-1-RJ45-MNBK**	**1405183**	1
Technical data						
Electrical data						
Transmission characteristics (category)	CAT6			CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)		
Material data						
Housing material	Aluminum cast alloy, powder-coated			Zinc die-cast		
Mechanical data						
No. of pos.	-			8		
Color	Black			Silver		
Degree of protection	IP65/67			IP67		
Temperature data						
Ambient temperature (operation)	-40°C ... 70°C			-40°C ... 70°C		

PROFINET cable type A

Type A (solid) is available as 100 m ring or with free length for fixed laying of PROFINET cables.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-93A...

SF/Q PROFINET cables

Description	Type	Order No.	Pcs. / Pkt.
PROFINET cable type A, CAT5e-SF/Q cable, 1 x 4 x 22 AWG, solid (1-wire), shielded, outer sheath: PVC, outside diameter 6.5 mm, RAL 6018 (yellow-green)			
100 m cable ring	**VS-OE-OE-93A-100,0**	**1416392**	1
Variable cable length	**VS-93A/...**	**1416486**	1

Technical data		
Electrical data		
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Mechanical data		
No. of pos.		4
Material of outer sheath		PVC
External sheath, color		Green-yellow RAL 6018
External cable diameter		6.50 mm
Temperature data		
Cable, fixed installation	[°C]	-40 ... 70

Ordering example for cables with **variable** cable length:

Assembled **type A** PROFINET cable having a length of 34.5 m.

Order No.		Length [m] Max. 100 m
1416486	/	34.5
		Step widths: 1.0 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

M12 connectors and IP65 and IP67 panel feed-throughs

For further technical data, see:
www.phoenixcontact.net/catalog

SACC-...SH...

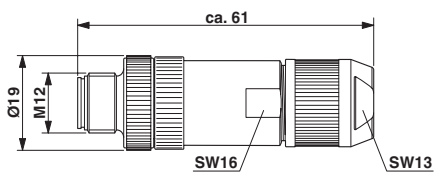
M12 connectors,
shielded, D-coded

VS-BH-M12FSD-RJ45...

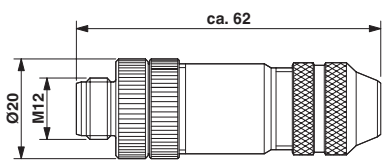
Control cabinet feed-through

Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
Bus system connector, 4-pos., QUICKON connection block, maximum cable diameter 8 mm						
Connector, straight	**SACC-M12MSD-4Q SH PN**	**1554513**	1			
Socket, straight	**SACC-M12FSD-4Q SH PN**	**1554526**	1			
Connector, angled	**SACC-M12MRD-4Q SH PN**	**1554539**	1			
Socket, angled	**SACC-M12FRD-4Q SH PN**	**1554542**	1			
Bus system connector, straight, 4-pos., screw connection, metal knurl						
Cable gland Pg7	**SACC-M12MSD-4CON-PG 7-SH**	**1521258**	1			
Cable gland Pg9	**SACC-M12MSD-4CON-PG 9-SH**	**1521261**	1			
Bus system flush-type socket, 4-pos, screw mounting with M16 thread, with 0.5 m TPE litz wires						
Front mounting	**SACC-E-FSD-4CON-M16/0.5 SCO**	**1535202**	1			
Front mounting, can be positioned	**SACC-EC-FSD-4CON-M16/0.5 SCO**	**1535215**	1			
Bus system flush-type socket, 4-pos, screw mounting with Pg9 thread, with 0.5 m TPE litz wires						
M12 socket, rear mounting	**SACC-DSI-FSD-4CON-PG9/0.5 SCO**	**1551529**	1			
Control cabinet feed-through, M12, 4-pos., D-coded on RJ45 socket, IP65/67			1			
Socket input 90°			1	**VS-BH-M12FSD-RJ45/90**	**1657261**	
Socket input 180°			1	**VS-BH-M12FSD-RJ45/180**	**1657494**	
Stripping tool, for multi-level stripping of shielded cables	**VS-PN-CABLE-STRIP**	**1657407**	1			

Technical data	**SACC-M12MSD-4QO...**	**SACC-M12MSD-4CON...**	**VS-BH-M12FSD-RJ45...**
Rated voltage	60 V	250 V	50 V
Nominal current I_N	1.75 A	4 A	1 A
Contact material	CuSn	CuZn	Copper alloy
Inflammability class according to UL 94	V0	V0	V0
Connection method	IDC	Screw connection	-
Connection cross-section min./max.	0.14 mm² / 0.34 mm²	0.25 mm² / 0.75 mm²	-
Connection cross-section AWG min./max.	26 / 22	24 / 18	
Degree of protection	IP67	IP67	IP65/IP67
Ambient temperature			
Ambient temperatures (operation)	-40°C ... 85°C	-40°C ... 85°C	-25°C ... 85°C



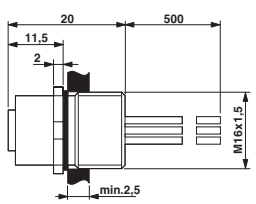
M12 connector with QUICKON connection



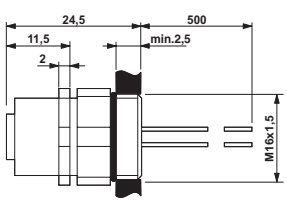
M12 connector with screw connection

Pin	Conductor color	Signal
1	YE	TD+
3	OG	TD–
2	WH	RD+
4	BU	RD–

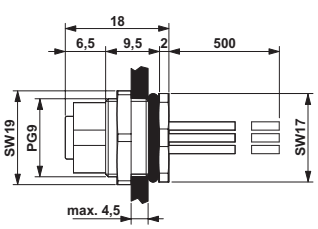
Assignment: PROFINET



M12 flush-type socket, front mounting, with 0.5 m litz wires



M12 flush-type socket, front mounting, can be positioned, with 0.5 m litz wires



M12 flush-type socket, rear mounting, with 0.5 m litz wires

IP65 and IP67-compliant M12 flush-type connector

EMC nut Pg9 is required for shield contacting on coated housing surfaces.

For further technical data, see:

www.phoenixcontact.net/catalog

SACC-DSI...-FSD-4CON...SCO

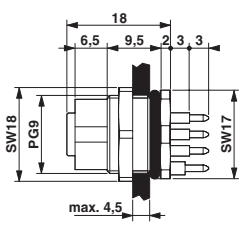
M12 socket, PCB mounting, one-piece connector

SACC-DSI...-FSD-4CON-...

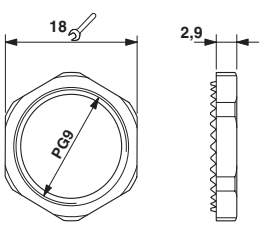
M12 socket, PCB mounting, two-piece connector

Description	Type	Order No.	Pcs./Pkt.	Type	Order No.	Pcs./Pkt.
SPEEDCON, Pg9 fastening thread, shield contact	**SACC-DSI-FSD-4CON-L180/SCO SH**	**1553006**	20			
SPEEDCON, Pg9 fastening thread, without shield contact	**SACC-DSI-FSD-4CON-L180 SCO**	**1551503**	20			
SPEEDCON, M12 fastening thread, 180° connection, THR				**SACC-DSIV-FSD-4CON-L180 SCOTHR**	**1542648**	60
SPEEDCON, M12 fastening thread, 180° connection, wave soldering				**SACC-DSIV-FSD-4CON-L180 SCO**	**1542619**	10
M12 fastening thread, 90° connection, wave soldering				**SACC-DSIV-M12FSD-4CON-L90**	**1534630**	10
EMC nut, Pg9	**SACC-PG9-KD-NUT-SH**	**1440177**	10			

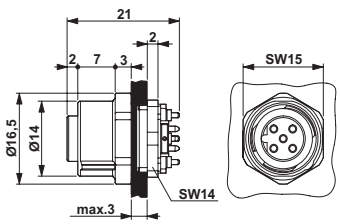
Technical data		
Electrical data		
Rated voltage	250 V	250 V
Nominal current I_N	4 A	4 A
Contact resistance	3 mΩ	3 mΩ
Insulation resistance	> 100 mΩ	> 100 mΩ
Surge voltage category	II	II
Mechanical data		
Material contact / contact surface	CU alloy / Au	CU alloy / Au
Contact carrier material	PA 66	PA 66
Inflammability class according to UL 94	V0	V0
Pollution degree	3	3
Connection data		
Connection method	PCB connection	PCB connection
Degree of protection	IP67	IP67
Ambient temperature		
Ambient temperatures (operation)	-25°C ... 85°C	-25°C ... 85°C



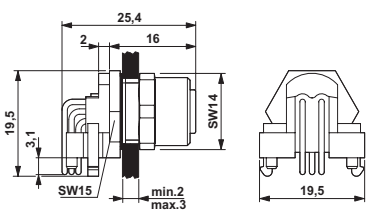
M12, rear mounting, with shield contact, 180° connection, Pg9 fastening thread



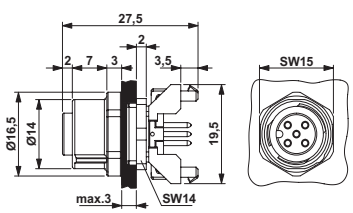
EMC nut, Pg9



M12, rear mounting, with shield contact, 180° connection, THR



M12, rear mounting, with shield contact, 90° connection, wave soldering



M12, rear mounting, with shield contact, 180° connection, wave soldering

Assembled cables type 93B, 4-pos.

Use of pre-assembled PROFINET cables, in complex systems, is often not possible. With the new ordering system, Phoenix Contact now provides the option of a simple and customer-specific realization of a wide range of cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		M12 connectors	
		OE		IP20		M12MS
		Order no.		Order no.		Order no.
Free end						
OE	100 m Variable	1416389 1416499	2 m Variable	1416128 1416499	2 m Variable	1416143 1416499
RJ45 connector, IP20						
IP20			2 m Variable	1416131 1416499	2 m Variable	1416134 1416499
M12 connector						
M12MS					2 m Variable	1416146 1416499
RJ45 push-pull, metal						
PPCME						
RJ45 push-pull, plastic						
PPCPL						
M12 flush-type socket, rear assembly						
M12FSBP	2 m	1416155	2 m	1416158		
RJ45 socket						
FPN			2 m Variable	1416173 1416499		

Ordering example:

For a Profinet cable equipped with an **RJ45 connector** at one end and an **IP67-compliant, metallic RJ45 push-pull connector** on the other and the **length 4.5 m**, the order data is as follows:

Order No.		Connector 1		Connector 2		Length [m] Max. 100 m
1416499	/	PPCME	/	IP20	/	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color		Signal
M12	RJ45			
1	1	YE		TD+
3	2	OG		TD–
2	3	WH		RD+
4	6	BU		RD–

Notes:

OE	Free end
IP20	RJ45 connector in compliance with IP20
IP67	RJ45 connector in compliance with IP67
IP67B	RJ45 connector in compliance with IP67, black
PPCPL	Push-pull RJ45 connector in compliance with IP67, made of plastic, black
PPCME	Push-pull RJ45 connector in compliance with IP67, made of metal
M12MS	M12 connector, straight
M12FSEC	M12 flush-type socket, front mounting
M12FSBP	M12 flush-type socket, rear mounting

RJ45 push-pull, metal		RJ45 push-pull, plastic		M12 SPEEDCON flush-type socket, rear assembly		M12 SPEEDCON flush-type connector, rear assembly	
	PPCME		PPCPL		M12FSBPS		M12MSBPS
	Order no.		Order no.		Order no.		Order no.
				0.5 m	1437766	0.5 m	1437805
				1 m	1437779	1 m	1437818
				2 m	1437782	2 m	1437821
5 m	1416162	5 m	1416168	5 m	1437795	5 m	1437834
Variable	1416499	Variable	1416499				
5 m	1416138	5 m	1416141				
Variable	1416499	Variable	1416499				
5 m	1416150	5 m	1416153				
Variable	1416499	Variable	1416499				
5 m	1416165						
Variable	1416499						
		5 m	1416171				
		Variable	1416499				
2 m	1416176	2 m	1416179				
Variable	1416499	Variable	1416499				

Technical data		PROFINET cable
Transmission characteristics (category)		CAT5e
Cable structure		1x4xAWG22/7; SF/Q
Conductor cross-section		0.34 mm²
Conductor structure for signal		7x 0.25 mm
AWG signal line		22
Cable Diameter		6.50 mm
Conductor resistance		≤ 120 Ω/km
Type of shield		Braided shielding made of tin-plated copper wires
Conductor material		Tin-plated Cu litz wires
Material of outer sheath		PVC
Color of outer sheath		Green RAL 6018
Color, single wire		White, yellow, blue, orange
Ambient temperature		
Fixed installation	[°C]	-40 ... 70
Flexible installation	[°C]	-20 ... 60

Assembled cables type 93C, 4-pos., flexible cable conduit capable

Use of pre-assembled PROFINET cables, in complex systems, is often not possible. With the new ordering system, Phoenix Contact now provides the option of a simple and customer-specific realization of a wide range of cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		M12 connectors	
		OE		IP20		M12MS
		Order no.		Order no.		Order no.
Free end						
			2 m	1416182	2 m	1416197
OE	100 m	1416376				
	Variable	1416509	Variable	1416509	Variable	1416509
RJ45 connector, IP20						
			2 m	1416185	2 m	1416188
IP20			Variable	1416509	Variable	1416509
M12 connector						
					2 m	1416200
M12MS					Variable	1416509
RJ45 push-pull, metal						
PPCME						
RJ45 push-pull, plastic						
PPCPL						
M12 flush-type socket, rear mounting						
	2 m	1416209	2 m	1416212		
M12FSBP						
RJ45 socket						
			2 m	1416227		
FPN			Variable	1416509		

Ordering example:

For a Profinet cable equipped with an **RJ45 connector** at one end and an **IP67-compliant, metallic RJ45 push-pull connector** on the other and the **length 4.5 m**, the order data is as follows:

Order No.		Connector 1		Connector 2		Length [m] Max. 100 m
1416509	/	PPCME	/	IP20	/	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color	Signal
M12	RJ45		
1	1	YE	TD+
3	2	OG	TD–
2	3	WH	RD+
4	6	BU	RD–

Notes:

OE	Free end
IP20	RJ45 connector in compliance with IP20
IP67	RJ45 connector in compliance with IP67
IP67B	RJ45 connector in compliance with IP67, black
PPCPL	Push-pull RJ45 connector in compliance with IP67, made of plastic, black
PPCME	Push-pull RJ45 connector in compliance with IP67, made of metal
M12MS	M12 connector, straight
M12FSEC	M12 flush-type socket, front mounting
M12FSBP	M12 flush-type socket, rear mounting

RJ45 push-pull, metal		RJ45 push-pull, plastic	
	PPCME		PPCPL
	Order no.		Order no.
5 m	1416216	5 m	1416222
Variable	1416509	Variable	1416509
5 m	1416192	5 m	1416195
Variable	1416509	Variable	1416509
5 m	1416204	5 m	1416207
Variable	1416509	Variable	1416509
5 m	1416219		
Variable	1416509		
		5 m	1416225
		Variable	1416509
2 m	1416230	2 m	1416233
Variable	1416509	Variable	1416509

Technical data		PROFINET cable
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Cable structure		1x4xAWG22/19; SF/Q
Conductor cross-section		0.34 mm²
Conductor structure for signal		19x 0.16 mm
AWG signal line		22
Cable Diameter		6.50 mm
Conductor resistance		≤ 120 Ω/km
Type of shield		Braided shielding made of tin-plated copper wires
Conductor material		Tin-plated Cu litz wires
Material of outer sheath		PUR
Color of outer sheath		Green RAL 6018
Color, single wire		White, yellow, blue, orange
Ambient temperature		
Fixed installation	[°C]	-40 ... 70
Flexible installation	[°C]	-20 ... 60

Assembled cables type 936, 4-pos.

Use of pre-assembled PROFINET cables, in complex systems, is often not possible. With the new ordering system, Phoenix Contact now provides the option of a simple and customer-specific realization of a wide range of cable assemblies.

First, the necessary cable type is selected. In the second step, the connectors are defined. **Connector 1** must be selected in the table heading and **Connector 2** in the first column of the table (OE, IP20, etc.). Finally, the required length is determined (please pay attention to the ordering example for the min. and max. lengths and increment).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	Free end		RJ45 connector, IP20		RJ45 push-pull, metal	
		OE		IP20		PPCME
		Order no.		Order no.		Order no.
Free end			1 m	1416571		
					5 m	1416574
OE	100 m	1416570				
	Variable	1416599	Variable	1416599	Variable	1416599
RJ45 connector, IP20			1 m	1416579		
					5 m	1416582
IP20			Variable	1416599	Variable	1416599
RJ45 push-pull, metal					5 m	1416592
PPCME					Variable	1416599
RJ45 push-pull, plastic						
PPCPL						
M12 connector						
M12MS						
M12 flush-type socket, rear mounting						
M12FSBP	2 m	1416578	2 m	1416585	2 m	1416594

Ordering example:

For a Profinet cable equipped with an **RJ45 connector** at one end an **IP67-compliant, metallic RJ45 push-pull connector** on the other and the **length 4.5 m**, the order data is as follows:

Order No.		Connector 1		Connector 2		Length [m] Max. 100 m
1416599	/	PPCME	/	IP20	/	4.5

Step widths:
0.2 ... 3 m = 0.1 m
> 3 m = 0.5 m

Minimum order = 25

Pin		Conductor color	Signal
M12	RJ45		
1	1	YE	TD+
3	2	OG	TD–
2	3	WH	RD+
4	6	BU	RD–

Notes:

OE	Free end
IP20	RJ45 connector in compliance with IP20
IP67	RJ45 connector in compliance with IP67
IP67B	RJ45 connector in compliance with IP67, black
PPCPL	Push-pull RJ45 connector in compliance with IP67, made of plastic, black
PPCME	Push-pull RJ45 connector in compliance with IP67, made of metal
M12MS	M12 connector, straight
M12FSEC	M12 flush-type socket, front mounting
M12FSBP	M12 flush-type socket, rear mounting

RJ45 push-pull, plastic		M12 connector	
	PPCPL		M12MS
	Order no.		Order no.
		2 m	1416576
5 m	1416575		
Variable	1416599	Variable	1416599
		2 m	1416584
5 m	1416583		
Variable	1416599	Variable	1416599
		2 m	1416593
		Variable	1416599
		2 m	1416596
5 m	1416595		
Variable	1416599	Variable	1416599
		2 m	1416598
		Variable	1416599
2 m	1416597		

Technical data		PROFINET cable
Transmission characteristics (category)		CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)
Cable structure		1x4xAWG22/7; SF/Q
Conductor cross-section		0.34 mm²
Conductor structure for signal		7x 0.25 mm
AWG signal line		22
Cable Diameter		7.25 mm
Conductor resistance		≤ 54.4 Ω/km (at 20°C)
Type of shield		Plastic-coated aluminum foil, tinned copper braided shield
Conductor material		Silver-plated Cu litz wires
Material of outer sheath		Radox GKW S
Color of outer sheath		Black RAL 9005
Color, single wire		White, orange, blue, yellow
Ambient temperature		
Fixed installation	[°C]	-40 ... 90
Flexible installation	[°C]	-25 ... 90

Fiber optics connector – SCRJ, IP20 / IP67

SCRJ is provided for PROFINET data transmission using fiber optics. In the IP67 environment, the same concept is continued in the metal and plastic design with the Pusch-pull SCRJ.

The Small Form Factor connector SCRJ in acc. with IEC 61754-24 and EN 50377-6-1 is suitable for all common fiber types, thanks to its 2.5 mm ferrule.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS...SCRJ-POF...

SCRJ plug connector for polymer fiber 980/1000 µm

VS...SCRJ-HCS...

SCRJ plug connector for HCS fiber 200/230 µm

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
FO connector SCRJ, duplex, with fast connection						
IP20	**VS-SCRJ-POF-FA-IP20**	**1654879**	1	**VS-SCRJ-HCS-FA-IP20-PN**	**1404087**	1
FO connector SCRJ, IP67, with push-pull locking, duplex, with fast connection technology						
Metal housing	**VS-PPC-C1-SCRJ-MNNA-PG9-A4D-C**	**1608032**	1	**VS-PPC-C1-SCRJ-MNNA-PG9-A3C-C**	**1608045**	1
Plastic housing	**VS-PPC-C1-SCRJ-POBK-PG9-A4D-C**	**1657850**	1	**VS-PPC-C1-SCRJ-POBK-PG9-A3C-C**	**1657863**	1
PROFINET fiber optics line, type B, outer sheath PUR in RAL 6018 (yellow-green)						
Variable cable length	**VS-PN-CABLE-1000-B/PUR-A4D/...**	**1609413**	1	**VS-PN-CABLE-1001-B/PUR-A3C/...**	**1609426**	1
100 m cable ring	**VS-PN-CABLE-1000-B/PUR-A4D/100**	**1609442**	1	**VS-PN-CABLE-1001-B/PUR-A3C/100**	**1609455**	1
Polishing tool set SCRJ, for polymer fiber, for field assembly of plug connectors SCRJ/IP20 and SCRJ/IP67 with fast connection system	**VS-SCRJ-POF-KONFTOOL-POLISH**	**1658820**	1			
SCRJ cutting tool set, for polymer fibers, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-KONFTOOL-CUT**	**1657096**	1			
HCS DIY case for SCRJ quick mounting connector, including two SCRJ quick mounting connectors, stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope				**PSM-HCS-KONFTOOL/SC-RJ**	**2708876**	1

Technical data	VS-SCRJ-POF-...-IP20	VS-...-MNNA-...A4D...	VS-SCRJ-HCS-...-IP20	VS-...-POBK-...-A3C...
Material data				
Housing material	PBT	Zinc die-cast	PBT	PA-GF
Ferrule material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Ferrule holder color	Blue	Blue	Red	Red
External cable diameter	-	6.5 mm ... 9.5 mm	-	6.5 mm ... 9.5 mm
Wire diameter	2.2 mm	2.2 mm	2.2 mm	2.2 mm
Attenuation	≤ 1.5 dB (insertion loss)	≤ 1.5 dB (insertion loss)	≤ 1 dB (insertion loss)	< 1 dB (insertion loss)
Temperature data				
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 70°C	-20°C ... 70°C	-20°C ... 70°C

Ordering example for cable with variable cable length:

35 m, **TYPE B** PROFINET fiber optics cable, polymer fiber 980/1000 µm

Order No.		Length [m] Max. 1000 m
1609413	/	**35**
1609426		**Step width:** 1 m ... 1000 m = 1 m

Fiber optics panel feed-throughs, terminal outlet and couplings – SCRJ IP67

An extensive product range is available for the device connection technology or for field connection, e.g. panel feed-throughs or terminal outlets.
The "VS-PPC-F1-SCRJ-...1RP" panel mounting frames allow integration of a transceiver into devices, e.g. for AVAGO transceiver (type: AFBR5978BZ).

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-PPC-F1-SCRJ-...-1RP

Push-pull panel mounting frame IP67, for PCB connection

VS-PPC-F1-SCRJ-...-1RF

Pusch-pull panel mounting frame IP67 with SCRJ coupling

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
SCRJ panel mounting frame, IP67, for push-pull locking, for rectangular mounting cutout, for **AVAGO transceiver (type: AFBR5978BZ)** on PCB, with seal, without mounting screws						
Metal housing	**VS-PPC-F1-SCRJ-MNNA-1RP**	**1608061**	1			
Plastic housing	**VS-PPC-F1-SCRJ-POBK-1RP**	**1657889**	1			
SCRJ panel mounting frame, IP67, for push-pull locking, with Freenet system, for rectangular mounting cutout, with seal, without mounting screws						
Metal housing				**VS-PPC-F1-SCRJ-MNNA-1RF**	**1405374**	1
Plastic housing				**VS-PPC-F1-SCRJ-POBK-1RF**	**1608210**	1
SCRJ panel mounting frame, IP67, for push-pull locking, metal, with Freenet system, for round mounting cutout, with seal						
				VS-PPC-F1-SCRJ-MNNA-1C-F	**1405235**	1
Terminal outlet SCRJ IP65/67 Pusch-pull, 2 slots version 14, with protective plugs, 2 cable entries	**VS-TO-RO-MCBK-F1417/1417**	**1404320**	1			
Terminal outlet SCRJ/Power IP65/67 Pusch-pull, 2 slots version 14, with protective plugs, 2 cable entries	**VS-TO-RO-MCBK-F1417/1413**	**1404346**	1			
SCRJ push-pull coupling, IP67, metal, CAT5e, with protective cover, color: nickel-plated				**VS-PPC-J-1-SCRJ-MNBK**	**1405206**	1
Snap-on cap, with additional snap-lock, IP65/IP67, for the panel mounting frame, push-pull locking	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1	**VS-PPC-C1-PC-ROBK-L**	**1405293**	1
Filler plug, to cover the contact insert in the RJ45 and SCRJ push-pull panel mounting frames	**VS-PPC-C1-PC-ROBK**	**1404773**	1	**VS-PPC-C1-PC-ROBK**	**1404773**	1

Technical data	VS-PPC-F1-SCRJ-MNNA-1RP	VS-TO-RO-MCBK-F1417/1417	VS-PPC-F1-SCRJ-MNNA-1RF	VS-PPC-J-1-SCRJ-MNBK
Material data				
Housing material	Zinc die-cast	Aluminum cast alloy, powder-coated	Zinc die-cast	Zinc die-cast
Color	Silver	Black	Silver	Silver
Degree of protection	IP65/67	IP65/67	IP65/67	IP67
Temperature data				
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 70°C	-40°C ... 70°C	-40°C ... 70°C

Assembled fiber optics cables – SCRJ, IP20 / IP67, POF

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

	SCRJ connector, IP20	SCRJ connector, IP67, metal housing	SCRJ connector, IP67, plastic housing

FSMA connector, IP20		Order No.		Order No.	Order No.		Order No.	Order No.
	1 m	**1657106**						
	2 m	**1657119**						
	5 m	**1657122**						
SCRJ connector, IP20								
	1 m	**1656738**	1 m	**1608731**		1 m	**1608812**	
	2 m	**1645741**	2 m	**1608744**		2 m	**1608825**	
	5 m	**1656479**	5 m	**1608757**		5 m	**1608838**	
SCRJ connector, IP67, metal housing								
			1 m	**1608692**				
			2 m	**1608702**				
			5 m	**1608715**				
SCRJ connector, IP67, plastic housing								
						1 m	**1608773**	
						2 m	**1608786**	
						5 m	**1608799**	

Technical data		FSMA connectors, IP20	SCRJ connectors, IP20	SCRJ connector, IP67, metal housing	SCRJ connector, IP67, plastic housing
Housing material		PBT/nickel silver	PBT	Zinc die-cast	PA-GF
Ferrule material		Copper alloy	Copper alloy	Copper alloy	Copper alloy
Outer sheath, material		PE	PE	LSFH	LSFH
Fiber type		Polymer fiber	Polymer fiber	Polymer fiber	Polymer fiber
External cable diameter		Twin conductor (2.2 x 4.4 mm)	Twin conductor (2.2 x 4.4 mm)	7.5 mm	7.5 mm
Individual wire diameter	[mm]	2.2	2.2	2.2	2.2
Degree of protection		IP20	IP20	IP65/IP67	IP65/67
Insertion loss		< 1.7 dB (with 660 nm)	< 1.7 dB (with 660 nm)	≤ 1.7 dB (with 660 nm)	≤ 1.7 dB (with 660 nm)
Ambient temperature					
Fixed installation	[°C]	-30 ... 70	-30 ... 70	-30 ... 70	-30 ... 70
Flexible installation	[°C]	-20 ... 60	-20 ... 60	-20 ... 60	-20 ... 60
Plug/socket	[°C]	-20 ... 70	-20 ... 70	-40 ... 70	-20 ... 70

Assembled fiber optics connector – SCRJ, IP20 / IP67, HCS

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

	SCRJ connector, IP20	SCRJ connector, IP67, metal housing	SCRJ connector, IP67, plastic housing

FSMA connector, IP20		Order No.		Order No.	Order No.		Order No.	Order No.
	1 m	**1654963**						
	2 m	**1654976**						
	5 m	**1654989**						
SCRJ connector, IP20								
	1 m	**1654934**	1 m	**1608896**		1 m	**1608977**	
	2 m	**1654947**	2 m	**1608906**		2 m	**1608980**	
	5 m	**1654950**	5 m	**1608919**		5 m	**1608993**	
SCRJ connector, IP67, metal housing								
			1 m	**1608854**				
			2 m	**1608867**				
			5 m	**1608870**				
SCRJ connector, IP67, plastic housing								
						1 m	**1608935**	
						2 m	**1608948**	
						5 m	**1608951**	

Technical data		FSMA connectors, IP20	SCRJ connectors, IP20	SCRJ connector, IP67, metal housing	SCRJ connector, IP67, plastic housing
Housing material		PBT/nickel silver	PBT	Zinc die-cast	PA-GF
Ferrule material		Copper alloy	Copper alloy	Copper alloy	Copper alloy
Outer sheath, material		TPE-O	TPE-O	LSFH	LSFH
Fiber type		HCS fiber	HCS fiber	HCS fiber	HCS fiber
External cable diameter		Twin conductor (3.9 x 6.8 mm)	Twin conductor (3.9 x 6.8 mm)	7.5 mm	7.5 mm
Individual wire diameter	[mm]	2.9	2.9	2.2	2.2
Degree of protection		IP20	IP20	IP65/IP67	IP65/IP67
Insertion loss		≤ 1.2 dB (with 850 nm)	≤ 1.2 dB (with 850 nm)	≤ 1.2 dB (with 850 nm)	≤ 1.2 dB (with 850 nm)
Ambient temperature					
Fixed installation	[°C]	-40 ... 70	-40 ... 70	-20 ... 70	-20 ... 70
Flexible installation	[°C]	-20 ... 70	-20 ... 70	-10 ... 60	-10 ... 60
Plug/socket	[°C]	-20 ... 70	-20 ... 70	-40 ... 70	-20 ... 70

POWER connectors and IP67 panel mounting frame

Devices are supplied with power using POWER-Pusch-pull. These heavy-duty connectors with their easy to operate and space-saving design are available in metal and plastic. The 5-pos. POWER connector with its pluggable interface that is compatible with COMBICON allows transmission of two independent 24 V circuits and the functional earth ground.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-PPC-C2-MSTB-...-P13...

Pusch-pull MSTB connector IP67 for power conductors, with spring-cage fast connection technology

VS-...MSTB...

MSTB socket inserts and Pusch-pull panel mounting frame IP67 for PCB connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Connector MSTB, IP67, with a push-pull interlock, 5-pos., with a spring-cage connection, 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			
MSTB contact insert, for PCB mounting, 24 V, 5-pos., RAL 9005 (black), for panel mounting frame VS-PPC-F2-MSTB-…-1R-P						
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
MSTB contact insert, for PCB mounting, 400 V, 5-pos., RAL 3000 (red), for panel mounting frame VS-PPC-F2-MSTB-…-1R-P						
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
MSTB panel mounting frame, IP67, for Pusch-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
MSTB panel mounting frame, IP67, for push-pull locking, with an integrated contact insert for conductor connection, spring-cage 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
MSTB panel mounting frame, IP67, for push-pull locking, metal, with an integrated contact insert for conductor connection, spring-cage connection, 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
Protective cover, IP67, to cover the contact insert in the push-pull panel mounting frame Power						
Metal housing				**VS-PPC-C2-PC67-MNNA**	**1404045**	1
Protective cover for push-pull panel mounting frame				**VS-PPC-C2-PC-ROBK**	**1405125**	1
Snap-on cap, with additional snap-lock, IP65/IP67, for the Power panel mounting frame, push-pull locking				**VS-PPC-C2-PC-ROBK-L**	**1405303**	1
Protective cap, IP67, with push-pull locking for covering the contact insert in the push-pull connector for Power, plastic				**VS-PPC-F2-PC-POBK**	**1405329**	1

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
Contact material	Copper alloy	Copper alloy	-
Contact surface material	Gold over nickel	Gold over nickel	-
Inflammability class acc. to UL 94	V0	V0	V0
Conductor cross-section	0.75 mm² ... 2.5 mm²	-	-
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

POWER distributor IP67

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-PPC-J-122...-1227-102...
Pusch-pull Y-distributor

VS-PPC-J...
Power H distributor

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
PROFINET Y-distributor with assembled power cable, 5-pos., IP65/IP67, **MSTB connector** with metal housing on 2x socket in metal housing, conductor length:						
0.2 m	**VS-PPC-J-1220-1227-1020-0,2**	**1404799**	1			
Variable	**VS-PPC-J-1220-1227-1020-...**	**1405484**	1			
PROFINET Y-distributor with assembled power cable, with push-pull connectors, 5-pos., IP65, connector with metal housing on 2x socket in metal housing, conductor length:						
0.2 m	**VS-PPC-J-1220-1227-1020-0,2INT**	**1405154**	1			
PROFINET Y distributor with assembled power cable, 5-pos., IP65/IP67, **7/8" connector** with metal housing on 2x socket in metal housing, conductor length:						
0.2 m	**VS-PPC-J-1226-1227-1020-0,2**	**1404812**	1			
Variable	**VS-PPC-J-1226-1227-1021-...**	**1405497**	1			
Power H distributor, 4 x MSTB contact inserts, metal housing, without mounting screws				**VS-PPC-J-4X-1227**	**1405387**	10
Mounting foot for power distributors, plastic	**VS-PPC-J-M**	**1405390**	10	**VS-PPC-J-M**	**1405390**	10

Technical data	VS-PPC-J-1220-1227-1020-0,2	VS-PPC-J-4X-1227
Electrical data		
Rated voltage	24 V	24 V
Rated current	16 A	16 A
Material data		
Housing material	Aluminum, die-cast	Zinc die-cast
Mechanical data		
No. of pos.	5	5
Degree of protection	IP65/67	IP65/67
Temperature data		
Ambient temperature (operation)	-40°C ... 70°C (cable, fixed installation)	-40°C ... 70°C

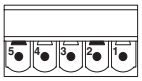
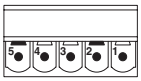
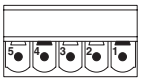
Ordering example for articles with variable cable:

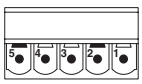
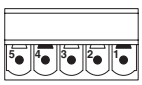
For a distributor with a cable length of 34.5 m, the order data is as follows:

Order No.		Length [m]
1405484	/	**34.5**
		Step width: 0.5 m; **Maximum length:** 50 m

Assembled POWER cables 2.5 mm²

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

	Power, metal, 24 V	Power, plastic, 24 V	Power, plastic, 400 V
			

		Order No.		Order No.	Order No.		Order No.	Order No.
Power, metal, 24 V								
		1 m	**1609170**					
		2 m	**1609183**					
		5 m	**1609196**					
		Variable	**1609206**					
Power, plastic, 24 V								
				1 m	**1609251**			
				2 m	**1609264**			
				5 m	**1609277**			
				Variable	**1609280**			
Power, plastic, 400 V								
							1 m	**1609374**
							2 m	**1609387**
							5 m	**1609390**
							Variable	**1609400**

Ordering example for cable with variable cable length:

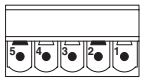
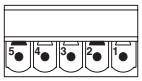
Assembled PROFINET Power cable for 24 V, with two push-pull connectors in metal design and a cable length of 34.5 m.

Order No.		Length [m] Max. 100 m
1609206	/	**34.5**
1609280 **1609400**		**Step widths:** 1.0 m ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

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	[mm²]	2.5	2.5	2.5
External cable diameter	[mm]	11.8	11.8	11.8
Degree of protection		IP65/67	IP65/67	IP65/67
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 mm²

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

	Power, metal, 24 V	Power, plastic, 24 V
		

Power, 7/8"		Order No.		Order No.	Order No.
		1 m	**1609219**	1 m	**1609293**
		2 m	**1609222**	2 m	**1609303**
		5 m	**1609235**	5 m	**1609316**
		Variable	**1609248**	Variable	**1609329**

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
1609248	/	**34.5**
1609329		**Step widths:** 1,0 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

Technical data		Power, metal, 24 V	Power, plastic, 24 V
Housing material		Zinc die-cast/PBT	PA-GF/PBT
Outer sheath, material		PVC	PVC
Conductor cross-section	[mm²]	1.5	1.5
External cable diameter	[mm]	10	10
Degree of protection		IP65/67	IP65/67
Ambient temperature			
Fixed installation	[°C]	-40 ... 70	-40 ... 70
Flexible installation	[°C]	-5 ... 70	-5 ... 70
Plug/socket	[°C]	-40 ... 70	-40 ... 70

Accessories
Tools for copper conductors

The VS-CABLE-STRIP-VARIO stripping tool can strip PROFINET cables in up to three stages. The LSA split-core tool enables an especially fast and easy conductor connection on female inserts with LSA connection.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-CABLE-STRIP-VARIO

CT-WZ/A

Description	Type	Order No.	Pcs. / Pkt.
Stripping tool, for multiple-stage repositioning of shielded conductors	**VS-CABLE-STRIP-VARIO**	**1657407**	1
Split-core tool, for connecting the copper wires to the LSA Plus strips	**CT-WZ/A**	**2765505**	1

Accessories
Tool for POWER cables

For the assembly of POWER push-pull connectors, suitable ferrules as well as corresponding crimping pliers are available.

CRIMPFOX ZA 3...

AI...-10 B...

Description	Type	Order No.	Pcs. / Pkt.
Crimping pliers, for ferrules in acc. with DIN 46228-1 and DIN 46228-4	**CRIMPFOX ZA 3**	**1201882**	1
Spare die	**CRIMPFOX ZA 3 G**	**1202289**	1
Replacement recuperating spring	**CRIMPFOX ZA 3/4 F**	**1202315**	1
Ferrule with plastic sleeve, for 2.5 mm², in acc. with DIN 46228-4	**AI 2,5 -10 BU**	**3202533**	100
Ferrule with plastic sleeve, for 1.5 mm², in acc. with DIN 46228-4	**AI 1,5 -10 BK**	**3200195**	100

Accessories
FO tools for polymer fibers

The assembly tool sets can be used to assemble the SCRJ fiber optics connectors for polymer fiber in an industrial environment.
The VS-SCRJ-KONFTOOL-CUT version with a cutting tool enables assembly without polishing.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-SCRJ-POF-...-POLISH

VS-SCRJ-POF-KONFTOOL-CUT

Description	Type	Order No.	Pcs. / Pkt.
Polishing tool set SCRJ, for polymer fiber, for field assembly of plug connectors SCRJ/IP20 and SCRJ/IP67 with fast connection technology	**VS-SCRJ-POF-KONFTOOL-POLISH**	**1658820**	1
Refill set for VS-SCRJ-POF-KONFTOOL-POLISH, consisting of two polishers and a polishing disc	**VS-SCRJ-POF-POLISH**	**1656673**	1
SCRJ cutting tool set, for polymer fibers, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-KONFTOOL-CUT**	**1657096**	1
SCRJ cutting tool, for polymer fibers, for field assembly of the SCRJ/IP20 connectors with fast connection technology	**VS-SCRJ-POF-TOOL-CUT**	**1405507**	1

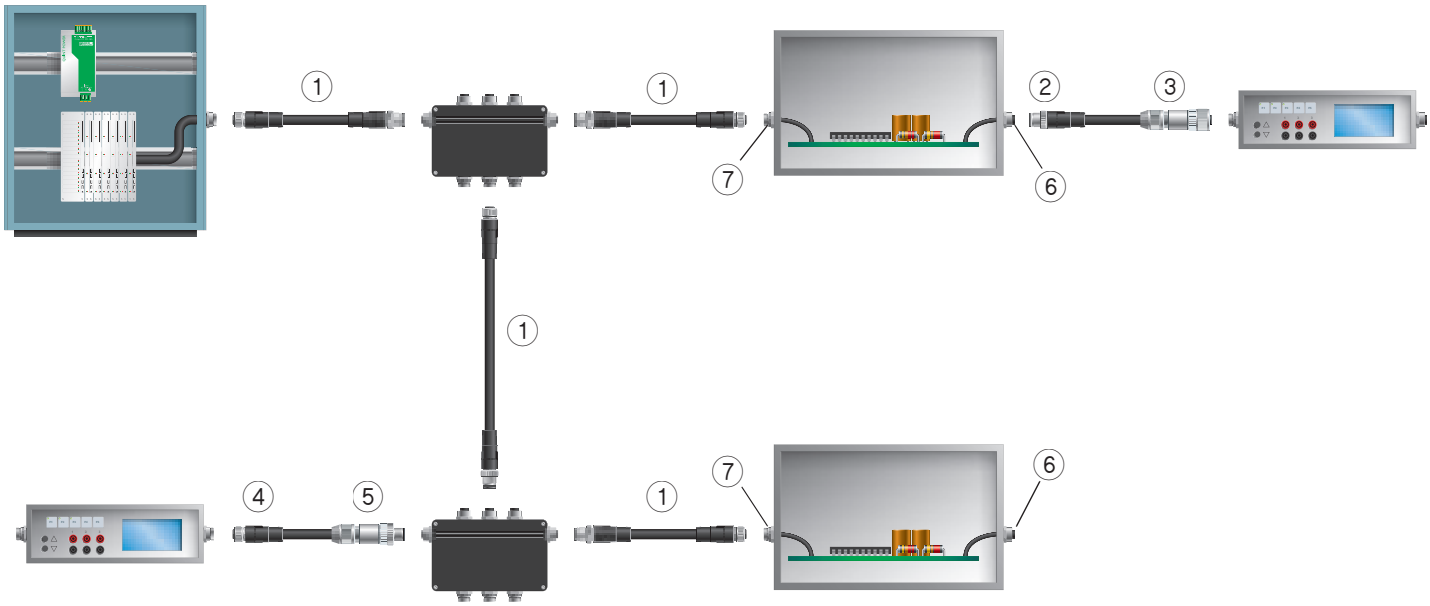
Accessories
FO tools for HCS fiber

The PSM-HCS-KONFTOOL/SC-RJ assembly tool set can be used to assemble the SCRJ fiber optics connectors for HCS fiber even under extreme conditions in an industrial environment using the scoring-breaking procedure. The set contains all the tools and appliances necessary for field assembly.

PSM-HCS-KONFTOOL/SCRJ

Description	Type	Order No.	Pcs. / Pkt.
HCS DIY case for SCRJ quick mounting connector, including two SCRJ quick mounting connectors, stripping knife, stripping pliers, Aramid yarn scissors, fiber stripper, fiber cleaving tool and microscope	**PSM-HCS-KONFTOOL/SC-RJ**	**2708876**	1

VARAN



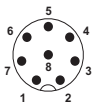
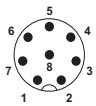
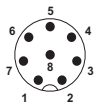
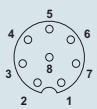
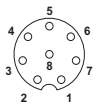
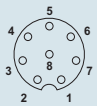
VARAN

VARAN (Versatile Automation Random Access Network) is a bus system based on standard Ethernet technology and fulfills all requirements for modern machine automation. The system is characterized by hard realtime data transmission, automatic addressing, high failure reliability and Hot-Plug in. VARAN technology is open and can be used by anyone.

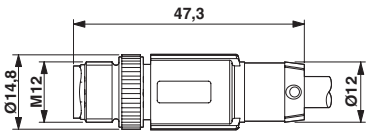
No.	Order designation	Order No.	Page
1	Assembled VARAN line, with straight M12 connector and straight M12 socket, 2 m	1428652	254
2	Assembled VARAN line, with straight M12 connector and free conductor end, 2 m	1428490	254
3	Connector for VARAN, straight M12 connector, with insulation displacement connection, for free assembly	1429143	255
4	Assembled VARAN line, with straight M12 socket and free conductor end, 2 m	1428571	254
5	Connector for VARAN, straight M12 connector, with insulation displacement connection, for free assembly	1429130	255
6	Shielded VARAN panel feed-through, M12 socket and free conductor end, 0.5 m	1429091	254
7	Shielded VARAN panel feed-through, M12 connector and free conductor end, 0.5 m	1429059	254

M12 assembled cables

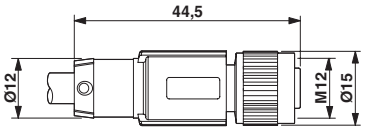
Notes:
For further technical data, see:
www.phoenixcontact.net/catalog

	Free end			M12 connector			M12 flush-type connector		
									
Free end		**Order No.**		**Order No.**		**Order No.**		**Order No.**	**Order No.**
							0.5 m	**1429059**	
							1 m	**1429062**	
			2 m	**1428490**	2 m	**1428539**	2 m	**1429075**	
			5 m	**1428500**	5 m	**1428542**	5 m	**1429088**	
			10 m	**1428513**	10 m	**1428555**			
			15 m	**1428526**	15 m	**1428568**			
M12 socket, straight									
		2 m	**1428571**	2 m	**1428652**				
		5 m	**1428584**	5 m	**1428665**				
		10 m	**1428597**	10 m	**1428678**				
		15 m	**1428607**	15 m	**1428681**				
M12 socket, angled									
		2 m	**1428610**			2 m	**1428694**		
		5 m	**1428623**			5 m	**1428704**		
		10 m	**1428636**			10 m	**1428717**		
		15 m	**1428649**			15 m	**1428720**		
M12 flush-type socket									
		0.5 m	**1429091**						
		1 m	**1429101**						
		2 m	**1429114**						
		5 m	**1429127**						

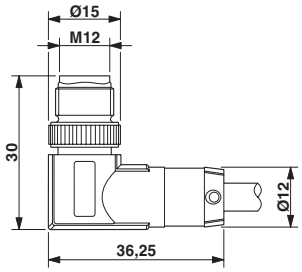
Color coding		Pin assignment M12
n. c.		1
OG		2
OGWH		3
n. c.		4
GNWH		5
BU		6
BN		7
GN		8



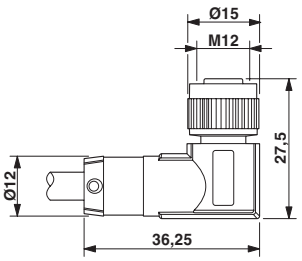
Dimensional drawing: M12 connector, straight



Dimensional drawing: M12 socket, straight



Dimensional drawing: M12 connector, angled



Dimensional drawing: M12 socket, angled

Technical data		Connectors M12	Flush-type connectors M12
Nominal current I_N	[A]	2	2
Rated voltage	[V]	30	30
Volume resistance		≤ 5 mΩ	≤ 3 mΩ
Conductor cross-section for signal	[mm²]	0.14	0.14
Conductor structure for signal		19x 0.10 mm	19x 0.10 mm
Conductor cross-section for power	[mm²]	0.34	0.34
Conductor structure for power		19x 0.16 mm	19x 0.16 mm
Cable diameter	[mm]	7.8	7.8
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Contact carrier material		TPU GF	PA 66
Degree of protection		IP65/IP67/IP69K	IP67
Ambient temperature			
Fixed installation	[°C]	-20 ... 80	-20 ... 80
Plug/socket	[°C]	-25 ... 90	-25 ... 80

M12 connector, shielded

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

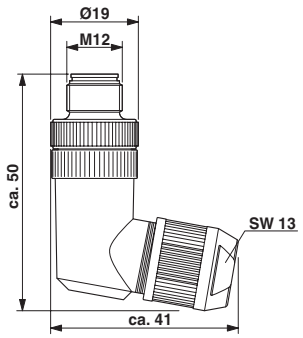
SACC-M12M...-6Q SH VARAN

M12 connector

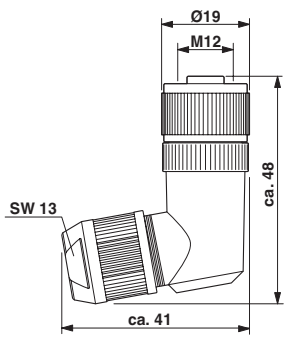
SACC-M12F...-6Q SH VARAN

M12 socket

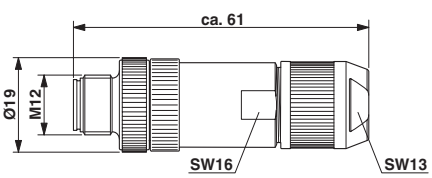
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
M12 connector for assembly shielded						
Straight	**SACC-M12MS-6Q SH VARAN**	**1429130**	1	**SACC-M12FS-6Q SH VARAN**	**1429143**	1
Angled	**SACC-M12MR-6Q SH VARAN**	**1429156**	1	**SACC-M12FR-6Q SH VARAN**	**1429169**	1
Technical data						
Electrical data						
Rated voltage	30 V			30 V		
Nominal current I_N	2 A			2 A		
Volume resistance	≤ 5 mΩ			≤ 5 mΩ		
Insulation resistance	≥ 100 MΩ			≥ 100 MΩ		
Surge voltage category / Pollution degree	II / 3			II / 3		
Material data						
Contact material	CuSn			CuSn		
Contact surface material	Ni/Au			Ni/Au		
Contact carrier material	PA 66			PA 66		
Material of grip body	Zinc die-cast, nickel-plated			Zinc die-cast, nickel-plated		
Inflammability class acc. to UL 94	V0			V0		
Degree of protection	IP67			IP67		
Connection data						
Type of connection	QUICKON fast connection			QUICKON fast connection		
Connection cross-section	0.14 mm² ... 0.34 mm²			0.14 mm² ... 0.34 mm²		
Connection cross-section AWG	26 ... 22			26 ... 22		
Cable diameter	4 mm ... 8 mm			4 mm ... 8 mm		
Temperature data						
Ambient temperature (operation)	-40°C ... 85°C			-40°C ... 85°C		



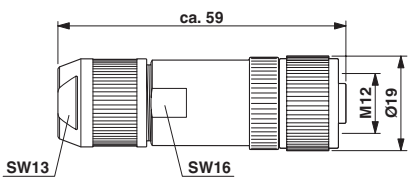
M12 x 1 connector, angled, shielded



M12 x 1 socket, angled, shielded

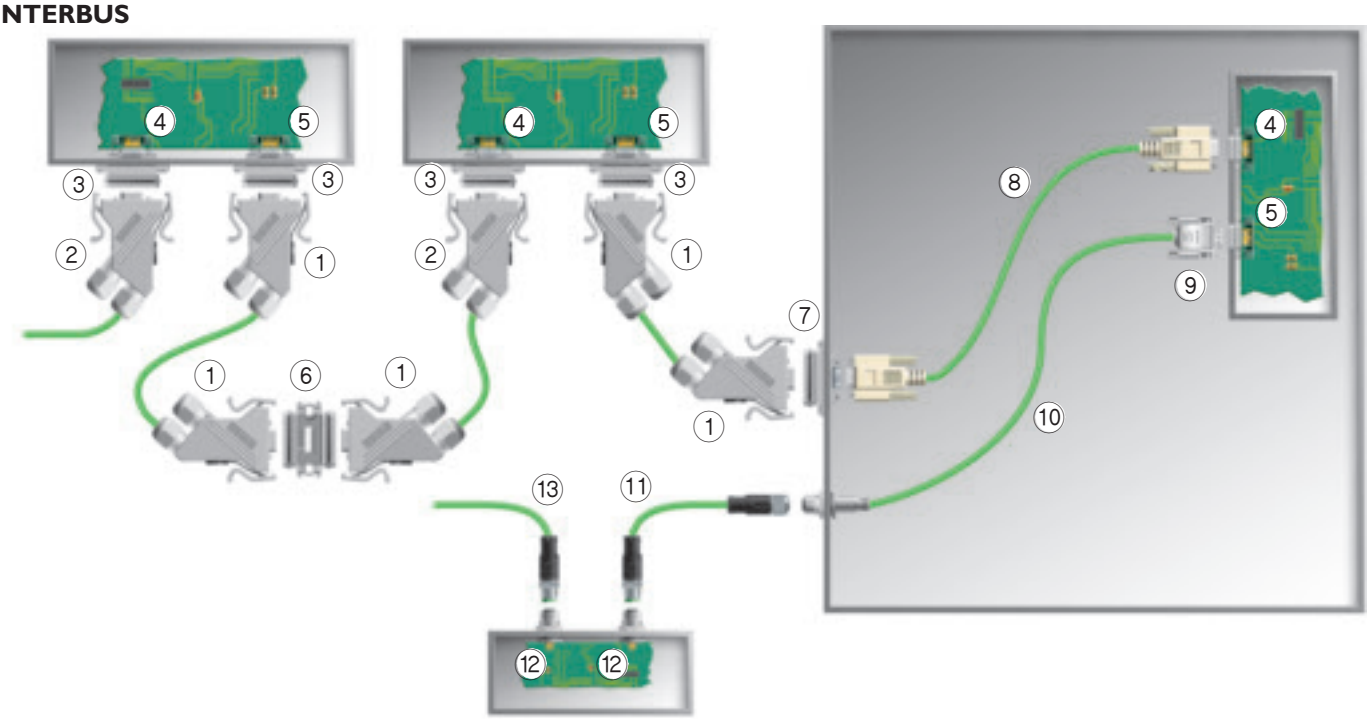


M12 x 1 connector, straight, shielded

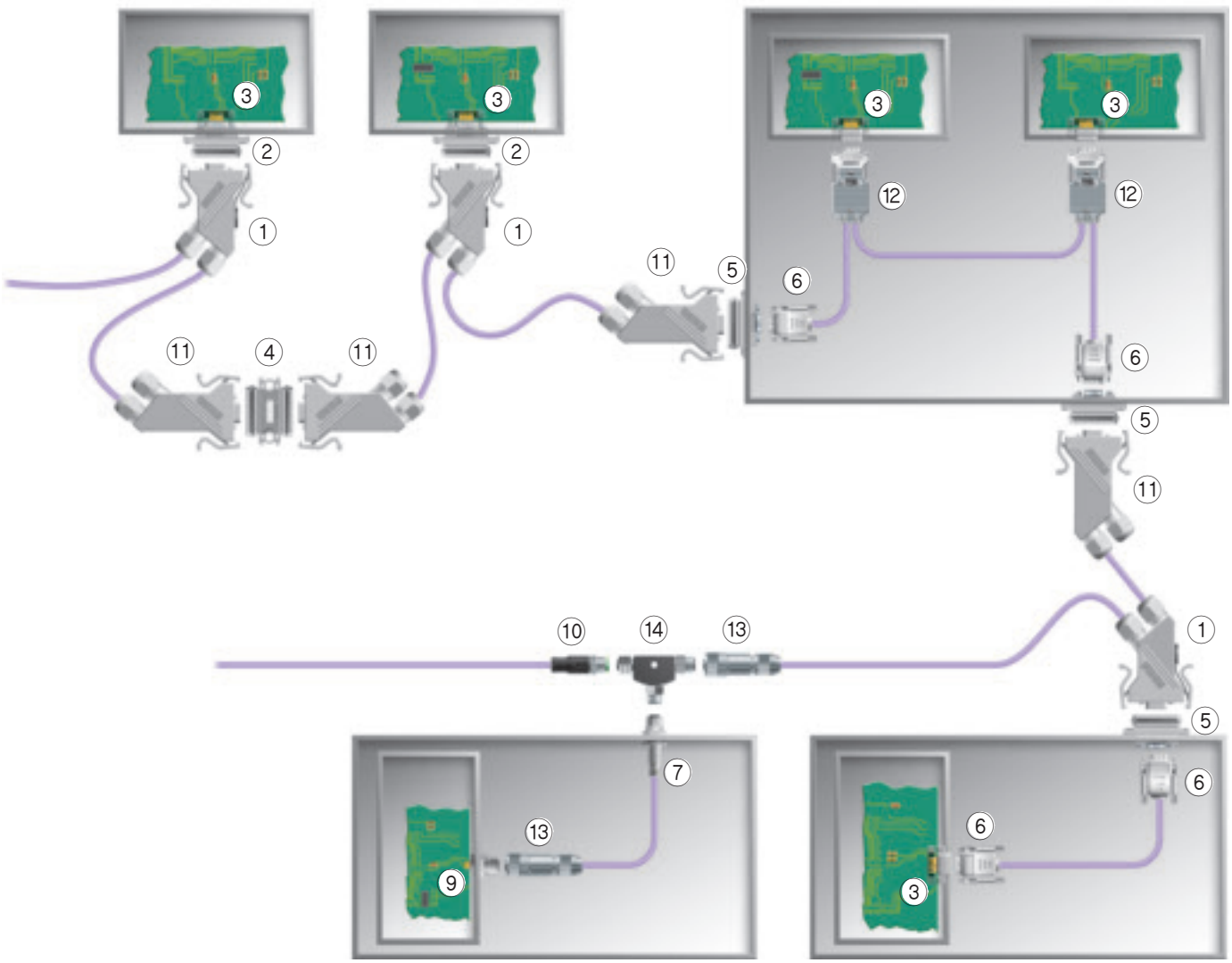


M12 x 1 socket, straight, shielded

INTERBUS



PROFIBUS



INTERBUS

No.	Order designation	Order No.
1	IP67 D-SUB complete connector, pin	1689271
2	IP67 D-SUB complete connector, socket	1689284
3	IP67 D-SUB panel mounting frame for D-SUB contact inserts	1688366
4	D-SUB contact inserts, pin	1688382
5	D-SUB contact inserts, socket	1688405
6	IP67 D-SUB coupling, socket/socket	1689637
7	IP67 D-SUB panel mounting frame with integrated D-SUB gender changer, socket/socket	1689695
8	Assembled D-SUB line with IP20 D-SUB connectors	1656233
9	IP20 D-SUB sleeve housing and D-SUB contact insert, pin	1655658 1688793
10	M12 panel feed-through with INTERBUS conductor and free conductor end	1534504
11	Assembled INTERBUS conductor with M12 connectors	1517958
12	M12 panel feed-through with solder connection	1543650
13	Assembled INTERBUS conductor with M12 connector and free conductor end	1517877

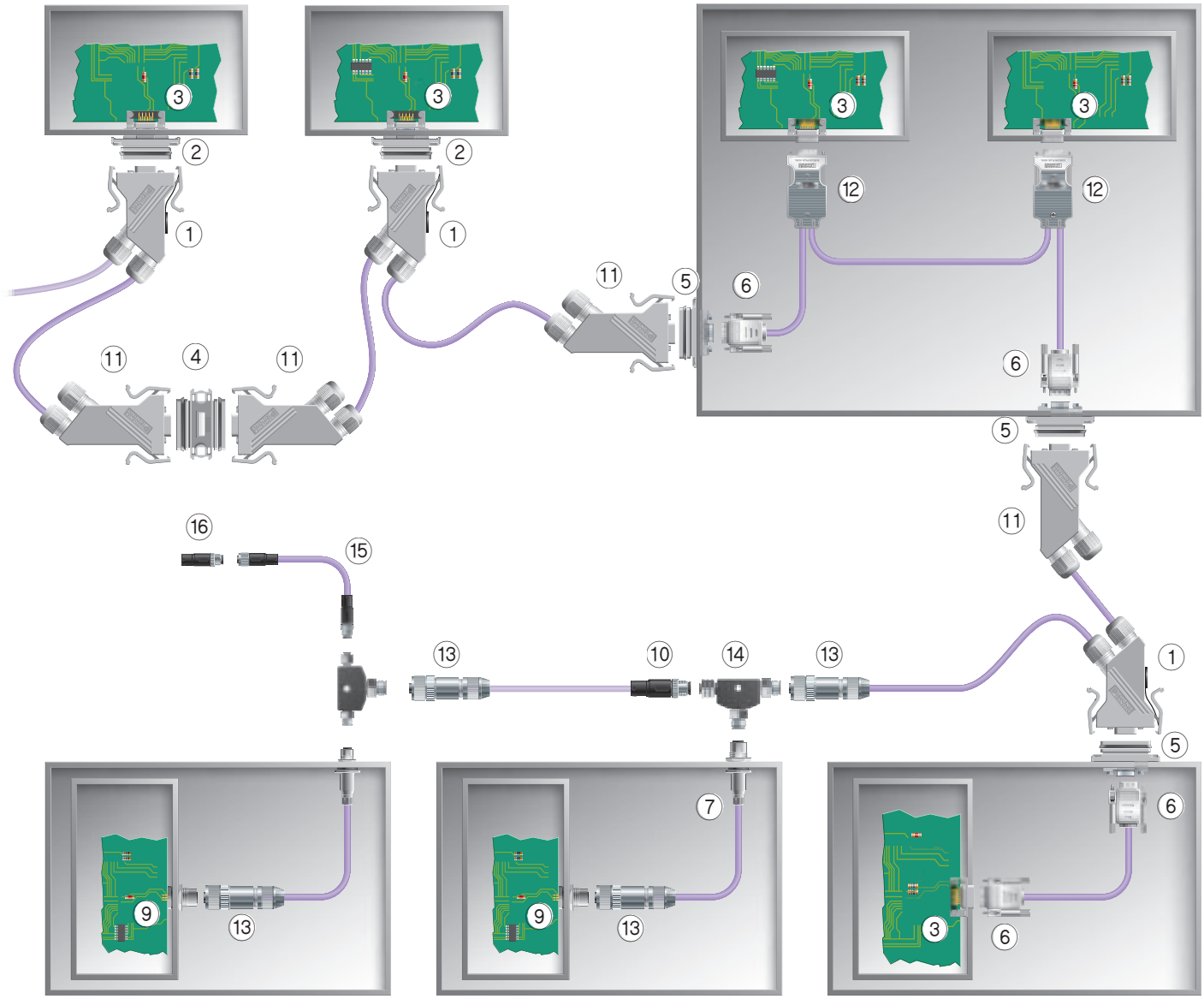
The bus typology is normally used for fieldbuses. Devices can be connected at the desired point using a short branch line and a passive connection point. The bus must be provided with a conductor termination, which can also be part of the connector, at both the ends to avoid reflections and other disturbances. The INTERBUS bus system, which is designed as an active ring, combines the incoming and outgoing signals in one cable giving the user the impression of a line topology.

Popular topology and installation situations are shown in the adjacent drawing along with their corresponding components. However, these examples do not claim to be complete. For more information, please refer to the following catalog pages containing product information and the basics of fieldbus connectors.

PROFIBUS

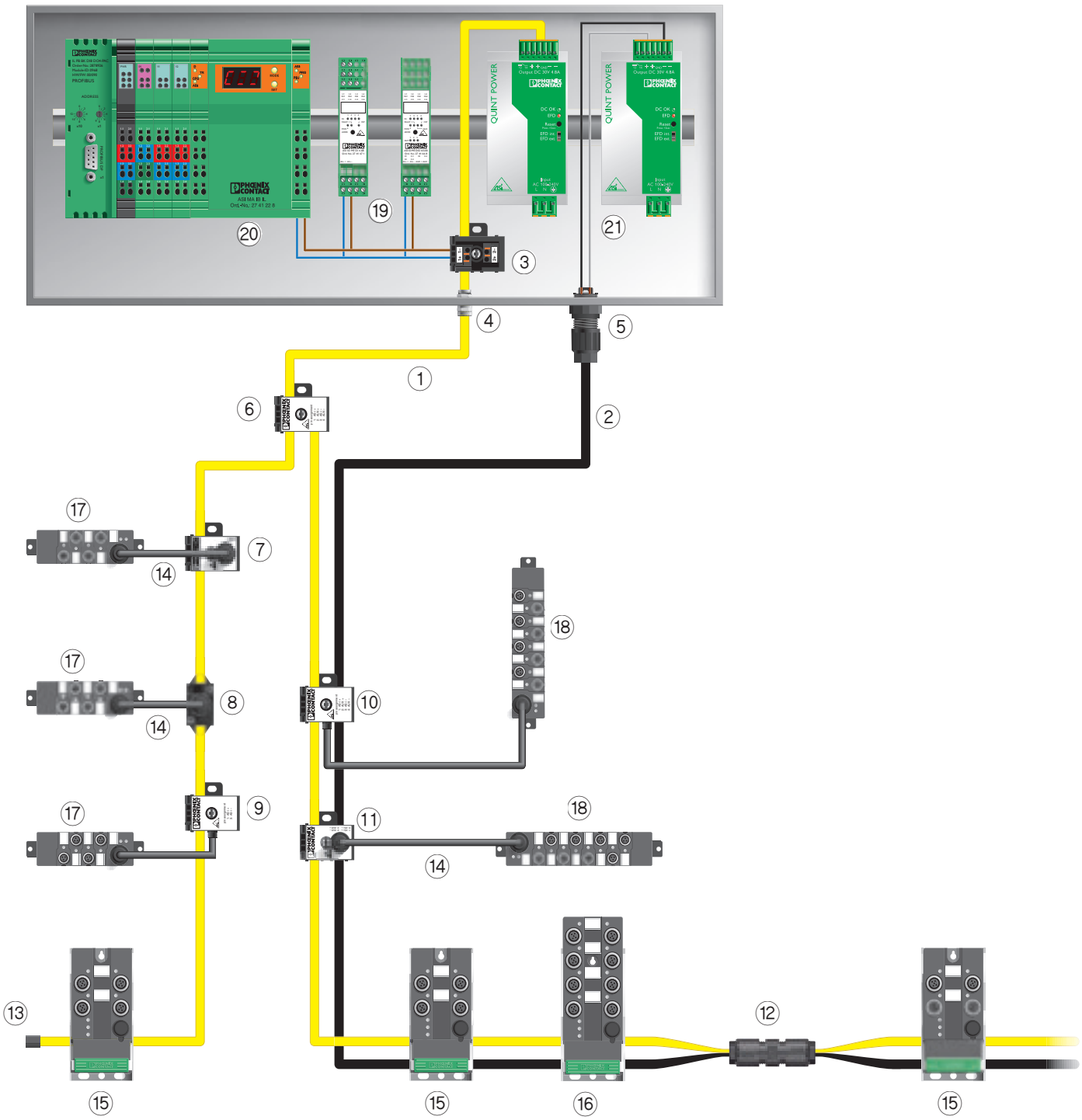
No.	Order designation	Order No.
1	IP67 D-SUB complete connector	1654549
2	IP67 D-SUB panel mounting frame for D-SUB contact inserts	1688366
3	D-SUB contact inserts	1688405
4	IP67 D-SUB coupling	1689637
5	IP67 D-SUB panel mounting frame with integrated D-SUB gender changer	1689695
6	IP20 D-SUB sleeve housing and D-SUB contact insert	1655658 1688793
7	M12 panel feed-through with fieldbus conductor and free conductor end	1525555
8	Assembled fieldbus conductor with M12 connectors	1518106
9	M12 panel feed-through with solder connection	1543650
10	Assembled fieldbus conductor with M12 connector and free conductor end	1518025
11	IP67 D-SUB sleeve housing with accessories and D-SUB contact insert	1655658 1688395
12	IP20 D-SUB complete connector	2708232
13	M12 connector, for free assembly	1507764
14	M12 T-piece	1507780

CANopen, DeviceNet™



CANopen, DeviceNet™

No.	Order designation	CANopen	DeviceNet
1	IP67 D-SUB complete connector	1689307	–
2	IP67 D-SUB panel mounting frame for D-SUB contact inserts	1688366	–
3	D-SUB contact inserts	1688382	–
4	IP67 D-SUB coupling	1689640	–
5	IP67 D-SUB panel mounting frame with integrated D-SUB gender changer	1689705	–
6	IP20 D-SUB sleeve housing and D-SUB contact insert	1655658 1688803	– –
7	M12 panel feed-through with fieldbus conductor and free conductor end	1525623	1525623
8	Assembled fieldbus conductor with M12 connectors	1518258	1518258
9	M12 panel feed-through with solder connection	1553048	1553048
10	Assembled fieldbus conductor with M12 connector and free conductor end	1518177	1518177
11	IP67 D-SUB sleeve housing with accessories and D-SUB contact insert	1689158 1688379	– –
12	IP20 D-SUB complete connector	2708999	–
13	M12 connector, for free assembly	1508352	1508352
14	M12 T-piece	1541186	1541186
15	Assembled fieldbus conductor with M8 connector and M8 socket	1575822	1575822
16	Termination resistor	1435988	1507816


QUINT POWER
QUINT POWER
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21

The range of accessories for the AS-Interface makes it possible to implement user-oriented solutions. Standard flat-ribbon conductors with an outer sheath made of EPDM, TPE as well as PVC with UL and PUR offer a wide range of applications. These conductor types are highly flexible and have excellent resistance to lubricants. Cable connectors, panel feed-throughs and fixing clips are available to connect or fix them.

One or more branches to "distribute" the yellow flat-ribbon conductor must be installed in order to implement different topologies. The H-distributor connected in parallel makes this distribution simple and saves space.

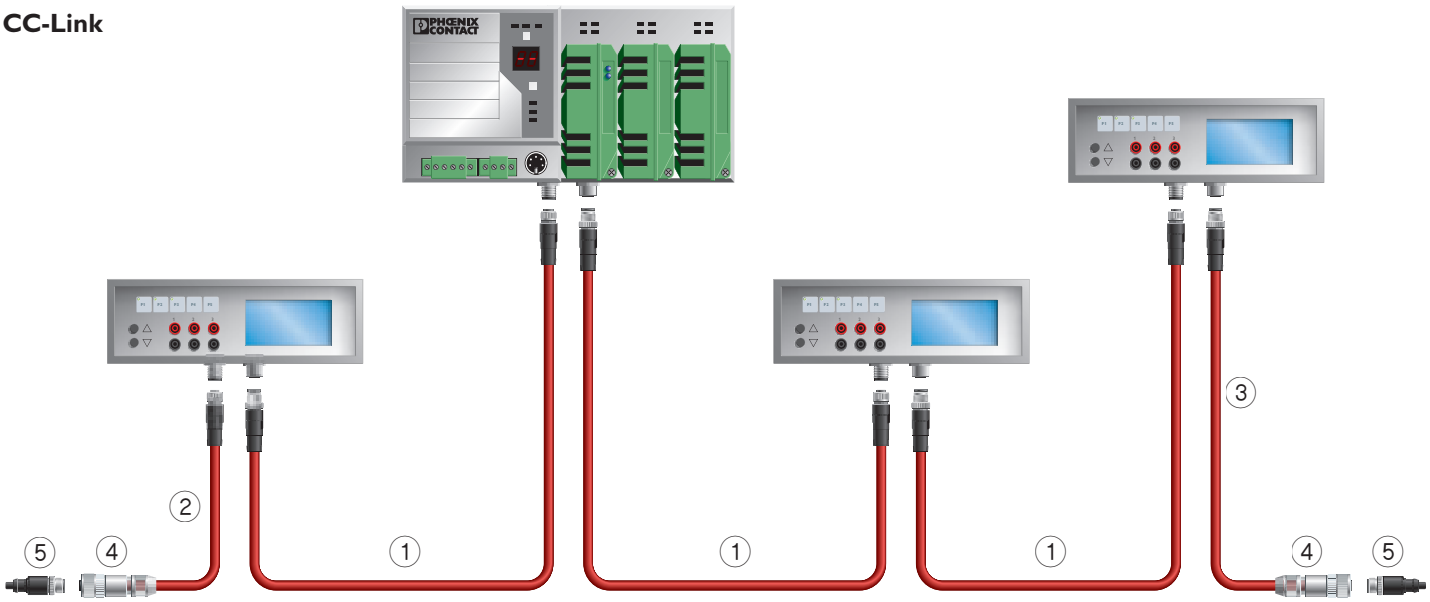
Phoenix Contact offers an extensive range of distributors to establish a direct and flexible connection between the AS-Interface flat-ribbon conductor and the AS-Interface input/output devices. This range is supplemented with assembled circular conductors with M12 connectors.

The AS-Interface distributor with a spring-cage connection is suitable to connect the flat-ribbon conductor with the circular conductor having the same conductor cross-section. This 4-pos. distributor is used, for example, for power supply in the control cabinet or to transfer power to a flexible cable conduit-capable circular conductor in a cable duct.

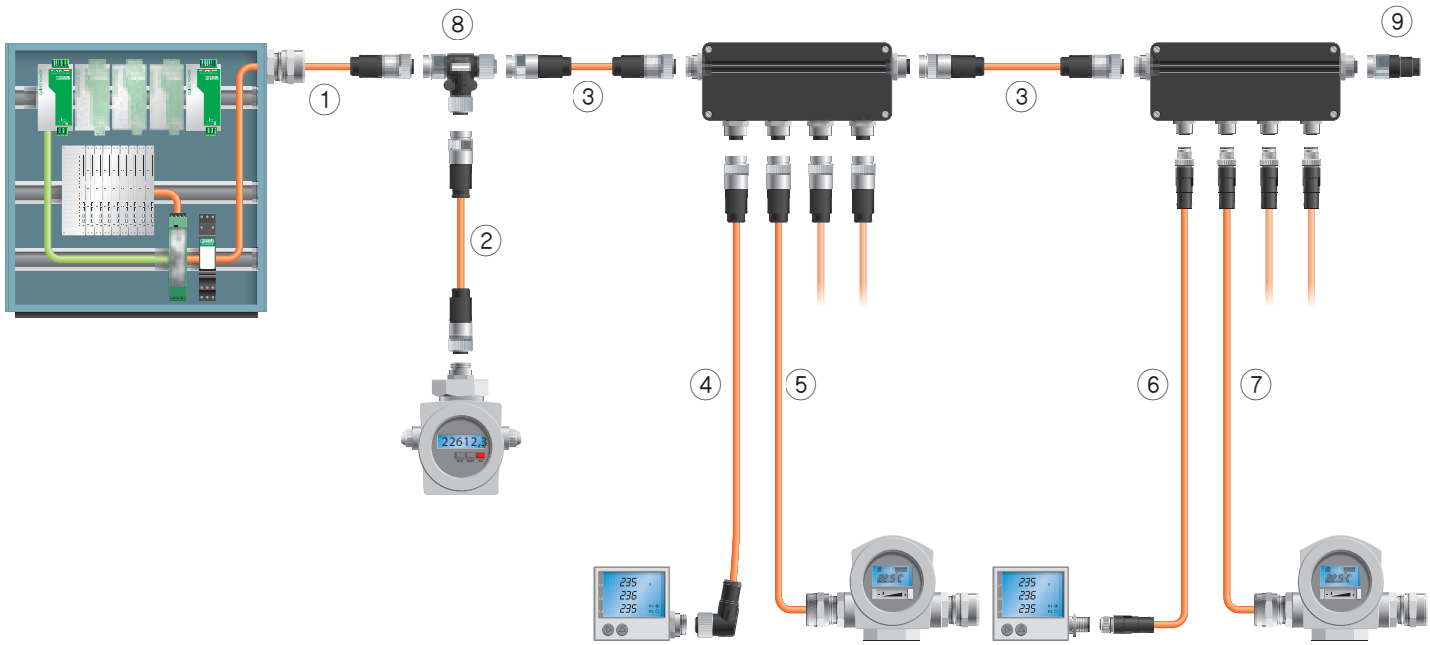
*) For other AS-Interface components for the control cabinet, please refer to the AUTOMATION catalog.

No.	Order designation	Order No.	Page
1	AS-Interface flat-ribbon conductor, yellow	1432402	**284**
2	AS-Interface flat-ribbon conductor, black	1432415	**284**
3	AS-Interface distributor, 4-pos., with spring-cage terminal blocks up to 1.5 mm²	1404498	**285**
4	Metal screw connection for an AS-Interface flat-ribbon conductor	1584017	**284**
5	Panel feed-through with QUICKON fast connection technology, for accommodating up to two AS-Interface flat-ribbon conductors	1437261	**284**
6	AS-Interface H-distributor for distributing AS-Interface flat-ribbon conductors	1404508	**285**
7	AS-Interface distributor, 2-pos., with straight, A-coded M12 socket	1404414	**286**
8	AS-Interface distributor, 2-pos., with straight, A-coded M12 socket	1433155	**286**
9	AS-Interface distributor, 2-pos., with circular conductor and molded, A-coded M12 socket	1404430	**285**
10	AS-Interface distributor, 4-pos., with circular conductor and molded, A-coded M12 socket	1404456	**285**
11	AS-Interface distributor, 4-pos., with straight, A-coded M12 socket	1404427	**286**
12	Cable connector with QUICKON fast connection technology, for connecting up to four AS-Interface flat-ribbon conductors	1585058	**284**
13	End seal for AS-Interface flat-ribbon conductor	1692336	**284**
14	Assembled circular conductor with M12 connectors	1555606	**286**
15	AS-Interface digital M12 input/output devices, 4 slots, IP65/67	2773429	**288**
16	AS-Interface digital M12 input/output devices, 8 slots, IP65/67	2773445	**289**
17	AS-Interface digital M8 input devices, 4 slots, IP65/67	2773403	**287**
18	AS-Interface digital M8 input/output devices, 8 slots, IP65/67	2773416	**287**
19	AS-Interface digital input/output devices, ME-Line, IP20	2741671	*
20	AS-Interface gateway for Inline Modular, IP20	2736628	*
21	Power supply, primary switched	2736686	*

CC-Link



FOUNDATION Fieldbus™



CC-Link

CC-Link (Control & Communication Link) is a high-speed network for control and information data. With a transmission speed of 10 Mbps, CC-Link has a maximum range of 100 m for a maximum of 64 devices. CC-Link is ideal for automated production systems or logistic systems.

No.	Order designation	Order No.	Page
1	Assembled CC-Link line, with straight M12 connector and straight M12 socket, 2 m	1558438	290
2	Assembled CC-Link line, with straight M12 socket and free conductor end, 2 m	1558360	290
3	Assembled CC-Link line, with straight M12 connector and free conductor end, 2 m	1558328	290
4	M12 socket with spring-cage connection for CC-Link, for free assembly	1559770	291
5	CC-Link M12 termination resistor	1558470	291

FOUNDATION Fieldbus™

FOUNDATION Fieldbus™ H1 is a fieldbus system for process automation and fulfills all requirements of the chemical, pharmaceutical and petrochemical industry. It realizes the power supply and the communication between the control system and the field instrumentation via a common cable. A maximum of 32 devices can be connected to one segment.

No.	Order designation	Order No.	Page
1	Assembled FOUNDATION Fieldbus™ line with straight 7/8" socket and free conductor end, 2 m	1429712	292
2	Assembled FOUNDATION Fieldbus™ line with straight 7/8" connector and straight 7/8" socket, 1 m	1429567	292
3	Assembled FOUNDATION Fieldbus™ line with straight 7/8" connector and straight 7/8" socket, 5 m	1429583	292
4	Assembled FOUNDATION Fieldbus™ line with straight 7/8" connector and angled 7/8" socket, 15 m	1429842	292
5	Assembled FOUNDATION Fieldbus™ line with straight 7/8" connector and free conductor end, 10 m	1429376	292
6	Assembled FOUNDATION Fieldbus™ line with straight M12 connector and angled M12 socket, 15 m	1431319	292
7	Assembled FOUNDATION Fieldbus™ line with straight M12 connector and free conductor end, 10 m	1431199	292
8	FOUNDATION Fieldbus™ 7/8" T-distributor	1430035	297
9	FOUNDATION Fieldbus™ 7/8" termination resistor	1430023	297

D-SUB connector, IP67

For the D-SUB-based INTERBUS cabling, there are various IP67 protection components.

Together with the panel mounting frame with integrated gender changer and the coupling, the IP67 complete connectors make up an industrial installation system.

Notes:

For D-SUB contact inserts, see from page 318.
For dimensional drawings, see from page 341.

For further technical data, see:
www.phoenixcontact.net/catalog

VS-09-IBS-...

D-SUB complete connector
for INTERBUS in IP67 protection

VS-...-SET-EMV

D-SUB connector set IP67, consisting of:
Sleeve housing, panel mounting frame and accessories, shielded design

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
D-SUB complete connector, for INTERBUS, shell size 1, screw connection, shielded						
Pin	**VS-09-IBS-ST**	**1689271**	1			
Socket	**VS-09-IBS-BU**	**1689284**	1			
D-SUB panel mounting frame, for taking up D-SUB contact inserts						
D-SUB 09				**VS-09-A**	**1688366**	5
D-SUB EMC shroud, for the IP67 panel mounting frame, for shield contacting to the housing panel						
D-SUB 09				**VS-09-A-EMV-S**	**1688463**	5
D-SUB connector set						
D-SUB 09				**VS-09-SET-EMV**	**1689158**	1
D-SUB contact insert						
Pin						
Socket						
D-SUB panel mounting frame, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB 09, socket/socket						
D-SUB coupling, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB 09, socket/socket						
D-SUB protective cover, IP54 protection, for panel mounting frame and sleeve housing VARIOSUB IP67	**VS-09-SD**	**1887086**	5	**VS-09-SD**	**1887086**	5

Technical data	VS-09-IBS-...	
Electrical data		
Rated voltage	63 V	-
Rated current	1 A	-
Surge voltage category	II	-
Material data		
Housing material	PA	PA
Contact material	Copper alloy	-
Contact surface material	Gold over nickel	-
Contact carrier material	PBTP	-
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
No. of pos.	9	-
Color	Gray	Gray
Pollution degree	2	2
Degree of protection	IP67	IP67
Type of connection	Screw connection	-
Conductor cross-section	0.14 mm² ... 0.5 mm²	-
Connection cross-section AWG	26 ... 20	-
Insertion/withdrawal cycles	≥ 200	≥ 1000
Temperature data		
Ambient temperature (operation)	-20°C ... 70°C	-40°C ... 80°C

VS-...-DSUB/...-MPT-0,5

D-SUB contact inserts with screw connection,
fixing: 2.5 mm drill hole

VS-...-A-GC-...

D-SUB panel mounting frame IP67,
with integrated gender changer

VS-...-KU-...

D-SUB coupling IP67,
with integrated gender changer

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB/9-MPT-0,5	**1688379**	10
VS-09-BU-DSUB/9-MPT-0,5	**1688395**	10

Type	Order No.	Pcs. / Pkt.
VS-09-A-GC-ST/ST	**1689705**	5
VS-09-A-GC-BU/BU	**1689695**	5
VS-09-SD	**1887086**	5

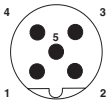
Type	Order No.	Pcs. / Pkt.
VS-09-KU-ST/ST	**1689640**	5
VS-09-KU-BU/BU	**1689637**	5
VS-09-SD	**1887086**	5

		VS-09-KU-...	VS-09-SD
60 V	125 V	125 V	-
5 A	5 A	5 A	-
III	III	III	-
-	PA	PA	PA
Copper alloy	Copper alloy	Copper alloy	-
Gold over nickel	Hard gold-plated over nickel	Hard gold-plated over nickel	-
PBTP	Polyester GF	Polyester GF	-
V0	V0	V0	V0
9	9	9	-
-	Gray	Gray	Gray
2	2	2	-
IP20	IP67	IP67	IP54
Screw connection	-	-	-
0.14 mm² ... 0.5 mm²	-	-	-
26 ... 20	-	-	-
≥ 200	≥ 200	≥ 200	≥ 1000
-20°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C

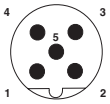
M12 assembled cables

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

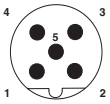
Free end

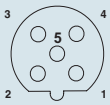
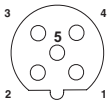
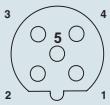


M12-SPEEDCON connectors



M12 connector



Free end		Order No.		Order No.		Order No.		Order No.	Order No.
			2 m	1517877			2 m	1507065	
			5 m	1517880			5 m	1507078	
			10 m	1517893			10 m	1507081	
			15 m	1517903			15 m	1507094	
	Variable	2723123	Variable	1537996	Variable	1433184	Variable	1537983	
M12-SPEEDCON socket, straight									
			0.3 m	1517958					
			0.5 m	1517961					
			1 m	1517974					
	2 m	1517916	2 m	1517987					
	5 m	1517929	5 m	1517990					
	10 m	1517932	10 m	1518009					
	15 m	1517945	15 m	1518012					
	Variable	1538018	Variable	1538034	Variable	1433210			
M12-SPEEDCON socket, angled									
									
	Variable	1433197	Variable	1433207	Variable	1433223			
M12 socket, straight									
							0.3 m	1507162	
							0.5 m	1507175	
							1 m	1507188	
	2 m	1507117					2 m	1507191	
	5 m	1507120					5 m	1507201	
	10 m	1507133					10 m	1507214	
	15 m	1507146					15 m	1507227	
	Variable	1538005					Variable	1538021	

Ordering example for cable **with** connector assembly:

For an INTERBUS bus cable, straight M12 socket on a straight M12 connector and the cable length of 34.5 m, the order data is as follows:

Order No.	Length [m] Max. 40 m
1538021	34.5

Step widths:
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] Max. 400 m
2723123	34.5

Step widths:
0.5 ... 400.0 m = 0.5 m

Technical data		Connectors M12
Nominal current I_N	[A]	4
Rated voltage	[V]	60
Volume resistance		≤ 5 mΩ
Conductor cross-section for signal	[mm²]	0.25
Conductor structure for signal		32 x 0.10 mm
Inflammability class in acc. with UL 94		V0
Cable diameter	[mm]	8
Contact material		CuSn
Contact surface material		Ni/Au
Contact carrier material		PA 66
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Fixed installation	[°C]	-40 ... 80
Flexible installation	[°C]	-30 ... 70
Plug/socket	[°C]	-25 ... 90

M12 flush-type connector, shielded

Notes:

Fastening thread: M16

EMC nut M16 is required for shield contacting on coated housing surfaces.

For connector pin assignments, see page 61.

For contact assignment, refer to page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

Front mounting, can be positioned, pin

Front mounting, can be positioned, socket

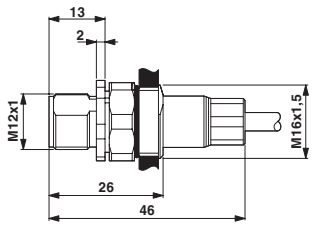
Plug mounting, pin

Plug mounting, socket

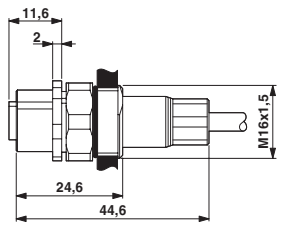
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
- Conductor length 0.5 m	**1529629**	1	**1529742**	1	**1534504**	1	**1534546**	1
- Conductor length 1.0 m	**1530223**	1	**1529755**	1	**1534517**	1	**1534559**	1
- Conductor length 2.0 m	**1529726**	1	**1529768**	1	**1534520**	1	**1534562**	1
- Conductor length 5.0 m	**1529739**	1	**1529771**	1	**1534533**	1	**1534575**	1
- Conductor length 0.5 m, SPEEDCON	-	-	-	-	**1437643**	1	**1437601**	1
- Cable length 1.0 m, SPEEDCON	-	-	-	-	**1437656**	1	**1437614**	1
- Cable length 2.0 m, SPEEDCON	-	-	-	-	**1437669**	1	**1437627**	1
- Cable length 5.0 m, SPEEDCON	-	-	-	-	**1437672**	1	**1437630**	1
EMC nut M16	-	-	-	-	**1440164**	10	**1440164**	10

Technical data

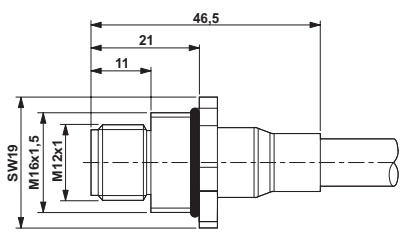
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Volume resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Encoding		B - inverse	B - inverse	B - inverse	B - inverse
No. of pos.		5	5	5	5
Mechanical data					
Material contact / contact surface		CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Connection data					
Conductor cross-section		0.25 mm²	0.25 mm²	0.25 mm²	0.25 mm²
Temperature data					
Plug/socket	[°C]	-25 ... 80	-25 ... 80	-25 ... 80	-25 ... 80
Fixed installation	[°C]	-40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80
Flexible installation	[°C]	-30 ... 70	-30 ... 70	-30 ... 70	-30 ... 70



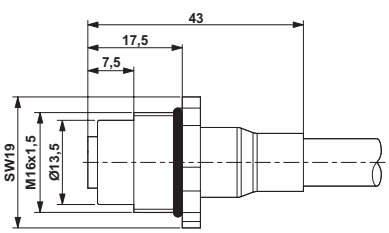
M12 flush-type connector, front mounting, can be positioned



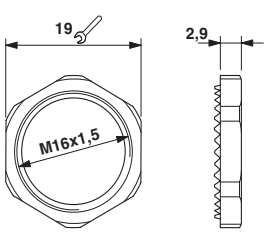
M12 flush-type socket, front mounting, can be positioned



M12 flush-type connector, rear mounting



M12 flush-type socket, rear mounting



EMC nut M16

M12 flush-type connector with solder connection

Flush-type connector with litz wires are available on request

EMC nut is required for shield contacting on coated housing surfaces.

For connector pin assignments, refer to page 61.

For further technical data, see:

www.phoenixcontact.net/catalog

Rear mounting, one-piece pin

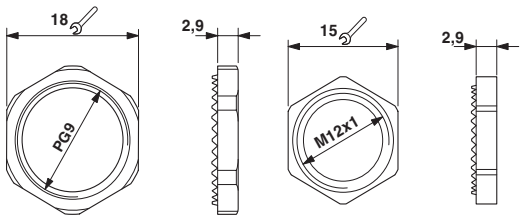
Rear mounting, one-piece socket

Rear mounting, two-piece pin

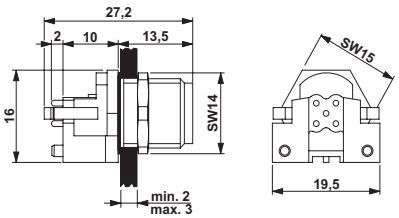
Rear mounting, two-piece socket

Description	Version	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight	**1543647**	20	**1543650**	20	-	-	-	-
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight, shield contact	**1553051**	20	**1553022**	20	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight	**1551846**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight, shield contact	**1552971**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread	Straight	-	-	-	-	**1514883**	10	**1542606**	10
Wave soldering, M12 fastening thread	Angled	-	-	-	-	**1527867**	10	**1527870**	10
THR, M12 fastening thread, SPEEDCON	Straight, shield contact	-	-	-	-	**1552188**	60	**1542635**	60
EMC nut, M12		**1440151**	10		-	-	-	-	-
EMC nut, Pg9		**1440177**	10	**1440177**	10	-	-	-	-

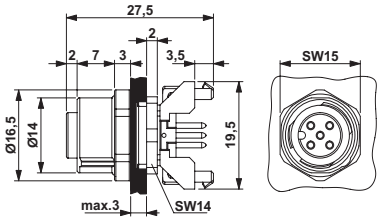
Technical data					
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Contact resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance		100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category		II	II	II	II
Coding		B - inverse	B - inverse	B - inverse	B - inverse
Number of positions		5	5	5	5
Material contact / contact surface		CU alloy / Au	CU alloy / Au	CU alloy / Au	CU alloy / Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Ambient temperature					
Plug/socket	[°C]	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85



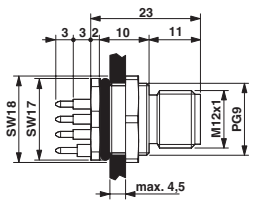
EMC nut, Pg9 **EMC nut, M12**



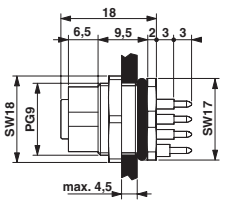
M12 fastening thread, two-piece pin, straight, wave soldering



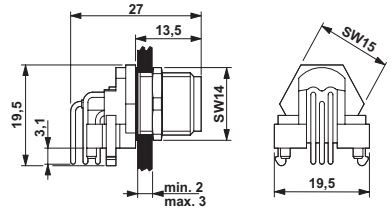
M12 fastening thread, two-piece socket, straight, SPEEDCON, wave soldering



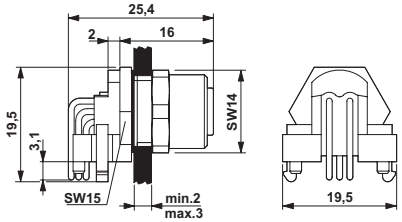
Pg9 fastening thread, one-piece pin



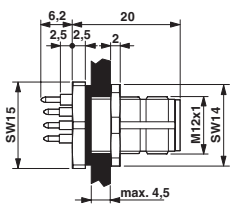
Pg9 fastening thread, one-piece socket



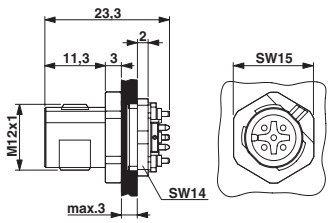
M12 fastening thread, two-piece pin, angled, wave soldering



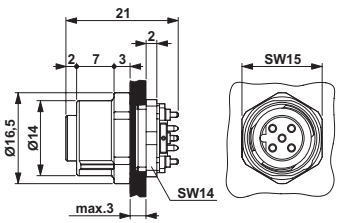
M12 fastening thread, two-piece socket, angled, wave soldering



M12 fastening thread, one-piece pin



M12 fastening thread, two-piece pin, straight, THR



M12 fastening thread, two-piece socket, straight, THR

M12 connector, shielded

For further technical data, see:
www.phoenixcontact.net/catalog

Screw connection, 5-pos., pin

Screw connection, 5-pos., socket

Spring-cage connection, 5-pos., pin

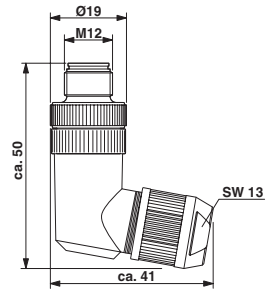
Spring-cage connection, 5-pos., socket

Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Connector, straight	**1507764**	1	**1507777**	1	**1432800**	1	**1432826**	1
Connector, angled	**-**	-	**-**	-	**1432813**	1	**1435839**	1

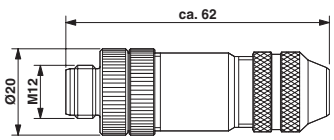
Technical data				
Electrical data				
Rated voltage	60 V	60 V	60 V	60 V
Nominal current I_N	4 A	4 A	4 A	4 A
Contact resistance	3 mΩ	3 mΩ	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Coding	B - inverse	B - inverse	B - inverse	B - inverse
Number of positions	5	5	5	5
Material contact / contact surface	CU alloy / Au	CU alloy / Au	CuSn/Au	CuSn/Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Connection data				
Connection method	Screw connection	Screw connection	Spring-cage connection	Spring-cage connection
Outside diameter	6 mm ... 8.5 mm	6 mm ... 8.5 mm	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min./max.	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²
Connection cross-section AWG min./max.	24 / 18	24 / 18	26 / 20	26 / 20
Degree of protection	IP67	IP67	IP67	IP67
Ambient temperature				
Plug/socket [°C]	-40 ... 85	-40 ... 85	-40 ... 85	-40 ... 85

Pin, 5-pos. B-coded | **Socket, 5-pos. B-coded**

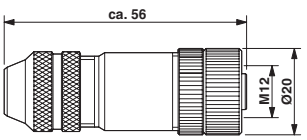
Connector pin assignments



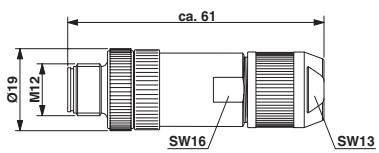
M12 connector x 1, angled, shielded, spring-cage connection



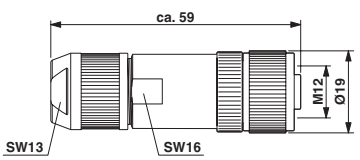
M12 connector x 1, straight, shielded, screw connection



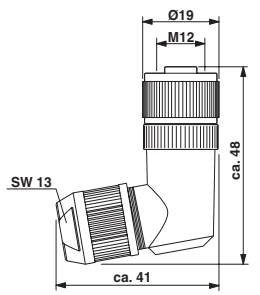
M12 socket x 1, straight, shielded, screw connection



M12 plug x 1, straight, shielded, spring-cage connection



M12 socket x 1, straight, shielded, spring-cage connection



M12 socket x 1, angled, shielded, spring-cage connection

D-SUB connector, IP67

Various IP67 protection components exist for D-SUB-based PROFIBUS cabling.

Together with the panel mounting frame with integrated gender changer and the coupling, the IP67 complete connectors make up an industrial installation system.

Notes:

For D-SUB contact inserts, see from page 318.

For dimensional drawings, see from page 341.

For further technical data, see:
www.phoenixcontact.net/catalog

VS-09-PROFIBUS-...

D-SUB complete connector
with IP67 degree of protection

VS-...-SET-EMV

D-SUB connector set IP67, consisting of:
Sleeve housing, panel mounting frame and accessories, shielded design

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
D-SUB complete connector, for PROFIBUS, shell size 1, pin, shielded						
Screw connection	**VS-09-PROFIBUS-SC**	**1654549**	1			
Spring-cage connection	**VS-09-PROFIBUS-SP**	**1654345**	1			
D-SUB panel mounting frame, for taking up D-SUB contact inserts						
D-SUB 09				**VS-09-A**	**1688366**	5
D-SUB EMC shroud, for the IP67 panel mounting frame, for shield contacting to the housing panel						
D-SUB 09				**VS-09-A-EMV-S**	**1688463**	5
D-SUB connector set						
D-SUB 09				**VS-09-SET-EMV**	**1689158**	1
D-SUB contact insert						
Female						
Male						
D-SUB panel mounting frame, with integrated gender changer, shielded						
D-SUB 09, socket/socket						
D-SUB coupling, with integrated gender changer, shielded						
D-SUB 09, socket/socket						
D-SUB protective cover, IP54 protection, for panel mounting frame and sleeve housing VARIOSUB IP67	**VS-09-SD**	**1887086**	5	**VS-09-SD**	**1887086**	5

Technical data	VS-09...SC	VS-09...SP	
Electrical data			
Rated voltage	50 V	50 V	-
Rated current	1 A	1 A	-
Surge voltage category	II	II	-
Material data			
Housing material	PA	PA	PA
Contact material	Copper alloy	Copper alloy	-
Contact surface material	Gold over nickel	Gold over nickel	-
Contact carrier material	PBTP	PBTP	-
Inflammability class acc. to UL 94	V0	V0	V0
Mechanical data			
No. of pos.	9	9	-
Color	Gray	Gray	Gray
Pollution degree	2	2	2
Degree of protection	IP67	IP67	IP67
Type of connection	Screw connection	Spring-cage conn.	-
Conductor cross-section	0.14 mm² ... 1.5 mm² (solid)	0.14 mm² ... 1.5 mm² (solid)	-
Connection cross-section AWG	26 ... 16 (solid)	26 ... 16 (solid)	-
Conductor cross-section	0.14 mm² ... 1 mm² (stranded)	0.14 mm² ... 1 mm² (stranded)	-
Connection cross-section AWG	26 ... 18 (stranded)	26 ... 18 (stranded)	-
Insertion/withdrawal cycles	≥ 200	≥ 200	≥ 1000
Temperature data			
Ambient temperature (operation)	-20°C ... 75°C	-20°C ... 75°C	-40°C ... 80°C

VS-...-DSUB/...-MPT-0,5

D-SUB contact inserts with screw connection,
fixing: 2.5 mm drill hole

VS-...-A-GC-...

D-SUB panel mounting frame IP67,
with integrated gender changer

VS-...-KU-...

D-SUB coupling IP67,
with integrated gender changer

Type	Order No.	Pcs. / Pkt.
VS-09-BU-DSUB/9-MPT-0,5	**1688395**	10
VS-09-ST-DSUB/9-MPT-0,5	**1688379**	10

Type	Order No.	Pcs. / Pkt.
VS-09-A-GC-BU/BU	**1689695**	5
VS-09-SD	**1887086**	5

Type	Order No.	Pcs. / Pkt.
VS-09-KU-BU/BU	**1689637**	5
VS-09-SD	**1887086**	5

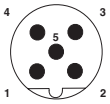
	VS-09-KU-BU/BU	VS-09-SD
	125 V	-
	5 A	-
	III	-
	PA	PA
	Copper alloy	-
	Hard gold-plated over nickel	-
	Polyester GF	-
	V0	V0
	9	-
	Gray	Gray
	2	-
	IP67	IP54
	-	-
	-	-
	-	-
	-	-
	-	-
	≥ 200	≥ 1000
	-40°C ... 80°C	-40°C ... 80°C

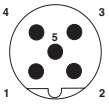
	60 V
	5 A
	III
	-
	Copper alloy
	Gold over nickel
	PBTP
	V0
	9
	-
	2
	IP20
	Screw connection
	0.14 mm² ... 0.5 mm²
	26 ... 20
	-
	-
	≥ 200
	-20°C ... 80°C

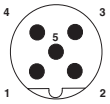
	125 V
	5 A
	III
	PA
	Copper alloy
	Hard gold-plated over nickel
	Polyester GF
	V0
	9
	Gray
	2
	IP67
	-
	-
	-
	-
	-
	≥ 200
	-40°C ... 80°C

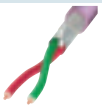
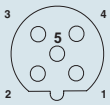
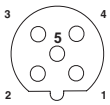
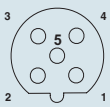
M12 assembled cables

Note:
For further technical data, see:
www.phoenixcontact.net/catalog







Free end		Order No.		Order No.		Order No.		Order No.	Order No.
			2 m	1518025			2 m	1507243	
			5 m	1518038			5 m	1507256	
			10 m	1518041			10 m	1507269	
			15 m	1518054			15 m	1507272	
	Variable	1511491	Variable	1538050	Variable	1433236	Variable	1538047	
M12 SPEEDCON socket, straight									
			0.3 m	1518106					
			0.5 m	1518119					
			1 m	1518122					
	2 m	1518067	2 m	1518135					
	5 m	1518070	5 m	1518148					
	10 m	1518083	10 m	1518151					
	15 m	1518096	15 m	1518164					
	Variable	1538076	Variable	1538092	Variable	1433265			
M12 SPEEDCON socket, angled									
	Variable	1433249	Variable	1433252	Variable	1433278			
M12 socket, straight									
							0.3 m	1507340	
							0.5 m	1507353	
							1 m	1507366	
	2 m	1507298					2 m	1507379	
	5 m	1507308					5 m	1507382	
	10 m	1507311					10 m	1507395	
	15 m	1507324					15 m	1507405	
	Variable	1538063					Variable	1538089	

Ordering example for cable **with** connector assembly:

For a PROFIBUS bus cable, straight M12 socket on a straight M12 plug and the cable length of 34.5 m, the order data is as follows:

Order No.	Length [m] Max. 40 m
1538089 /	34.5
	Step widths: 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] Max. 400 m
1511491 /	34.5
	Step widths: 0.5 ... 400.0 m = 0.5 m

Technical data		Connectors M12
Nominal current I_N	[A]	4
Rated voltage	[V]	250
Volume resistance		≤ 5 mΩ
Conductor cross-section for signal	[mm²]	0.25
Conductor structure for signal		19x 0.13 mm
Inflammability class in acc. with UL 94		V0
Cable diameter	[mm]	7.8
Contact material		CuSn
Contact surface material		Ni/Au
Contact carrier material		PA 66
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Fixed installation	[°C]	-40 ... 80
Flexible installation	[°C]	-20 ... 80
Plug/socket	[°C]	-25 ... 90

M12 flush-type connector, shielded

Fastening thread: M16

EMC nut M16 is required for shield contacting on coated housing surfaces.

For connector pin assignments, see page 61.

For contact assignment, refer to page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

Front mounting, can be positioned, pin

Front mounting, can be positioned, socket

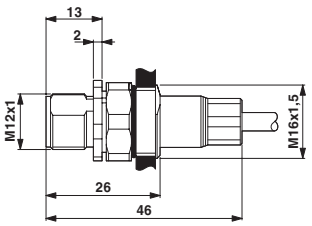
Plug mounting, pin

Plug mounting, socket

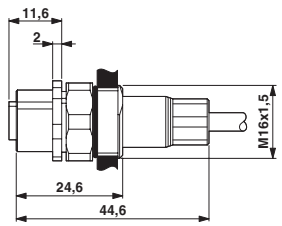
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
- Cable length 0.5 m	**1525555**	1	**1525597**	1	**1534342**	1	**1534384**	1
- Cable length 1 m	**1525568**	1	**1525607**	1	**1534355**	1	**1534397**	1
- Cable length 2 m	**1519561**	1	**1519574**	1	**1534368**	1	**1534407**	1
- Cable length 5 m	**1525571**	1	**1525610**	1	**1534371**	1	**1534410**	1
- Conductor length 0.5 m, SPEEDCON	-	-	-	-	**1437481**	1	**1437449**	1
- Cable length 1.0 m, SPEEDCON	-	-	-	-	**1437494**	1	**1437452**	1
- Cable length 2.0 m, SPEEDCON	-	-	-	-	**1437504**	1	**1437465**	1
- Cable length 5.0 m, SPEEDCON	-	-	-	-	**1437517**	1	**1437478**	1
EMC nut M16	-	-	-	-	**1440164**	10	**1440164**	10

Technical data

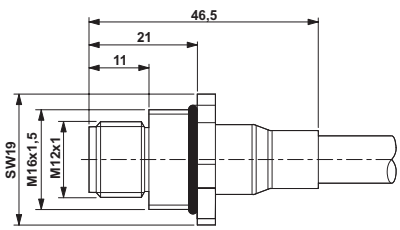
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Volume resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Encoding		B - inverse	B - inverse	B - inverse	B - inverse
No. of pos.		2	2	2	2
Mechanical data					
Material contact / contact surface		CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Connection data					
Conductor cross-section		0.25 mm²	0.25 mm²	0.25 mm²	0.25 mm²
Temperature data					
Plug/socket	[°C]	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85
Fixed installation	[°C]	-40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80
Flexible installation	[°C]	-20 ... 80	-20 ... 80	-20 ... 80	-20 ... 80



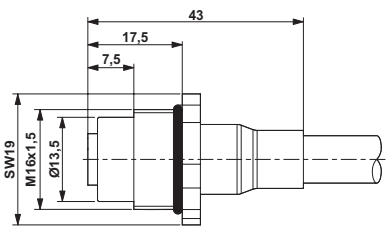
M12 flush-type plug, front mounting, can be positioned



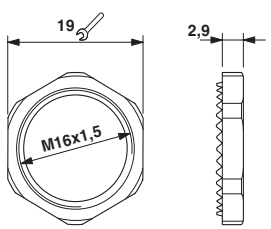
M12 flush-type socket, front mounting, can be positioned



M12 flush-type plug, rear mounting



M12 flush-type socket, rear mounting



EMC nut M16

M12 flush-type connector with solder connection

Flush-type connector with litz wires available on request

EMC nut is required for shield contacting on coated housing surfaces.

For connector pin assignments, refer to page 61.

For further technical data, see:

www.phoenixcontact.net/catalog

Rear mounting, one-piece pin

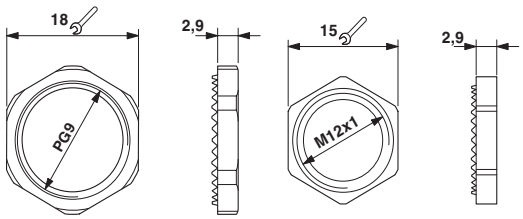
Rear mounting, one-piece socket

Rear mounting, two-piece pin

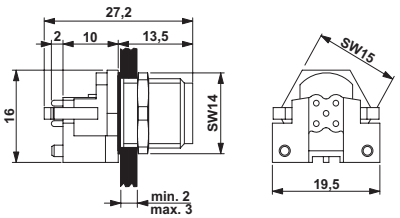
Rear mounting, two-piece socket

Description	Version	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight	**1543647**	20	**1543650**	20	-	-	-	-
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight, shield contact	**1553051**	20	**1553022**	20	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight	**1551846**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight, shield contact	**1552971**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread	Straight	-	-	-	-	**1514883**	10	**1542606**	10
Wave soldering, M12 fastening thread	Angled	-	-	-	-	**1527867**	10	**1527870**	10
THR, M12 fastening thread, SPEEDCON	Straight, shield contact	-	-	-	-	**1552188**	60	**1542635**	60
EMC nut, M12		**1440151**	10		-	-	-	-	-
EMC nut, Pg9		**1440177**	10	**1440177**	10	-	-	-	-

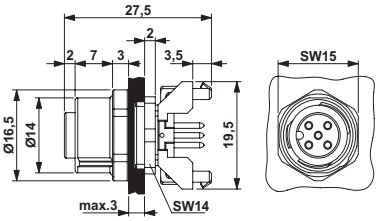
Technical data					
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Contact resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance		100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category		II	II	II	II
Coding		B - inverse	B - inverse	B - inverse	B - inverse
Number of positions		5	5	5	5
Material contact / contact surface		CU alloy / Au	CU alloy / Au	CU alloy / Au	CU alloy / Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Ambient temperature					
Plug/socket	[°C]	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85



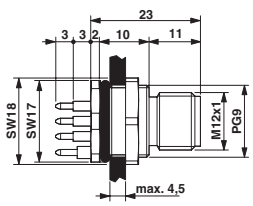
EMC nut, Pg9 **EMC nut, M12**



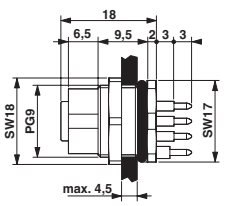
M12 fastening thread, two-piece pin, straight, wave soldering



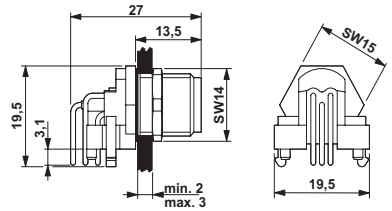
M12 fastening thread, two-piece socket, straight, SPEEDCON, wave soldering



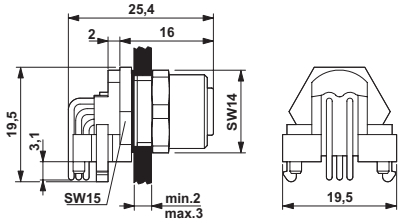
Pg9 fastening thread, one-piece pin



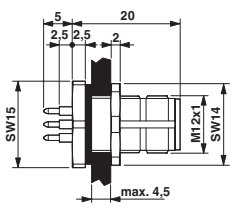
Pg9 fastening thread, one-piece socket



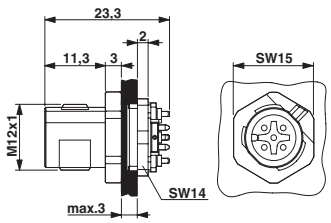
M12 fastening thread, two-piece pin, angled, wave soldering



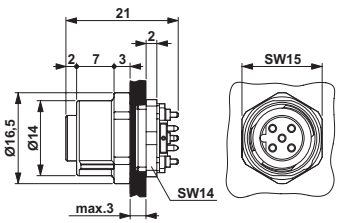
M12 fastening thread, two-piece socket, angled, wave soldering



M12 fastening thread, one-piece pin



M12 fastening thread, two-piece pin, straight, THR



M12 fastening thread, two-piece socket, straight, THR

M12 connector, shielded

For further technical data, see:
www.phoenixcontact.net/catalog

Screw connection, 5-pos., pin

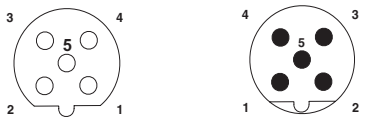
Screw connection, 5-pos., socket

Spring-cage connection, 5-pos., pin

Spring-cage connection, 5-pos., socket

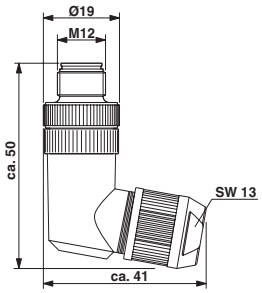
Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Connector, straight	**1507764**	1	**1507777**	1	**1432842**	1	**1432868**	1
Connector, angled	**-**	-	**-**	-	**1432855**	1	**1432871**	1

Technical data				
Electrical data				
Rated voltage	60 V	60 V	60 V	60 V
Nominal current I_N	4 A	4 A	4 A	4 A
Contact resistance	3 mΩ	3 mΩ	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Coding	B - inverse	B - inverse	B - inverse	B - inverse
Number of positions	5	5	3	3
Material contact / contact surface	CU alloy / Au	CU alloy / Au	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Connection data				
Connection method	Screw connection	Screw connection	Spring-cage connection	Spring-cage connection
Outside diameter	6 mm ... 8.5 mm	6 mm ... 8.5 mm	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min./max.	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²
Connection cross-section AWG min./max.	24 / 18	24 / 18	26 / 20	26 / 20
Degree of protection	IP67	IP67	IP67	IP67
Ambient temperature				
Plug/socket [°C]	-40 ... 85	-40 ... 85	-40 ... 85	-40 ... 85

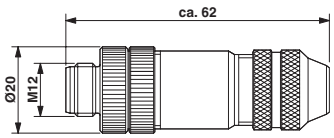


Socket, 5-pos. B-coded | **Pin, 5-pos. B-coded**

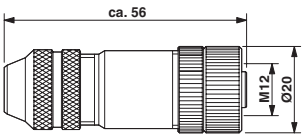
Connector pin assignments



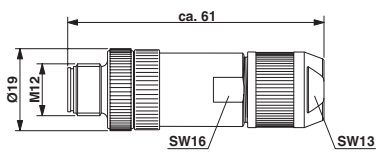
M12 plug x 1, angled, shielded, spring-cage connection



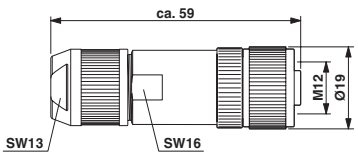
M12 connector x 1, straight, shielded, screw connection



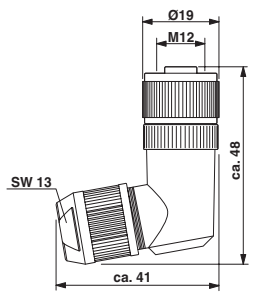
M12 socket x 1, straight, shielded, screw connection



M12 connector x 1, straight, shielded, spring-cage connection



M12 socket x 1, straight, shielded, spring-cage connection



M12 socket x 1, angled, shielded, spring-cage connection

D-SUB connector, IP67

Various IP67 protection components exist for D-SUB-based CANopen cabling.

Together with the panel mounting frame with integrated gender changer and the coupling, the IP67 complete connectors make up an industrial installation system.

Notes:

For D-SUB contact inserts, see from page 318.

For dimensional drawings, see from page 341.

For further technical data, see:
www.phoenixcontact.net/catalog

VS-09-CAN

D-SUB complete connector
for CANopen with IP67 protection

VS-...-SET-EMV

D-SUB connector set IP67, consisting of:
Sleeve housing, panel mounting frame and accessories, shielded design

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
D-SUB complete connector, for CANopen, shell size 1, socket, screw connection, shielded						
Socket	**VS-09-CAN**	**1689307**	1			
D-SUB panel mounting frame, for taking up D-SUB contact inserts						
D-SUB 09				**VS-09-A**	**1688366**	5
D-SUB EMC shroud, for the IP67 panel mounting frame, for shield contacting to the housing panel						
D-SUB 09				**VS-09-A-EMV-S**	**1688463**	5
D-SUB connector set						
D-SUB 09				**VS-09-SET-EMV**	**1689158**	1
D-SUB contact insert						
Pin						
Socket						
D-SUB panel mounting frame, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB coupling, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB protective cover, IP54 protection, for panel mounting frame and sleeve housing VARIOSUB IP67	**VS-09-SD**	**1887086**	5	**VS-09-SD**	**1887086**	5

Technical data		
Electrical data		
Rated voltage	63 V	-
Rated current	1 A	-
Surge voltage category	II	-
Material data		
Housing material	PA	PA
Contact material	Copper alloy	-
Contact surface material	Gold over nickel	-
Contact carrier material	PBTP	-
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
No. of pos.	9	-
Color	Gray	Gray
Pollution degree	2	2
Degree of protection	IP67	IP67
Type of connection	Screw connection	-
Conductor cross-section	0.14 mm² ... 0.5 mm²	-
Connection cross-section AWG	26 ... 20	-
Insertion/withdrawal cycles	≥ 200	≥ 1000
Temperature data		
Ambient temperature (operation)	-20°C ... 75°C	-40°C ... 80°C

VS-...-DSUB/...-MPT-0,5

D-SUB contact inserts with screw connection,
fixing: 2.5 mm drill hole

VS-...-A-GC-...

D-SUB panel mounting frame IP67,
with integrated gender changer

VS-...-KU-...

D-SUB coupling IP67,
with integrated gender changer

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB/9-MPT-0,5	**1688379**	10
VS-09-BU-DSUB/9-MPT-0,5	**1688395**	10

Type	Order No.	Pcs. / Pkt.
VS-09-A-GC-ST/ST	**1689705**	5
VS-09-SD	**1887086**	5

Type	Order No.	Pcs. / Pkt.
VS-09-KU-ST/ST	**1689640**	5
VS-09-SD	**1887086**	5

	VS-09-KU-ST/ST	VS-09-SD
60 V	125 V	-
5 A	5 A	-
III	III	-
-	PA	PA
Copper alloy	Copper alloy	-
Gold over nickel	Hard gold-plated over nickel	-
PBTP	Polyester GF	-
V0	V0	V0
9	9	-
-	Gray	Gray
2	2	-
IP20	IP67	IP54
Screw connection	-	-
0.14 mm² ... 0.5 mm²	-	-
26 ... 20	-	-
≥ 200	≥ 200	≥ 1000
-20°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C

M8 assembled cables

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end		Order No.		Order No.		Order No.
			2 m	**1575712**		
			5 m	**1575725**		
			10 m	**1575738**		
			15 m	**1575754**		
			Variable	**1575767**	Variable	**1575903**
M8 socket, straight						
			0.3 m	**1575822**		
			0.5 m	**1575835**		
			1 m	**1575848**		
		2 m **1575770**	2 m	**1575851**		
		5 m **1575783**	5 m	**1575864**		
		10 m **1575796**	10 m	**1575877**		
		15 m **1575806**	15 m	**1575880**		
		Variable **1575819**	Variable	**1575893**	Variable	**1575932**
M8 socket, angled						
		Variable **1575916**			Variable	**1575945**

Ordering example for cables **with** variable cable length:

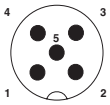
For a DeviceNet™ bus cable, straight M8 socket on a straight M8 connector and the cable length of 34.5 m, the order data is as follows:

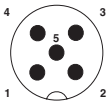
Order No.		Length [m] Max. 40 m
1575893	/	**34.5**
		Step widths: 0.2 ... 3.0 m = 0.1 m > 3.0 m = 0.5 m

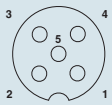
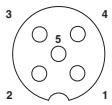
Technical data		Connector M8
Nominal current I_N	[A]	4
Rated voltage	[V]	30
Volume resistance		≤ 5 mΩ
Conductor cross-section for signal	[mm²]	0.2
Conductor cross-section for power	[mm²]	0.32
Inflammability class in acc. with UL 94		HB
Cable Diameter		6.70 mm
Contact material		CuSn
Contact surface material		Ni/Au
Contact carrier material		TPU GF
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Fixed installation	[°C]	-40 ... 80
Flexible installation	[°C]	-20 ... 75
Plug/socket	[°C]	-25 ... 90

M12 assembled cables

Note:
For further technical data, see:
www.phoenixcontact.net/catalog





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	**1538102**	
M12-SPEEDCON socket, straight								
			0.3 m	**1518258**				
			0.5 m	**1518261**				
			1 m	**1518274**				
	2 m	**1507476**	2 m	**1518287**				
	5 m	**1507489**	5 m	**1518290**				
	10 m	**1507492**	10 m	**1518300**				
	15 m	**1507502**	15 m	**1518313**				
	Variable	**1538128**	Variable	**1538157**				
M12 socket, straight								
						0.3 m	**1507528**	
						0.5 m	**1507531**	
						1 m	**1507544**	
						2 m	**1507557**	
						5 m	**1507560**	
						10 m	**1507573**	
						15 m	**1507586**	
						Variable	**1538144**	

Ordering example for cable **with** connector assembly:

For a DeviceNet™ bus cable, straight M12 socket on a straight M12 connector and the cable length of 34.5 m, the order data is as follows:

Order No.	Length [m] Max. 40 m
1538144	**34.5**

Step widths:
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:

Order No.	Length [m] Max. 400 m
1511504	**34.5**

Step widths:
0.5 ... 400.0 m = 0.5 m

Technical data		Connectors M12
Nominal current I_N	[A]	4
Rated voltage	[V]	60
Volume resistance		≤ 5 mΩ
Conductor cross-section for signal	[mm²]	0.2
Conductor cross-section for power	[mm²]	0.32
Inflammability class in acc. with UL 94		HB
Cable Diameter		6.70 mm
Contact material		CuSn
Contact surface material		Ni/Au
Contact carrier material		TPU GF
Degree of protection		IP65/IP67/IP69K
Ambient temperature		
Fixed installation	[°C]	-40 ... 80
Flexible installation	[°C]	-20 ... 75
Plug/socket	[°C]	-25 ... 90

M12 Y distributor

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

SAC-5P-M/2FY/...-920/M12MS-FS

Bus system cable

SAC-5P-...2Y/...-920

Bus system cable

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Bus system Y cable, 5-pos., PUR halogen-free violet, shielded, straight M12 Y socket, on straight M12 socket and straight M12 connector						
- Conductor length 0.3 m	**SAC-5PY-F/2X 0,3-920-MS-FS**	**1436013**	1			
- Conductor length 0.5 m	**SAC-5PY-F/2X 0,5-920-MS-FS**	**1436026**	1			
- Conductor length 1.0 m	**SAC-5PY-F/2X 1,0-920-MS-FS**	**1436039**	1			
- Conductor length 2.0 m	**SAC-5PY-F/2X 2,0-920-MS-FS**	**1436042**	1			
- Conductor length 5.0 m	**SAC-5PY-F/2X 5,0-920-MS-FS**	**1436055**	1			
- Conductor length 10.0 m	**SAC-5PY-F/2X10,0-920-MS-FS**	**1436068**	1			
- Conductor length 15.0 m	**SAC-5PY-F/2X15,0-920-MS-FS**	**1436071**	1			
Bus system Y cable, 5-pos., PUR halogen-free violet, shielded, straight M12 Y connector, on free conductor ends						
- Conductor length 2.0 m				**SAC-5PY-M/2X 2,0-920**	**1436084**	1
- Conductor length 5.0 m				**SAC-5PY-M/2X 5,0-920**	**1436097**	1
- Conductor length 10.0 m				**SAC-5PY-M/2X10,0-920**	**1436107**	1
- Conductor length 15.0 m				**SAC-5PY-M/2X15,0-920**	**1436110**	1
Bus system Y cable, 5-pos., PUR halogen-free violet, shielded, straight M12 Y socket, on free conductor ends						
- Conductor length 2.0 m				**SAC-5PY-F/2X 2,0-920**	**1436123**	1
- Conductor length 5.0 m				**SAC-5PY-F/2X 5,0-920**	**1436136**	1
- Conductor length 10.0 m				**SAC-5PY-F/2X10,0-920**	**1436149**	1
- Conductor length 15.0 m				**SAC-5PY-F/2X15,0-920**	**1436152**	1

Technical data			
Electrical data			
Rated voltage		60 V	60 V
Nominal current I_N		4 A	4 A
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Material data			
Contact material		CuSn	CuSn
Contact surface material		Ni/Au	Ni/Au
Contact carrier material		TPU GF	-
Inflammability class acc. to UL 94		HB	HB
Mechanical data			
No. of pos.		5	5
Pollution degree		3	3
Degree of protection		IP65/IP67/IP69K	IP65/IP67/IP69K
External cable diameter		6.70 mm	6.70 mm
Conductor cross-section for signal		0.2 mm²	0.2 mm²
Conductor structure, signal line		19x 0.12 mm	19x 0.12 mm
Conductor cross-section for power		0.32 mm²	0.32 mm²
Conductor structure, voltage supply		19x 0.15 mm	19x 0.15 mm
Temperature data			
Plug/socket	[°C]	-25 ... 90	-25 ... 90
Cable, fixed installation	[°C]	-40 ... 80	-40 ... 80
Cable, flexible installation	[°C]	-20 ... 75	-20 ... 75

M12 flush-type connector, shielded

Fastening thread: M16

EMC nut M16 is required for shield contacting on coated housing surfaces.

For connector pin assignments, see page 61.

For contact assignment, refer to page 61.

For further technical data, see:
www.phoenixcontact.net/catalog

Front mounting, can be positioned, pin

Front mounting, can be positioned, socket

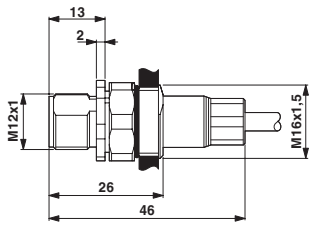
Plug mounting, pin

Plug mounting, socket

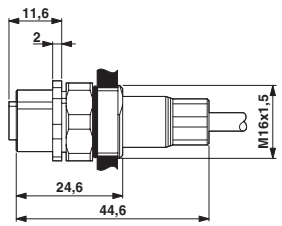
Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
- Cable length 0.5 m	**1525623**	1	**1525678**	1	**1534423**	1	**1534465**	1
- Cable length 1 m	**1525636**	1	**1525681**	1	**1534436**	1	**1534478**	1
- Cable length 2 m	**1525649**	1	**1525694**	1	**1534449**	1	**1534481**	1
- Cable length 5 m	**1525652**	1	**1525704**	1	**1534452**	1	**1534494**	1
- Conductor length 0.5 m, SPEEDCON	-	-	-	-	**1437562**	1	**1437520**	1
- Cable length 1.0 m, SPEEDCON	-	-	-	-	**1437575**	1	**1437533**	1
- Cable length 2.0 m, SPEEDCON	-	-	-	-	**1437588**	1	**1437546**	1
- Cable length 5.0 m, SPEEDCON	-	-	-	-	**1437591**	1	**1437559**	1
EMC nut M16	-	-	-	-	**1440164**	10	**1440164**	10

Technical data

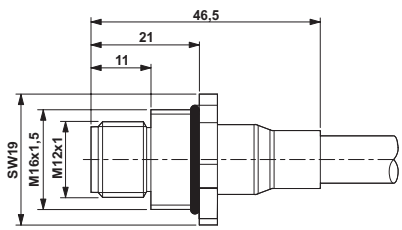
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Volume resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Encoding		A - standard	A - standard	A - standard	A - standard
No. of pos.		5	5	5	5
Mechanical data					
Material contact / contact surface		CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au	CuZn / Ni/Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class acc. to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Connection data					
Conductor cross-section for signal		0.2 mm²	0.2 mm²	0.2 mm²	0.2 mm²
Conductor cross-section for power		0.32 mm²	0.32 mm²	0.32 mm²	0.32 mm²
Temperature data					
Plug/socket	[°C]	-25 ... 80	-25 ... 80	-25 ... 80	-25 ... 80
Fixed installation	[°C]	-40 ... 80	-40 ... 80	-40 ... 80	-40 ... 80
Flexible installation	[°C]	-20 ... 75	-20 ... 75	-20 ... 75	-20 ... 75



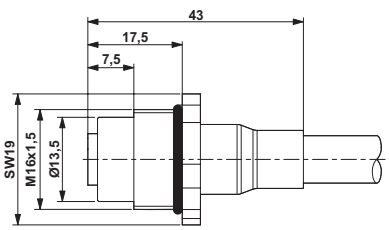
M12 flush-type connector, front mounting, can be positioned



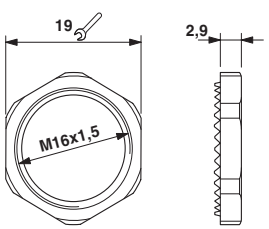
M12 flush-type socket, front mounting, can be positioned



M12 flush-type connector, rear mounting



M12 flush-type socket, rear mounting



EMC nut M16

M12 flush-type connector with solder connection

Flush-type connector with litz wires available on request

EMC nut is required for shield contacting on coated housing surfaces.

For connector pin assignments, refer to page 61.

For further technical data, see:

www.phoenixcontact.net/catalog

Rear mounting, one-piece pin

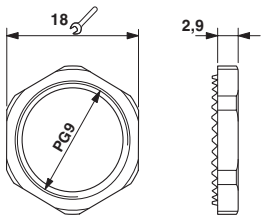
Rear mounting, one-piece socket

Rear mounting, two-piece pin

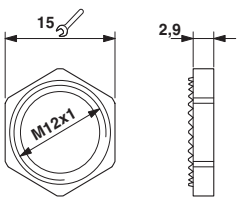
Rear mounting, two-piece socket

Description	Version	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight	**1542745**	20	**1542761**	20	-	-	-	-
Wave soldering, Pg9 fastening thread, SPEEDCON	Straight, shield contact	**1553048**	20	**1553019**	20	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight	**1551833**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread, SPEEDCON	Straight, shield contact	**1552968**	20	-	-	-	-	-	-
Wave soldering, M12 fastening thread	Straight	-	-	-	-	**1694211**	10	**1542570**	10
Wave soldering, M12 fastening thread	Angled	-	-	-	-	**1694224**	10	**1694240**	10
THR, M12 fastening thread, SPEEDCON	Straight	-	-	-	-	**1551752**	60	**1542622**	60
EMC nut, M12		**1440151**	10		-	-	-	-	-
EMC nut, Pg9		**1440177**	10	**1440177**	10	-	-	-	-

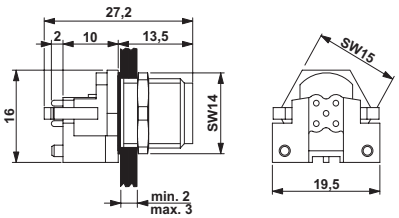
Technical data					
Electrical data					
Rated voltage		60 V	60 V	60 V	60 V
Nominal current I_N		4 A	4 A	4 A	4 A
Contact resistance		3 mΩ	3 mΩ	3 mΩ	3 mΩ
Insulation resistance		100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category		II	II	II	II
Coding		A - standard	A - standard	A - standard	A - standard
Number of positions		5	5	5	5
Material contact / contact surface		CuZn / Au	CuZn / Au	CuZn / Au	CuZn / Au
Contact carrier material		PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94		V0	V0	V0	V0
Pollution degree		3	3	3	3
Degree of protection		IP67	IP67	IP67	IP67
Ambient temperature					
Plug/socket	[°C]	-25 ... 85	-25 ... 85	-25 ... 85	-25 ... 85



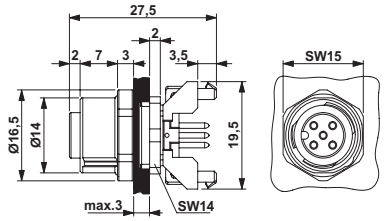
EMC nut, Pg9



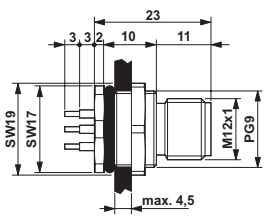
EMC nut, M12



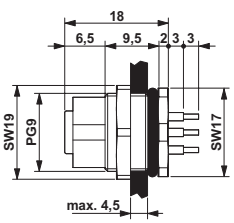
M12 fastening thread, two-piece pin, straight, wave soldering



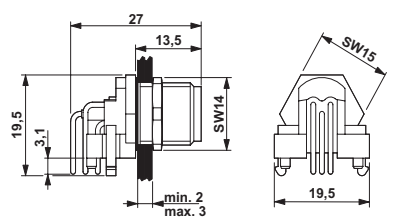
M12 fastening thread, two-piece socket, straight, SPEEDCON, wave soldering



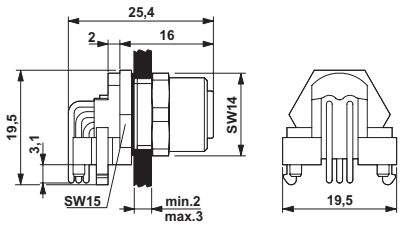
Pg9 fastening thread, one-piece pin



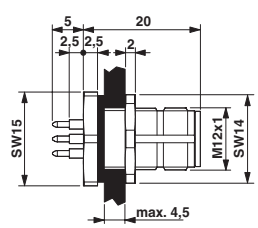
Pg9 fastening thread, one-piece socket



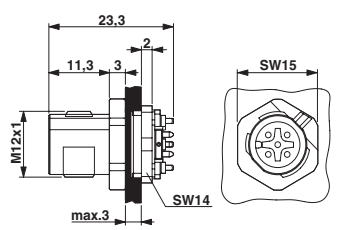
M12 fastening thread, two-piece pin, angled, wave soldering



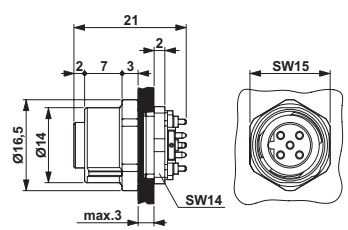
M12 fastening thread, two-piece socket, angled, wave soldering



M12 fastening thread, one-piece pin



M12 fastening thread, two-piece pin, straight, THR



M12 fastening thread, two-piece socket, straight, THR

M12 connector, shielded

For further technical data, see:
www.phoenixcontact.net/catalog

Screw connection, 5-pos., pin

Screw connection, 5-pos., socket

Spring-cage connection, 5-pos., pin

Spring-cage connection, 5-pos., socket

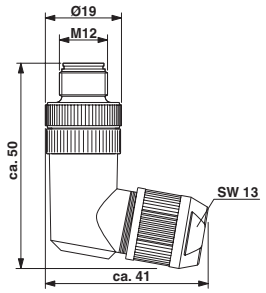
Description	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.	Order No.	Pcs./Pkt.
Connector, straight	**1508352**	1	**1508365**	1	**1432761**	1	**1432787**	1
Connector, angled	**-**	-	**-**	-	**1432774**	1	**1432790**	1

Technical data

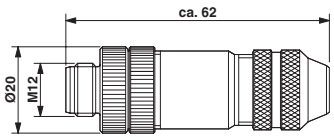
Electrical data				
Rated voltage	60 V	60 V	60 V	60 V
Nominal current I_N	4 A	4 A	4 A	4 A
Contact resistance	3 mΩ	3 mΩ	8 mΩ	8 mΩ
Insulation resistance	100 MΩ	100 MΩ	100 MΩ	100 MΩ
Surge voltage category	II	II	II	II
Mechanical data				
Coding	A - standard	A - standard	A - standard	A - standard
Number of positions	5	5	5	5
Material contact / contact surface	CuZn / Au	CuSn/Au	CuSn / Ni/Au	CuSn / Ni/Au
Contact carrier material	PA 66	PA 66	PA 66	PA 66
Inflammability class according to UL 94	V0	V0	V0	V0
Pollution degree	3	3	3	3
Connection data				
Connection method	Screw connection	Screw connection	Spring-cage connection	Spring-cage connection
Outside diameter	6 mm ... 8.5 mm	6 mm ... 8.5 mm	4 mm ... 8 mm	4 mm ... 8 mm
Connection cross-section min./max.	0.25 mm² / 0.75 mm²	0.25 mm² / 0.75 mm²	0.14 mm² / 0.5 mm²	0.14 mm² / 0.5 mm²
Connection cross-section AWG min./max.	24 / 18	24 / 18	26 / 20	26 / 20
Degree of protection	IP67	IP67	IP67	IP67
Ambient temperature				
Plug/socket [°C]	-40 ... 85	-40 ... 85	-40 ... 85	-40 ... 85

Socket, 5-pos. A-coded | **Pin, 5-pos. A-coded**

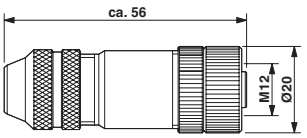
Connector pin assignments



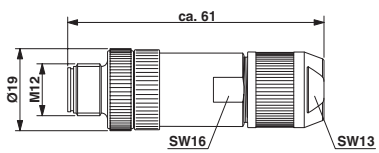
M12 connector x 1, angled, shielded, spring-cage connection



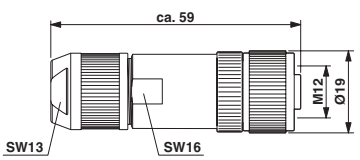
M12 connector x 1, straight, shielded, screw connection



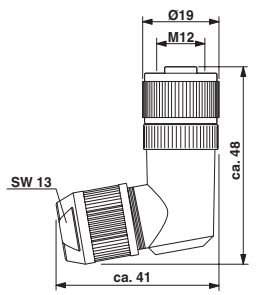
M12 socket x 1, straight, shielded, screw connection



M12 connector x 1, straight, shielded, spring-cage connection



M12 socket x 1, straight, shielded, spring-cage connection



M12 socket x 1, angled, shielded, spring-cage connection

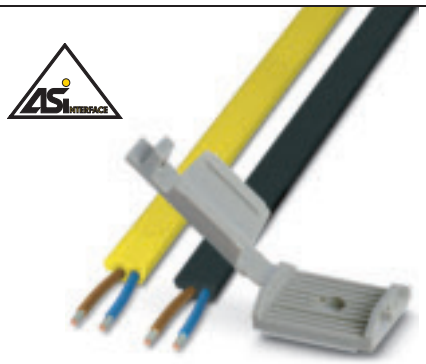
Flat-ribbon conductors, flat-ribbon conductor connectors and panel feed-throughs

Thanks to the four flat-ribbon conductor materials, applications in various fields are possible.

Connectors with QUICKON fast connection technology are available for connecting or laying these flat-ribbon conductors. The only preparation of the lines is the easy and fast removal of the sheath using the WIREFOX ASI stripping tool.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog



VS-ASI-FC-...

AS-Interface flat-ribbon conductors and accessories

Q 1,5/4...KU-...ASI...

Flat-ribbon conductors and panel feed-throughs with QUICKON fast connection technology

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
AS-Interface EPDM flat-ribbon conductor, 2 x 1.5 mm², 100 m Ring						
Yellow	**VS-ASI-FC-EPDM-YE 100M**	**1432402**	1			
Black	**VS-ASI-FC-EPDM-BK 100M**	**1432415**	1			
AS-Interface PVC flat-ribbon conductor with UL, 2 x 1.5 mm², 100 m Ring						
Yellow	**VS-ASI-FC-PVC-UL-YE 100M**	**1404906**	1			
Black	**VS-ASI-FC-PVC-UL-BK 100M**	**1404919**	1			
AS-Interface TPE flat-ribbon conductor with UL, 2 x 1.5 mm², 100 m Ring						
Yellow	**VS-ASI-FC-TPE-UL-YE 100M**	**1404922**	1			
Black	**VS-ASI-FC-TPE-UL-BK 100M**	**1404935**	1			
AS-Interface PUR flat-ribbon conductor, 2 x 1.5 mm², 100 m Ring						
Yellow	**VS-ASI-FC-PUR-YE 100M**	**1404883**	1			
Black	**VS-ASI-FC-PUR-BK 100M**	**1404896**	1			
Flat-ribbon connector, 4-pos., for connecting one or two AS-i flat-ribbon conductors				**Q 1,5/4IDC/24-24KU-KU-ASI-BK**	**1585058**	1
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				**Q 1,5/4FL/24-M20KU-ESA-ASI BK**	**1437261**	1
Panel feed-through, for accommodating one or two AS-i flat-ribbon conductors, on the rear side with four 0.5 m long individual wires 1.5 mm²				**Q 1,5/4A50/24-M20KU-ESA-ASI BK**	**1437274**	1
Metal screw connection for an AS-Interface flat-ribbon conductor						
Thread type: M20				**HC-M-KV-M20(1ASI)**	**1584017**	10
Thread type: M25				**HC-M-KV-M25(1ASI)**	**1584020**	10
Fastening clip for two AS-Interface flat-ribbon conductors, self-adhesive and with a 3 mm hole for additional fastening, plastic, gray	**VS-ASI-2FC-FIX**	**1404757**	20			
Fixing clip for an AS-Interface flat-ribbon conductor, self-adhesive	**ASI CC FIX FCAB**	**2741354**	500			
End sealing for AS-Interface flat-ribbon conductor, can be used on both sides, color: Black	**ASI SACB KABEL-ENDDICHTUNG**	**1692336**	100			
Stripping pliers, for AS-Interface flat wires, any desired stripping length	**WIREFOX ASI**	**1212154**	1			

Technical data		VS-ASI-FC-PVC...	VS-ASI-FC-PUR...	Q 1,5/4IDC	Q 1,5/4M20
Electrical data					
Rated current		-	-	16 A	16 A
Material data					
Contact carrier material		-	-	PA	PA
Mechanical data					
No. of pos.		-	-	4	4
Degree of protection		-	-	IP65/67	IP65/67
Cable data					
Material of outer sheath		PVC	PUR	-	-
Conductor cross-section		1.5 mm²	1.5 mm²	-	-
Connector data QUICKON connection					
Conductor cross-section [mm²]		- ... -	- ... -	0.75 mm² ... 1.5 mm²	0.75 mm² ... 1.5 mm²
Conductor cross-section [AWG]		- ... -	- ... -	18 ... 16	18 ... 16
Temperature data					
Ambient temperature (operation)		-	-	-25°C ... 80°C	-25°C ... 80°C
Cable, fixed installation	[°C]	-30 ... 90	-40 ... 85	-	-
Cable, flexible installation	[°C]	-20 ... 90	-30 ... 85	-	-

Distributor with spring-cage connection and with round conductors

The distributor with spring-cage terminal blocks enables easy transition from round conductors to flat-ribbon conductors.

Thanks to the H-distributor, assembly of various topologies is extremely simple.

For cabling between a flat-ribbon conductor and an I/O device, the distributors with pre-assembled round conductors provide a quick and economical solution. Thanks to the various connectors and line lengths, a wide range of applications can be easily implemented.

VS-ASI-J-Y-...

AS-Interface distributor with COMBICON spring-cage terminal block and flat-ribbon conductor distributor

VS-ASI-J-Y-...-PUR-...

AS-Interface distributor with round cable and molded M12 connector with SPEEDCON

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
AS-Interface distributor with IP20 degree of protection for **two flat-ribbon conductors**, 4-pos., with **spring-cage terminal blocks**	**VS-ASI-J-Y-B-FFKDS**	**1404498**	1			
AS-Interface H distributor with IP67 degree of protection, for distribution from one to two flat-ribbon conductors	**VS-ASI-J-Y-Y-N**	**1404508**	1			
AS-Interface distributors with IP67 degree of protection for **one flat-ribbon conductor**, with **PUR** round cable and molded, **straight**, A-coded, **2-pos.** M12 socket with SPEEDCON						
Length: 1.0 m				**VS-ASI-J-Y-N-PUR-1,0-M12FS SCO**	**1404430**	1
Length: 2.0 m				**VS-ASI-J-Y-N-PUR-2,0-M12FS SCO**	**1404443**	1
AS-Interface distributors with IP67 degree of protection for **two flat connectors**, with **PUR** round cable and molded, **straight**, A-coded, **4-pos.** M12 socket with SPEEDCON						
Length: 1.0 m				**VS-ASI-J-Y-B-PUR-1,0-M12FS SCO**	**1404456**	1
Length: 2.0 m				**VS-ASI-J-Y-B-PUR-2,0-M12FS SCO**	**1404472**	1
AS-Interface distributors with IP67 degree of protection for **two flat connectors**, with **PUR** round cable and molded, **angled**, A-coded, **4-pos.** M12 socket with SPEEDCON						
Length: 1.0 m				**VS-ASI-J-Y-B-PUR-1,0-M12FR SCO**	**1404469**	1
Length: 2.0 m				**VS-ASI-J-Y-B-PUR-2,0-M12FR SCO**	**1404485**	1

Technical data		VS-ASI-J-Y-B...	VS-ASI-J-Y-Y-N	VS-ASI-J-Y-N...	VS-ASI-J-Y-B...
Electrical data					
Rated voltage		≤ 35 V	≤ 35 V	≤ 35 V	≤ 35 V
Rated current		≤ 6 A	≤ 8 A	≤ 4 A	≤ 4 A
Material specifications for exit					
Material of grip body		-	-	TPU	TPU
Material specifications for distributor					
Housing material		PA-GF	PA-GF	PA-GF	PA-GF
Mechanical data					
No. of pos.		4	4	2	4
Degree of protection		IP20	IP65/IP67/IP69K	IP65/IP67/IP69K	IP65/IP67/IP69K
Connection data for spring-cage terminal blocks					
Conductor cross-section		0.2 mm² ... 1.5 mm²	-	-	-
Connection cross-section AWG		24 ... 16	-	-	-
Cable data					
Material of outer sheath		-	-	PUR	PUR
External cable diameter		-	-	4.70 mm	4.70 mm
Conductor cross-section		-	-	0.34 mm²	0.34 mm²
Temperature data					
Plug/socket	[°C]	-25 ... 75	-25 ... 75	-25 ... 75	-25 ... 75
Cable, fixed installation	[°C]	-	-	-25 ... 75	-25 ... 75
Cable, flexible installation	[°C]	-	-	-5 ... 75	-5 ... 75

Distributors with M12 sockets, with screw connection, pre-assembled round conductors

Distributors with M12 sockets are suitable for connection that is pluggable on both sides between a flat-ribbon conductor and an I/O device. Thanks to the pre-configured round conductors in different lengths, a wide range of applications can be realized easily and safely.

If a pluggable connection is required only on the I/O side, the distributor with screw connection provides a favorable alternative.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-ASI-J-Y-...

AS-Interface distributor with M12 slots and with screw connection

SAC-4P-...-186...SCO

PUR round conductors with molded M12-SPEEDCON connectors

Description	Cable length	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
AS-Interface distributor with IP65/IP67/IP69k degree of protection for flat-ribbon conductors, with straight, A-coded M12 socket							
one flat-ribbon conductor, 2-pos.		**VS-ASI-J-Y-N-M12FS**	**1404414**	1			
Two flat-ribbon conductors, 4-pos.		**VS-ASI-J-Y-B-M12FS**	**1404427**	1			
AS-Interface distributor with IP67 degree of protection, with straight, A-coded M12 socket							
one flat-ribbon conductor, 2-pos.		**VS-ASI-J-Y-N-M12FS-LC**	**1433155**	1			
AS-Interface distributor with IP67 degree of protection, with screw connection, angled							
one flat-ribbon conductor, 2-pos.		**VS-ASI-J-Y-N-SWA-LC**	**1433168**	1			
AS-Interface distributor, 5x (without mounting plate)							
5 x M12 connector		**ASI CC DIST FCAB 5M12**	**2741477**	1			
Mounting plate for 5-way distributor		**ASI CC BP FL 4**	**2741134**	10			
M12 screw plug for unoccupied M12 sockets of the sensor/actuator cable, boxes and flush-type connectors		**PROT-M12**	**1680539**	5			
Labeling material							
Zack marker strip, unprinted		**ZBN 18:UNBEDRUCKT**	**2809128**	10			
Pre-assembled round conductor M12 pin, straight, free conductor end							
	2 m				**SAC-4P-MS/ 2,0-186 SCO**	**1555606**	1
	5 m				**SAC-4P-MS/ 5,0-186 SCO**	**1555619**	1
	10 m				**SAC-4P-MS/10,0-186 SCO**	**1555622**	1
	15 m				**SAC-4P-MS/15,0-186 SCO**	**1555635**	1
Pre-assembled round conductor M12 socket, straight, free conductor end							
	2 m				**SAC-4P- 2,0-186/FS SCO**	**1555648**	1
	5 m				**SAC-4P- 5,0-186/FS SCO**	**1555651**	1
	10 m				**SAC-4P-10,0-186/FS SCO**	**1555664**	1
	15 m				**SAC-4P-15,0-186/FS SCO**	**1555677**	1
Pre-assembled round conductor M12 pin, straight, M12 socket, straight							
	0.3 m				**SAC-4P-MS/ 0,3-186/FS SCO**	**1555680**	1
	0.5 m				**SAC-4P-MS/ 0,5-186/FS SCO**	**1555693**	1
	1 m				**SAC-4P-MS/ 1,0-186/FS SCO**	**1555703**	1
	2 m				**SAC-4P-MS/ 2,0-186/FS SCO**	**1555716**	1
	5 m				**SAC-4P-MS/ 5,0-186/FS SCO**	**1555729**	1
	10 m				**SAC-4P-MS/10,0-186/FS SCO**	**1555732**	1
	15 m				**SAC-4P-MS/15,0-186/FS SCO**	**1555745**	1

Technical data		VS-ASI-J-Y-N-M12FS	VS-ASI-J-Y-N-SWA-LC	
Housing material		PA-GF	PA	-
Material of grip body		-	-	TPU, hardly inflammable, self-extinguishing
No. of pos.		2	2	4
Degree of protection		IP65/IP67/IP69K	IP67	IP65/IP68/IP69K
Connection data for screw connection				
Conductor cross-section		-	0.14 mm² ... 1 mm² (solid)	-
Connection cross-section AWG		-	26 ... 17 (solid)	-
Conductor cross-section		-	0.14 mm² ... 0.75 mm² (with ferrules)	-
Connection cross-section AWG		-	26 ... 18 (with ferrules)	-
Cable data				
Conductor cross-section		-	-	0.75 mm²
Temperature data				
Ambient temperature (operation)		-25°C ... 75°C	-25°C ... 70°C	-25°C ... 90°C (pin/socket)
Cable, fixed installation	[°C]	-	-	-25 ... 80
Cable, flexible installation	[°C]	-	-	-5 ... 80

M8 devices

Fieldline Extension AS-Interface M8 devices are especially developed for applications in handling machines and in robot technology.

IP65/67 protection and sealed-in device electronics guarantee perfect operation even under the harshest industrial conditions.

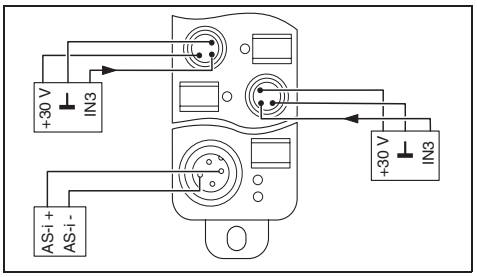
The sensors and actuators are connected via M8 connectors. The AS-Interface network is connected to a SPEEDCON-capable M12 connector.

The devices can be mounted via an AS-i round conductor directly near the sensors and actuators, and the flat-ribbon cable does not have to be installed in inaccessible places.

The devices are addressed via the M12 plug connector of the bus connection.

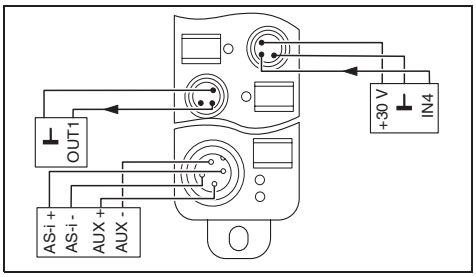
FLX ASI DI 4 M8

Fieldline Extension AS-i digital input device, M8, inputs: 24 V DC



FLX ASI DIO 4/4 M8-1A

Fieldline Extension AS-i digital input/output device, M8, inputs: 24 V DC, outputs: 24 V DC, 1 A



Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Fieldline Extension AS-i digital input device						
- 4 inputs	**FLX ASI DI 4 M8**	**2773403**	1			
Fieldline Extension AS-i digital input/output device						
- Four inputs, four outputs, 1 A				**FLX ASI DIO 4/4 M8-1A**	**2773416**	1
M8 screw plug	**PROT-M8**	**1682540**	5	**PROT-M8**	**1682540**	5
Zack flat marker strip, 10-section, unprinted: For individual labeling with TML (101X4.2)R TR, X-PEN or CMS-P1-PLOTTER	**ZBF 8:UNBEDRUCKT**	**0808781**	10	**ZBF 8:UNBEDRUCKT**	**0808781**	10
Manual addressing device, for AS-Interface devices	**ASI CC ADR**	**2741338**	1	**ASI CC ADR**	**2741338**	1

Technical data		
Interface		
Fieldbus system	AS-i	AS-i
Type of connection	M12 plug connectors, (A-coded)	M12 plug connectors, (A-coded)
AS-Interface		
Slave type	Single slave	Single slave
AS-i specification	2.0	2.0
Required master specification	>= 2.0	>= 2.0
AS-i profile	S-0.0	S-7.0
IO code	0	7
ID code (hex) / ID1 code / ID2 code	0 / - / -	0 / - / -
Digital inputs		
Type of connection	M8 plug connector	M8 plug connector
Connection method	2, 3-wire	2, 3-wire
Number of inputs	4	4
Input characteristic curve	IEC 61131-2 type 2	IEC 61131-2 type 2
Digital outputs		
Type of connection	-	M8 plug connector
Connection method	-	2-wire
Number of outputs	-	4
Maximum output current per channel	-	1 A
Maximum output current per module / terminal block	-	4 A
General data		
Weight	85 g	125 g
Width	30 mm	30 mm
Height	26 mm	26 mm
Depth	103 mm	143 mm
Degree of protection	IP67 in acc. with IEC 60529	IP67 in acc. with IEC 60529
Ambient temperature (operation)	-25°C ... 70°C	-25°C ... 70°C
Ambient temperature (storage/transport)	-25°C ... 85°C	-25°C ... 85°C

M12 devices

Fieldline Extension AS-Interface M12 devices are especially compact devices with IP65/67 protection for connecting digital sensors and actuators.

The AS-i flat-ribbon conductor is connected in 2 steps. First the base plate is fastened and the flat-ribbon conductors inserted with the guiding aid. Then the device is pushed over the flat-ribbon conductors and is contacted without tools using an innovative locking mechanism to avoid connection faults.

The mounted devices are addressed via the integrated interface via special addressing devices or online by the master of the AS-Interface systems.

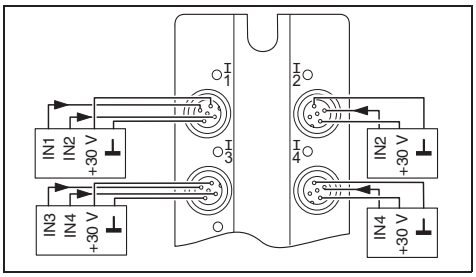
Status displays directly on the devices constantly provide information about the switching state of the connected sensors and actuators as well as via the data exchange with the higher-level master, thus reducing the time for startup and for preventive maintenance.

The communication monitoring by the integrated watchdog function increases machine and plant safety in the event of a fault.

The sensors and actuators are connected to M12 plug connectors with the SPEEDCON connection method. Thanks to SPEEDCON technology, connection times are reduced by up to 90% compared with classic M12 connections.

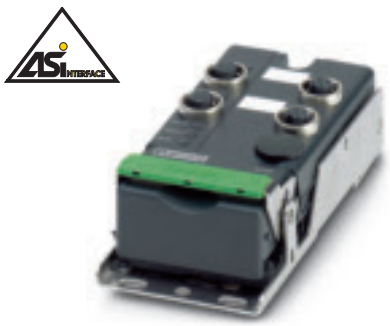
FLX ASI DI 4 M12

Fieldline Extension AS-i digital input device, M12, inputs: 24 V DC



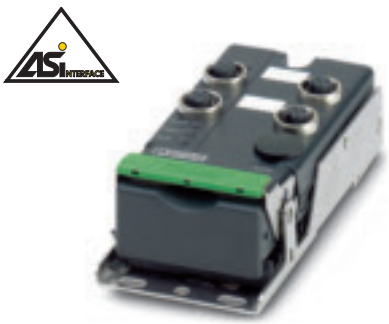
Description	Type	Order No.	Pcs. / Pkt.
Fieldline Extension AS-i digital input device - 4 inputs	**FLX ASI DI 4 M12**	**2773429**	1
Fieldline Extension AS-i digital output device - Four outputs, 2 A			
Fieldline Extension AS-i digital input/output device - Two inputs, two outputs, 2 A - Four inputs, three outputs, 2 A - Four inputs, four outputs, 2 A			
M12 screw plug	**PROT-M12**	**1680539**	5
Label sheet for laser printers, 64 x 16 mm, color: White	**BMKL 64X16 WH**	**0821807**	2
Label sheet for laser printers, 108 x 16 mm, color: White			
Manual addressing device, for AS-Interface devices	**ASI CC ADR**	**2741338**	1
Programming cable, for addressing the AS-i devices	**ASI CC ADR CAB CINCH**	**2741341**	1
Security against undesired unlocking of the FLX ASI M12 devices	**FLX ASI M12 FS**	**2773539**	5

Technical data	
Interface	
Fieldbus system	AS-i
Type of connection	Flat-ribbon cable penetration technique
AS-Interface	
Slave type	A/B slave
AS-i specification	2.1
Required master specification	>= 2.0
AS-i profile	S-0.A.2
IO code	0
ID code (hex) / ID1 code / ID2 code	A / 7 / 2
Digital inputs	
Type of connection	M12 plug connector
Connection method	2, 3-wire
Number of inputs	4
Input characteristic curve	IEC 61131-2 type 2
Digital outputs	
Type of connection	-
Connection method	-
Number of outputs	-
Maximum output current per channel	-
Maximum output current per module / terminal block	-
General data	
Weight	195 g
Width	58 mm
Height	118 mm
Depth	35 mm
Degree of protection	IP67 in acc. with IEC 60529
Ambient temperature (operation)	-25°C ... 70°C



FLX ASI DO 4 M12-2A

Fieldline Extension AS-i digital output device, M12, outputs: 24 V DC, 2 A

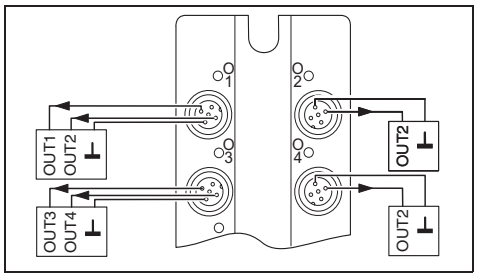


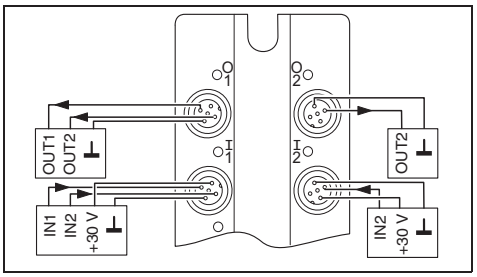
FLX ASI DIO 2/2 M12-2A

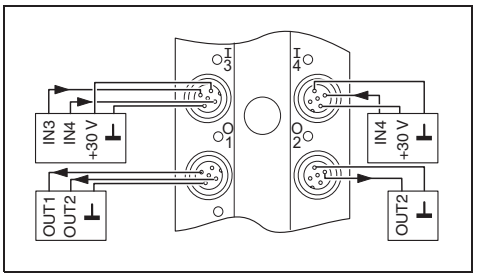
Fieldline Extension AS-i digital input/output device, M12, inputs: 24 V DC, outputs: 24 V DC, 2 A

FLX ASI ... DIO 4/... M12-2A

Fieldline Extension AS-i digital input/output device, M12, inputs: 24 V DC, outputs: 24 V DC, 2 A







Type	Order No.	Pcs. / Pkt.
FLX ASI DO 4 M12-2A	**2773458**	1
PROT-M12	**1680539**	5
BMKL 64X16 WH	**0821807**	2
ASI CC ADR	**2741338**	1
ASI CC ADR CAB CINCH	**2741341**	1
FLX ASI M12 FS	**2773539**	5

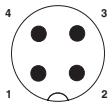
Type	Order No.	Pcs. / Pkt.
FLX ASI DIO 2/2 M12-2A	**2773432**	1
PROT-M12	**1680539**	5
BMKL 64X16 WH	**0821807**	2
ASI CC ADR	**2741338**	1
ASI CC ADR CAB CINCH	**2741341**	1
FLX ASI M12 FS	**2773539**	5

Type	Order No.	Pcs. / Pkt.
FLX ASI DIO 4/3 M12-2A	**2773445**	1
FLX ASI 3.0 DIO 4/4 M12-2A	**2773474**	1
PROT-M12	**1680539**	5
BMKL 11,5 (108X16) WH	**0821797**	2
ASI CC ADR	**2741338**	1
ASI CC ADR CAB CINCH	**2741341**	1
FLX ASI M12 FS	**2773539**	5

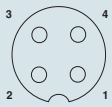
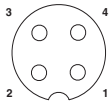
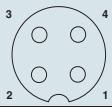
	FLX ASI DIO 4/3 M12-2A	FLX ASI 3.0 DIO 4/4 M12-2A
AS-i	AS-i	AS-i
Flat-ribbon cable penetration technique	Flat-ribbon cable penetration technique	Flat-ribbon cable penetration technique
Single slave	A/B slave	A/B slave
2.0	2.1	3.0
>= 2.0	>= 2.0	>= 3.0
S-8.1	S-B.A.2	S-7.A.7
8	B	7
1 / - / -	A / 7 / 2	A / 7 / 7
-	M12 plug connector	M12 plug connector
-	2, 3-wire	2, 3-wire
-	2	4
-	IEC 61131-2 type 2	IEC 61131-2 type 2
M12 plug connector	M12 plug connector	M12 plug connector
2-wire	2-wire	2-wire
4	2	3 4
2 A	2 A	2 A
4 A	4 A	4 A
195 g	195 g	245 g
58 mm	58 mm	58 mm
118 mm	118 mm	150 mm
35 mm	35 mm	35 mm
IP67 in acc. with IEC 60529	IP67 in acc. with IEC 60529	IP67 in acc. with IEC 60529
-25°C ... 70°C	-25°C ... 70°C	-25°C ... 70°C

M12 assembled cables

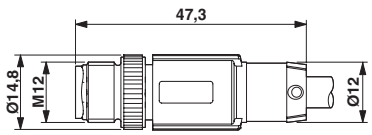
Free end	M12 connector



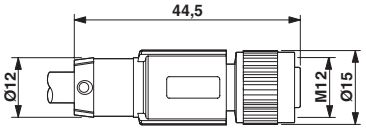
Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end		Order No.		Order No.	Order No.
			2 m	**1558328**	
			5 m	**1558331**	
			10 m	**1558344**	
			15 m	**1558357**	
M12 socket, straight					
				0.3 m	**1558409**
				0.6 m	**1558412**
				1 m	**1558425**
		2 m	**1558360**	2 m	**1558438**
		5 m	**1558373**	5 m	**1558441**
		10 m	**1558386**	10 m	**1558454**
		15 m	**1558399**	15 m	**1558467**
M12 flush-type socket					
		0.5 m	**1559819**		
		1 m	**1559822**		
		2 m	**1559835**		
		5 m	**1559848**		
M12 flush-type socket, SPEEDCON					
		0.5 m	**1437847**		
		1 m	**1437850**		
		2 m	**1437863**		
		5 m	**1437876**		

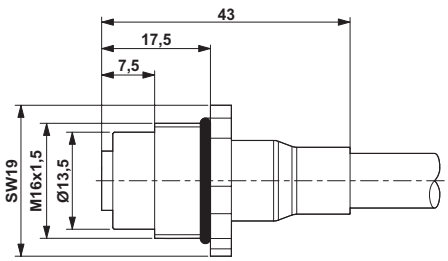
Color coding	Pin assignment M12
Shield	1
WH	2
YE	3
BU	4



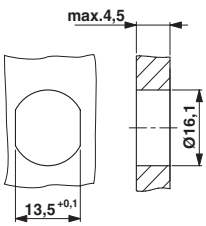
Dimensional drawing: M12 connector



Dimensional drawing: M12 socket



Dimensional drawing: M12 flush-type socket



Housing cutout: M12 flush-type socket

Technical data		Connectors M12	Flush-type connectors M12
Nominal current I_N	[A]	4	4
Rated voltage	[V]	250	250
Volume resistance		≤ 5 mΩ	≤ 3 mΩ
Conductor cross-section	[mm²]	0.5	0.5
Conductor construction		7x 0.28 mm	7x 0.28 mm
Cable diameter	[mm]	7.7	7.7
Contact material		CuZn	CuZn
Contact surface material		Ni/Au	Ni/Au
Contact carrier material		TPU GF	PA 66
Degree of protection		IP65/IP67/IP69K	IP67
Ambient temperature			
Fixed installation	[°C]	-30 ... 60	-30 ... 60
Flexible installation	[°C]	-5 ... 60	-5 ... 60
Plug/socket	[°C]	-25 ... 90	-25 ... 80

Shielded M12 connector, M12 termination resistor, M12 T-distributor

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

SACC-M12...-4SC SH CCL

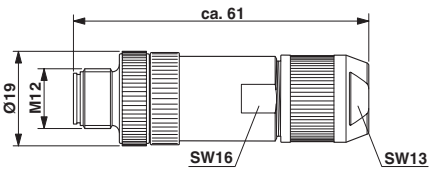
Mountable sensor/actuator connectors M12, shielded

SAC-4P-M12...CCL...

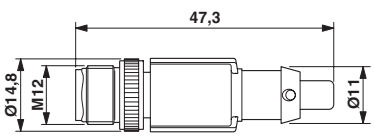
M12 termination resistor, M12 T-distributor

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
M12 connector, straight version, shielded, with spring-cage connection, 4-pos., A-coded						
Pin	**SACC-M12MS-4SC SH CCL**	**1559767**	1			
Socket	**SACC-M12FS-4SC SH CCL**	**1559770**	1			
Termination resistor, M12				**SAC-4P-M12MS CCL TR**	**1558470**	1
T-distributor, for round conductors				**SAC-4P-M12T/2XM12 CCL**	**1559783**	1

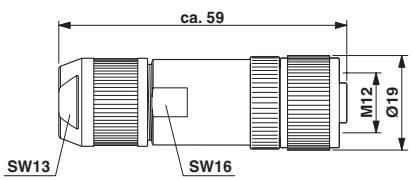
Technical data		**SAC-4P-M12MS CCL TR**	**SAC-4P-M12T/2XM12 CCL**
Electrical data			
Rated voltage	60 V	24 V	60 V
Nominal current I_N	4 A	20 mA	4 A
Volume resistance	≤ 8 mΩ	≤ 5 mΩ	≤ 5 mΩ
Insulation resistance	≥ 100 MΩ	≥ 100 MΩ	≥ 100 MΩ
Surge voltage category / Pollution degree	II / 3	II / 3	II / 3
Material data			
Contact material	CuSn	CuZn	CuZn
Contact surface material	Ni/Au	Ni/Au	Ni/Au
Contact carrier material	PA 66	TPU GF	TPU GF
Material of grip body	Zinc die-cast, nickel-plated	TPU, hardly inflammable, self-extinguishing	TPU, hardly inflammable, self-extinguishing
Inflammability class acc. to UL 94	V0	HB	HB
Degree of protection	IP67	IP65/IP67/IP69K	IP65/IP68/IP69K
Connection data			
Type of connection	Spring-cage conn.	-	-
Connection cross-section	0.14 mm² ... 0.5 mm²	-	-
Connection cross-section AWG	26 ... 20	-	-
Cable diameter	4 mm ... 8 mm	-	-
Temperature data			
Ambient temperature (operation)	-40°C ... 85°C	-25°C ... 90°C	-25°C ... 90°C



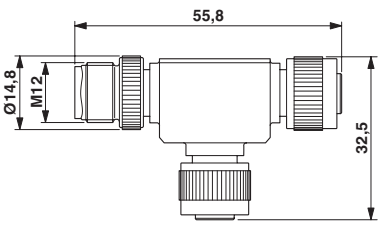
M12 x 1 connector, straight, shielded



M12 termination resistor



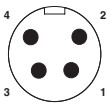
M12 x 1 connector, straight, shielded

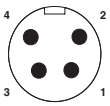


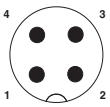
M12 connector x 1, T distributor

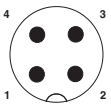
7/8" mini and M12 assembled cables

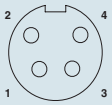
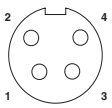
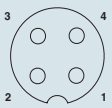
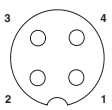
Note:
For further technical data, see:
www.phoenixcontact.net/catalog







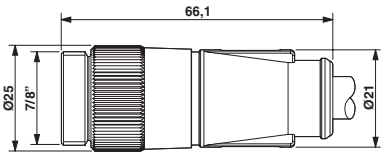


Free end		Order No.		Order No.		Order No.		Order No.		Order No.
			2 m	1429350	2 m	1429444	2 m	1431173		
			5 m	1429363	5 m	1429457	5 m	1431186		
			10 m	1429376	10 m	1429460	10 m	1431199		
			15 m	1429389	15 m	1429473	15 m	1431209		
			20 m	1429392	20 m	1429486				
			25 m	1429402	25 m	1429499				
			30 m	1429415	30 m	1429509				
			40 m	1429428	40 m	1429512				
			50 m	1429431	50 m	1429525				
		Variable	1432389				Variable	1431322	Variable	1431335
7/8" socket, straight										
				0.3 m	1429538	0.3 m	1429664			
				0.5 m	1429554	0.5 m	1429677			
				1 m	1429567	1 m	1429680			
		2 m	1429712	2 m	1429570	2 m	1429693			
		5 m	1429185	5 m	1429583	5 m	1429703			
		10 m	1429198	10 m	1429596	10 m	1429716			
		15 m	1429208	15 m	1429606	15 m	1429729			
		20 m	1429211	20 m	1429619	20 m	1429732			
		25 m	1429224	25 m	1429622	25 m	1429745			
		30 m	1429237	30 m	1429635	30 m	1429758			
		40 m	1429240	40 m	1429648	40 m	1429761			
		50 m	1429253	50 m	1429651	50 m	1429774			
7/8" socket, angled										
				0.3 m	1429787	0.3 m	1429907			
				0.5 m	1429790	0.5 m	1429910			
				1 m	1429800	1 m	1429923			
		2 m	1429266	2 m	1429813	2 m	1429936			
		5 m	1429279	5 m	1429826	5 m	1429949			
		10 m	1429282	10 m	1429839	10 m	1429952			
		15 m	1429295	15 m	1429842	15 m	1429965			
		20 m	1429305	20 m	1429855	20 m	1429978			
		25 m	1429318	25 m	1429868	25 m	1429981			
		30 m	1429321	30 m	1429871	30 m	1429994			
		40 m	1429334	40 m	1429884	40 m	1430006			
		50 m	1429347	50 m	1429897	50 m	1430019			
M12 socket, straight										
							0.3 m	1431254		
							0.5 m	1431267		
							1 m	1431270		
		2 m	1431212				2 m	1431283		
		5 m	1431225				5 m	1431296		
		10 m	1431238				10 m	1431306		
		15 m	1431241				15 m	1431319		
		Variable	1431348				Variable	1431364	Variable	1431377
M12 socket, angled										
										
		Variable	1431351				Variable	1431380	Variable	1431393

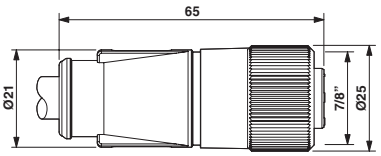
Ordering example for articles with variable cable:

For a Foundation Fieldbus cable equipped with a straight M12 connector at one end and an M12 socket on the other, and which has a length of 34.5 m, the order data is as follows:

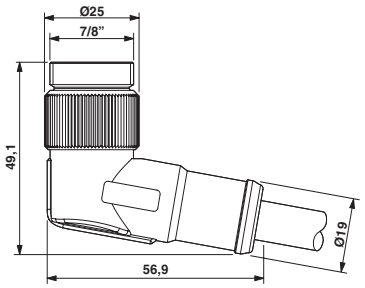
Order No.	Length [m] maximum 50 m
1431364 /	34.5 **Step width:** 0.5 m



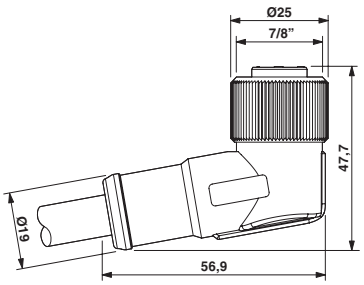
Dimensional drawing: 7/8" connector, straight



Dimensional drawing: 7/8" socket, straight



Dimensional drawing: 7/8" connector, angled



Dimensional drawing: 7/8" socket, angled

Color coding	Pin assignment	
	7/8"	M12
BU	1	1
BN	2	2
Shield	3	3
n. c.	4	4

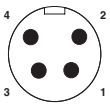
Technical data		7/8"	Connectors M12
Nominal current I_N	[A]	5.2	4
Rated voltage	[V]	300	250
Volume resistance		≤ 5 mΩ	≤ 5 mΩ
Conductor cross-section	AWG	18	-
Contact material		CuZn	CuSn
Contact surface material		AU	Ni/Au
Contact carrier material		PA 66	TPU GF
Material of grip body		TPU	TPU, hardly inflammable, self-extinguishing
Material, knurls		High-grade steel	High-grade steel
Degree of protection		IP67	IP65/IP68/IP69K
Ambient temperature			
Fixed installation	[°C]	-30 ... 105	-30 ... 105
Plug/socket	[°C]	-40 ... 105	-25 ... 90

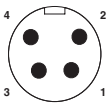
7/8" mini assembled cables

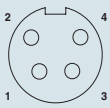
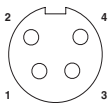
For applications in circuits of the intrinsic safety "i" protection type.

Note:

For more technical data, including the electrical characteristics as per EN 60079-14, see:
www.phoenixcontact.com/catalog





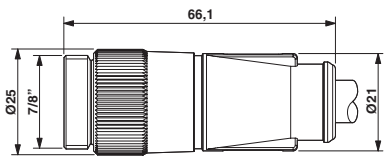
Free end		Order No.		Order No.		Order No.
			2 m	**1433964**	2 m	**1434057**
			5 m	**1433977**	5 m	**1434060**
			10 m	**1433980**	10 m	**1434073**
	Variable	**1434620**				
7/8" socket, straight						
			0.3 m	**1434141**	0.3 m	**1434264**
			0.5 m	**1434154**	0.5 m	**1434277**
			1 m	**1434167**	1 m	**1434280**
	2 m	**1433786**	2 m	**1434170**	2 m	**1434293**
	5 m	**1433799**	5 m	**1434183**	5 m	**1434303**
	10 m	**1433809**	10 m	**1434196**	10 m	**1434316**
7/8" socket, angled						
			0.3 m	**1434387**	0.3 m	**1434507**
			0.5 m	**1434390**	0.5 m	**1434510**
			1 m	**1434400**	1 m	**1434523**
	2 m	**1433870**	2 m	**1434413**	2 m	**1434536**
	5 m	**1433883**	5 m	**1434426**	5 m	**1434549**
	10 m	**1433896**	10 m	**1434439**	10 m	**1434552**

Ordering example for articles with **variable** cable:

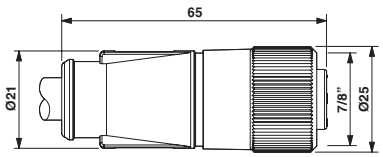
For a Foundation Fieldbus cable having a length of 34.5 m, the order data is as follows:

Order No.	Length [m] maximum 50 m
1434620 /	34.5
	Step width: 0.5 m

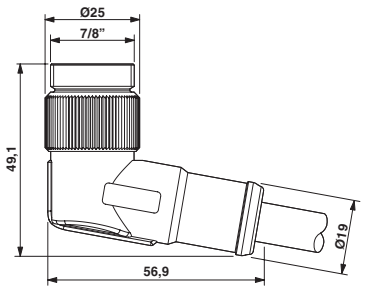
Color coding		Pin assignment	
		7/8"	M12
BU		1	1
BN		2	2
Shield		3	3
n. c.		4	4



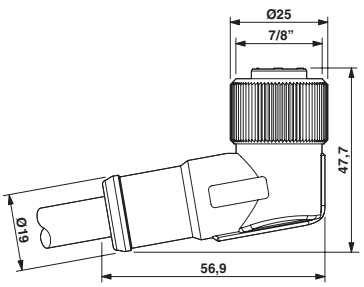
Dimensional drawing: 7/8" connector, straight



Dimensional drawing: 7/8" socket, straight



Dimensional drawing: 7/8" connector, angled



Dimensional drawing: 7/8" socket, angled

Technical data		7/8"
Nominal current I_N	[A]	5.2
Rated voltage	[V]	-
Volume resistance		≤ 5 mΩ
Conductor cross-section	AWG	18
Contact material		CuZn
Contact surface material		AU
Contact carrier material		PA 66
Material of grip body		TPU
Material, knurls		High-grade steel
Degree of protection		IP67
Ambient temperature		
Fixed installation	[°C]	-30 ... 105
Plug/socket	[°C]	-40 ... 105

M12 flush-type connector, shielded

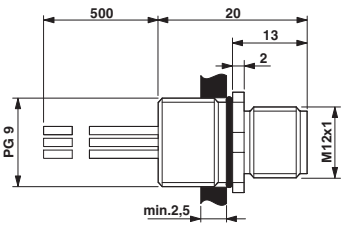
Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Front mounting, with halogen-free litz wires

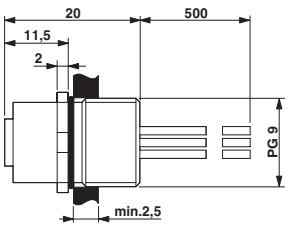
Rear mounting, wave soldering

Description	No. of pos.	Encoding	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
M12 pin	4	A - standard	**1431432**	1	**-**	-
M12 socket	4	A - standard	**1431429**	1	**-**	-
M12 pin	5	A - standard	**-**	-	**1554746**	20
M12 socket	5	A - standard	**-**	-	**1554733**	20
EMC nut Pg9	-	-	**-**	-	**1440177**	10

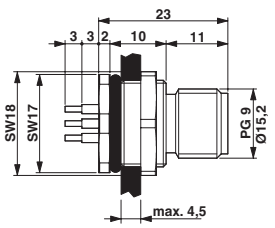
Technical data		4-pos.	5-pos.
Electrical data			
Rated voltage		250 V	60 V
Nominal current I_N		4 A	4 A
Volume resistance		3 mΩ	3 mΩ
Insulation resistance		100 MΩ	100 MΩ
Surge voltage category		II	II
Mechanical data			
Material contact / contact surface		CuZn / Au	CuZn / Au
Contact carrier material		PA66 GF	PA 66
Inflammability class acc. to UL 94		V0	HB
Pollution degree		3	3
Degree of protection		IP67	IP67/IP69K
Connection data			
Type of connection		Individual wires	Solder pins
Conductor cross-section		0.25 mm²	-
Cable type		TPE litz wire	-
Temperature data			
Plug/socket	[°C]	-25 ... 85	-25 ... 85



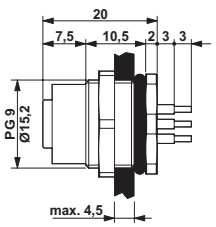
Flush-type connector M12, front mounting, with litz wires



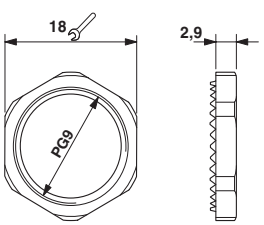
Flush-type socket M12, front mounting, with litz wires



M12 flush-type connector, rear mounting, for wave soldering processes



Flush-type socket M12, rear mounting, for wave soldering processes



EMC nut Pg9

Termination resistor, T-distributor

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

SAC-5P-M12MS PB TR

M12 termination resistor

SAC-M12T/2XM12 PB DP

M12 T distributor

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Termination resistor, M12						
- PROFIBUS	**SAC-5P-M12MS PB TR**	**1507803**	5			
- DeviceNet™/CANopen	**SAC-5P-M12MS CAN TR**	**1507816**	5			
Termination resistor, M8						
- DeviceNet™	**SAC-5P-M 8MS DN TR**	**1435988**	1			
Bus system T-connector, 5-pos., M12						
- PROFIBUS				**SAC-M12T/2XM12 PB DP**	**1507780**	1
5-pos., parallel				**SAC-5P-M12T/2XM12 VP**	**1541186**	1

Technical data		
Electrical data		
Rated voltage	60 V	60 V
Nominal current I_N	4 A	4 A
Volume resistance	≤ 5 mΩ	≤ 5 mΩ
Material data		
Contact material	CuSn	Cu alloy
Contact surface material	Ni/Au	Ni/Au
Contact carrier material	TPU GF	PUR
Material of grip body	TPU, hardly inflammable, self-extinguishing	PUR
Material, knurls	Zinc die-cast, (nickel-plated)	Nickel-plated brass
Inflammability class acc. to UL 94	HB	V0
Degree of protection	IP65/IP67/IP69K	IP68
Temperature data		
Ambient temperature (operation)	-25°C ... 90°C (Connector)	-25°C ... 80°C (plug/socket)

Termination resistor, T-distributor

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

SAC-4P-MINMS FF-TR VA

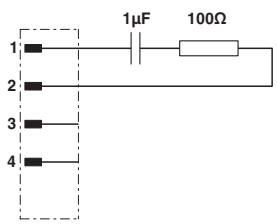
7/8" termination resistor

SAC-4P-MINT/2XMIN FF VA

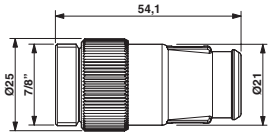
7/8"-T-distributor

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Termination resistor, 4-pos., high-grade steel knurl						
7/8"-UNF connector	**SAC-4P-MINMS FF-TR VA**	**1430023**	1			
M12 connector	**SAC-4P-M12MS FF TR VA**	**1431403**	5			
Bus system T distributor, 4-pos., high-grade steel knurl						
Socket 7/8"-16UNF on socket 7/8"-16UNF and connector 7/8"-16UNF				**SAC-4P-MIN-T/2XMIN FF VA**	**1430035**	1
Socket M12 on socket M12 and connector M12				**SAC-4P-M12T/2XM12 FF VA**	**1431416**	5

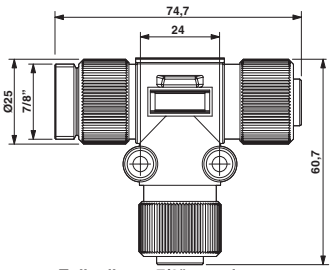
Technical data		
Electrical data		
Rated voltage	50 V	300 V
Nominal current I_N	-	5.2 A
Volume resistance	≤ 5 mΩ	≤ 5 mΩ
Material data		
Contact material	CuZn	CuZn
Contact surface material	AU	AU
Contact carrier material	PA 66	PA 66
Material of grip body	TPU	TPU
Material, knurls	High-grade steel	High-grade steel
Inflammability class acc. to UL 94	HB	HB
Degree of protection	IP67	IP67
Temperature data		
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 105°C



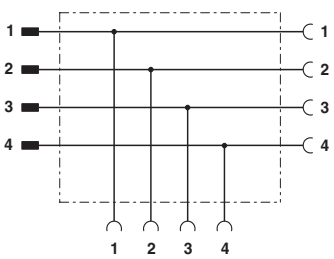
Contact assignment and wiring of termination resistors



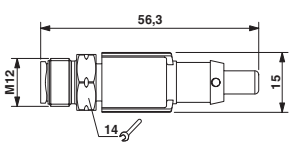
7/8" termination resistor



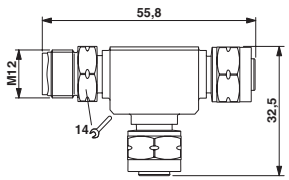
T-distributor 7/8", top view



Contact assignment of T distributors



M12 termination resistor



M12 T-distributor

Key symbols

With UL style

UV resistant

Good oil resistance

Halogen-free

Flexible cable conduit capable

Extremely good flame resistance

Good chemical resistance

Transmission properties

Welding spark-resistant

High temperature resistance

Suitable for torsion stresses

INTERBUS cable – type 900

Remote bus cable for highly flexible use in dry and moist rooms and in harsh industrial environments. The remote bus cable is certified in accordance with the requirements of the Interbus Club under No. 117.
The cable is halogen-free and flame resistant in accordance with VDE 0482, Part 265-2-1 / IEC 332-1. The conductor insulation of the inner conductor is made of polyethylene.

Outer sheath material	**PVC**
Min. bending radius	**7.5 x D**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
900 **PVC** Green	6-pos.	M12	3 x 2 x 0.25 mm² 32 x 0.1 mm		Yellow, green, white, brown, pink, gray	PE	-30°C ... 70°C	266 267

PROFIBUS cable – type 910

Profibus cable, suitable for use in drag chains in harsh industrial environments. This cable is also oil-resistant.

Outer sheath material	**PUR**
No. of bending cycles	**5 million**
Min. bending radius	**10 x D**
Traverse path	**10 m**
Acceleration	**7 m/s²**
Speed	**180 m/min.**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
910 **PUR** Violet	2-pos.	M12	1 x 2 x AWG 24 19 x 0.15 mm		Green, red	PE	-40°C ... 80°C	272 273

DeviceNet™ / CANopen cable – type 920

Devicenet / CANopen cable for flexible installation. The cable is flexible cable conduit capable and suitable for use in harsh industrial environments. It is also oil-resistant.

Outer sheath material	**PUR**
No. of bending cycles	**5 million**
Min. bending radius	**10 x D**
Traverse path	**10 m**
Acceleration	**7 m/s²**
Speed	**180 m/min.**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
920 **PUR** Violet	4-pos.	M12, M8	1 x 2 x AWG 22 19 x 0.15 mm + 1 x 2 x AWG 24 19 x 0.15 mm		Red, black, blue, white	PO, PE	-40°C ... 80°C	278 279 280 281

CC-Link cable – type 990

CC-Link cable for fixed installation for indoor applications. This cable is flame resistant in accordance with UL 1685.

Outer sheath material **PVC**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
990 **PVC** Red	3-pos.	M12	3 x AWG 22 7 x 0.28 mm		White, blue, yellow	Cell PE	-30°C ... 60°C	290

FOUNDATION Fieldbus cable – type 960 / 961

Foundation Fieldbus cable for fixed installation. This cable is UV and flame resistant in accordance with UL1685. It is thus suitable for outdoor as well as indoor applications. The cable type 961 is available in blue for special applications in the Ex zone.

Outer sheath material **PVC**

Min. bending radius **10 x D**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
960 **PVC** Orange	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	292
961 **PVC** Blue	2-pos.	7/8", M12	2 x AWG 20 7 x 0.3 mm		Blue, orange	PO	-30°C ... 105°C	294

PROFINET cable – type 93A

Profinet cable for fixed installation. This cable is flame resistant and complies with the transmission properties in accordance with CAT5e.

Outer sheath material **PVC**

Min. bending radius **7.5 x D**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
93A **PVC** Green	4-pos.	M12, PP, RJ45	4 x AWG 22 Solid strand		White, yellow, blue, orange	PE	-40°C ... 75°C	233

PROFINET cable – type 93B

Profinet cable for flexible installation. This cable is partially oil-resistant. It is UV resistant in accordance with UL1581 Sec.1200 and is thus also suitable for outdoor applications. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material **PVC**

Min. bending radius **7 x D**
Tested at **20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
93B **PVC** Green	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	236 237

PROFINET cable – type 93C

Profinet cable for use in drag chains. This cable is halogen-free and oil-resistant. It is UV resistant and is thus suitable for outdoor applications. This cable complies with the transmission properties in accordance with CAT5e.

Outer sheath material PUR

Number of bending cycles	**3 million**
Minimum bending radius	**7.5 x D**
Traverse path	**10 m**
Acceleration	**4 m/s²**
Speed	**4 m/s**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
93C **PVC** Green	4-pos.	M12, PP, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	PE	-40°C ... 70°C	238 239

Ethernet cable – type 93E

Ethernet cable for use in welding robots and for torsion. This cable is halogen-free and oil-resistant. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material PUR

No. of bending cycles	**500,000**
No. of bending cycles	**30,000 at +/- 180°**
Min. bending radius	**5 x D**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
93E **PUR** Blue	4-pos.	M12, PP, RJ45	2 x 2 x AWG 26 19 x 0.167 mm Twisted pair		White-orange, orange, white-green, green	PE	-25°C ... 80°C	202 203

PROFINET cable – type 936

Profinet cable for laying inside and outside rail vehicles, suitable for connecting fixed and movable parts. This cable fulfills all fire protection requirements in rail vehicles in accordance with DIN 5510-2 and BS 6853. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material **RADOX**

Min. bending radius **6 x D**
Tested at **20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
936 **RADOX** Black	4-pos.	M12, RJ45	4 x AWG 22 7 x 0.25 mm		White, yellow, blue, orange	RADOX	-25°C ... 90°C	240 241

Ethernet cable – type 94A

Ethernet cable for fixed installation. This cable complies with the transmission properties in accordance with CAT5e.

Outer sheath material **PUR**

Min. bending radius **7 x D**
Tested at **20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94A **PUR** Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 24 Solid strand Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20 ... 70°C	210

Ethernet cable – type 94B

Ethernet cable for flexible installation. This cable is oil, chemical and flame resistant. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material	**PUR**
Min. bending radius	**7 x D**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94B **PUR** Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20 ... 70°C	204 205

Ethernet cable – type 94C

Ethernet cable for universal use in drag chains and, to some extent, for torsion. This cable is oil, chemical and flame resistant. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material	**PUR**
No. of bending cycles	**10 million**
Torsion	**≤ ±30°**
Min. bending radius	**7.5 x D**
Traverse path	**10 m**
Acceleration	**5 m/s²**
Speed	**180 m/min.**
Tested at	**20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94C **PUR** Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 19 x 0.1 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-20 ... 60°C	206 207

Ethernet cable – type 94D

Ethernet cable for flexible installation. This cable is partially oil-resistant. It is UV resistant in accordance with UL1581 Sec.1200 and is thus also suitable for outdoor applications. This cable complies with the transmission properties in accordance with CAT5e.

Outer sheath material PVC

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94D **PVC** Black	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 mm Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PP	-40°C ... 80°C	210

Ethernet cable – type 94E

Ethernet for fixed installation. This cable is oil, chemical and flame resistant. It is also halogen-free and complies with the transmission properties in accordance with CAT6a.

Outer sheath material PUR

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94E **PUR** Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 23 Solid strand Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-20 ... 80°C	210

Ethernet cable – type 94F

Ethernet cable for flexible laying. This cable is oil, chemical and flame resistant. It is also halogen-free and complies with the transmission properties in accordance with CAT6a.

Outer sheath material **PUR**

Min. bending radius **10 x D**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
94F **PUR** Blue	8-pos.	M12, PP, RJ45	4 x 2 x AWG 26 7 x 0.16 Twisted pair		White-blue, blue, white-orange, orange, white-green, green, white-brown, brown	PE	-40°C ... 70°C	208 209

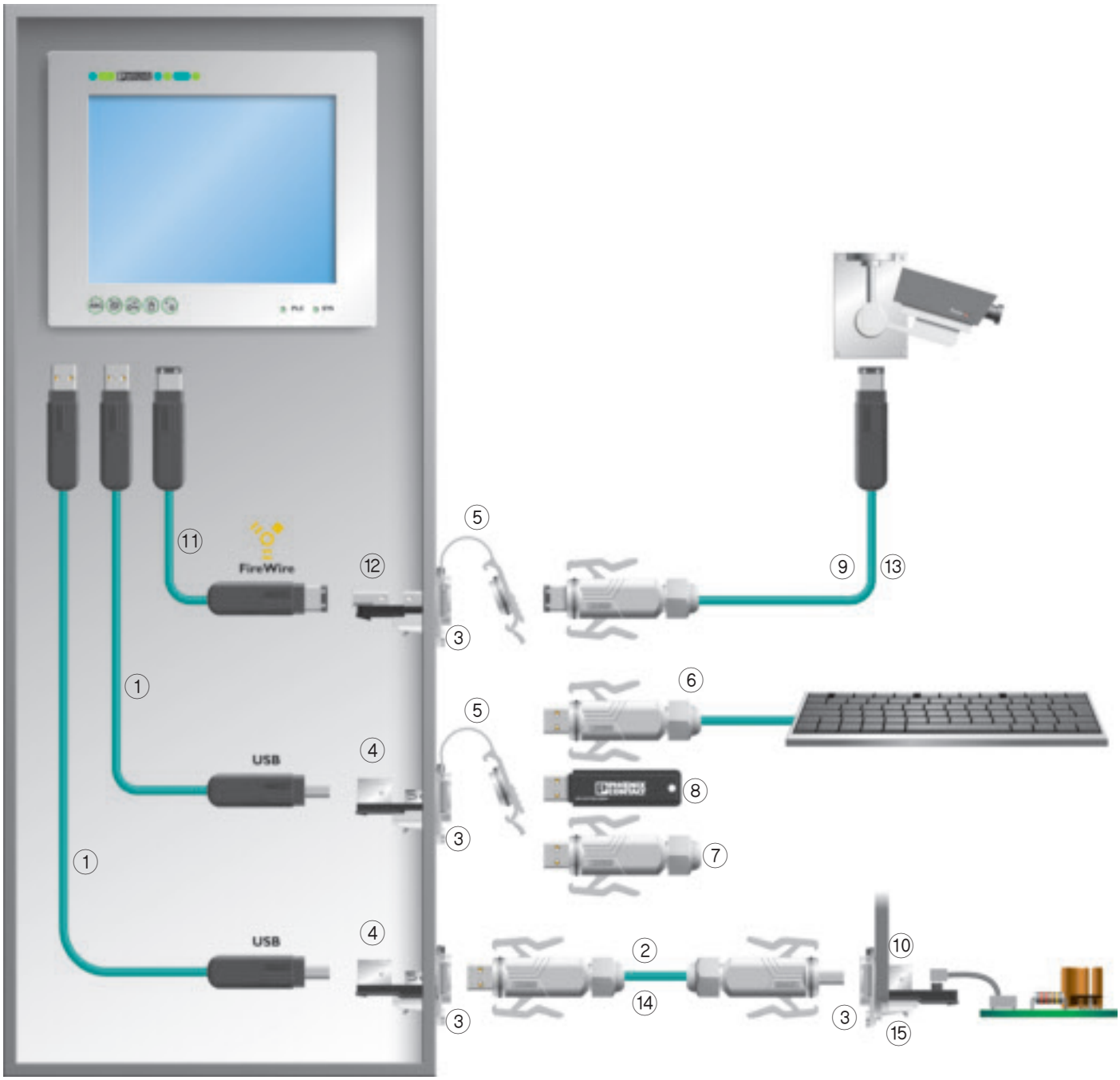
VARAN cable – type 970

Varan cable for flexible installation. This cable is oil, chemical and flame resistant. It complies with the transmission properties in accordance with CAT5e.

Outer sheath material **Santoprene**

Min. bending radius **7.5 x D**
Tested at **20 ... 25°C**

Type	Number of positions	Usage	Design	cross-section	Conductor colors	Conductor insulation	Temperature range	Page
970 **Santoprene** Black	6-pos.	M12, PP, RJ45	1 x 2 x AWG 22 19 x 0.1 mm + 2 x 2 x AWG 26 19 x 0.1 mm		Brown, blue white-orange, orange, white-green, green	PE	-40°C ... 80°C	254


FireWire
USB
USB
1
1
3
3
3
3
4
4
5
5
6
7
8
9
10
11
12
13
14
15
2

USB FireWire

A star topology is used for USB and FireWire. Each transmission cable individually runs from a central device, e.g. an industrial PC, to a bus device.

The VARIOSUB USB and FireWire connectors allow these interfaces to be used directly on the machine and in the control cabinet. Thanks to the rugged locking clip interlock and the connector compatibility with the standard, they can also cover commonly used applications in industrial environments. Pre-assembled cables in IP20 and IP67 versions, panel feed-throughs for control cabinets, device connections and memory sticks are available to users. The components are well shielded against high electromagnetic interferences and are suitable for data transmission in accordance with USB 2.0 with 480 Mbps and IEEE 1394 with 400 Mbps.

Popular topology and installation situations are shown in the adjacent drawing along with their corresponding components.

However, these examples do not claim to be complete. For more information, please refer to the catalog pages containing the detailed product descriptions.

USB components

No.	Order designation	Order No.	Page
1	Assembled USB cable with connectors with IP20 degree of protection	1654853	311
2	Assembled USB cable with connectors with IP67 degree of protection	1653870	311
3	Panel mounting frame with IP67 degree of protection	1653744	310
4	USB female insert, socket/socket	1653838	310
5	Protective cover for the panel mounting frame with IP67 degree of protection	1652606	310
6	Assembled USB cable with a connector with IP67 degree of protection and open cable end	1655742	311
7	USB memory stick with IP67 degree of protection	1405109	310
8	USB memory stick with IP20 degree of protection	1405086	310
9	Assembled USB cable with connectors with IP20/67 degree of protection	1653896	311
10	USB female insert with flat-ribbon cable terminal strip	1653867	310

FireWire components

No.	Order designation	Order No.	Page
3	Panel mounting frame with IP67 degree of protection	1653744	312
5	Protective cover for the panel mounting frame with IP67 degree of protection	1652606	312
11	Assembled FireWire cable with connectors with IP20 degree of protection	1654222	313
12	FireWire female insert, socket/socket	1654329	312
13	Assembled FireWire cable with connectors with IP20/67 degree of protection	1654141	313
14	Assembled FireWire cable with connectors with IP67 degree of protection	1653993	313
15	FireWire female insert with flat-ribbon cable terminal strip	1654332	312

Panel feed-throughs, memory sticks, protective cover

Panel feed-throughs can be implemented with the IP67 panel mounting frame and the USB female inserts. The USB memory sticks with IP67 degree of protection enable wireless data transmission in rough industrial environments.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-04-...-F/IP67

USB female inserts and panel mounting frames IP67, Freenet system

VS-04-MS-2GB-IP...

USB memory sticks, IP20 and IP67

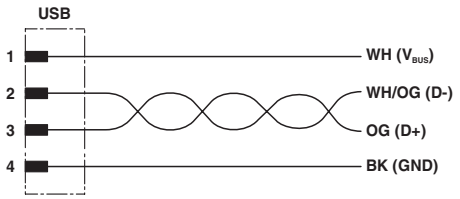
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
USB female insert, 4-pos., USB socket type A to USB socket type B, can be plugged in both directions	**VS-04-BUA-BUB-F/IP67**	**1653838**	1			
USB female insert, 4-pos., female on flat-ribbon cable terminal strip, pitch 2.54						
Socket, type A	**VS-04-BUA-FK-F/IP67**	**1653854**	1			
Socket, type B	**VS-04-BUB-FK-F/IP67**	**1653867**	1			
USB cable, assembled on one side with USB connectors						
Connector type: A, length: 0.3 m	**VS-04-C-SDA/PH/0,3**	**1405552**	1			
Connector type: B, length: 0.3 m	**VS-04-C-SDB/PH/0,3**	**1405565**	1			
Connector type: A on B, length: 1.8 m	**VS-04-C-SDA/SDB/1,8**	**1405578**	1			
Panel mounting frame, for round assembly opening, with grommet, without mounting screws						
Military gray RAL 7042	**VS-A-F-IP67**	**1653744**	5			
USB memory stick, memory 2 GB, USB 2.0						
IP20				**VS-04-MS-2GB-IP20**	**1405086**	1
IP67				**VS-04-MS-2GB-IP67**	**1405109**	1
Protective cover, flat, for covering the contact insert in the panel mounting frame						
Military gray RAL 7042	**VS-08-SD-F**	**1652606**	5			

Technical data	VS-04-BU...	VS-A-F-IP67	VS-04-MS-...-IP20	VS-04-MS-...-IP67
Electrical data				
Rated voltage	30 V	-	-	-
Transmission speed	480 Mbps	-	480 Mbps	480 Mbps
Material data				
Housing material	PC	PA	PA	-
Seal material	-	NBR	-	-
Inflammability class acc. to UL 94	V0	V0	-	-
Mechanical data				
No. of pos.	4	-	4	4
Degree of protection	IP20	IP67	IP20	IP67
Insertion/withdrawal cycles	≥ 1000	≥ 1000	≥ 500	-
Temperature data				
Ambient temperature (operation)	-15°C ... 65°C	-40°C ... 80°C	-15°C ... 60°C	-15°C ... 60°C

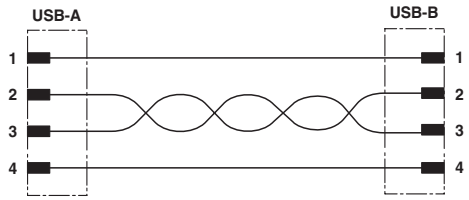
Assembled conductors IP20, IP67

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

Free end		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	**1653935**	2 m	**1653896**	
	5 m	**1653948**	5 m	**1653906**	
USB type B connector, IP67					
	2 m	**1653919**	2 m	**1653870**	
	5 m	**1653922**	5 m	**1653883**	



USB cable with a free end



USB connector pin assignment

Technical data		IP20	IP67
Transmission characteristics (category)		CAT7, For USB 2.0 (480 mbps)	CAT7, For USB 2.0 (480 mbps)
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
Ambient temperature			
Fixed installation	[°C]	-20 ... 60	-20 ... 60
Flexible installation	[°C]	0 ... 50	0 ... 50

Panel feed-throughs, protective cover

Panel feed-throughs and device connections can be implemented with the IP67 panel mounting frame and the FireWire female inserts. The shielded lines are suitable for data transmissions with 400 Mbps.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-06-BU-...F/IP67

FireWire female inserts, Freenet system

VS-...-F...

IP67 panel mounting frame, for SCRJ female inserts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
FireWire female insert, 6-pos., socket on socket	**VS-06-BU-BU-F/IP67**	**1654329**	1			
FireWire female insert, 6-pos., socket on flat-ribbon cable terminal strip, pitch 2.54	**VS-06-BU-FK-F/IP67**	**1654332**	1			
Panel mounting frame, for round assembly opening, with grommet, without mounting screws Military gray RAL 7042				**VS-A-F-IP67**	**1653744**	5
Protective cover, flat, for covering the contact insert in the panel mounting frame Military gray RAL 7042				**VS-08-SD-F**	**1652606**	5

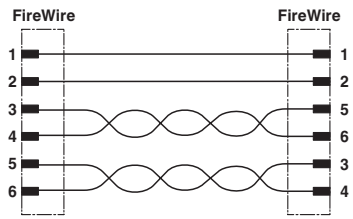
Technical data		
Electrical data		
Rated voltage	30 V	-
Transmission speed	400 Mbps	-
Material data		
Housing material	PC	PA
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
No. of pos.	6	-
Degree of protection	IP20	IP67
Insertion/withdrawal cycles	≥ 1000	≥ 1000
Temperature data		
Ambient temperature (operation)	-15°C ... 65°C	-40°C ... 80°C

Assembled conductors IP20, IP67

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

FireWire connector, IP20	FireWire connector, IP67

FireWire connector, IP20		Order No.		Order No.	Order No.
	0.5 m	**1654222**	0.5 m	**1654141**	
	1 m	**1654235**	1 m	**1654154**	
	2 m	**1654248**	2 m	**1654167**	
	5 m	**1654251**	5 m	**1654170**	
	7.5 m	**1656783**	7.5 m	**1655849**	
FireWire connector, IP67					
			0.5 m	**1653993**	
			1 m	**1654002**	
			2 m	**1654015**	
			5 m	**1654028**	
			7.5 m	**1656712**	



Contact assignment

Technical data		IP20	IP67
Rated voltage	[V]	30	30
Transmission characteristics (category)		CAT7, for FireWire (400 mbps)	CAT7, for FireWire (400 mbps)
Cable diameter	[mm]	6.7	6.7
Handle color		Black	Gray
No. of pos.		6	6
Insertion/withdrawal cycles		≥ 1000	≥ 1000
Degree of protection		IP20	IP67
Ambient temperature			
Fixed installation	[°C]	-20 ... 60	-20 ... 60
Flexible installation	[°C]	0 ... 50	0 ... 50

Data connectors – PLUSCON data

D-SUB matrix for sleeve housing and contact inserts

This matrix indicates which combinations of housing components and contact inserts can be used together.

For more product details and technical data, please refer to the following product pages.

For crimp contacts for crimp contact carriers, see page 324.

Shell size 1 ... 3				Screw connection			Solder connection					
							Straight solder cups					
				VS-...-ST-DSUB/...-MPT-0,5 VS-...-BU-DSUB/...-MPT-0,5			VS-...-ST-DSUB-EG VS-...-BU-DSUB-EG			VS-...-ST-DSUB-HD-EG VS-...-BU-DSUB-HD-EG		
				D-SUB contact insert Fixing: 2.5mm bore hole			D-SUB contact insert Fixing: 3mm bore hole			D-SUB contact insert, high-position Fixing: 3mm bore 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
	IP20 sleeve housing											
	VS-09-T-20-1-S-A	1655661		9	-	-	9	1688793	1688803	15	1655111	1655108
	VS-15-T-20-1-S-A	1655687		15	-	-	15	1688874	1688887	26	1655179	1655166
	VS-25-T-20-1-S-A	1655700		25	-	-	25	1689899	1689909	44	1655234	1655221
	VS-09-T-20-1-S-S	1655658		9	-	-	9	1688793	1688803	15	1655111	1655108
	VS-15-T-20-1-S-S	1655674		15	-	-	15	1688874	1688887	26	1655179	1655166
	VS-25-T-20-1-S-S	1655690		25	-	-	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-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

Note:
The EMC inner sleeve of the IP67 sleeve housing cannot be used on the panel mounting side.

Signal transmission

Solder connection

Angled solder pins

VS-...-ST-DSUB-ER
VS-...-BU-DSUB-ER

D-SUB contact insert
Fixing:
4-40 UNC thread and solder pins

Number of positions	Pin	Socket
9	1688382	1688405
15	1688081	1688120
25	1689873	1689886
9	-	-
15	-	-
25	-	-
9	-	-
15	-	-
25	-	-
9	-	-
15	-	-
25	-	-
9	1688382	1688405
9	-	-
15	1688081	1688120
15	-	-
25	1689873	1689886
25	-	-
9	1688382	1688405
9	-	-
15	1688081	1688120
15	-	-
25	1689873	1689886
25	-	-

VS-...-ST-DSUB-HD-ER
VS-...-BU-DSUB-HD-ER

D-SUB contact insert,
high-position, fixing:
4-40 UNC thread and solder pins

Number of positions	Pin	Socket
15	1655098	1656136
26	1655153	1655140
44	1655218	1655205
15	-	-
26	-	-
44	-	-
15	-	-
26	-	-
44	-	-
15	-	-
26	-	-
44	-	-
15	1655098	1656136
15	-	-
26	1655153	1655140
26	-	-
44	1655218	1655205
44	-	-
15	1655098	1656136
15	-	-
26	1655153	1655140
26	-	-
44	1655218	1655205
44	-	-

VS-...-ST-DSUB-LH-B
VS-...-BU-DSUB-LH-B

D-SUB contact insert
Fixing:
2.5 mm bore hole and solder metal plate

Number of positions	Pin	Socket
9	1654785	1654798
15	1654808	1654811
25	1654824	1654837
9	1654785	1654798
15	1654808	1654811
25	1654824	1654837
9	1654785	1654798
15	1654808	1654811
25	1654824	1654837
9	1654785	1654798
15	1654808	1654811
25	1654824	1654837
9	1654785	1654798
9	1654785	1654798
15	1654808	1654811
15	1654808	1654811
25	1654824	1654837
25	1654824	1654837
9	1654785	1654798
9	1654785	1654798
15	1654808	1654811
15	1654808	1654811
25	1654824	1654837
25	1654824	1654837

Crimp connection

Contact carriers for crimp contacts

VS-...-ST-DSUB-CD-...G
VS-...-BU-DSUB-CD-...G

D-SUB contact carrier
Fixing:
4-40 UNC thread

Number of positions	Pin	Socket
9	1688832	1688845
15	1688913	1688926
25	1689938	1689941
9	-	-
15	-	-
25	-	-
9	-	-
15	-	-
25	-	-
9	-	-
15	-	-
25	-	-
9	1688832	1688845
9	-	-
15	1688913	1688926
15	-	-
25	1689938	1689941
25	-	-
9	1688832	1688845
9	-	-
15	1688913	1688926
15	-	-
25	1689938	1689941
25	-	-

VS-...-ST-DSUB-CD-...
VS-...-BU-DSUB-CD-...

D-SUB contact carrier
Fixing: 3mm bore hole

Number of positions	Pin	Socket
9	1688858	1688861
15	1688939	1688942
25	1689954	1689967
9	1688858	1688861
15	1688939	1688942
25	1689954	1689967
9	1688858	1688861
15	1688939	1688942
25	1689954	1689967
9	1688858	1688861
15	1688939	1688942
25	1689954	1689967
9	1688858	1688861
9	1688858	1688861
15	1688939	1688942
15	1688939	1688942
25	1689954	1689967
25	1689954	1689967
9	1688858	1688861
9	1688858	1688861
15	1688939	1688942
15	1688939	1688942
25	1689954	1689967
25	1689954	1689967

VS-...-ST-DSUB-HD-CD-B
VS-...-BU-DSUB-HD-CD-B

D-SUB contact carrier,
high-position
Fixing: 3mm bore hole

Number of positions	Pin	Socket
15	1655137	1655124
26	1655195	1655182
44	1655250	1655247
15	1655137	1655124
26	1655195	1655182
44	1655250	1655247
15	1655137	1655124
26	1655195	1655182
44	1655250	1655247
15	1655137	1655124
26	1655195	1655182
44	1655250	1655247
15	1655137	1655124
15	1655137	1655124
26	1655195	1655182
26	1655195	1655182
44	1655250	1655247
44	1655250	1655247
15	1655137	1655124
15	1655137	1655124
26	1655195	1655182
26	1655195	1655182
44	1655250	1655247
44	1655250	1655247

Note:
For crimp contacts, see page 324.

Data connectors – PLUSCON data

D-SUB matrix for sleeve housing and contact inserts

This matrix indicates which combinations of housing components and contact inserts can be used together.

For power, coaxial contacts (PK) for contact carriers, see page 325.

For signal contacts (S) for contact carriers, see page 324.

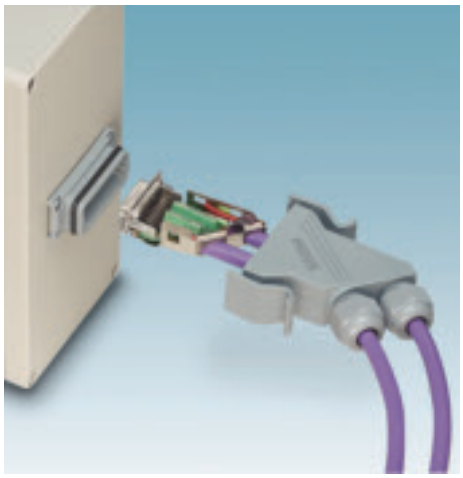
Shell size 1 ... 3				Signal transmission								
				Flat-ribbon cable connection			Gender changer					
										Number of positions 2PK/3PK/5PK		
				VS-...-ST-DSUB-FK VS-...-BU-DSUB-FK			VS-...-GC-ST/ST VS-...-GC-BU/BU			VS-...-ST-DSUB-...P VS-...-BU-DSUB-...P		
				D-SUB contact insert Fixing: 3 mm bore hole			D-SUB contact insert Fixing: 4-40 UNC thread			D-SUB contact carrier Fixing: 3 mm bore hole		
	Type	Order No.		Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket
	IP67 panel mounting											
	VS-09-A	1688366		9	1688816	1688829	9	1652651	1688722	2PK	1688418	1688421
	VS-15-A	1688036		15	1688890	1688900	15	1652677	1652664	3PK	1688201	1688214
	VS-25-A	1689750		25	1689912	1689925	25	1652693	1652680	5PK	1689970	1689983
	VS-25-A	1689750										
	IP20 sleeve housing											
	VS-09-T-20-1-S-A	1655661		9	-	-	9	-	-	2PK	-	-
	VS-15-T-20-1-S-A	1655687		15	-	-	15	-	-	3PK	-	-
	VS-25-T-20-1-S-A	1655700		25	-	-	25	-	-	5PK	-	-
	VS-25-T-20-1-S-A	1655700										
	VS-09-T-20-1-S-S	1655658		9	-	-	9	-	-	2PK	-	-
	VS-15-T-20-1-S-S	1655674		15	-	-	15	-	-	3PK	-	-
	VS-25-T-20-1-S-S	1655690		25	-	-	25	-	-	5PK	-	-
	VS-25-T-20-1-S-S	1655690										
	IP67 sleeve housing											
	VS-09-T-2M16	1688353		9	-	-	9	-	-	2PK	1688418	1688421
	VS-15-T-2PG11	1688052		15	-	-	15	-	-	3PK	1688201	1688214
	VS-25-T-2M20	1689792		25	-	-	25	-	-	5PK	1689970	1689983
	VS-25-T-2M20	1689792										
	VS-09-SET-STD	1689145	Panel mounting frame	9	1688816	1688829	9	1652651	1688722	2PK	1688418	1688421
			Sleeve housing	9	-	-	9	-	-	2PK	1688418	1688421
	VS-15-SET-STD	1689129	Panel mounting frame	15	1688890	1688900	15	1652677	1652664	3PK	1688201	1688214
			Sleeve housing	15	-	-	15	-	-	3PK	1688201	1688214
	VS-25-SET-STD	1652198	Panel mounting frame	25	1689912	1689925	25	1652693	1652680	5PK	1689970	1689983
			Sleeve housing	25	-	-	25	-	-	5PK	1689970	1689983
	VS-25-SET-STD	1652198	Panel mounting frame									
			Sleeve housing									
	VS-09-SET-EMV	1689158	Panel mounting frame	9	1688816	1688829	9	1652651	1688722	2PK	1688418	1688421
			Sleeve housing	9	-	-	9	-	-	2PK	-	-
	VS-15-SET-EMV	1689132	Panel mounting frame	15	1688890	1688900	15	1652677	1652664	3PK	1688201	1688214
			Sleeve housing	15	-	-	15	-	-	3PK	-	-
	VS-25-SET-EMV	1652208	Panel mounting frame	25	1689912	1689925	25	1652693	1652680	5PK	1689970	1689983
			Sleeve housing	25	-	-	25	-	-	5PK	-	-
	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.

Note: When installing the gender changer in the data front plate of the VARIOSUB service interface, the 1656961 VS-SI-SCREW-GC must be used.

Power and signal transmission									Power				
	Angled solder pins					Angled solder pins			Angled solder pins			Screw connection	
	Number of positions 2PK/3PK/5PK			Number of positions 1PK-4S/2PK-5S/4PK-5S/3PK-10S					Number of positions 3/5				
	VS-...-ST-DSUB-...P-LH VS-...-BU-DSUB-...P-LH			VS-...-ST-DSUB-...P-...S VS-...-BU-DSUB-...P-...S			VS-...-ST-DSUB-...P-...S-LH VS-...-BU-DSUB-...P-...S-LH		VS-PSC 1,5/...-M PE VS-PSC 1,5/...-M			PSC 1,5/...-F	
	D-SUB contact carrier Fixing: 4-40 UNC thread and solder pins			D-SUB contact insert Fixing: 3 mm bore hole			D-SUB contact insert Fixing: 4-40 UNC thread and solder pins		D-SUB contact insert Fixing: M3 threads and solder pins			D-SUB contact insert Fixing: 3 mm bore hole	
	Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Socket	Number of positions	Pin	Pin with PE	Number of positions	Socket
	2PK	1655292	1655289	1PK-4S	1689006	1689019	1PK-4S	1655315	1655302	3	1689310	1689336	3	-
	3PK	1655331	1655328	2PK-5S	1688227	1688230	2PK-5S	1655360	1655344	5	1688825	1689323	5	-
	5PK	1655441	1655438	3PK-10S	1689996	1690008	3PK-10S	1655425	1655412					
				4PK-5S	1655386	1655373	4PK-5S	1655409	1655399					
	2PK	-	-	1PK-4S	-	-	1PK-4S	-	-	3	-	-	3	1841909
	3PK	-	-	2PK-5S	-	-	2PK-5S	-	-	5	-	-	5	1841912
	5PK	-	-	3PK-10S	-	-	3PK-10S	-	-					
				4PK-5S	-	-	4PK-5S	-	-					
	2PK	-	-	1PK-4S	-	-	1PK-4S	-	-	3	-	-	3	1841909
	3PK	-	-	2PK-5S	-	-	2PK-5S	-	-	5	-	-	5	1841912
	5PK	-	-	3PK-10S	-	-	3PK-10S	-	-					
				4PK-5S	-	-	4PK-5S	-	-					
	2PK	-	-	1PK-4S	1689006	1689019	1PK-4S	-	-	3	-	-	3	1841909
	3PK	-	-	2PK-5S	1688227	1688230	2PK-5S	-	-	5	-	-	5	1841912
	5PK	-	-	3PK-10S	1689996	1690008	3PK-10S	-	-					
				4PK-5S	1655386	1655373	4PK-5S	-	-					
	2PK	1655292	1655289	1PK-4S	1689006	1689019	1PK-4S	1655315	1655302	3	1689310	1689336	3	-
	2PK	-	-	1PK-4S	1689006	1689019	1PK-4S	-	-	3	-	-	3	1841909
	3PK	1655331	1655328	2PK-5S	1688227	1688230	2PK-5S	1655360	1655344	5	1688825	1689323	5	-
	3PK		-	2PK-5S	1688227	1688230	2PK-5S	-	-	5	-	-	5	1841912
	5PK	1655441	1655438	3PK-10S	1689996	1690008	3PK-10S	1655425	1655412					
	5PK	-	-	3PK-10S	1689996	1690008	3PK-10S	-	-					
				4PK-5S	1655386	1655373	4PK-5S	1655409	1655399					
				4PK-5S	1655386	1655373	4PK-5S	-	-					
	2PK	1655292	1655289	1PK-4S	1689006	1689019	1PK-4S	1655315	1655302	3	1689310	1689336	3	-
	2PK	-	-	1PK-4S	-	-	1PK-4S	-	-	3	-	-	3	1841909
	3PK	1655331	1655328	2PK-5S	1688227	1688230	2PK-5S	1655360	1655344	5	1688825	1689323	5	-
	3PK		-	2PK-5S	-	-	2PK-5S	-	-	5	-	-	5	1841912
	5PK	1655441	1655438	3PK-10S	1689996	1690008	3PK-10S	1655425	1655412					
	5PK	-	-	3PK-10S	-	-	3PK-10S	-	-					
				4PK-5S	1655386	1655373	4PK-5S	1655409	1655399					
				4PK-5S	-	-	4PK-5S	-	-					

Contact inserts



VS-...-DSUB/...-MPT-0,5

D-SUB contact inserts with screw connection, fixing: 2.5 mm drill hole

The D-SUB contact inserts are available as D-SUB 09, D-SUB 15 and D-SUB 25 versions and with various connection methods.

The male and female inserts with screw connection are ideal for use in the connector housings VARIOSUB D-SUB IP67 and can be used for conductor cross-sections of 0.14 mm² to 0.5 mm². The contact inserts with straight solder cups allow conductors to be soldered directly. The contact inserts with angled solder cups for PCB assembly are available in two versions. The contact inserts with mounting bracket are particularly suited for device integration. The versions with solder metal plates allow you to use PCBs you have made yourself in the VARIOSUB D-SUB IP67 connector housings.

The male and female inserts in a high position design (High Density) enable even more data lines to be connected to each other in a confined space. They are available in the sizes D-SUB 09, 15 and 25 and offer a very high packing density with 15, 26 or 44 positions.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

Description	Design	No. of pos.	Type	Order No.	Pcs. / Pkt.
D-SUB contact insert					
Male	09	9	**VS-09-ST-DSUB/9-MPT-0,5**	**1688379**	10
Female	09	9	**VS-09-BU-DSUB/9-MPT-0,5**	**1688395**	10
Male	15	15	**VS-15-ST-DSUB/16-MPT-0,5**	**1688078**	10
Female	15	15	**VS-15-BU-DSUB/16-MPT-0,5**	**1688094**	10
Male	25	25	**VS-25-ST-DSUB/25-MPT-0,5**	**1689789**	10
Female	25	25	**VS-25-BU-DSUB/25-MPT-0,5**	**1689776**	10
D-SUB contact insert					
Male	09	9			
Female	09	9			
Male	15	15			
Female	15	15			
Male	25	25			
Female	25	25			
D-SUB contact insert, high density					
Male	09	15			
Female	09	15			
Male	15	26			
Female	15	26			
Male	25	44			
Female	25	44			
D-SUB contact insert					
Male	09	9			
Female	09	9			
Male	15	15			
Female	15	15			
Male	25	25			
Female	25	25			

Technical data	
Electrical data	
Rated voltage	60 V
Rated current	5 A
Surge voltage category	III
Material data	
Contact material	Copper alloy
Contact surface material	Gold over nickel
Contact carrier material	PBTP
Inflammability class acc. to UL 94	V0
Mechanical data	
Pollution degree	2
Conductor cross-section	0.14 mm² ... 0.5 mm²
Connection cross-section AWG	26 ... 20
Insertion/withdrawal cycles	≥ 200
Type of connection	Screw connection
Temperature data	
Ambient temperature (operation)	-20°C ... 80°C

VS-...-DSUB...EG

With solder cups,
fixing by means of drilled hole 3 mm

VS-...-DSUB...ER

With angled solder pins for PCB assembly,
fixing by means of thread 4-40 UNC and solder pins

VS-...-DSUB-LH-B

With angled solder pins for PCB assembly
fixing by means of drilled hole 2.5 mm and solder metal plate

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-EG	**1688793**	10
VS-09-BU-DSUB-EG	**1688803**	10
VS-15-ST-DSUB-EG	**1688874**	10
VS-15-BU-DSUB-EG	**1688887**	10
VS-25-ST-DSUB-EG	**1689899**	10
VS-25-BU-DSUB-EG	**1689909**	10
VS-09-ST-DSUB-HD-EG	**1655111**	10
VS-09-BU-DSUB-HD-EG	**1655108**	10
VS-15-ST-DSUB-HD-EG	**1655179**	10
VS-15-BU-DSUB-HD-EG	**1655166**	10
VS-25-ST-DSUB-HD-EG	**1655234**	10
VS-25-BU-DSUB-HD-EG	**1655221**	10

VS-...EG	VS-...-HD-EG
125 V	60 V
5 A	3 A
III	III
Copper alloy	Copper alloy
Hard gold-plated over nickel	Hard gold-plated over nickel
Polyester GF	Polyester GF
V0	V0
2	2
0.5 mm²	0.34 mm²
20	22
≥ 200	≥ 200
Solder cup	Solder cup
-55°C ... 125°C	-55°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-ER	**1688382**	10
VS-09-BU-DSUB-ER	**1688405**	10
VS-15-ST-DSUB-ER	**1688081**	10
VS-15-BU-DSUB-ER	**1688120**	10
VS-25-ST-DSUB-ER	**1689873**	10
VS-25-BU-DSUB-ER	**1689886**	10
VS-09-ST-DSUB-HD-ER	**1655098**	10
VS-09-BU-DSUB-HD-ER	**1656136**	10
VS-15-ST-DSUB-HD-ER	**1655153**	10
VS-15-BU-DSUB-HD-ER	**1655140**	10
VS-25-ST-DSUB-HD-ER	**1655218**	10
VS-25-BU-DSUB-HD-ER	**1655205**	10

VS-...-ER	VS-...-HD-ER
125 V	60 V
5 A	3 A
III	III
Copper alloy	Copper alloy
Hard gold-plated over nickel	Hard gold-plated over nickel
Polyester GF	Polyester GF
V0	V0
2	2
-	-
-	-
≥ 200	≥ 200
Solder connection	Solder connection
-55°C ... 125°C	-55°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-LH-B	**1654785**	10
VS-09-BU-DSUB-LH-B	**1654798**	10
VS-15-ST-DSUB-LH-B	**1654808**	10
VS-15-BU-DSUB-LH-B	**1654811**	10
VS-25-ST-DSUB-LH-B	**1654824**	10
VS-25-BU-DSUB-LH-B	**1654837**	10

125 V
5 A
III
Copper alloy
Gold over nickel
PBT-GF
V0
2
-
-
≥ 200
Solder connection
-55°C ... 125°C

Contact carriers, inserts and gender changers

The D-SUB contact inserts are available as D-SUB 09, D-SUB 15 and D-SUB 25 versions and with various connection methods. The crimp contact carriers for turned crimp contacts allow the cable to be connected directly. The male and female inserts in high position design (High Density) enable even more data lines to be connected to each other in a confined space. They are available in the sizes D-SUB 09, 15 and 25 and offer a very high packing density with 15, 26 or 44 positions.

For the crimp contact carriers, there are turned crimp contacts with a conductor cross-section of AWG 22. The male and female inserts with flat-ribbon cable connection can be used for flat-ribbon cable with a pitch of 1.27 mm. With the D-SUB gender changers with UNC screws, D-SUB connectors with IP20 protection can be connected simply and safely.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-DSUB-CD-...G

For crimp contacts,
Fixing by means of thread 4-40 UNC

Description	Design	No. of pos.	Type	Order No.	Pcs. / Pkt.
D-SUB contact support					
Male	09	9	**VS-09-ST-DSUB-CD-G**	**1688832**	10
Female	09	9	**VS-09-BU-DSUB-CD-G**	**1688845**	10
Male	15	15	**VS-15-ST-DSUB-CD-MG**	**1688913**	10
Female	15	15	**VS-15-BU-DSUB-CD-MG**	**1688926**	10
Male	25	25	**VS-25-ST-DSUB-CD-G**	**1689938**	10
Female	25	25	**VS-25-BU-DSUB-CD-G**	**1689941**	10
D-SUB contact carrier, high density					
Male	09	15			
Female	09	15			
Male	15	26			
Female	15	26			
Male	25	44			
Female	25	44			
D-SUB contact insert					
Male	09	9			
Female	09	9			
Male	15	15			
Female	15	15			
Male	25	25			
Female	25	25			
D-SUB gender changer					
Male/Male	09	9			
Female/Female	09	9			
Male/Male	15	15			
Female/Female	15	15			
Male/Male	25	25			
Female/Female	25	25			

Technical data	
Electrical data	
Rated voltage	125 V
Rated current	5 A
Surge voltage category	III
Material data	
Contact material	-
Contact surface material	-
Contact carrier material	Polyester GF
Inflammability class acc. to UL 94	V0
Mechanical data	
Pollution degree	2
Insertion/withdrawal cycles	≥ 500
Type of connection	Crimp connection
Temperature data	
Ambient temperature (operation)	-55°C ... 125°C

VS-...-DSUB-CD-...

For crimp contacts,
fixing by means of drilled hole 3 mm

VS-...-DSUB-FK

With flat-ribbon cable connection,
fixing by means of drilled hole 3 mm

VS-...-GC-...

Gender changer,
fixing by means of thread 4-40 UNC

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-CD-B	**1688858**	10
VS-09-BU-DSUB-CD-B	**1688861**	10
VS-15-ST-DSUB-CD-OG	**1688939**	10
VS-15-BU-DSUB-CD-OG	**1688942**	10
VS-25-ST-DSUB-CD-B	**1689954**	10
VS-25-BU-DSUB-CD-B	**1689967**	10
VS-09-ST-DSUB-HD-CD-B	**1655137**	10
VS-09-BU-DSUB-HD-CD-B	**1655124**	10
VS-15-ST-DSUB-HD-CD-B	**1655195**	10
VS-15-BU-DSUB-HD-CD-B	**1655182**	10
VS-25-ST-DSUB-HD-CD-B	**1655250**	10
VS-25-BU-DSUB-HD-CD-B	**1655247**	10

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-FK	**1688816**	10
VS-09-BU-DSUB-FK	**1688829**	10
VS-15-ST-DSUB-FK	**1688890**	10
VS-15-BU-DSUB-FK	**1688900**	10
VS-25-ST-DSUB-FK	**1689912**	10
VS-25-BU-DSUB-FK	**1689925**	10

Type	Order No.	Pcs. / Pkt.
VS-09-GC-ST/ST	**1652651**	10
VS-09-GC-BU/BU	**1688722**	10
VS-15-GC-ST/ST	**1652677**	10
VS-15-GC-BU/BU	**1652664**	10
VS-25-GC-ST/ST	**1652693**	10
VS-25-GC-BU/BU	**1652680**	10

VS-...-CD-B	VS-...-HD-CD-B	
125 V	60 V	125 V
5 A	3 A	5 A
III	III	III
-	-	Copper alloy
-	-	Hard gold-plated over nickel
Polyester GF	Polyester GF	Polyester GF
V0	V0	V0
2	2	2
≥ 500	≥ 500	≥ 200
Crimp connection	Crimp connection	Flat-ribbon cable connection
-55°C ... 125°C	-55°C ... 125°C	-55°C ... 125°C

125 V
5 A
III
Copper alloy
Hard gold-plated over nickel
Polyester GF
V0
2
≥ 200
Gender changer
-55°C ... 125°C

Combination contact carriers and inserts

Combining signal, power and coaxial contacts in a connector with IP67 protection – no problem with VARIOSUB D-SUB. Combination contact inserts are available in D-SUB 09, 15 and 25 types, for connector housings and panel mounting bases IP67, in various combinations as well as with various connection methods. As a result, up to ten signal contacts (S) can be combined with three power or coaxial contacts (PK) in a single D-SUB 25 connector housing.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-DSUB-..P

To accommodate coaxial and power contacts, fixing by means of drilled hole 3 mm

VS-...-DSUB-...P-LH

To accommodate coaxial and power contacts, fixing by means of thread 4-40 UNC and solder pins

Description	Design	No. of pos.	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
D-SUB contact carrier								
Male	09	2 PK	**VS-09-ST-DSUB-2P**	**1688418**	10	**VS-09-ST-DSUB-2P-LH**	**1655292**	10
Female	09	2 PK	**VS-09-BU-DSUB-2P**	**1688421**	10	**VS-09-BU-DSUB-2P-LH**	**1655289**	10
Male	15	3 PK	**VS-15-ST-DSUB-3P**	**1688201**	10	**VS-15-ST-DSUB-3P-LH**	**1655331**	10
Female	15	3 PK	**VS-15-BU-DSUB-3P**	**1688214**	10	**VS-15-BU-DSUB-3P-LH**	**1655328**	10
Male	25	5 PK	**VS-25-ST-DSUB-5P**	**1689970**	10	**VS-25-ST-DSUB-5P-LH**	**1655441**	10
Female	25	5 PK	**VS-25-BU-DSUB-5P**	**1689983**	10	**VS-25-BU-DSUB-5P-LH**	**1655438**	10
D-SUB contact insert								
Male	09	1 PK 4 S						
Female	09	1 PK 4 S						
Male	15	2 PK 5 S						
Female	15	2 PK 5 S						
Male	25	3 PK 10 S						
Female	25	3 PK 10 S						
Male	25	4 PK 5 S						
Female	25	4 PK 5 S						
D-SUB contact insert								
Male	09	3						
Pin with capacitive PE	09	3						
Female	09	3						
Male	15	5						
Pin with capacitive PE	15	5						
Female	15	5						

Technical data		
Electrical data		
Rated voltage	-	-
Rated current	-	-
Surge voltage category	-	-
Material data		
Contact material	-	-
Contact surface material	Gold over nickel	Gold over nickel
Contact carrier material	PBTP	PBTP
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Pollution degree	-	-
Insertion/withdrawal cycles	≥ 500	≥ 500
Type of connection	Fitting to accept combined contact	Fitting to accept combined contact
Temperature data		
Ambient temperature (operation)	-55°C ... 125°C	-55°C ... 125°C

VS-...-DSUB-...P-...S

with signal contacts with solder cups,
for accommodation of power and coaxial contacts,
fixing by means of drilled hole 3 mm

VS-...-DSUB-...P-...S-LH

with signal contacts with angled solder pins,
for accommodation of coaxial and power contacts,
fixing by means of thread 4-40 UNC and solder pins

...PSC 1,5/...-...

with angled solder connection on the socket side,
with screw connection on the pin side

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-1P-4S	1689006	10
VS-09-BU-DSUB-1P-4S	1689019	10
VS-15-ST-DSUB-2P-5S	1688227	10
VS-15-BU-DSUB-2P-5S	1688230	10
VS-25-ST-DSUB-3P-10S	1689996	10
VS-25-BU-DSUB-3P-10S	1690008	10
VS-25-ST-DSUB-4P-5S	1655386	10
VS-25-BU-DSUB-4P-5S	1655373	10

Type	Order No.	Pcs. / Pkt.
VS-09-ST-DSUB-1P-4S-LH	1655315	10
VS-09-BU-DSUB-1P-4S-LH	1655302	10
VS-15-ST-DSUB-2P-5S-LH	1655360	10
VS-15-BU-DSUB-2P-5S-LH	1655344	10
VS-25-ST-DSUB-3P-10S-LH	1655425	10
VS-25-BU-DSUB-3P-10S-LH	1655412	10
VS-25-ST-DSUB-4P-5S-LH	1655409	10
VS-25-BU-DSUB-4P-5S-LH	1655399	10

Type	Order No.	Pcs. / Pkt.
VS-PSC 1,5/3-M	1689310	10
VS-PSC 1,5/3-M PE	1689336	10
PSC 1,5/ 3-F	1841909	50
VS-PSC 1,5/5-M	1688825	10
VS-PSC 1,5/5-M PE	1689323	10
PSC 1,5/ 5-F	1841912	50

250 V	250 V	250 V
5 A	5 A	8 A
III	III	III
Copper alloy	Copper alloy	Copper alloy
Gold over nickel	Gold over nickel	Tin-plated
PBTP	PBTP	PA
V0	V0	V0
2	2	3
≥ 200	≥ 200	≥ 100
Solder cup	Solder connection	Printed circuit connection
-55°C ... 125°C	-55°C ... 125°C	-20°C ... 80°C

Signal contacts

Turned crimp contacts are available for VARIOSUB D-SUB contact carriers. The sturdy contacts can be reliably processed in harsh industrial environments.

This type of contact fulfills IEC 60352 and DIN EN 60652. Suitable tools for crimping the contacts or removing them from the contact chambers facilitate assembly of the connectors.

Notes:

Crimping pliers for high-density contacts on request.

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-CD-1,0/14,8/...

Contacts for standard D-SUB contact carriers

VS-...-CD-HD-1,0/13,5/0,37

Contacts for high density D-SUB contact carriers

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Turned male crimp contacts, for D-SUB contact inserts with standard contact density, gold-plated surface						
AWG 28 ... 24	**VS-ST-CD-1,0/14,8/0,2**	**1688971**	30			
AWG 24 ... 20	**VS-ST-CD-1,0/14,8/0,5**	**1688968**	30			
Turned female crimp contacts, for D-SUB contact inserts with standard contact density, gold-plated surface						
AWG 28 ... 24	**VS-BU-CD-1,0/14,4/0,2**	**1688997**	30			
AWG 24 ... 20	**VS-BU-CD-1,0/14,4/0,5**	**1688984**	30			
Turned crimp contacts, for D-SUB contact inserts with high density, gold-plated surface						
AWG 22, male				**VS-ST-CD-HD-1,0/13,5/0,37**	**1655276**	100
AWG 22, female				**VS-BU-CD-HD-1,0/13,5/0,37**	**1655263**	100
Crimping pliers						
- For turned contacts VS...CD (D-SUB contacts)	**CRIMPFOX RC 2,5**	**1205448**	1			
Insertion/Extraction Tool, for fitting and removing the D-SUB **standard** signal contacts	**VS-IET-DSUB-SIGNAL-STD**	**1658794**	1			
Insertion/Extraction Tool, for fitting and removing the D-SUB **High Density** signal contacts				**VS-IET-DSUB-SIGNAL-HD**	**1658503**	1

Technical data	AWG 28 … 24	AWG 24 … 20	
Electrical data			
Rated voltage	125 V	125 V	60 V
Rated current	5 A	5 A	3 A
Contact material	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Hard gold-plated over nickel	Hard gold-plated over nickel	Hard gold-plated over nickel
Mechanical data			
Type of connection	Crimp connection	Crimp connection	Crimp connection
Conductor cross-section	0.08 mm² ... 0.2 mm²	0.2 mm² ... 0.5 mm²	0.34 mm²
Connection cross-section AWG	28 ... 24	24 ... 20	22
Insertion/withdrawal cycles	≥ 200	≥ 200	≥ 200
Temperature data			
Ambient temperature (operation)	-55°C ... 125°C	-55°C ... 125°C	-55°C ... 125°C

Power and coaxial contacts

For the common coaxial cable types RG58, RG174, RG178 and RG179/187 and for PCB mounting, gold-plated coaxial male and female contacts can be used in the D-SUB combination contact inserts. Similarly, gold-plated power contacts for 20 A or 40 A can be used in the combination contact inserts and are available for PCB mounting with screw or solder connection.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-KX-...

Coaxial contacts for D-SUB contact carriers

VS-...

Power contacts for D-SUB contact carriers

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Coaxial contacts, for D-SUB combination inserts, with straight solder cup, gold-plated surface						
For cable type: RG178, 50 Ω, male	**VS-ST-KX-50-RG178**	**1655506**	10			
For cable type: RG178, 50 Ω, female	**VS-BU-KX-50-RG178**	**1655496**	10			
For cable type: RG174, 50 Ω, male	**VS-ST-KX-50-RG174**	**1655548**	10			
For cable type: RG174, 50 Ω, female	**VS-BU-KX-50-RG174**	**1655535**	10			
For cable type: RG58, 50 Ω, male	**VS-ST-KX-50-RG58**	**1655580**	10			
For cable type: RG58, 50 Ω, female	**VS-BU-KX-50-RG58**	**1655577**	10			
For cable type: RG179/187, 75 Ω, male	**VS-ST-KX-75-RG179/187**	**1655629**	10			
For cable type: RG179/187, 75 Ω, male	**VS-BU-KX-75-RG179/187**	**1655616**	10			
Coaxial contacts, for D-SUB combination inserts, with angled solder pins for PCB mounting, gold-plated surface						
50 Ω, male	**VS-ST-KX-50-LP**	**1655522**	10			
50 Ω, female	**VS-BU-KX-50-LP**	**1655519**	10			
75 Ω, male	**VS-ST-KX-75-LP**	**1655645**	10			
75 Ω, female	**VS-BU-KX-75-LP**	**1655632**	10			
Power contact, for D-SUB combination inserts, with straight solder cup, gold-plated surface						
Up to 20 A, male				**VS-ST-LK-3,6/22,4/2,6**	**1688243**	30
Up to 40 A, male				**VS-ST-LK-3,6/22,4/4,6**	**1688269**	30
Up to 20 A, female				**VS-BU-LK-3,6/22,8/2,6**	**1688256**	30
Up to 40 A, female				**VS-BU-LK-3,6/22,8/4,6**	**1688272**	30
Power contact, for D-SUB combination inserts, with straight screw connection, gold-plated surface						
Up to 40 A, male				**VS-ST-SC-2,6**	**1655483**	30
Up to 40 A, female				**VS-BU-SC-2,6**	**1655470**	30
Power contact, for D-SUB combination inserts, with angled solder pins for PCB mounting, gold-plated surface						
Up to 40 A, male				**VS-ST-LH-3,6/18/3,8**	**1655467**	30
Up to 40 A, female				**VS-BU-LH-3,6/18/3,8**	**1655454**	30
Removal tool	**HC-M4-KOAX-EWZ**	**1676747**	1	**HC-M4-KOAX-EWZ**	**1676747**	1

Technical data	VS-...-KX-75-RG179/187	VS-...-KX-75-LP	VS-...-LK-3,6/22,4/4,6	VS-...SC-2,6
Electrical data				
Rated voltage	250 V	250 V	-	-
Rated current	2 A	2 A	40 A	40 A
Material data				
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Hard gold-plated over nickel	Hard gold-plated over nickel	Hard gold-plated over nickel	Hard gold-plated over nickel
Mechanical data				
Type of connection	Solder cup	PCB mounting	Solder cup	Screw connection
Conductor cross-section	0.2 mm²	-	4.5 mm² ... 8.5 mm²	0.75 mm² ... 2 mm²
Connection cross-section AWG	24	-	10 ... 8	18 ... 14
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500
Temperature data				
Ambient temperature (operation)	-55°C ... 135°C	-55°C ... 135°C	-55°C ... 155°C	-55°C ... 155°C

Assembled cables and housings with IP20 and IP67

Note:
For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-DSUB-20-LI-...

Assembled D-SUB cable IP20,
pin on socket

Pre-assembled cables with IP20 protection are now available for internal control cabinet wiring on a D-SUB basis. It is thus possible, for example, to connect active components within control cabinets without difficulty. The assembled shielded cables have knurled screws and are available in various lengths and in the types D-SUB 09, 15 and 25.

The plug connector housings with IP20 protection can be used to set up connection cables on a D-SUB basis according to your own requirements. The metal-plated housings in plastic are equipped with knurled screws and strain relief and thus guarantee the mechanical and EMC protection of the plug connection.

The two cable screw connections of the connectors with locking clip interlock provide good cable strain relief. When locked, the housings fulfill the requirements of IP67 protection, and they require very little operating force, thanks to a special profile gasket. 16 keying options and labeling enable easy identification. Optional EMC protection is provided by a shroud on the panel mounting base and a metallic inner sleeve in the IP67 sleeve housing.

Description	Cable length	Type	Order No.	Pcs. / Pkt.
Assembled D-SUB cable, shielded, stranded (7-wire), pin on socket				
D-SUB 09	1 m	**VS-09-DSUB-20-LI-1,0**	**1656233**	1
D-SUB 09	2 m	**VS-09-DSUB-20-LI-2,0**	**1656246**	1
D-SUB 09	5 m	**VS-09-DSUB-20-LI-5,0**	**1656259**	1
D-SUB 15	1 m	**VS-15-DSUB-20-LI-1,0**	**1656262**	1
D-SUB 15	2 m	**VS-15-DSUB-20-LI-2,0**	**1656275**	1
D-SUB 15	5 m	**VS-15-DSUB-20-LI-5,0**	**1656288**	1
D-SUB 25	1 m	**VS-25-DSUB-20-LI-1,0**	**1656291**	1
D-SUB 25	2 m	**VS-25-DSUB-20-LI-2,0**	**1656301**	1
D-SUB 25	5 m	**VS-25-DSUB-20-LI-5,0**	**1656314**	1
D-SUB sleeve housings, shielded				
D-SUB 09, straight design				
D-SUB 09, angled design				
D-SUB 15, straight design				
D-SUB 15, angled design				
D-SUB 25, straight design				
D-SUB 25, angled design				
D-SUB sleeve housing				
D-SUB 09, M16 design				
D-SUB 15, Pg11 design				
D-SUB 25, M20 design				
D-SUB cap nut with line seal, for sleeve housing VARIOSUB IP67, design / line Ø:				
M16 / 3 mm ... 6 mm				
M16 / 5 mm ... 9 mm				
Pg11 / 3 mm ... 7 mm				
Pg11 / 5 mm ... 10 mm				
M20 / 5 mm ... 13 mm				
EMC inner sleeve, for shielding for the sleeve housing VARIOSUB IP67				
For D-SUB 09 sleeve housing				
For D-SUB 15 sleeve housing				
For D-SUB 25 sleeve housing				
D-SUB protective cover, IP54 protection, for panel mounting frame and sleeve housing VARIOSUB IP67				
D-SUB 09				
D-SUB 15				
D-SUB 25				
Closing cap				
Coding profile, prevents confusion of similar connectors				
Labeling material				

Technical data	
Electrical data	
Rated voltage	125 V
Rated current	1 A
Material data	
Housing material	PVC
Housing surface material	-
Contact material	Copper alloy
Contact surface material	Gold-plated
Inflammability class acc. to UL 94	-
Mechanical data	
Color	-
Degree of protection	IP20
External cable diameter	6 mm
Insertion/withdrawal cycles	≥ 50
Temperature data	
Ambient temperature (operation)	0°C ... 70°C

VS-...-T-20-1-S...

D-SUB sleeve housing IP20,
with knurled screws 4-40 UNC

VS-...-T-2...

D-SUB sleeve housing IP67 and protective cover IP54

VS-...

Accessories for D-SUB sleeve housing IP67

Type	Order No.	Pcs. / Pkt.
VS-09-T-20-1-S-S	**1655658**	1
VS-09-T-20-1-S-A	**1655661**	1
VS-15-T-20-1-S-S	**1655674**	1
VS-15-T-20-1-S-A	**1655687**	1
VS-25-T-20-1-S-S	**1655690**	1
VS-25-T-20-1-S-A	**1655700**	1

Type	Order No.	Pcs. / Pkt.
VS-09-T-2M16	**1688353**	5
VS-15-T-2PG11	**1688052**	5
VS-25-T-2M20	**1689792**	5
VS-09-SD	**1887086**	5
VS-15-SD	**1887099**	5
VS-25-SD	**1652211**	5

Type	Order No.	Pcs. / Pkt.
VS-M16 (3-6)	**1688450**	5
VS-M16 (5-9)	**1688447**	5
VS-PG11 (3- 7)	**1688117**	5
VS-PG11 (5-10)	**1688104**	5
VS-M20 (5-13)	**1652127**	5
VS-09-TI-2EMV	**1688476**	5
VS-15-TI-2EMV	**1688065**	5
VS-25-TI-2 EMV	**1689802**	5
Q-PROT 9/11	**1670235**	10
CP-HCC 4	**1600027**	100
ZBN 18:UNBEDRUCKT	**2809128**	10

	VS-09-T-2M16	VS-...-SD	VS-M16(3-6)	VS-...TI-...EMV
-	-	-	-	-
-	-	-	-	-
ABS	PA	PA	PA	Nickel silver
Metal-plated	-	-	-	-
-	-	-	-	-
-	-	-	-	-
V0	V0	V0	V0	-
Bare metallic	Gray	Gray	Gray	Bare metallic
IP20	IP67	IP54	IP67	-
4 mm ... 8.5 mm	3 mm ... 9 mm	-	3 mm ... 6 mm	-
-	≥ 1000	≥ 1000	-	-
0°C ... 70°C	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C

Housing sets IP67, gender-changer and couplings IP67

The practical VARIOSUB D-SUB connector sets in the standard and EMC version contain the essential components, such as plug housings and IP67 panel frames, threaded connections and coding sections. Wall feed-throughs can be easily implemented with the D-SUB mounting frame with built-in gender changer. IP67 protection cables can be connected via the D-SUB coupling IP67.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-...-A...

D-SUB panel mounting frame IP67 and EMC shroud

VS-...-SET-STD

D-SUB connector set IP67 consisting of:
Sleeve housing, panel mounting frame and accessories

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
D-SUB panel mounting frame, for taking up D-SUB contact inserts						
D-SUB 09	**VS-09-A**	**1688366**	5			
D-SUB 15	**VS-15-A**	**1688036**	5			
D-SUB 25	**VS-25-A**	**1689750**	5			
D-SUB EMC shroud, for the IP67 panel mounting frame, for shield contacting to the housing panel						
D-SUB 09	**VS-09-A-EMV-S**	**1688463**	5			
D-SUB 15	**VS-15-A-EMV-S**	**1688049**	5			
D-SUB 25	**VS-25-A-EMV-S**	**1689763**	5			
D-SUB connector set						
D-SUB 09				**VS-09-SET-STD**	**1689145**	1
D-SUB 15				**VS-15-SET-STD**	**1689129**	1
D-SUB 25				**VS-25-SET-STD**	**1652198**	1
D-SUB panel mounting frame, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB 09, socket/socket						
D-SUB 15, pin/pin						
D-SUB 15, socket/socket						
D-SUB 25, pin/pin						
D-SUB 25, socket/socket						
D-SUB coupling, with integrated gender changer, shielded						
D-SUB 09, pin/pin						
D-SUB 09, socket/socket						
D-SUB 15, pin/pin						
D-SUB 15, socket/socket						
D-SUB 25, pin/pin						
D-SUB 25, socket/socket						
D-SUB protective cover, IP54 protection, for panel mounting frame and sleeve housing VARIOSUB IP67						
D-SUB 09	**VS-09-SD**	**1887086**	5	**VS-09-SD**	**1887086**	5
D-SUB 15	**VS-15-SD**	**1887099**	5	**VS-15-SD**	**1887099**	5
D-SUB 25	**VS-25-SD**	**1652211**	5	**VS-25-SD**	**1652211**	5

Technical data	VS-...A...	VS-09-SET-STD
Electrical data		
Rated voltage	-	-
Rated current	-	-
Material data		
Housing material	PA	PA
Contact material	-	-
Contact surface material	-	-
Seal material	Flat seal: NBR; profile gasket: EPDM	Flat seal: NBR; profile gasket: EPDM
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Color	Gray	Gray
Degree of protection	IP67	IP67
External cable diameter	-	3 mm ... 9 mm
Temperature data		
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 80°C

VS-...-SET-EMV

D-SUB connector set IP67, consisting of:
Sleeve housing, panel mounting frame and accessories, shielded design

VS-...-A-GC-...

D-SUB panel mounting frame IP67, with integrated gender changer

VS-...-KU-...

D-SUB coupling IP67, with integrated gender changer

Type	Order No.	Pcs. / Pkt.
VS-09-SET-EMV	**1689158**	1
VS-15-SET-EMV	**1689132**	1
VS-25-SET-EMV	**1652208**	1
VS-09-SD	**1887086**	5
VS-15-SD	**1887099**	5
VS-25-SD	**1652211**	5
VS-09-SET-EMV		
-		
-		
PA		
-		
-		
Flat seal: NBR; profile gasket: EPDM		
V0		
Gray		
IP67		
3 mm ... 9 mm		
-40°C ... 80°C		

Type	Order No.	Pcs. / Pkt.
VS-09-A-GC-ST/ST	**1689705**	5
VS-09-A-GC-BU/BU	**1689695**	5
VS-15-A-GC-ST/ST	**1689721**	5
VS-15-A-GC-BU/BU	**1689718**	5
VS-25-A-GC-ST/ST	**1689747**	5
VS-25-A-GC-BU/BU	**1689734**	5
VS-09-SD	**1887086**	5
VS-15-SD	**1887099**	5
VS-25-SD	**1652211**	5
VS-...-A-GC-...		
125 V		
5 A		
PA		
Copper alloy		
Hard gold-plated over nickel		
Flat seal: NBR; profile gasket: EPDM		
V0		
Gray		
IP67		
-		
-40°C ... 80°C		

Type	Order No.	Pcs. / Pkt.
VS-09-KU-ST/ST	**1689640**	5
VS-09-KU-BU/BU	**1689637**	5
VS-15-KU-ST/ST	**1689666**	5
VS-15-KU-BU/BU	**1689653**	5
VS-25-KU-ST/ST	**1689682**	5
VS-25-KU-BU/BU	**1689679**	5
VS-09-SD	**1887086**	5
VS-15-SD	**1887099**	5
VS-25-SD	**1652211**	5
VS-...-KU-...		
125 V		
5 A		
PA		
Copper alloy		
Hard gold-plated over nickel		
EPDM		
V0		
Gray		
IP67		
-		
-40°C ... 80°C		

Mounting frame, front plates and socket inserts

Notes:
For RJ45 female inserts, see page 332.
For D-SUB contact inserts, see from page 318.
For further technical data, see:
www.phoenixcontact.net/catalog

VS-SI-EB-EMV...
Mounting frame

The service interface is designed for use in control cabinets, infrastructure components and devices in a harsh industrial environment. The range of products is made up of a rugged metal frame with cover, various front plates and accessories.

The single or double version metal frames are equipped with a transparent lockable cover that guarantees IP65 protection when closed.

The metal frames can be fitted with finished front plates equipped with contact inserts or with plates without components for accommodating D-SUB, Keystone and Freenet contact inserts. The dummy plate can be used to design one's own front plates with special interfaces.

In combination with the socket inserts in various national versions, it is possible to set up individual service interfaces.

Description	Type	Order No.	Pcs. / Pkt.
Mounting frame, metal frame, matt nickel-plated, electrically conductive, transparent cover			
Single	**VS-SI-EB-EMV-1**	**1656482**	1
Double	**VS-SI-EB-EMV-2**	**1656495**	1
Front plate			
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			
Socket inserts			
Germany			
Germany, yellow			
USA			
France			
Great Britain			
Italy			
Marker labels, for identifying mounting frames and front plates, one sheet has 20 labels	**VS-SI-BZ**	**1656660**	1
Dummy plate, plastic			

Technical data	
Electrical data	
Rated voltage	-
Rated current	-
Material data	
Housing material	Zinc alloy
Housing surface material	Nickel-plated
Inflammability class acc. to UL 94	V0
Mechanical data	
Color	-
Degree of protection	IP65
Type of connection	-
Conductor cross-section	-
Connection cross-section AWG	-
Temperature data	
Ambient temperature (operation)	-10°C ... 60°C

VS-SI-FP-...

Front plate,
without contact inserts

VS-SI-FP-...-BU...

Data front plate with contact inserts RJ45 (female on female),
D-SUB (socket on pin)

VS-SI-SD-...

Socket inserts

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
VS-SI-BZ	**1656660**	1
VS-SI-FP-BP	**1656657**	1

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

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

	VS-SI-FP...RJ45...	VS-SI-FP...DSUB...
-	50 V	125 V
-	1 A	3 A
PBT	PBT	PBT
-	-	-
V0	V0	V0
Gray	Gray	Gray
-	IP20	IP20
-	-	-
-	-	-
-	-	-
-10°C ... 60°C	-10°C ... 60°C	-10°C ... 60°C

VS-SI-SD-DE	VS-SI-SD-USA
250 V	125 V
16 A	15 A
PA	PA
-	-
V0	V0
Gray	Gray
IP20	IP20
Screw connection	Slip-on connection
2.5 mm^2	2.5 mm^2
14	14
-10°C ... 60°C	-10°C ... 60°C

Front plate and female inserts (Freenet system)

The front plate for accommodating two Freenet modules allows the RJ45, USB, FireWire and SCRJ (FO) interfaces to be combined as you wish. The Freenet modules are available as socket/socket versions and with a cable or flat-ribbon cable connection. The slots can be labeled using the marking labels.

Note:

For further technical data, see:
www.phoenixcontact.net/catalog

VS-SI-FP-2F

Front plate with two Freenet slots

VS-08-BU-RJ45...-F/...

RJ45 female inserts, Freenet system

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Front plate	**VS-SI-FP-2F**	**1658532**	1			
RJ45 female insert, CAT5e, 8-pos., shielded, socket on socket						
For metal panel mounting frame				**VS-08-BU/BU-RJ45-F**	**1405617**	1
RJ45 female insert, 8-pos., shielded, with cable connection						
CAT5e				**VS-08-BU-RJ45-5-F/PK**	**1652936**	1
CAT6				**VS-08-BU-RJ45-6-F/PK**	**1652949**	1
SCRJ coupling, for terminal outlets VS-TO-... and 19" patch panels VS-PP-19-1HE-16-F and front plate VS-SI-FP-2F						
USB female insert, 4-pos., USB socket type A to USB socket type B, can be plugged in both directions						
USB female insert, 4-pos., female on flat-ribbon cable terminal strip, pitch 2.54						
Socket, type A						
Socket, type B						
FireWire female insert, 6-pos., socket on socket						
FireWire female insert, 6-pos., socket on flat-ribbon cable terminal strip, pitch 2.54						
Marker labels, for identifying mounting frames and front plates, one sheet has 20 labels	**VS-SI-BZ**	**1656660**	1			

Technical data		CAT5e	CAT6
Electrical data			
Rated voltage	-	50 V	50 V
Rated current	-	1 A	1 A
Transmission speed	-	-	-
Transmission characteristics (category)	-	CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001)	CAT6
Material data			
Housing material	PBT	-	-
Contact material	-	Copper alloy	Copper alloy
Contact surface material	-	Gold over nickel	Gold over nickel
Contact carrier material	-	PC	PC
Ferrule material	-	-	-
Inflammability class acc. to UL 94	V0	V0	V0
Mechanical data			
No. of pos.	-	8	8
Pollution degree	-	1	1
Degree of protection	IP20	IP20	IP20
Type of connection	-	IDC	IDC
Conductor cross-section	-	0.2 mm² ... 0.32 mm² (solid)	0.2 mm² ... 0.32 mm²
Connection cross-section AWG	-	24 ... 22 (solid)	24 ... 22
Fiber type	-	-	-
Insertion/withdrawal cycles	-	≥ 750	≥ 750
Temperature data			
Ambient temperature (operation)	-10°C ... 60°C	-20°C ... 70°C	-20°C ... 70°C

VS-SCRJ-GOF-KU

SCRJ coupling for IP20 terminal outlets and 19" patch panels and front plate with Freenet slots

VS-04-BUA-...-F/IP67

USB female insert, Freenet system

VS-06-BU-...-F/IP67

FireWire female inserts, Freenet system

Type	Order No.	Pcs. / Pkt.
VS-SCRJ-GOF-KU	1654358	1

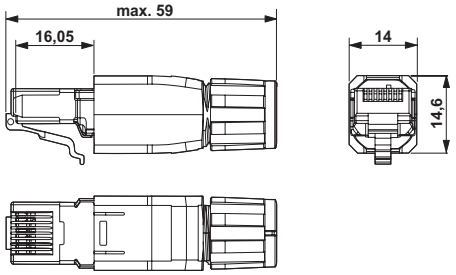
Type	Order No.	Pcs. / Pkt.
VS-04-BUA-BUB-F/IP67	1653838	1
VS-04-BUA-FK-F/IP67	1653854	1
VS-04-BUB-FK-F/IP67	1653867	1

Type	Order No.	Pcs. / Pkt.
VS-06-BU-BU-F/IP67	1654329	1
VS-06-BU-FK-F/IP67	1654332	1

-	30 V	30 V
-	1 A	1 A
-	480 Mbps	400 Mbps
-	-	-
PBT	PC	PC
-	Copper alloy	Copper alloy
-	Gold over nickel	Gold over nickel
-	PET	PBT-GF
Zirconia ceramics	-	-
V0	V0	V0
2	4	6
-	-	2
IP20	IP20	IP20
Coupling	Flat-ribbon cable connection, pitch 2.54 mm	Flat-ribbon cable connection, pitch 2.54 mm
-	-	-
-	-	-
GOF, HCS, POF	-	-
≥ 500	≥ 1000	≥ 1000
-25°C ... 70°C	-15°C ... 65°C	-15°C ... 65°C

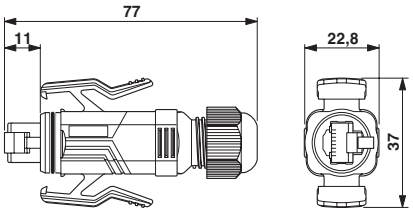
RJ45 connector

VS-...-RJ45-5-Q/IP20...



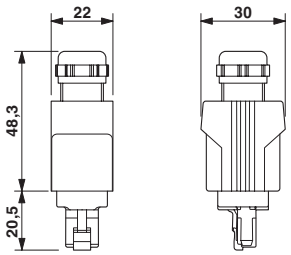
IP20 RJ45 connector

VS-08-RJ45-5/Q/IP67...



IP67 RJ45 connector

VS-PPC-C1-RJ45-...-PG9-...

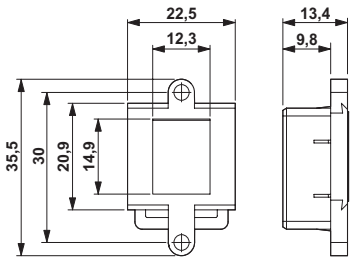


IP67 RJ45 push-pull connector

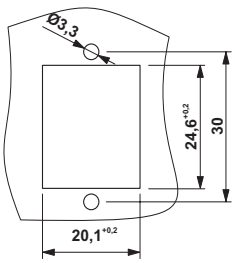
RJ45 panel mounting frame

VS-08-A-RJ45/MOD-1-IP20

Modular system, keystone



RJ45/IP20 panel mounting frame

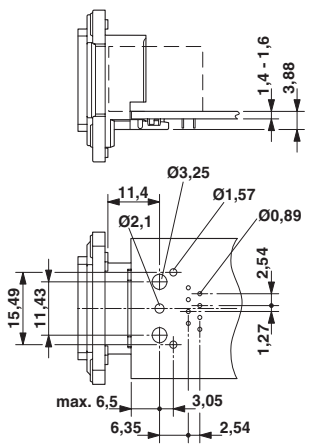


Mounting cutout

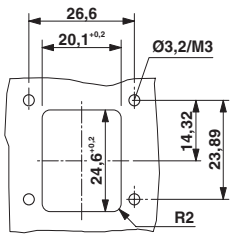
RJ45 panel mounting frame

VS-08-A-...-RJ45/LP-1-IP67

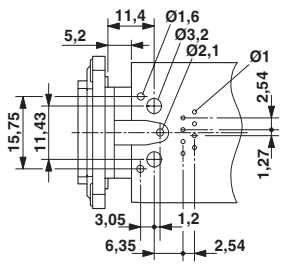
PCB connection



Drilling diagram for female insert (CAT5):
VS-08-BU-RJ45/LP-1

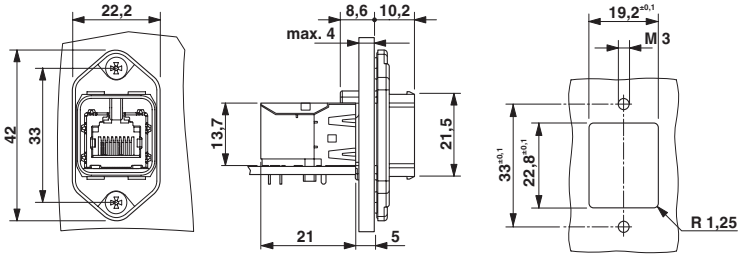


Mounting cutout



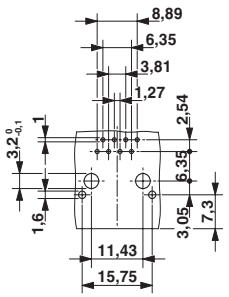
Drilling diagram for female insert (CAT6):
VS-08-BU-RJ45/6/LH-1

RJ45 panel mounting frame
VS-PPC-F1-RJ45-...-1R-PHA
PCB connection



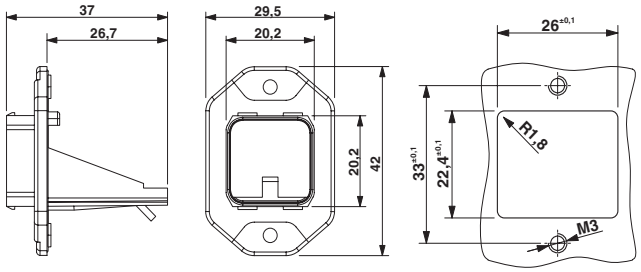
Dimensional drawing

Mounting cutout



Drilling diagram

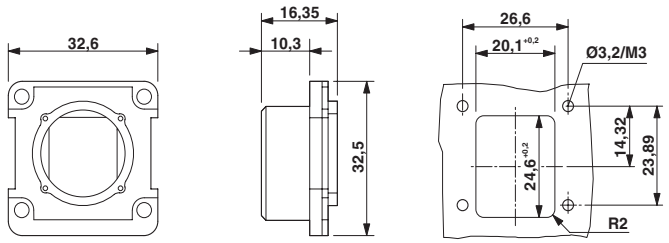
VS-PPC-F1-RJ45-...-1R-F
Freenet system



Dimensional drawing

Mounting cutout

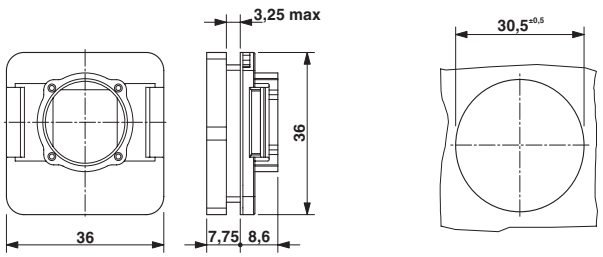
RJ45 panel mounting frame
VS-08-A-RJ45/MOD-1-IP67
Modular system, keystone



Dimensional drawing

Mounting cutout

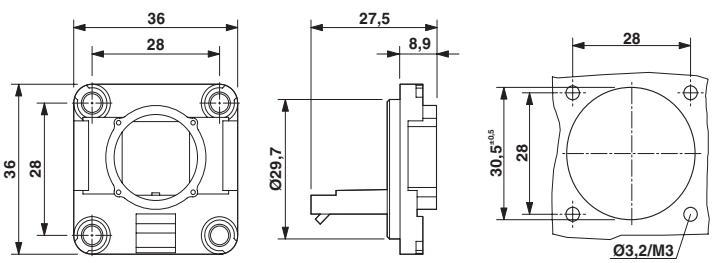
VS-08-A-RJ45/MOD-1-R-IP67...
Modular system, keystone



Dimensional drawing

Mounting cutout

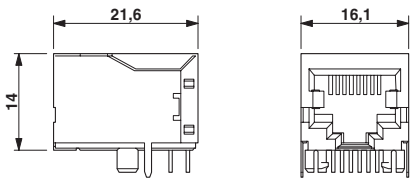
RJ45 panel mounting frame
VS-A-F-IP67...
Freenet system



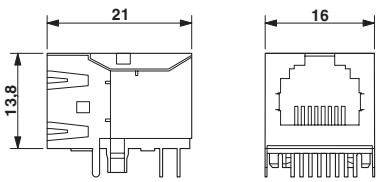
Dimensional drawing

Mounting cutout

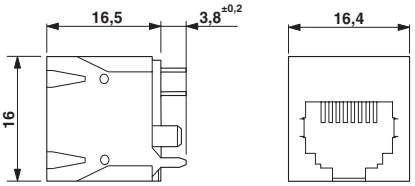
RJ45 female inserts
PCB connection



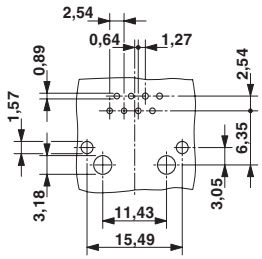
Dimensional drawing: VS-08-BU-RJ45/LP-1



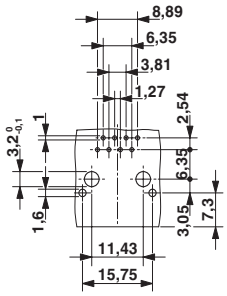
Dimensional drawing: VS-08-BU-RJ45-6/LH-1



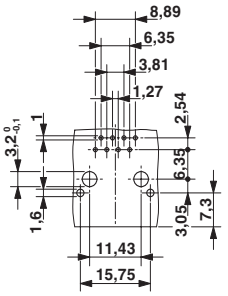
Dimensional drawing: VS-08-BU-RJ45-6/LV-1



Drilling diagram: VS-08-BU-RJ45/LP-1

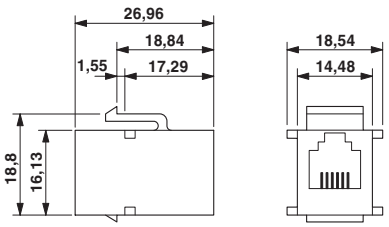


Drilling diagram: VS-08-BU-RJ45-6/LH-1

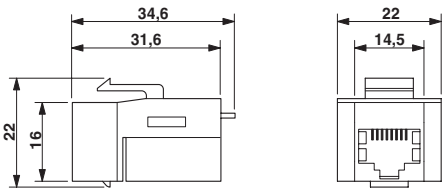


Drilling diagram: VS-08-BU-RJ45-6/LV-1

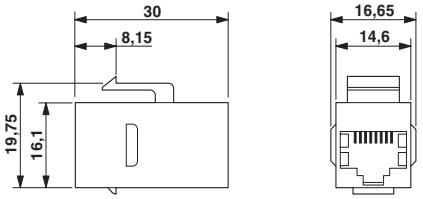
RJ45 female inserts
Modular system, keystone



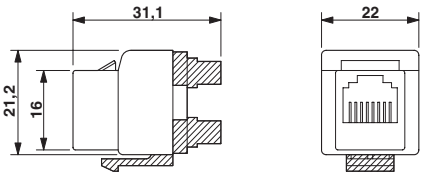
Dimensional drawing: VS-RJ11-BU-MOD/BU



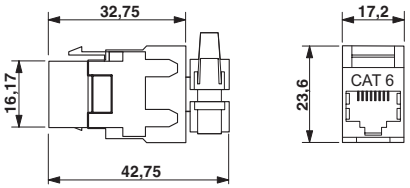
Dimensional drawing: VS-08-BU-RJ45/BU



Dimensional drawing: VS-08-BU-RJ45-6-MOD/BU



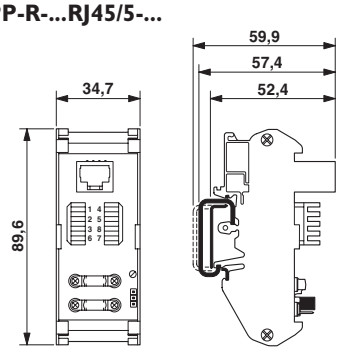
Dimensional drawing: VS-08-BU-RJ45/KA/LSA



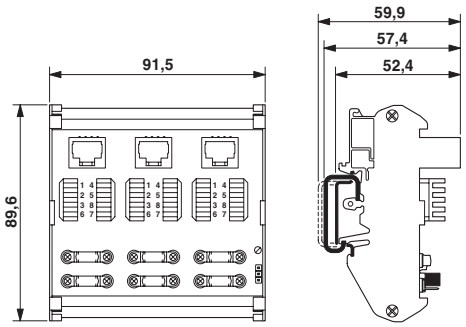
Dimensional drawing: VS-08-BU-RJ45-6/KA/LSA

RJ45 patch panel

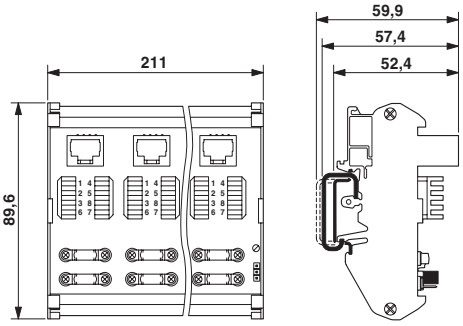
VS-PP-R-...RJ45/5-...



Patch panel with one RJ45 connection

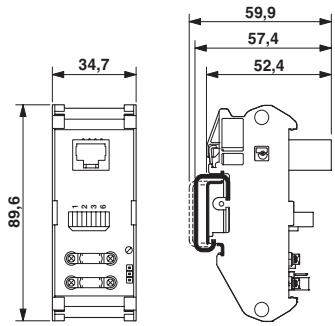


Patch panel with three RJ45 connections

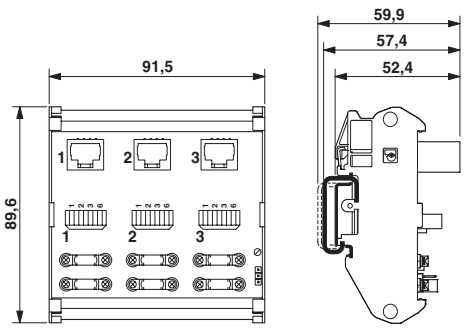


Patch panel with eight RJ45 connections

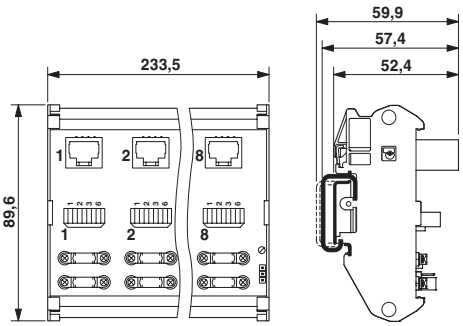
VS-PP-PN-R-...RJ45/5-...



Patch panel with one RJ45 connection

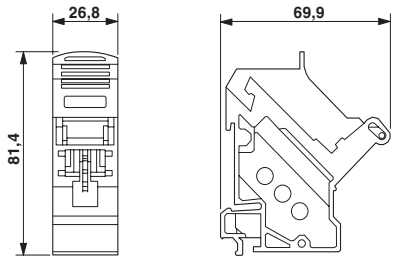


Patch panel with three RJ45 connections

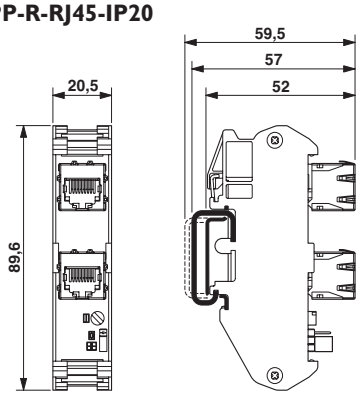


Patch panel with eight RJ45 connections

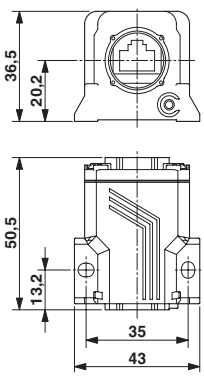
VS-PP-F-RJ45/CAT6



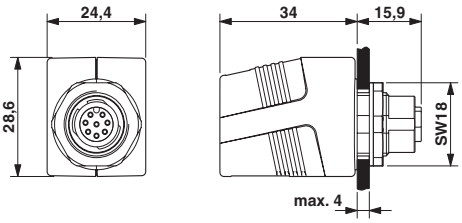
VS-PP-R-RJ45-IP20



RJ45 coupling: VS-08-KU-IP67...

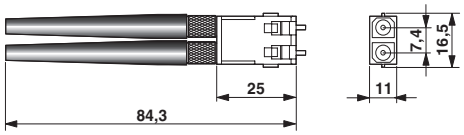


Bulkhead: VS-BH-M12FS...RJ45/...

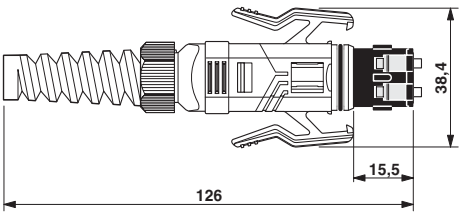


SCRJ connectors

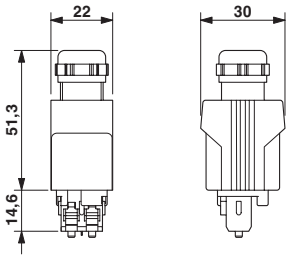
VS-SCRJ-POF-FA-IP20



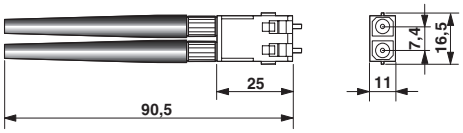
VS-SCRJ-POF-FA-IP67



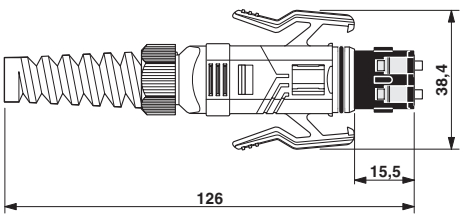
VS-PPC-C1-SCRJ-...-PG9-A4D-C



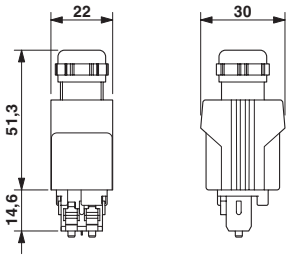
VS-SCRJ-HCS-FA-IP20



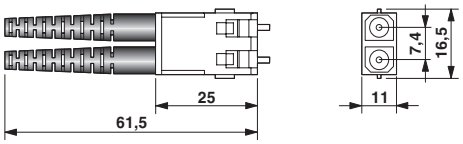
VS-SCRJ-HCS-FA-IP67



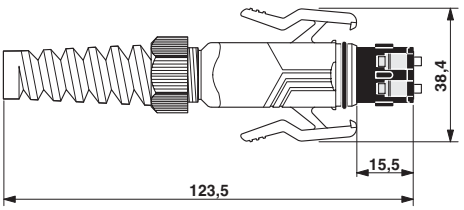
VS-PPC-C1-SCRJ-...-PG9-A3C-C



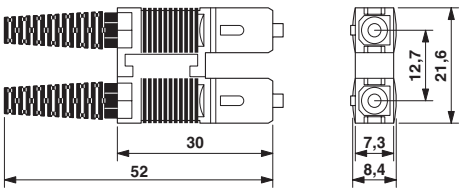
VS-SCRJ-GOF-FA-IP20



VS-SCRJ-GOF-FA-IP67

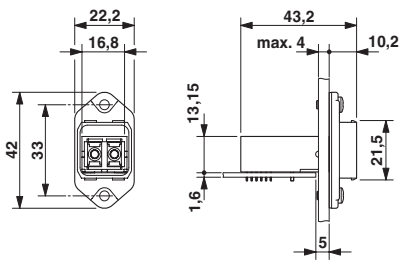


VS-SCDU-GOF-FA-IP20

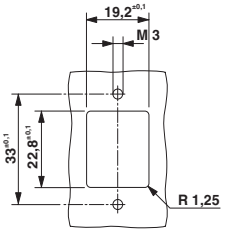


SCRJ panel mounting frame
PCB connection

VS-PPC-F1-SCRJ-...-1RP



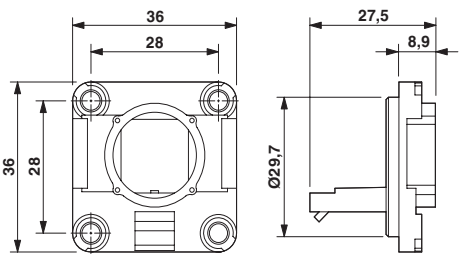
Dimensional drawing



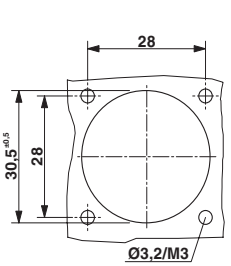
Mounting cutout

Freenet system

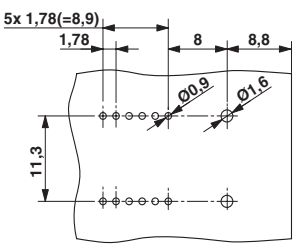
VS-A-F-IP67



Dimensional drawing



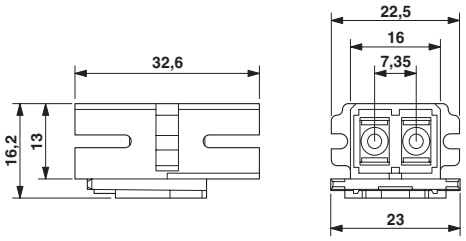
Mounting cutout



Drilling diagram

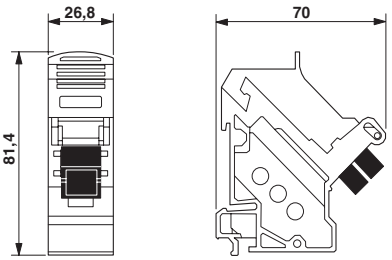
SCRJ female insert
Freenet system

VS-SCRJ-GOF-BU/BU



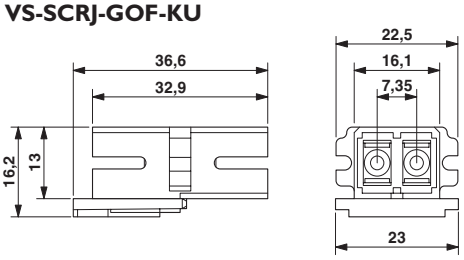
SCRJ patch panel

VS-PP-F-SCRJ



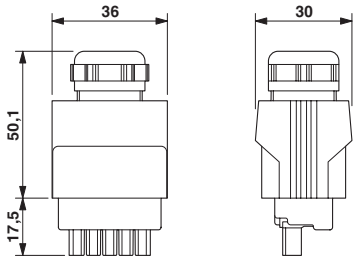
SCRJ coupling

VS-SCRJ-GOF-KU



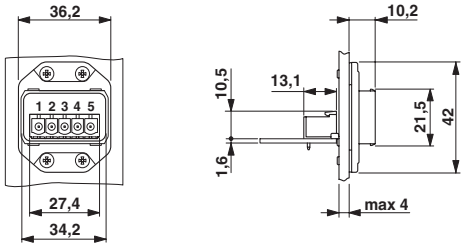
PROFINET
POWER connector

VS-PPC-C2-MSTB-...P13-5-SP

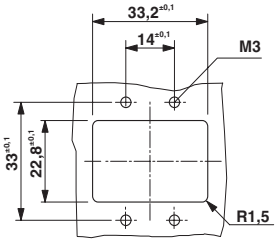


PROFINET
POWER panel mounting frame

VS-PPC-F2-MSTB-...-1R-P



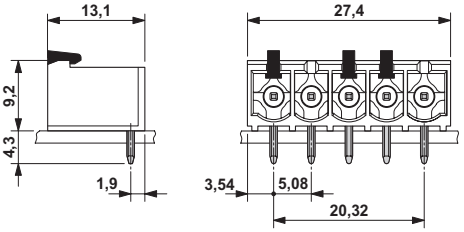
Dimensional drawing



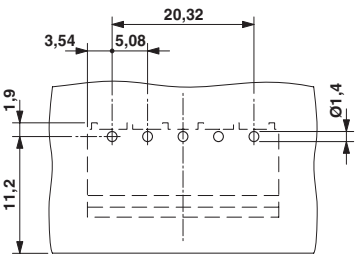
Panel cutout

PROFINET
POWER female inserts

VS-MSTBAH-2,5/5-GB-5,08-...

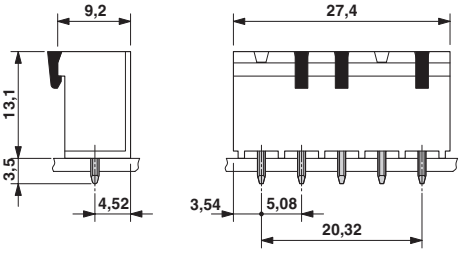


Dimensional drawing

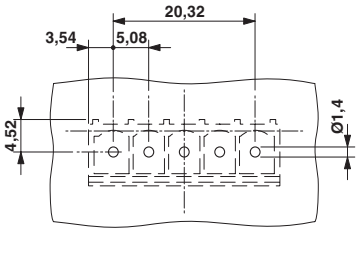


Drilling diagram

VS-MSTBAV-2,5/5-GB-5,08-...



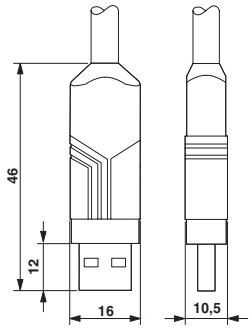
Dimensional drawing



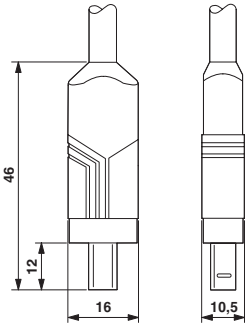
Drilling diagram

USB connectors

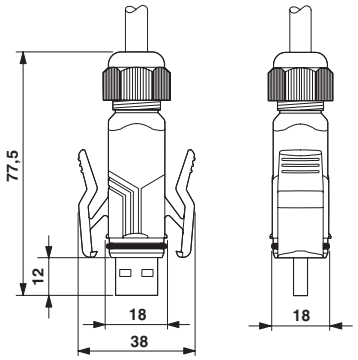
VS-04-...-SDA...



VS-04-...-SDB...



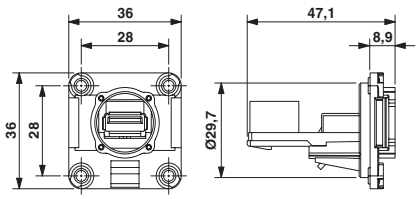
VS-04-...-67A...



USB female inserts

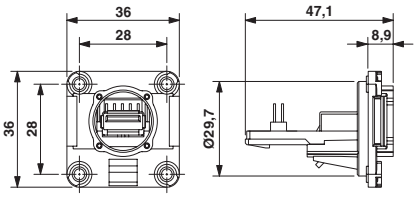
VS-04-BUA-BUB-F/IP67

(mounted in the panel mounting frame VS-A-F-IP67)



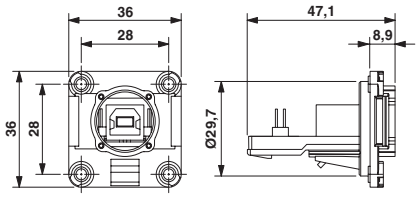
VS-04-BUA-FK-F/IP67

(mounted in the panel mounting frame VS-A-F-IP67)



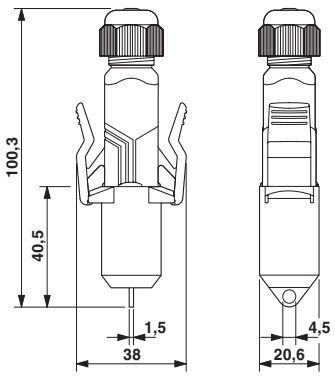
VS-04-BUB-FK-F/IP67

(mounted in the panel mounting frame VS-A-F-IP67)



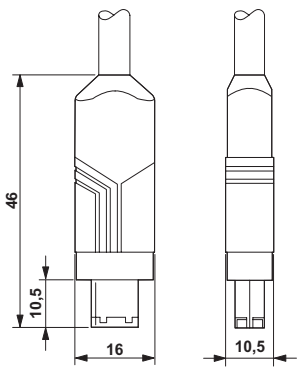
USB memory stick

VS-04-MS-512-IP67

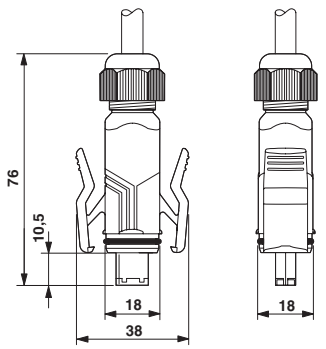


FireWire connector

VS-06-...SD...

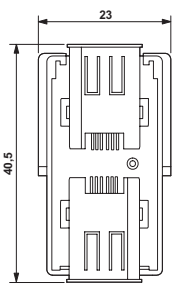


VS-06-...67...

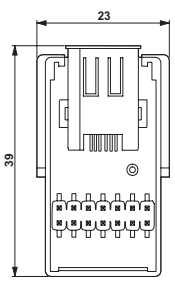


FireWire female inserts

VS-06-BU-BU-F/IP67

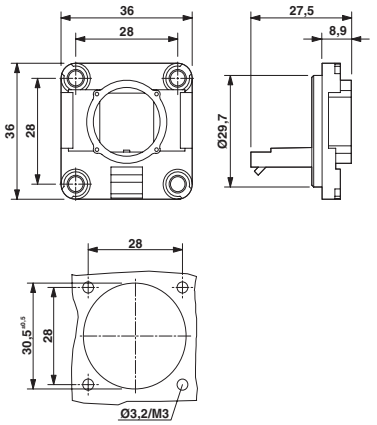


VS-06-BU-FK-F/IP67



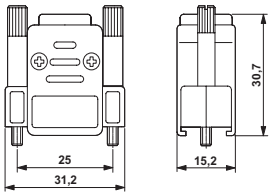
Panel mounting frame

VS-A-F-IP67

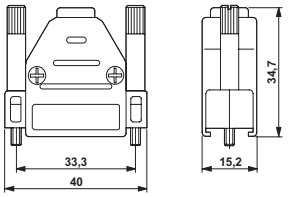


IP20 D-SUB sleeve housings

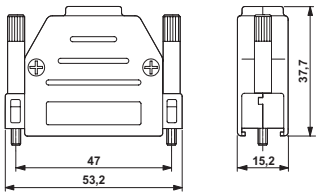
VS-09-T-20-1-S-S



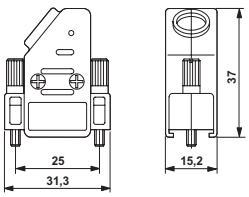
VS-15-T-20-1-S-S



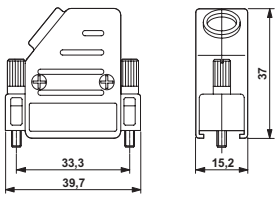
VS-25-T-20-1-S-S



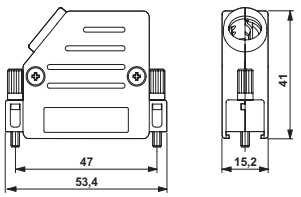
VS-09-T-20-1-S-A



VS-15-T-20-1-S-A

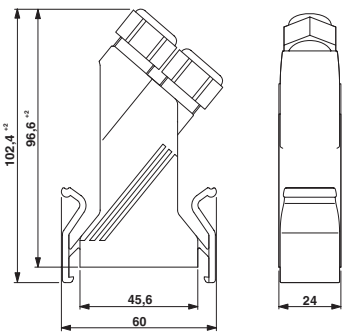


VS-25-T-20-1-S-A

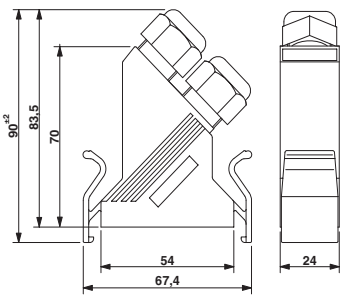


IP67 D-SUB sleeve housings

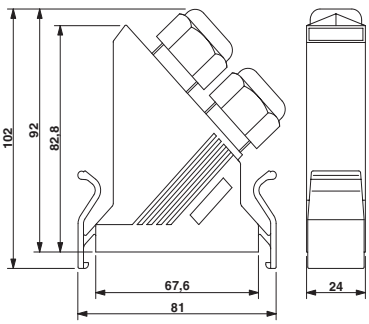
VS-09-T...



VS-15-T...

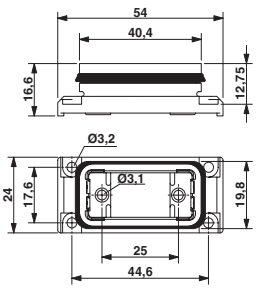


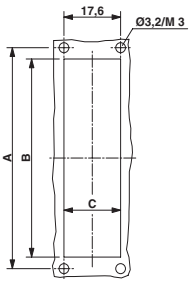
VS-25-T...



IP67 D-SUB panel mounting frames

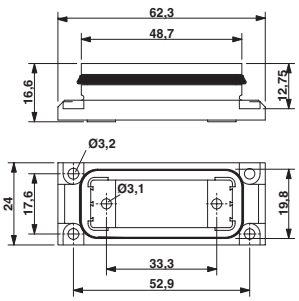
VS-09-A



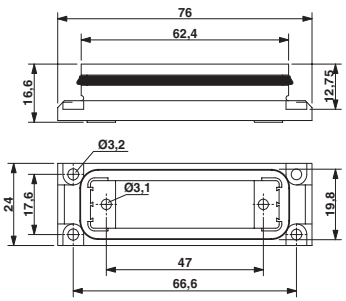


Mounting cutout

VS-15-A

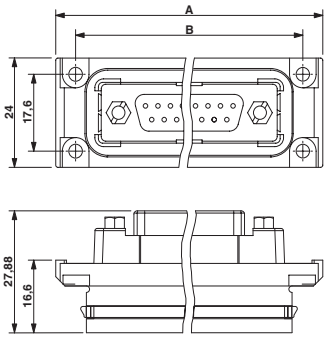


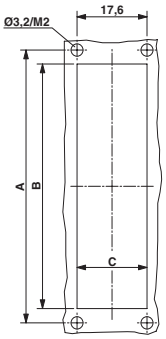
VS-25-A



	VS-09-A	VS-15-A	VS-25-A	VS-09-A With EMC	VS-15-A With EMC	VS-25-A With EMC
A [mm]	44.6	52.9	66.6	44.6	52.9	66.6
B [mm]	37.5	46.0	59.5	33.0	41.0	55.0
C [mm]	17.6	17.6	17.6	14.6	14.6	14.6

D-SUB panel mounting frame with gender changer insert

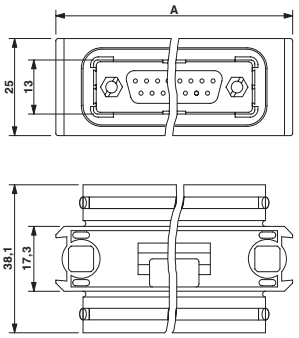




	VS-09-A-GC…	VS-15-A-GC…	VS-25-A-GC…
A [mm]	54,0	62,3	76,0
B [mm]	44,6	52,9	66,6

	VS-09-A-GC…	VS-15-A-GC…	VS-25-A-GC…
A [mm]	44.6	52.9	66.6
B [mm]	37.7	46.0	59.7
C [mm]	17.6	17.6	17.6

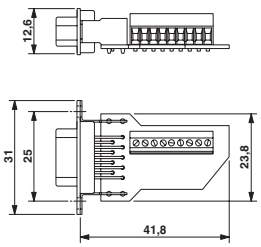
D-SUB coupling



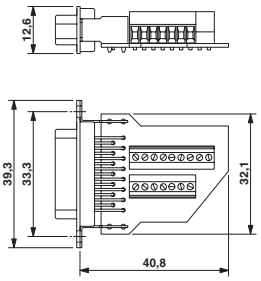
	VS-09-KU…	VS-15-KU…	VS-25-KU…
A [mm]	54.0	62.3	76.0

D-SUB contact inserts with screw connection

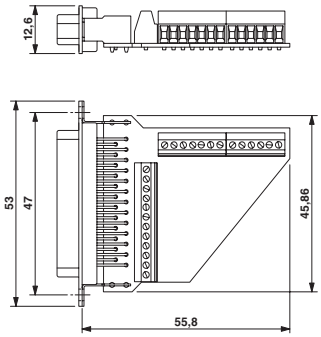
VS-09-...-DSUB/9-MPT-0,5



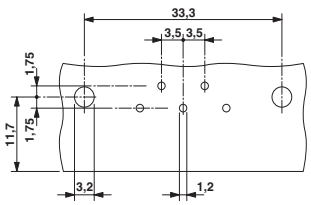
VS-15-...-DSUB/16-MPT-0,5



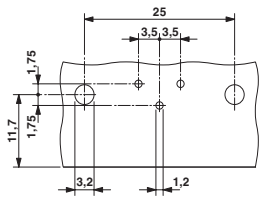
VS-25-...-DSUB/25-MPT-0,5



Drilling diagrams: VS-PSC 1,5/...M (-PE)

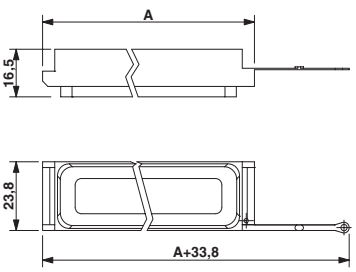


VC-PSC 1,5/5-M (-PE)



VS-PSC 1,5/3-M (-PE)

IP54 D-SUB protective cover VS-...-SD

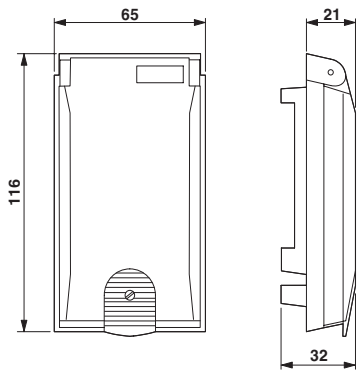


	VS-09-KU…	VS-15-KU…	VS-25-KU…
A [mm]	53.7	62.0	75.7

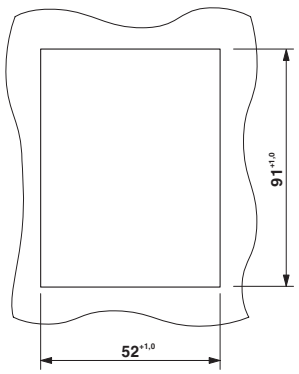
Service interface

Mounting frames

VS-SI-EB-EMV-1

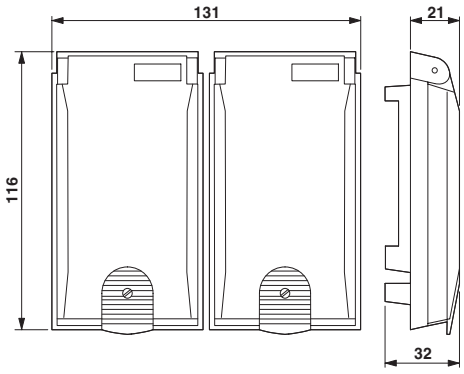


Dimensional drawing

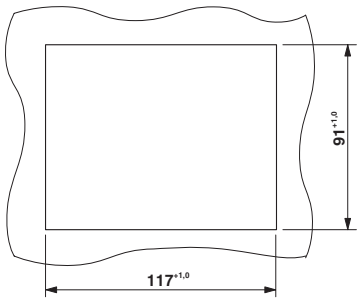


Mounting cutout

VS-SI-EB-EMV-2



Dimensional drawing

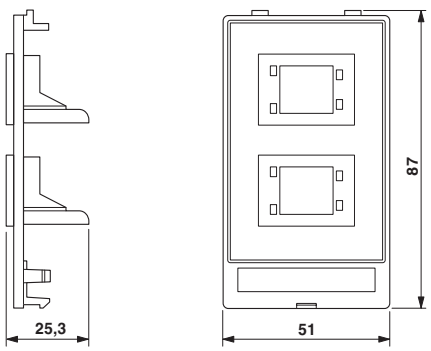


Mounting cutout

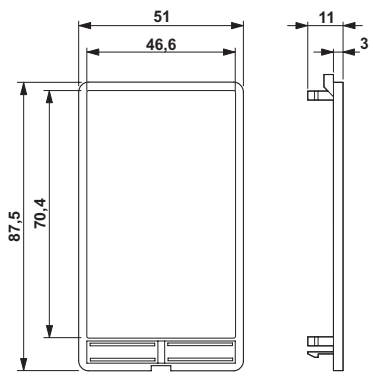
Service interface

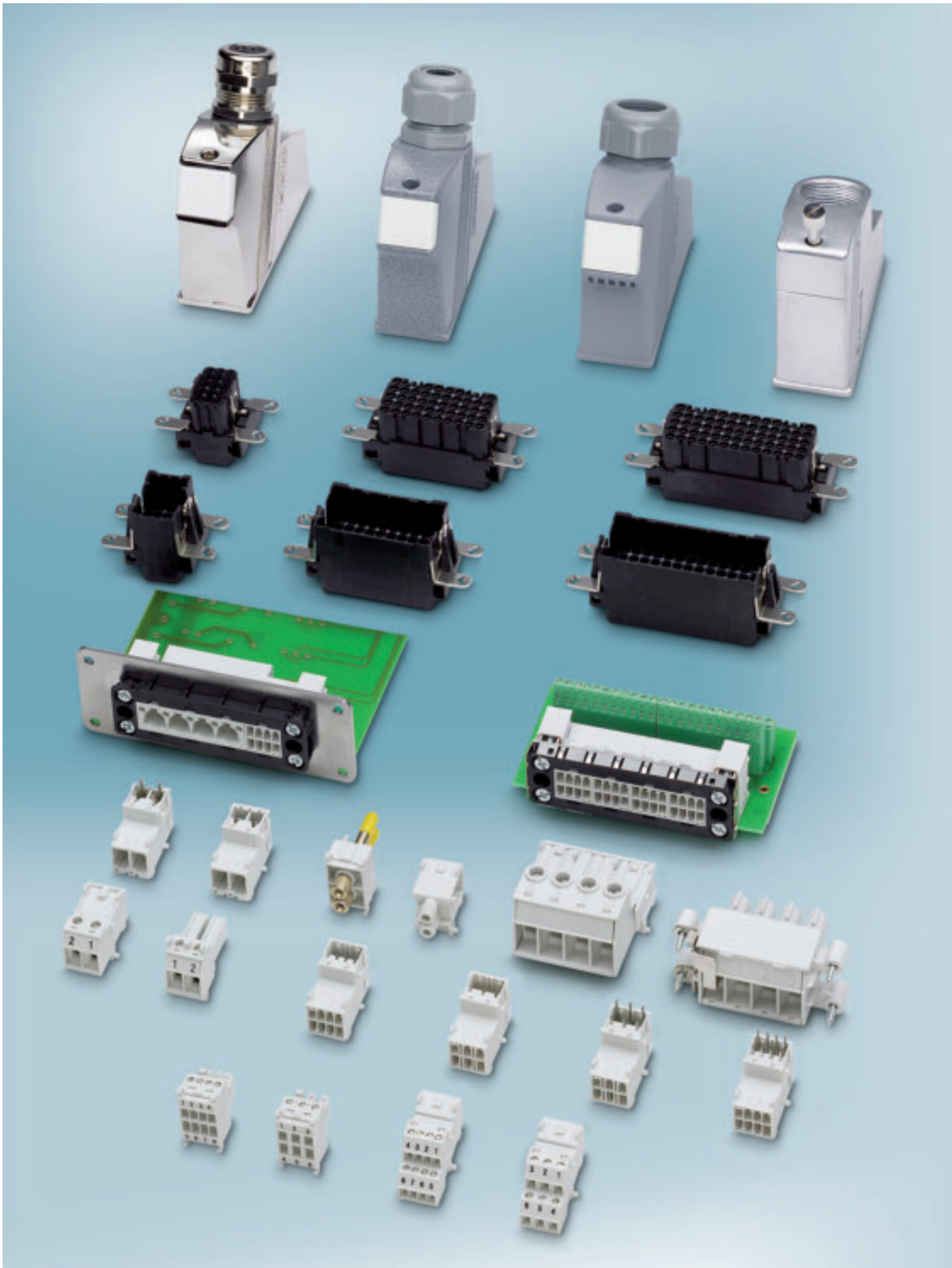
Mounting plates

VS-SI-FP-...



VS-SI-FP-2F





Appliance plug connectors – PLUSCON device

VARIOCON

The direct PCB connection and the omission of a panel mounting base are the exceptional features of the modular, compact, IP67 connector system.

It is especially suitable for use in your devices as well as in terminal boxes and control cabinets in harsh industrial environments. Thanks to its modular design and the variety of contact inserts from signal to power connections with 70 A, VARIOCON offers proven solutions especially in the field of electrical drives.

The basis of the range are modular contact inserts with screw and PCB connection, as well as permanent contact inserts with crimp connection for turned and rolled contacts. The universal screw connections distinguish themselves through high reliability, low contact resistances and compact design. The contact insert modules are uniformly touch proof and can be coded against incorrect plugging. The direct PCB connection saves one complete jumpering level and offers a controlled and space-saving device assembly.

The VARIOCON housing is available in different versions: plastic housings made of impact-resistant polyamide, metal housings made of die-cast zinc with a polyester coating as well as metal housings with a conductive EMC nickel surface. The rugged screw locking protects connectors against unintentional opening and mechanical disturbances such as shocks and vibrations.

Note:

For integrating multiple circuits in one cable and/or a connector,

VDE 0100/1.97 § 411.1.3.2 and
DIN EN 60 204/11.98 § 14.1.3 are applicable.

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VARIOCON

VARIOCON is suitable for use in devices, terminal boxes and control cabinets.

As a result of its modular design and the variety of contact inserts from D-SUB to FO and on to power connections, the range offers nearly unlimited application possibilities.

The basis of the range are modular contact inserts with screw and PCB connection, as well as permanent contact inserts with crimp connection for turned and rolled contacts. The variable structure allows the connector to be put together optimally, and thus at low cost, to suit the individual application.

The housing for direct panel mounting is available in different versions: plastic housings made of tough polyamide, metal housings made of die-cast zinc with a polyester coating as well as metal housings with a conductive EMC nickel surface.

Five reasons for choosing VARIOCON

Appliance plug connectors for industrial use

Advantages	User benefits
1. Modularity of contact inserts and housing	– Customized solution for contact inserts using the combination of power up to 70 A, signal up to 40 positions and fiber optics – Space savings through compact design – Free selection of housing versions that are made of plastic and metal and are EMC-protected
2. Omission of panel mounting base	– Reduced mounting cost – IP67 degree of protection with only one housing seal – Exceptional EMC protection
3. Rugged housing screw locking for commissioning and service	– Insensitive to mechanical disturbances (vibrations, shocks) – Secured against unintentional opening of the plug connection – Space saving in comparison to brackets
4. COMBICON screw connection method	– High reliability – Touch proof – Low contact resistances – Compact design – Can be coded against incorrect plugging – Universal use
5. Direct PCB connection in the device	– Omission of one jumpering level – Controlled assembly owing to the soldered-in method – Space-saving installation

The range of products

Modular contact inserts

VARIOCON Modular allows power and signal transmission to be combined in one connector.

The contact system is based on the proven COMBICON connection method with tension sleeve principle and coding possibility. The panel mounting side can be supplied with screw connection or alternatively with direct PCB connection.

The connection capacity ranges from 4-pos. / 70 A / 690 V to 40-pos. / 10 A / 160 V

In addition, fiber optics modules are available for data transmission.

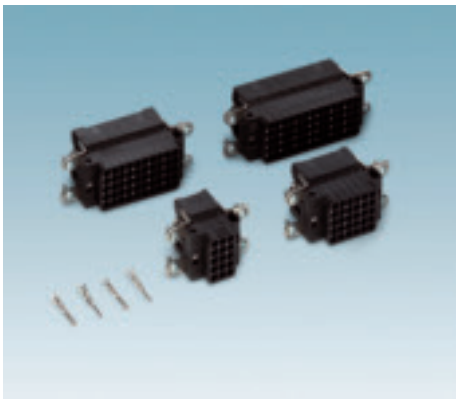
From page 351 onwards

Crimp contact carriers

The crimp contact carriers are available as male or female contact carriers and fulfill the requirements for high-position plug connections.

Turned and rolled crimp contacts from the proven HEAVYCON D-series (EN 175301-801) are available for the 15, 30, 50 and 65-position crimp contact carriers plus two capacitive PE connections each.

All advantages of the crimp system, such as machine preassembly or partial assembly, can be used with VARIOCON-Crimp.

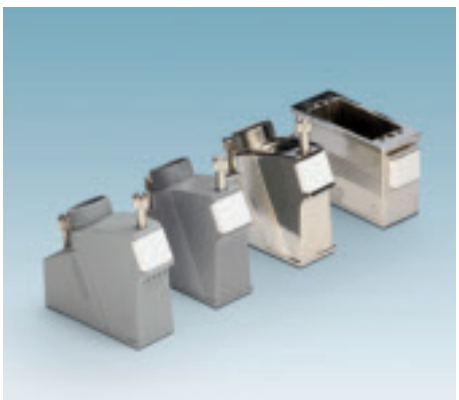


From page 362 onwards

Sleeve housings and supporting base elements

The sleeve housings are available in three housing versions:
– Plastic
– Metal, powder-coated and
– Metal, EMC-coated

VARIOCON sleeve housings form a seal directly on the mounting panel using two locking screws. This locking method saves space, can be accessed easily from above, resists vibration and fulfills the requirements of the IP65/66/67 degree of protection (IP68 on request). For attaching without tools, versions with an easy-to-handle knurled screw are available.



From page 364 onwards

Accessories

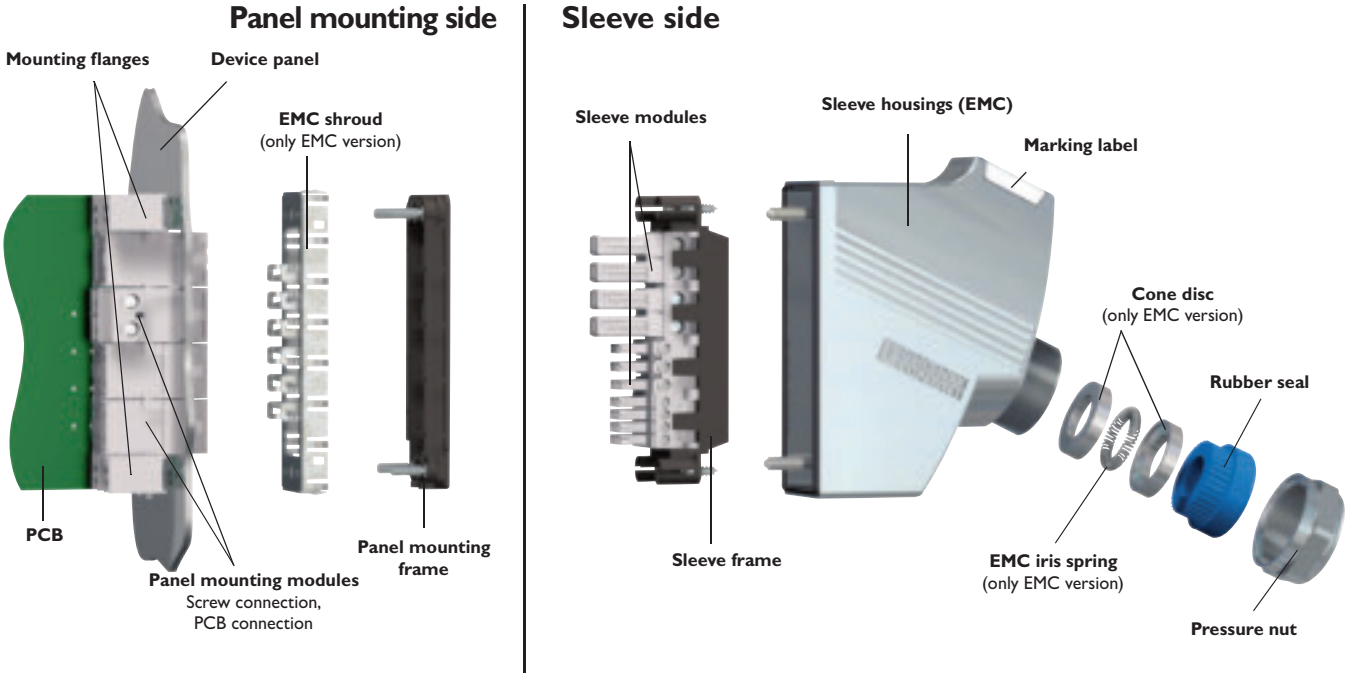
Half cable glands with PG 16 and PG 21 thread are available for the VARIOCON housings. The housings with M20 and M25 thread are available as alternatives.

D-SUB inserts can be integrated for high-position signal connections. Adapter plates for D-SUB 9 to D-SUB 25 inserts are available for this purpose.

With the VC adapter plates, VARIOCON connectors can also be easily used in standard panel cutouts for heavy-duty industrial plug connectors.

Protective covers protect the contact inserts when they are not plugged in.

From page 372 onwards



Panel mounting plug connectors

The panel mounting plug connector consists of the modular mounting contact inserts, the mounting flanges and the panel mounting frame. The contact inserts are available with different numbers of positions and different rated electrical data. They can be snapped together in any order. They are always touch proof, so that the panel mounting plug connector and the sleeve plug connector can be conductive.

Mounting:

– Snap in the contact insert modules in the desired order
– Mount the panel mounting flanges as shown
– Position the contact insert with panel mounting flanges in the panel cutout from the inside of the device
– Snap the panel mounting frame onto the contact insert from the outside of the device
– Screw the panel mounting frame together with the panel mounting flanges

The positions of each contact insert module with screw connection are continuously labeled with 1 or ⏚ to n.

On the panel mounting frame, each module position is labeled from A-E. This makes each position clearly identifiable.

The panel mounting plug connector can either be mounted directly on the device wall as a panel feed-through without a panel mounting base or in a VARIOCON supporting base element.

Contact inserts with PCB connection are available for parallel or right-angled arrangement of the PCB to the device wall. The EMC shroud provides an effective solution for creating an EMC-suitable plug connection to a panel cutout in which only the cutting edge itself is conductive, but the device wall is painted, for example. It is simply snapped in under the panel mounting frame, thereby making contact over a large area between the sleeve housing and the device wall. With the EMC supporting base elements, the EMC shroud can be dispensed with, because the EMC sleeve housings always have a conductive EMC sealing.

Sleeve connectors

The sleeve connectors consist of the modular sleeve contact inserts and the sleeve frame. They are designed to be compatible with the panel mounting connector.

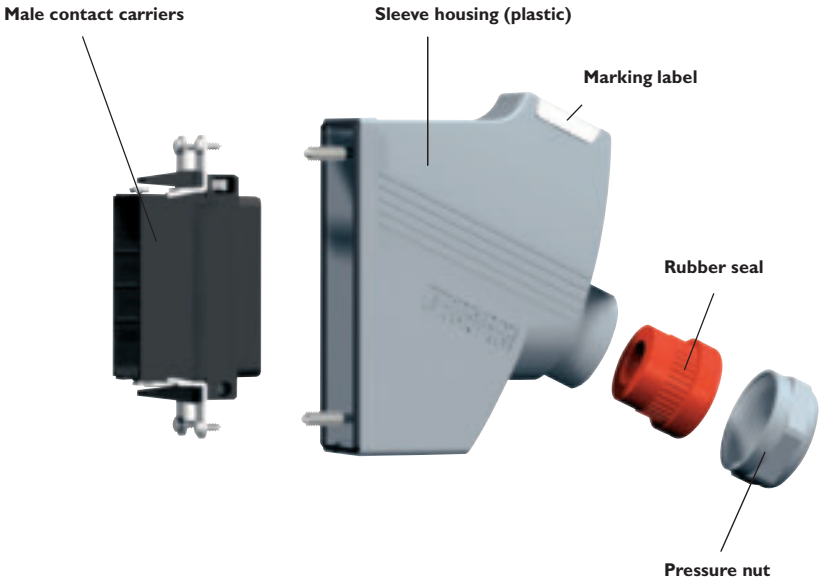
The contact insert modules are snapped into the sleeve frame and screwed into the sleeve housing after conductor assembly.

The angled cable outlet makes it easy to mount the compact VARIOCON connector and allows straight as well as lateral cable outlets. Alternatively, Pg half or metric full screw connections are available in plastic, nickel-plated brass or EMC-shielded.

The power contact inserts and sleeve frames already form a unit for space reasons. The removable marking label is the obvious choice for labeling the VARIOCON housings.

Panel mounting side

Sleeve side



Panel mounting connectors

In the simplest case, the panel mounting plug connector only consists of the contact insert. This is directly screwed onto the device wall using the supplied ST-2,9 screws. The prerequisite for this, however, is a sturdy device wall into which the medium M4 locking thread for the sleeve housing can also be cut.

If a locking thread cannot be cut, there are 2 mm thick V2A panel mounting flanges that can be mounted from the inside of the device.

The panel mounting plug connector can either be mounted efficiently as a panel feed-through without a panel mounting base or in a VARIOCON supporting base element. The current-carrying female contact inserts can be used in panel mounting plug connectors as well as in sleeve connectors. In the case of EMC panel feed-throughs, the device wall must always remain conductive with the crimp contact inserts. The sealing area must not be painted. The EMC sleeve housings always have a conductive EMC seal.

The CK 1,6... crimp contacts, which are also used in the HEAVYCON D series, are available in a punched-rolled and a solid-turned version with a silver or gold-plated surface for conductors from 0.14 to 1.5 mm^2.

Sleeve connectors

The sleeve connector consists of the crimp contact insert and the sleeve housing.

The angled cable outlet makes it easy to mount the compact VARIOCON plug connector and allows straight as well as lateral cable outlets. Alternatively, Pg half or metric full screw connections are available in plastic, nickel-plated brass or EMC-shielded.

In order to avoid mismating several identical VARIOCON-Crimp plugs, special coding pins are available for the panel mounting and sleeve side. The removable marking label is the obvious choice for labeling the VARIOCON housings.

Connector sets

With its geared motors and frequency inverters, servo-drive systems, distributed drive systems and industrial gears, SEW-EURODRIVE is one of the leading companies in drive technology.

The corresponding VARIOCON plug connector sets are available here from stock.

For dimensional drawings, refer to page 380.

VC-M-T2/10() S822 NZ:TS

VC-EMV3-S2266... NZ

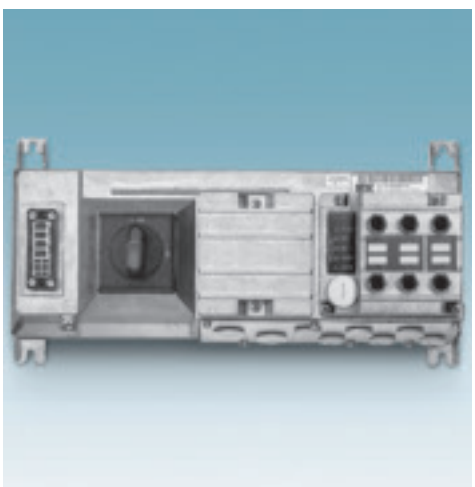
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
EMC sleeve housing, with 4 power and 8 control contacts, screw connection, metric EMC cable screw connection, M25 for clamping range 11 mm ... 16 mm Design: VC2	**VC-M-T2/10() S822 NZ:TS**	**1886074**	20			
EMC sleeve housing, with 4 power and 12 control contacts, screw connection, metric EMC cable screw connection, M25 for clamping range 11 mm ... 16 mm Design: VC3				**VC-EMV3-S2266 NZ**	**1885211**	1
EMC sleeve housing, with 4 power and 12 control contacts, screw connection, metric EMC cable screw connection, M25 for clamping range 11 mm ...16 mm, M20 for clamping range 9 mm ... 13 mm Design: VC3				**VC-EMV3-S2266-M20/M25 NZ**	**1885212**	1

Technical data	**Power contacts**	**Control contacts**	**Power contacts**	**Control contacts**
Electrical data in acc. with IEC 61076-2-101				
Rated voltage	400 V	160 V	400 V	250 V
Rated surge voltage	6 kV	2.5 kV	6 kV	2.5 kV
Rated current	20 A	10 A	20 A	10 A
Material data				
Design	VC2		VC3	
Housing material	Zinc die-cast		Zinc die-cast	
Housing surface material	Copper-nickel coating		Copper-nickel coating	
Material of locking screw	V2A		V2A	
Seal material	EPDM, conductive		EPDM, conductive	
Degree of protection	IP65/IP66/IP67		IP65/IP66/IP67	
Connection data				
Conductor cross-section	0.2 mm² ... 4 mm²	0.14 mm² ... 1.5 mm²	0.2 mm² ... 4 mm²	0.14 mm² ... 1.5 mm²
Connection cross-section AWG	24 ... 12	28 ... 16	24 ... 12	28 ... 16
Temperature data				
Ambient temperature (operation)	-40°C ... 100°C		-40°C ... 100°C	

Field distributors:
MF../Z.3. and MF../Z.6,
MQ../Z.3. and MQ../Z.6
for VC-M-T2... (Order No. 1886074)

Field distributors with MOVIMOT converter:
MF../MM../Z.7 and MF../MM../Z.8.
MQ../MM../Z.7 and MQ../MM../Z.8.
for VC-EMV3... (Only Order No. 1885211)

(Geared) motors with connector:
...DT../APG1 and ...DT../APG4
for VC-EMV3... (Order No. 1885211 and 1885212)



Field distributor Z.6

Field distributor Z.8

Contact insert sets for hood side and mounting side

The contact insert sets are taken from the modular VARIOCON range. For standard panel feed-throughs with a uniform wire cross-section, up to 40-position plug connectors are thus possible.

The screw connection can be easily wired in the field. The positions are consecutively marked with PE and from 1 to n.

For dimensional drawings, refer to page 380.

VC-TR...PEA...SET

Contact insert sets for the sleeve side, with PE, screw connection

VC-AR...SET

Contact insert sets for the mounting side, screw connection

Description	Design	Number of positions Incl. PE	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert set, consisting of: Frame, four mounting screws and pre-assembled 2-pos. modules with screw connection, six keying profiles								
	VC1	4	**VC-TR1/2M-PEA-S22-SET**	**1607143**	5	**VC-AR1/2M-S22-SET**	**1607298**	5
	VC2	6	**VC-TR2/3M-PEA-S222-SET**	**1607154**	5	**VC-AR2/3M-S222-SET**	**1607311**	5
	VC3	8	**VC-TR3/4M-PEA-S2222-SET**	**1607167**	5	**VC-AR3/4M-S2222-SET**	**1607322**	5
	VC4	10	**VC-TR4/5M-PEA-S22222-SET**	**1607178**	5	**VC-AR4/5M-S22222-SET**	**1607335**	5
Contact insert set, consisting of: Frame, four mounting screws and pre-assembled 6-pos. modules with screw connection, six keying profiles								
	VC1	12	**VC-TR1/2M-PEA-S66-SET**	**1607191**	5	**VC-AR1/2M-S66-SET**	**1607346**	5
	VC2	18	**VC-TR2/3M-PEA-S666-SET**	**1607202**	5	**VC-AR2/3M-S666-SET**	**1607359**	5
	VC3	24	**VC-TR3/4M-PEA-S6666-SET**	**1607215**	5	**VC-AR3/4M-S6666-SET**	**1607370**	5
	VC4	30	**VC-TR4/5M-PEA-S66666-SET**	**1607226**	5	**VC-AR4/5M-S66666-SET**	**1607383**	5
Contact insert set, consisting of: Frame, four mounting screws and pre-assembled 8-pos. modules with screw connection, six keying profiles								
	VC1	16	**VC-TR1/2M-PEA-S88-SET**	**1607239**	5	**VC-AR1/2M-S88-SET**	**1607394**	5
	VC2	24	**VC-TR2/3M-PEA-S888-SET**	**1607250**	5	**VC-AR2/3M-S888-SET**	**1607407**	5
	VC3	32	**VC-TR3/4M-PEA-S8888-SET**	**1607263**	5	**VC-AR3/4M-S8888-SET**	**1607418**	5
	VC4	40	**VC-TR4/5M-PEA-S88888-SET**	**1607274**	5	**VC-AR4/5M-S88888-SET**	**1607431**	5

Technical data		VC-TR...S2...	VC-TR...S6...	VC-TR...S8...	VC-AR...S2...	VC-AR...S6...	VC-AR...S8...
Electrical data in acc. with IEC 61076-2-101							
Rated voltage	[V]	400	250	160	400	250	160
Rated surge voltage	[kV]	6	4	3	6	4	3
Rated current	[A]	20	10	10	20	10	10
Surge voltage category / Pollution degree		III / 3	III / 3	III / 3	III / 3	III / 3	III / 3
Inflammability class in acc. with UL 94		V0	V0	V0	V0	V0	V0
Connection data							
Torque	[Nm]	0.50 - 0.60	0.22 - 0.25	0.22 - 0.25	0.50 - 0.60	0.22 - 0.25	0.22 - 0.25
Connection cross-section	[mm²]	0.2 ... 4	0.14 ... 1.5	0.14 ... 1.5	0.2 ... 4	0.14 ... 1.5	0.14 ... 1.5
Connection cross-section	AWG	24 ... 12	28 ... 16	28 ... 16	24 ... 12	28 ... 16	28 ... 16
Temperature data							
Ambient temperature (operation)		-40°C ... 100°C			-40°C ... 100°C		

VARIOCON sleeve plug connector

VARIOCON panel mounting plug connector

Power inserts for sleeve and panel mounting connectors

For dimensional drawings, see page 380.

VC-TFS ...-PEA

Sleeve contact insert module, with screw connection

The modular contact inserts are based on the tried-and-tested COMBICON technology. They are available with the screw connection method and on the mounting side also as a solder-in version.

With the keying profiles CP-HCC 4 the power inserts can be keyed to prevent confusion of similar plug connectors. In case of sleeve inserts VC-TFS..., the corresponding opposite coding bar must be cut off flush.

The modular high current inserts fit in all the VARIOCON sleeve housings. Combinations with any 1 and 2 modules are possible as an option. The standard frames and mounting flanges are used on the mounting side.

High current panel mounting inserts VC-AMS.... cannot be used in the VC flush-mounting housings for space reasons. Special coupling housings or box mounting bases are available upon request.

Note:

The hinged cover must be closed after assembly to maintain insulation data.

VARIOCON contact insert modules meet the requirements of DIN EN 61984 (plug connectors without switching capacity) and should therefore be operated only under no load condition.

All inserts are touch proof and in accordance with DIN EN 60529 and fulfill the requirements of the BGV A2 accident prevention regulations.

For the contact inserts with screw connection, there is an insertion bridge EB3-10/ST (order no. 5020823).

Description	Design	Number of positions Incl. PE	Type	Order No.	Pcs. / Pkt.
Sleeve contact insert module, with PE conductor connection to the metal sleeve housing and integrated sleeve frame					
	VC2	4	**VC-TFS 4-PEA**	**1607467**	5
	VC3	5	**VC-TFS 5-PEA**	**1607474**	5
	VC4	7	**VC-TFS 7-PEA**	**1607481**	5
Sleeve contact insert module, with PE conductor connection to the metal sleeve housing					
One extra module	VC3	4	**VC-TFS 4/1M-PEA**	**1607488**	5
Two extra modules	VC4	4	**VC-TFS 4/2M-PEA**	**1607495**	5
One extra module	VC4	5	**VC-TFS 5/1M-PEA**	**1607502**	5
Panel mounting contact insert module					
	VC2/3/4	4			
	VC3/4	5			
	VC4	7			
Coding profile, prevents confusion of similar connectors					
Diagonal cutter, for flush cutting of the coding bars					
			MICROFOX SC	**1205862**	1
Panel mounting frame					
Additional modules			**See page 354**		

Technical data		
Electrical data in acc. with IEC 61076-2-101		
UL rated voltage	[V]	600
Rated voltage	[V]	690
Rated surge voltage	[kV]	6
Rated current	[A]	70
Surge voltage category / Pollution degree		III / 3
Material data		
Contact carrier material		PA
Contact surface material		Hard-silver plated
Inflammability class in acc. with UL 94		V0
Connection data		
Torque	[Nm]	1.20 - 1.80
Stripping length	[mm]	14
Connection cross-section	[mm²]	0.5 mm² ... 16 mm²
Connection cross-section	AWG	20 ... 6
Insertion/withdrawal cycles		≥ 500
Temperature data		
Ambient temperature (operation)		-40°C ... 100°C

VC-AMS ...

Panel mounting contact insert module, with screw connection

VC-AML ...

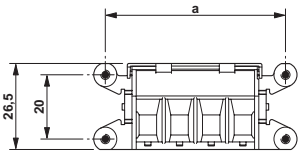
Panel mounting contact insert module, with 90° PCB connection

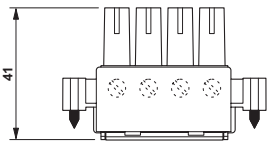
Type	Order No.	Pcs. / Pkt.
VC-AMS 4	**1607745**	5
VC-AMS 5	**1607748**	5
VC-AMS 7	**1607751**	5
CP-HCC 4	**1600027**	100
see page 358		

Type	Order No.	Pcs. / Pkt.
VC-AML 4	**1607509**	10
VC-AML 5	**1607523**	5
VC-AML 7	**1607537**	5
CP-HCC 4	**1600027**	100
see page 358		

600	600
690	690
6	6
70	63
III / 3	III / 3
PA	PA
Hard-silver plated	Hard-silver plated
V0	V0
1.20 - 1.80	-
12	-
0.5 mm² ... 16 mm²	-
20 ... 5	-
≥ 500	≥ 500
-40°C ... 100°C	-40°C ... 100°C

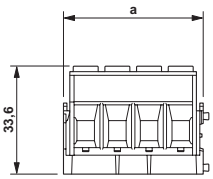
Type	Dimension a [mm]
VS-TFS 4...	57.8
VS-TFS 5...	72.8
VS-TFS 7...	87.5

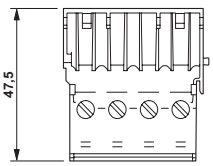




Dimensional drawing: VC-TFS...

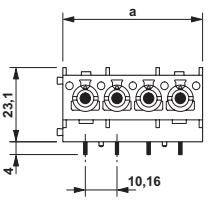
Type	Dimension a [mm]
VS-AMS 4...	45
VS-AMS 5...	60
VS-AMS 7...	75

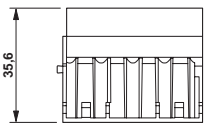




Dimensional drawing: VC-AMS...

Type	Dimension a [mm]
VS-AML 4...	45
VS-AML 5...	60
VS-AML 7...	75





Dimensional drawing: VC-AML...

Contact insert modules for sleeve and panel mounting connectors

The modular contact inserts are based on the tried-and-tested COMBICON technology. They are available with the screw connection method and can also be supplied as a solder-in version on the device side.

The sleeve or panel mounting contact inserts are snapped into the corresponding frame and are then simple to assemble and mount. The modules are easy to unsnap with a screwdriver.

All contact inserts can be equipped with coding profiles. This rules out the possibility of mixing up several plug connectors.

The modules are numbered consecutively.

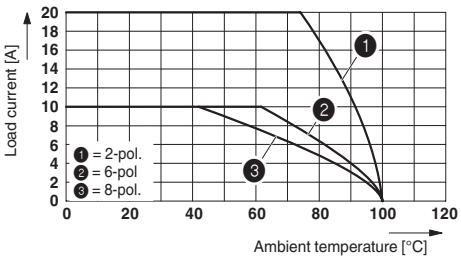
Note:

VARIOCON contact inserts meet the requirements of DIN EN 61984 (connectors without switching capacity) and should therefore be operated only under no load condition.

Notes:

For dimensional drawings, refer to page: 380.

Drilling diagrams, see page: 380.



Derating diagram

VC-TFS ...

Modules for sleeve frame with screw connection

Description	No. of pos.	Type	Order No.	Pcs. / Pkt.
Contact insert module, marking on screw connection:				
1 ... 2	2	**VC-TFS 2**	**1852846**	50
1 ... 6	6	**VC-TFS 6**	**1853476**	50
1 ... 8	8	**VC-TFS 8**	**1852820**	50
Contact insert module, marking on screw connection:				
PE, 2	2	**VC-TFS 2-PE**	**1583513**	50
PE, 2 ... 6	6	**VC-TFS 6-PE**	**1583526**	50
PE, 2 ... 8	8	**VC-TFS 8-PE**	**1583536**	50
Dummy modules For sleeve connectors		**VC-T 2-BM**	**1607813**	50
For panel mounting connectors				
Keying profile, for VC-...2, prevents confusion of similar connectors		**CP-HCC 4**	**1600027**	100
Keying profile, for VC-...6 and VC...-8, is pushed in into the groove on the contact insert module, red insulating material		**CP-MSTB**	**1734634**	100
Sleeve frame		**see page 358**		
Panel mounting frame				

Technical data		VC-TFS 2	VC-TFS 6	VC-TFS 8
Electrical data in acc. with IEC 61076-2-101				
UL rated voltage	[V]	600	600	250
Rated voltage	[V]	400	250	160
Rated surge voltage	[kV]	6	4	3
Rated current	[A]	20	10	10
Surge voltage category / Pollution degree		III / 3	III / 3	III / 3
Material data				
Contact material		CuZn	CuZn	CuZn
Contact carrier material		PA	PA	PA
Inflammability class in acc. with UL 94		V0	V0	V0
Connection data				
Torque	[Nm]	0.50 - 0.60	0.22 - 0.25	0.22 - 0.25
Stripping length	[mm]	10	6	6
Connection cross-section	[mm²]	0.2 ... 4	0.14 ... 1.5	0.14 ... 1.5
Connection cross-section	AWG	24 ... 12	28 ... 16	28 ... 16
Insertion/withdrawal cycles		≥ 100	≥ 100	≥ 100
Temperature data				
Ambient temperature (operation)		-40°C ... 100°C		

VC-AMS ...

Modules for panel mounting frame, with screw connection

VC-AML ...

Modules for panel mounting frame, with 90° PCB connection

VC-AMLV ...

Modules for panel mounting frame, with 180° PCB connection

Type	Order No.	Pcs. / Pkt.
VC-AMS 2	**1853528**	50
VC-AMS 6	**1854019**	50
VC-AMS 8	**1854022**	50
VC-AMS 2-PE	**1583542**	50
VC-AMS 6-PE	**1583555**	50
VC-AMS 8-PE	**1583568**	50
VC-A 2-BM	**1607815**	50
CP-HCC 4	**1600027**	100
CP-MSTB	**1734634**	100
see page 360		

VC-AMS 2	VC-AMS 6	VC-AMS 8
600	600	250
400	250	160
6	4	3
20	10	10
III / 3	III / 3	III / 3
CuZn	CuZn	CuZn
PA	PA	PA
V0	V0	V0
0.50 - 0.60	0.22 - 0.25	0.22 - 0.25
10	6	8
0.2 ... 4	0.14 ... 1.5	0.14 ... 1.5
24 ... 12	28 ... 16	28 ... 16
≥ 100	≥ 100	≥ 100
-40°C ... 100°C		

Type	Order No.	Pcs. / Pkt.
VC-AML 2	**1852859**	50
VC-AML 6	**1853531**	50
VC-AML 8	**1852833**	50
VC-A 2-BM	**1607815**	50
CP-HCC 4	**1600027**	100
CP-MSTB	**1734634**	100
see page 360		

VC-AML 2	VC-AML 6	VC-AML 8
600	600	250
400	250	160
6	4	3
20	10	10
III / 3	III / 3	III / 3
CuZn	CuZn	CuZn
PA	PA	PA
V0	V0	V0
-	-	-
-	-	-
-	-	-
-	-	-
≥ 100	≥ 100	≥ 100
-40°C ... 100°C		

Type	Order No.	Pcs. / Pkt.
VC-AMLV 2	**1884979**	50
VC-AMLV 6	**1884872**	50
VC-AMLV 8	**1884885**	50
VC-A 2-BM	**1607815**	50
CP-HCC 4	**1600027**	100
CP-MSTB	**1734634**	100
see page 360		

VC-AMLV 2	VC-AMLV 6	VC-AMLV 8
600	600	250
400	250	160
6	4	3
20	10	10
III / 3	III / 3	III / 3
CuZn	CuZn	CuZn
PA	PA	PA
V0	V0	V0
-	-	-
-	-	-
-	-	-
-	-	-
≥ 100	≥ 100	≥ 100
-40°C ... 100°C		

FO contact insert modules with screw connection

VC-TFOS 2

Contact insert module ferrules, with F-SMA screw connection

The fiber optic modules of VARIOCON enable optical signal transmission over distances of up to 50 m by using polymer fiber optic cables.

Quick-assembly on the connector side and passive panel feed-through make assembly possible in 2 minutes, even in the field.

The single core is stripped, fixed in the ferrule with the knurled screw and then polished for the optical connection.

Coding:

The FO contact insert modules can be additionally protected against incorrect plugging with the red coding profiles CP-HCC 4 (Order No. 1600027).

Description	Type	Order No.	Pcs. / Pkt.
Contact insert module, for sleeve frames	**VC-TFOS 2**	**1855814**	10
Contact insert module, for panel mounting frames for accommodating VC-FSMA-M ... quick mounting connectors			
FSMA connector, for polymer fiber cable, for contact carrier module VC-AFOS 2, (2 pcs. each as set)			
FSMA connector set, with bend protection sleeve for polymer fiber cable, for contact carrier module VC-AFOS 2, (2 pcs. each as set)			
Stripping tool for FO cables	**PSM-FO-STRIP**	**2744199**	1
Polisher, metal, for repeated preparation of VARIOCON fiber optic ferrules	**VC-POLISHER/M FSMA**	**1884982**	1
Polymer fiber polishing set, for F-SMA quick mounting plug	**PSM-SET-FSMA-POLISH**	**2799348**	1

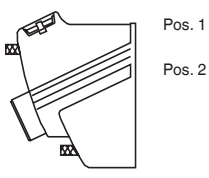
Technical data		
Material data		
Contact material		Nickel silver
Contact carrier material		PA
Inflammability class in acc. with UL 94		V0
Mechanical data		
Connection profile		F-SMA type 905, IEC 874-2
Torque value knurled screw		0.1 Nm (hand tight)
Connection data		
Stripping length	[mm]	12
Cable type		Polymer fiber (980 / 1000 µm)
Insertion/withdrawal cycles		> 100
Attenuation		< 3 dB
Temperature data		
Ambient temperature (operation)		-20°C ... 70°C

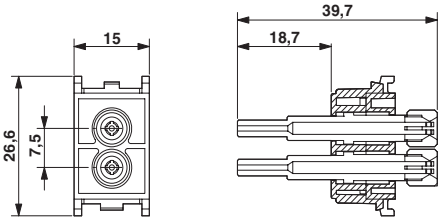
Note:

The minimum allowed bending radius is to be taken into consideration when using fiber optics. For optic fibers (polymer fiber cable) that only allow a minimum bending radius of 50 mm, Phoenix Contact recommends using the slots as shown in the adjacent table. Passive coupling reduces the transmission range by approx. 10 m.

Recommended slots in the sleeve frame

Sleeve frame size	VC-TFOS 2 module at position
1	1
2	1
3	1 and/or 2
4	2





VC-TFOS 2

VC-AFOS 2

Mounting contact insert

VC-FSMA-M ...

F-SMA quick mounting plug
for polymer fiber cables

VC-FSMA-M ...

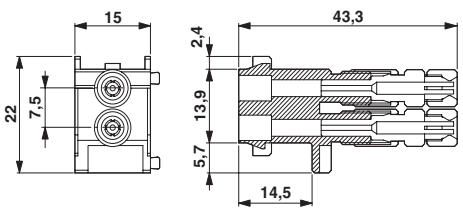
F-SMA quick mounting plug
for polymer fiber cables

Type	Order No.	Pcs. / Pkt.
VC-AFOS 2	1885240	10
PSM-FO-STRIP	2744199	1
VC-POLISHER/M FSMA	1884982	1
PSM-SET-FSMA-POLISH	2799348	1

Type	Order No.	Pcs. / Pkt.
VC-FSMA-M-2 SET	1855432	1
PSM-FO-STRIP	2744199	1
VC-POLISHER/M FSMA	1884982	1
PSM-SET-FSMA-POLISH	2799348	1

Type	Order No.	Pcs. / Pkt.
VC-FSMA-M-KT-2 SET	1855703	1
PSM-FO-STRIP	2744199	1
VC-POLISHER/M FSMA	1884982	1
PSM-SET-FSMA-POLISH	2799348	1

Nickel silver	Nickel silver	Nickel silver
PA	-	-
V0	-	-
F-SMA type 905, IEC 874-2	F-SMA type 905, IEC 874-2	F-SMA type 905, IEC 874-2
0.1 Nm (hand tight)	0.1 Nm (hand tight)	0.1 Nm (hand tight)
12	12	-
Polymer fiber (980 / 1000 µm)	Polymer fiber (980 / 1000 µm)	Polymer fiber (980 / 1000 µm)
> 100	> 100	> 100
< 3 dB	< 3 dB	< 3 dB
-20°C ... 70°C	-20°C ... 70°C	-20°C ... 70°C



VC-AFOS 2

Sleeve frame

VC-TR...M

Sleeve frame

Sleeve frames are available for 2 to 5 contact insert modules. Each module position is labeled from A-E.

The contact insert modules are snapped into the sleeve frame. The frame is then screwed together with the housing.

Two sleeve frame versions are available for each size, both with and without PE connection.

Advantages:

– The PE connection to the metal housing is particularly space-saving
– Any position can serve as a PE contact

Notes:

VC contact inserts meet the requirements of DIN EN 61984, i.e. connectors without switching capacity, and should therefore be operated only under no load condition.

Leading PE contact on request.

Description	Design	Module slots	Type	Order No.	Pcs. / Pkt.
Sleeve frame, without PE, for contact insert modules in plastic sleeves or operating voltages < 42 V					
	VC1	2	**VC-TR1/2M**	**1852891**	5
	VC2	3	**VC-TR2/3M**	**1852901**	5
	VC3	4	**VC-TR3/4M**	**1852914**	5
	VC4	5	**VC-TR4/5M**	**1852927**	5
Sleeve frame, with PE, for contact insert modules in metal sleeves and operating voltages > 42 V					
	VC1	2			
	VC2	3			
	VC3	4			
	VC4	5			
T20 replacement screw			**VC-TR-S**	**1607826**	50

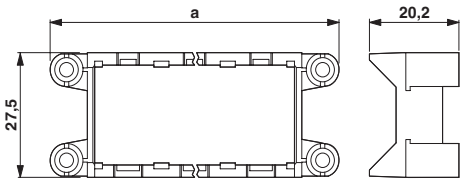
Technical data	
Material data	
Material	PA-GF
Contact material	-
Inflammability class in acc. with UL 94	V0
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C

VC-TR...M-PEA

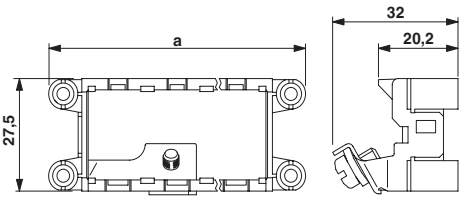
Sleeve frames with PE

Sleeve frame type	Design	a [mm]
VC-TR1/2M...	VC 1	50.2
VC-TR2/3M...	VC 2	65.2
VC-TR3/4M...	VC 3	80.2
VC-TR4/5M...	VC 4	95.2

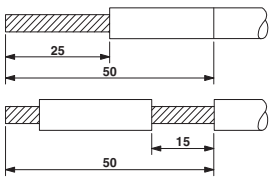
Table: Sleeve frame VC-TR...



VC-TR...M



VC-TR...M PEA



Stripping length of the PE conductor

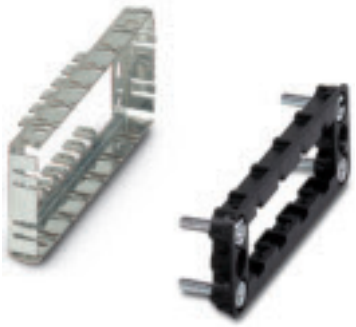
Type	Order No.	Pcs. / Pkt.
VC-TR1/2M-PEA	**1607059**	5
VC-TR2/3M-PEA	**1607062**	5
VC-TR3/4M-PEA	**1607075**	5
VC-TR4/5M-PEA	**1607088**	5
VC-TR-S	**1607826**	50

PA-GF	
CuZn	
V0	
-40°C ... 100°C	

Assembly instructions:

Metal sleeves must be grounded in case of operating voltages > 42 V. The VC-TR...M-PEA frame has a PE sheet with a PE connection. Strip the PE conductor by 25 mm and cut the insulation at 50 mm. Push the cut insulation forward by 15 mm. Connect the PE conductor to the contact of the module and clamp it to the PE sheet under the PE screw (see the photo).

Panel mounting frame



VC-AR...M

Panel mounting frame

Two mounting flanges (VC-AF) are required for securing the panel mounting frame on the mounting panel. They connect the panel mounting frame with the device wall, and, if present, the printed circuit board.

In case of an EMC shielded plug connection, the shield adapter VC-AR...EMV is necessary if contacting is only possible on the cutting surface of the panel cutout. The housing seal is conductive.

If VARIOCON panel mounting frames are mounted on electrically conductive supporting base elements and the nominal voltage is > 42 V, the VARIOCON panel mounting frames with PE (VC-AR...M-PEA) must be used.

Description	Design	Module slots	Type	Order No.	Pcs. / Pkt.
Panel mounting frame, for panel feed-throughs and for VARIOCON supporting base elements at voltages < 42 V					
	VC1	2	**VC-AR1/2M**	**1852972**	5
	VC2	3	**VC-AR2/3M**	**1852985**	5
	VC3	4	**VC-AR3/4M**	**1852998**	5
	VC4	5	**VC-AR4/5M**	**1853007**	5
Panel mounting frame, with PE, for VARIOCON supporting base elements with voltages > 42 V					
	VC1	2			
	VC2	3			
	VC3	4			
	VC4	5			
EMC shield adapter, for EMC connectors					
	VC1	2	**VC-AR1-EMV**	**1853214**	5
	VC2	3	**VC-AR2-EMV**	**1853227**	5
	VC3	4	**VC-AR3-EMV**	**1853230**	5
	VC4	5	**VC-AR4-EMV**	**1853243**	5
Panel-mounting flange for screw locking, for wall thicknesses of 1-5 mm, 2 pcs. per panel feed-through required, not for supporting base element			**VC-AF**	**1852862**	50
Replacement screws, for panel mounting frame			**VC-AR-S**	**1607829**	50

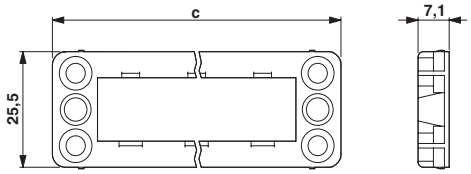
Technical data	
Material data	
Material	PA-GF
Contact material	-
Inflammability class in acc. with UL 94	V0
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

VC-AR...M-PEA

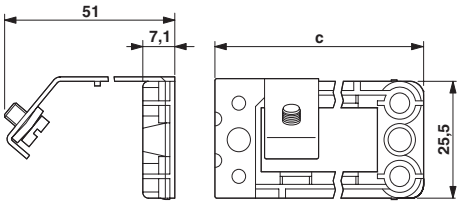
Panel mounting frames with PE

Panel mounting frame type	Dimensions [mm]		
	a	b	c
VC-AR1/2M...	40.0	32.4	50.6
VC-AR2/3M...	55.0	47.4	65.6
VC-AR3/4M...	70.0	62.4	80.6
VC-AR4/5M...	85.0	77.4	95.6

Table: Mounting cutout and panel mounting frame VC-AR...



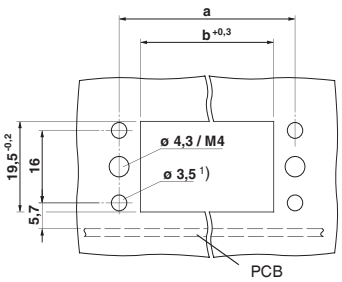
VC-AR...M



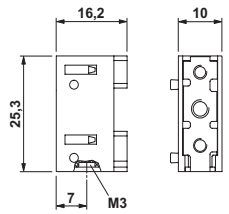
VC-AR...M PEA

Type	Order No.	Pcs. / Pkt.
VC-AR1/2M-PEA	**1607761**	1
VC-AR2/3M-PEA	**1607774**	1
VC-AR3/4M-PEA	**1607787**	1
VC-AR4/5M-PEA	**1607790**	1
VC-AF	**1852862**	50
VC-AR-S	**1607829**	50

PA-GF
CuZn
V0
-40°C ... 125°C



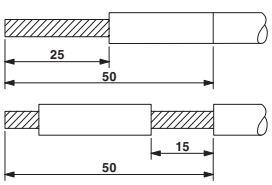
Mounting cutout VC-AR...
1) M3 and M4, if VC-AF is not needed.



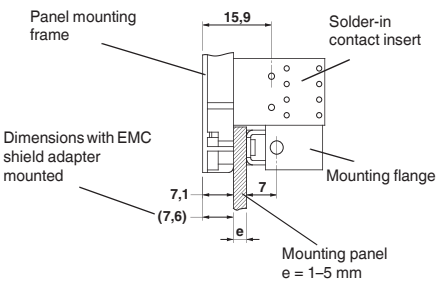
Dimensional drawing: Mounting flange VC-AF

Assembly instructions:

The supporting base element must be grounded in case of operating voltages > 42 V. The VC-AR...M-PEA frame has a PE sheet with a PE connection. Strip the PE conductor by 25 mm and cut the insulation at 50 mm. Push the cut insulation forward by 15 mm. Connect the PE conductor to the contact of the module and clamp it to the PE sheet under the PE screw (see the photo).



Stripping length of the PE conductor



Mounting: Mounting flange VC-AF

Contact carriers for turned and rolled crimp contacts

15, 30, 50 and 65 poles are available, in accordance with housing sizes 1-4. Male and female contacts can be used on both the connector and device sides.

The contact carriers additionally have two pre-mating protective ground contacts. The connection data is 250 V / 10 A and is equivalent to that of the HEAVYCON D series. Both turned and rolled contacts can be used in the contact carriers. The type of contacts used fulfill the requirements of IEC 60352/ DIN EN 60352.

Safety note:

The PE conductor must always be connected to the directly opposite positions.

Connectors may only be operated when under no-load conditions.

Notes:

For crimp contacts, refer to page 528.

For crimping tool, refer to page 534.

VC-D...-ST...-PE

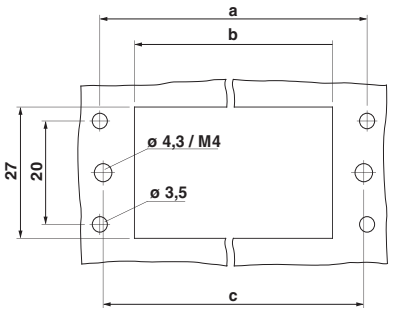
Male contact carrier,
for turned and rolled contacts

Description	Design	Number of positions Incl. PE	Type	Order No.	Pcs. / Pkt.
Female contact carrier, with four ST 2,9 fastening screws					
	VC1	15	**VC-D1-ST15-PE**	**1855018**	10
	VC2	30	**VC-D2-ST30-PE**	**1855021**	10
	VC3	50	**VC-D3-ST50-PE**	**1855034**	10
	VC4	65	**VC-D4-ST65-PE**	**1855047**	10
Mounting flange, to screw the contact insert to the housing panel			**VC-D-AF**	**1855319**	20
Coding pins, with ST2,9 thread for sleeve housings, to prevent identical plug connectors from being confused			**VC-CB-T**	**1607884**	10
Coding pins, with M3 thread for VC panel mounting bases, to prevent identical plug connectors from being confused			**VC-CB-A**	**1607888**	10

Technical data		
Electrical data in acc. with IEC 61076-2-101		
Rated voltage	[V]	250
Rated surge voltage	[kV]	4
Rated current	[A]	10
Surge voltage category / Pollution degree		III / 2
Material data		
Contact carrier material		PA-GF
Connection data		
Stripping length	[mm]	8
Connection cross-section	[mm²]	0.14 mm² ... 1.5 mm² (stranded)
Connection cross-section	AWG	22 ... 16
Temperature data		
Ambient temperature (operation)		-40°C ... 125°C

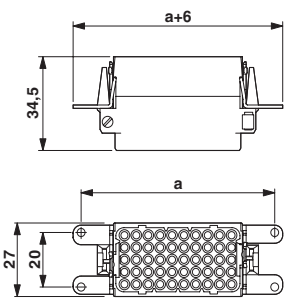
Design	Number of positions	a [mm]	b [mm]	c [mm]
VC 1	15	42.8	31.5	40.0
VC 2	30	57.8	46.5	55.0
VC 3	50	72.8	61.5	70.0
VC 4	65	87.8	76.5	85.0

Dimension table



Mounting cutout VC-D...-PE

[1]) Ø 2.5 for supplied ST2,9 screw



VC-D...-ST...-PE

VC-D...-BU-PE

Female contact carrier,
for turned contacts

VC-D...-BU...-PE-R

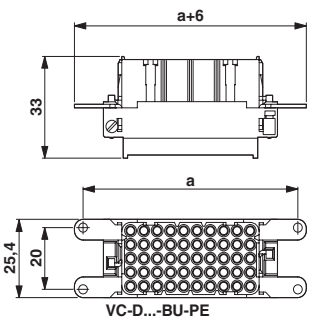
Female contact carrier,
for rolled contacts

Type	Order No.	Pcs. / Pkt.
VC-D1-BU15-PE	**1855050**	10
VC-D2-BU30-PE	**1855063**	10
VC-D3-BU50-PE	**1855076**	10
VC-D4-BU65-PE	**1855089**	10
VC-D-AF	**1855319**	20
VC-CB-T	**1607884**	10
VC-CB-A	**1607888**	10

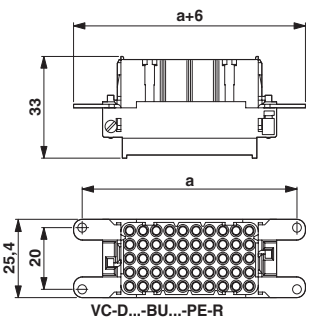
250
4
10
III / 2
PA-GF
8
0.14 mm² ... 1.5 mm² (stranded)
22 ... 16
-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VC-D1-BU15-PE-R	**1884801**	10
VC-D2-BU30-PE-R	**1884791**	10
VC-D3-BU50-PE-R	**1884788**	10
VC-D4-BU65-PE-R	**1884775**	10
VC-D-AF	**1855319**	20
VC-CB-T	**1607884**	10
VC-CB-A	**1607888**	10

250
4
10
III / 2
PA-GF
8
0.14 mm² ... 1.5 mm² (stranded)
22 ... 16
-40°C ... 125°C



VC-D...-BU-PE



VC-D...-BU...-PE-R

Sleeve housing, with metric cable entry, EMC-compatible

VC-AL-T1-...

Sleeve housing, type VC1

The new VARIOCON sleeve housing is made of salt water resistant aluminum die-cast and has a calendered and EMC-compatible surface.

There is no need for a panel mounting base with standard panel feed-throughs. VARIOCON sleeve housings form a seal directly on the mounting panel using two locking screws. This screw locking saves space, can be easily accessed from above, resists vibration and fulfills the requirements of higher degrees of protection up to IP69K owing to the rugged grommet.

Grommets are conductive for EMC applications. The mounting panel must also be conductive for this.

The locking screws are equipped with either a cylinder or knurled head and can be screwed tight or unscrewed with a standard Philips screwdriver or by hand (no tools).

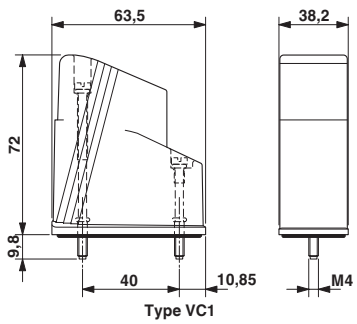
The angled cable outlet means the cable can be routed as desired, from the side and straight. The new housings have extended wiring space for high-position and power contact inserts and offer space for M32 cable glands. Housings with two cable inlets are also available now.

Notes:

Panel mounting bases, box mounting bases and coupling housings are also available for other applications.

Description	Cable input	Type	Order No.	Pcs. / Pkt.
Sleeve housing with metric cable entry, locking screws with **cylinder head** made of V2A				
	M20 x 1.5	**VC-AL-T1-Z-M20-S**	**1583597**	5
	M25 x 1.5	**VC-AL-T1-Z-M25-S**	**1583607**	5
	M25/M20 x 1.5			
	M32 x 1.5			
Sleeve housing with metric cable entry, locking screws with **knurled head** made of brass, nickel-plated				
	M20 x 1.5	**VC-AL-T1-R-M20-S**	**1583610**	5
	M25 x 1.5	**VC-AL-T1-R-M25-S**	**1583623**	5
	M25/M20 x 1.5			
	M32 x 1.5			
Plastic label sheet, self-adhesive double layer plastic labels, square corners, material thickness: 0.8 mm, suitable for plotting and engraving, with rounded edges, radius: 2 mm				
1 sheet = 32 labels		**GPE 22X22 SR/R**	**0806628**	10

Technical data	
Material data	
Housing material	Aluminum, die-cast
Sealing material	NBR, conductive
Degree of protection	IP65/IP68/IP69K
Torque value knurled screw	1.5 Nm ± 0.3 Nm
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Type VC1

VC-AL-T2-...

Sleeve housing,
type VC2

VC-AL-T3-...

Sleeve housing,
type VC3

VC-AL-T4-...

Sleeve housing,
type VC4

Type	Order No.	Pcs. / Pkt.
VC-AL-T2-Z-M20-S	**1583636**	5
VC-AL-T2-Z-M25-S	**1583649**	5
VC-AL-T2-R-M20-S	**1583652**	5
VC-AL-T2-R-M25-S	**1583665**	5
GPE 22X22 SR/R	**0806628**	10

Type	Order No.	Pcs. / Pkt.
VC-AL-T3-Z-M25-S	**1583678**	5
VC-AL-T3-Z-M25/M20-S	**1583681**	5
VC-AL-T3-Z-M32-S	**1583694**	5
VC-AL-T3-R-M25-S	**1583704**	5
VC-AL-T3-R-M25/M20-S	**1583717**	5
VC-AL-T3-R-M32-S	**1583720**	5
GPE 22X22 SR/R	**0806628**	10

Type	Order No.	Pcs. / Pkt.
VC-AL-T4-Z-M25-S	**1583733**	5
VC-AL-T4-Z-M25/M20-S	**1583746**	5
VC-AL-T4-Z-M32-S	**1583759**	5
VC-AL-T4-R-M25-S	**1583762**	5
VC-AL-T4-R-M25/M20-S	**1583775**	5
VC-AL-T4-R-M32-S	**1583788**	5
GPE 22X22 SR/R	**0806628**	10

Aluminum, die-cast
NBR, conductive
IP65/IP68/IP69K
1.5 Nm ± 0.3 Nm

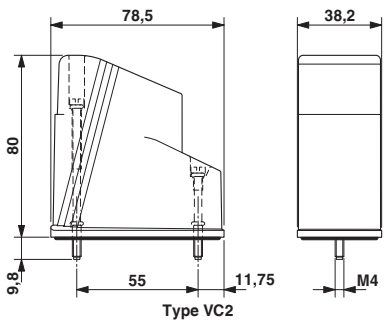
-40°C ... 125°C

Aluminum, die-cast
NBR, conductive
IP65/IP68/IP69K
1.5 Nm ± 0.3 Nm

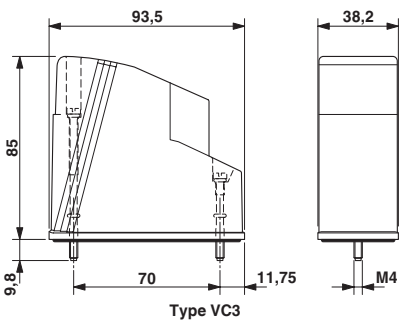
-40°C ... 125°C

Aluminum, die-cast
NBR, conductive
IP65/IP68/IP69K
1.5 Nm ± 0.3 Nm

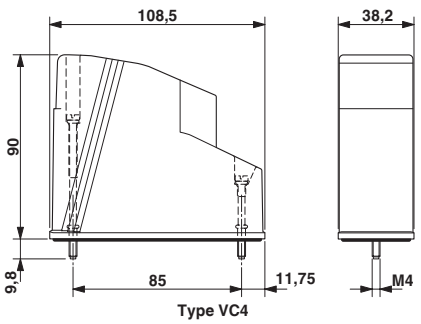
-40°C ... 125°C



Type VC2



Type VC3



Type VC4

Sleeve housing with metric cable exit

VC-K-T...M...

Sleeve housing in plastic, with metric cable outlet

The VARIOCON sleeve housing is available in four different designs, each available in either plastic, powder-coated metal or EMC-coated metal.

There is no need for a panel mounting base with standard panel feed-throughs. VARIOCON sleeve housings form a seal directly on the mounting panel using two locking screws. This locking method saves space, can be easily accessed from above, resists vibration and fulfills the requirements of a high degree of protection.

The screws are equipped with either a cylindrical or knurled head and can be screwed tight or unscrewed with a standard Philips screwdriver or by hand (no tools).

The shape of the housing has a user-friendly design and is fitted with a large marking label. The angled cable exit means the cable can be routed as desired, from the side and straight.

Notes:

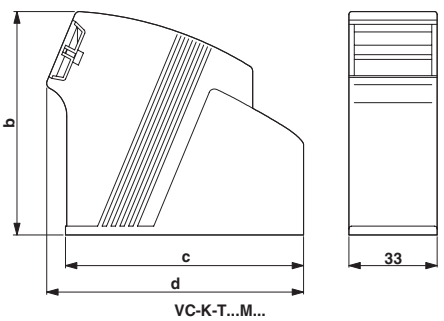
The EMC sleeve housings have an EMC-conductive seal. If only the cutting edge in a panel cutout is conductive, an additional EMC shroud VC-A-...EMV is needed.

Panel mounting bases, box mounting bases and coupling housings are also available for other applications.

Description	Design	Cable input	Type	Order No.	Pcs. / Pkt.
Sleeve housing with metric cable exit, locking screws with **cylinder head** made ofV2A steel					
	VC1	M20	**VC-K-T1-Z-M20**	**1852935**	5
	VC2	M25	**VC-K-T2-Z-M25**	**1852948**	5
	VC3	M25	**VC-K-T3-Z-M25**	**1852961**	5
	VC4	M25	**VC-K-T4-Z-M25**	**1852974**	5
Sleeve housing with metric cable exit, locking screws with **knurled head,** made of brass, nickel-plated					
	VC1	M20	**VC-K-T1-R-M20**	**1855097**	5
	VC2	M25	**VC-K-T2-R-M25**	**1855107**	5
	VC3	M25	**VC-K-T3-R-M25**	**1855120**	5
	VC4	M25	**VC-K-T4-R-M25**	**1855133**	5
Marker labels, unprinted, 5-section, for individual labeling with B-PEN or CMS system (25 labels per pack), white			**VC-BZS WH**	**1852875**	5

Technical data	
Material data	
Housing material	PA
Housing surface material	-
Sealing material	EPDM
Inflammability class in acc. with UL 94	V0
Degree of protection	IP65
Torque value knurled screw	1.5 Nm ± 0.3 Nm
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C

Sleeve housing		Dimensions [mm]			
Design	Width [mm]	a	b	c	d
VC 1	33	71	65	59	66
VC 2	33	73	65	74	81
VC 3	33	79	75	89	96
VC 4	33	79	75	104	111



VC-K-T...M...

VC-MP-T...M...

Sleeve housing,
with powder coating and metric cable outlet

VC-MEMV-T...M...

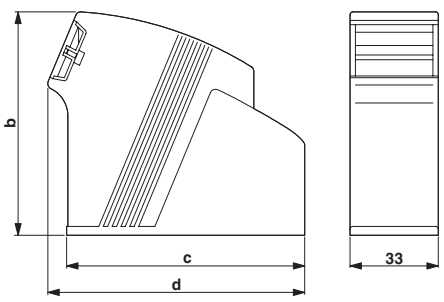
Sleeve housing,
with EMC coating and conductive seal, with metric cable outlet

Type	Order No.	Pcs. / Pkt.
VC-MP-T1-Z-M20	**1886676**	5
VC-MP-T2-Z-M25	**1886689**	5
VC-MP-T3-Z-M25	**1886692**	5
VC-MP-T4-Z-M25	**1886702**	5
VC-MP-T1-R-M20	**1886634**	5
VC-MP-T2-R-M25	**1886647**	5
VC-MP-T3-R-M25	**1886650**	5
VC-MP-T4-R-M25	**1886663**	5
VC-BZS WH	**1852875**	5

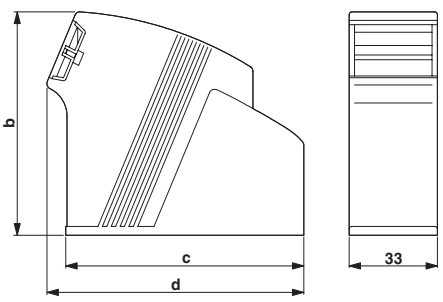
Zinc die-cast
Powder coating
EPDM
-
IP65/IP66/IP67
1.5 Nm ± 0.3 Nm
-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VC-MEMV-T1-Z-M20	**1886553**	5
VC-MEMV-T2-Z-M25	**1886566**	5
VC-MEMV-T3-Z-M25	**1886579**	5
VC-MEMV-T4-Z-M25	**1886582**	5
VC-MEMV-T1-R-M20	**1886595**	5
VC-MEMV-T2-R-M25	**1886605**	5
VC-MEMV-T3-R-M25	**1886618**	5
VC-MEMV-T4-R-M25	**1886621**	5
VC-BZS WH	**1852875**	5

Zinc die-cast
Nickel-plated
EPDM, conductive
-
IP65/IP66/IP67
1.5 Nm ± 0.3 Nm
-40°C ... 125°C



VC-MP-T...M...



VC-MEMV-T...M...

Sleeve housing with Pg cable exit

VC-K-T...

Sleeve housing in plastic

The VARIOCON sleeve housing is available in four different designs, each available in either plastic, powder-coated metal or EMC-coated metal.

There is no need for a panel mounting base with standard panel feed-throughs. VARIOCON sleeve housings form a seal directly on the mounting panel using two locking screws. This locking method saves space, can be easily accessed from above, resists vibration and fulfills the requirements of a high degree of protection.

The screws are equipped with either a cylindrical or knurled head and can be screwed tight or unscrewed with a standard Philips screwdriver or by hand (no tools).

The shape of the housing has a user-friendly design and is fitted with a large marking label. The angled cable exit means the cable can be routed as desired, from the side and straight.

Notes:

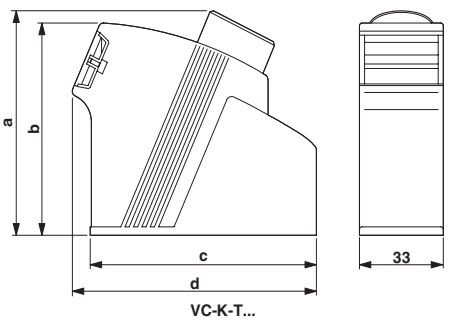
The EMC sleeve housings have an EMC-conductive seal. If only the cutting edge in a panel cutout is conductive, an additional EMC shroud VC-A-...EMV is needed.

Panel mounting bases, box mounting bases and coupling housings are also available for other applications.

Description	Design	Cable input	Type	Order No.	Pcs. / Pkt.
Sleeve housings with Pg screw connection supports, locking screws with **cylinder head**					
	VC1	Pg16	**VC-K-T1-Z**	**1852930**	5
	VC2	Pg21	**VC-K-T2-Z**	**1852943**	5
	VC3	Pg21	**VC-K-T3-Z**	**1852956**	5
	VC4	Pg21	**VC-K-T4-Z**	**1852969**	5
Sleeve housings with screw connection supports, locking screws with **knurled head**					
	VC1	Pg16	**VC-K-T1-R**	**1855092**	5
	VC2	Pg21	**VC-K-T2-R**	**1855102**	5
	VC3	Pg21	**VC-K-T3-R**	**1855115**	5
	VC4	Pg21	**VC-K-T4-R**	**1855128**	5
Marker labels, unprinted, 5-section, for individual labeling with B-PEN or CMS system (25 labels per pack), white					
			VC-BZS WH	**1852875**	5

Technical data	
Material data	
Housing material	PA
Housing surface material	-
Sealing material	EPDM
Inflammability class in acc. with UL 94	V0
Degree of protection	IP67
Torque value knurled screw	1.5 Nm ± 0.3 Nm
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C

Sleeve housing		Dimensions [mm]			
Design	**Width [mm]**	**a**	**b**	**c**	**d**
VC 1	33	71	65	59	66
VC 2	33	73	65	74	81
VC 3	33	79	75	89	96
VC 4	33	79	75	104	111



VC-MP-T...

Sleeve housing,
with powder coating

VC-MEMV-T...

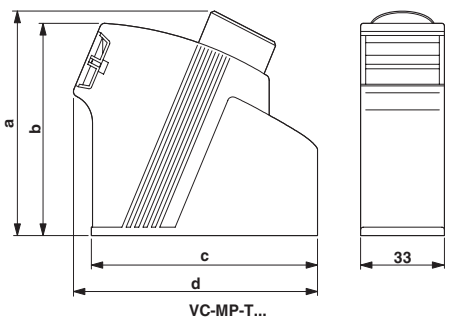
Sleeve housing,
with EMC metal-plating and conductive seal

Type	Order No.	Pcs. / Pkt.
VC-MP-T1-Z	**1884898**	5
VC-MP-T2-Z	**1884908**	5
VC-MP-T3-Z	**1884911**	5
VC-MP-T4-Z	**1884924**	5
VC-MP-T1-R	**1855539**	5
VC-MP-T2-R	**1855542**	5
VC-MP-T3-R	**1855555**	5
VC-MP-T4-R	**1855568**	5
VC-BZS WH	**1852875**	5

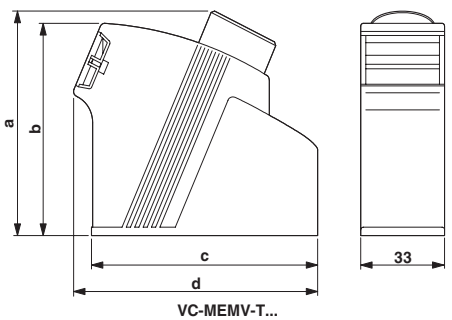
Zinc die-cast	
Powder coating	
EPDM	
-	
IP65/IP66/IP67	
1.5 Nm ± 0.3 Nm	
-40°C ... 125°C	

Type	Order No.	Pcs. / Pkt.
VC-MEMV-T1-Z	**1853324**	5
VC-MEMV-T2-Z	**1853337**	5
VC-MEMV-T3-Z	**1853340**	5
VC-MEMV-T4-Z	**1853353**	5
VC-MEMV-T1-R	**1855131**	5
VC-MEMV-T2-R	**1855144**	5
VC-MEMV-T3-R	**1855157**	5
VC-MEMV-T4-R	**1855160**	5
VC-BZS WH	**1852875**	5

Zinc die-cast	
Nickel-plated	
EPDM, conductive	
-	
IP65/IP66/IP67	
1.5 Nm ± 0.3 Nm	
-40°C ... 125°C	

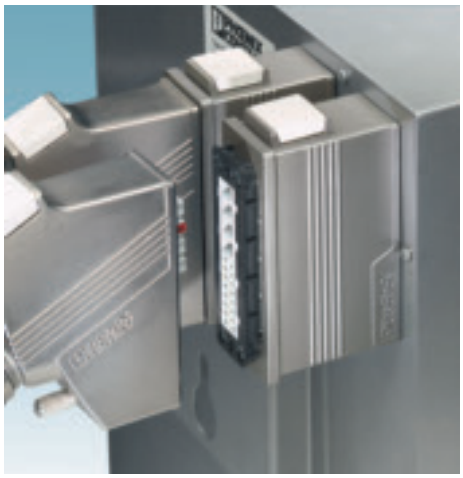


VC-MP-T...



VC-MEMV-T...

Supporting base elements



Notes:
For dimensional drawings, refer to page: 381.

VC-M...-A...

Panel mounting base, with open floor, incl. seal and M3 screws for crimp inserts

Supporting base element is the collective term for panel mounting base, box mounting base and coupling housings.

These elements are compatible with the sleeve housings of plastic, metal and EMC series and are available in four designs for 2 to 5 modules or for crimp inserts with 15 to 65 positions.

The supporting base elements are made of zinc die-cast and the surface is either powder-coated or EMC metal-plated. When locked, the supporting base elements fulfill the requirements of a high degree of protection.

Applications:

– The panel mounting bases are designed for panel feed-throughs and create space in the interior of the device
– Box mounting elements make it possible for the pluggable wiring to be directly on the device panel
– Coupling housings are suitable for free-hanging connections where jumpering is necessary in the field

Description	Design	Module slots	Cable input	Type	Order No.	Pcs. / Pkt.
Housing, metal, powder-coated						
	VC1	2	1x Pg16	**VC-MP-A1**	**1884403**	5
	VC2	3	1x Pg21	**VC-MP-A2**	**1884416**	5
	VC3	4	1x Pg21	**VC-MP-A3**	**1884429**	5
	VC4	5	1x Pg21	**VC-MP-A4**	**1884432**	5
EMC housing, metal, EMC coating, with conductive seal to the mounting panel						
	VC1	2	1x Pg16	**VC-MEMV-A1**	**1884322**	5
	VC2	3	1x Pg21	**VC-MEMV-A2**	**1884335**	5
	VC3	4	1x Pg21	**VC-MEMV-A3**	**1884348**	5
	VC4	5	1x Pg21	**VC-MEMV-A4**	**1884351**	5
Replacement profile gasket, for sleeve housings and supporting base elements of type:						
	VC1					
	VC2					
	VC3					
	VC4					
Marker labels, unprinted, 5-section, for individual labeling with B-PEN or CMS system (25 labels per pack), white						
				VC-BZS WH	**1852875**	5

Technical data	VC-MP-...	VC-MEMV-...
Material data		
Housing material	Zinc die-cast	Zinc die-cast
Housing surface material	Powder coating	Nickel-plated
Sealing material	EPDM	EPDM, conductive
Degree of protection	IP65/IP66/IP67	IP65/IP66/IP67
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

Safety note

For voltages > 42 V, conductive connector housings must be grounded. For modular contact inserts, the panel mounting frames with PE connection must be used.

VC-M...-S...

Box mounting base, with four mounting holes in the floor, incl. seal and M3 screws for crimp inserts

VC-M...-K...

Coupling housing, with closed floor, incl. M3 screws for crimp inserts

VC-T...-PR-DI

Replacement seals for sleeve housings and supporting base elements

Type	Order No.	Pcs. / Pkt.
VC-MP-S1	**1884720**	5
VC-MP-S2	**1884733**	5
VC-MP-S3	**1884746**	5
VC-MP-S4	**1884759**	5
VC-MEMV-S1	**1884649**	5
VC-MEMV-S2	**1884652**	5
VC-MEMV-S3	**1884665**	5
VC-MEMV-S4	**1884678**	5
VC-BZS WH	**1852875**	5

VC-MP-...	VC-MEMV-...
Zinc die-cast	Zinc die-cast
Powder coating	Nickel-plated
EPDM	EPDM, conductive
IP65/IP66/IP67	IP65/IP66/IP67
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VC-MP-K1	**1884568**	5
VC-MP-K2	**1884571**	5
VC-MP-K3	**1884584**	5
VC-MP-K4	**1884597**	5
VC-MEMV-K1	**1884487**	5
VC-MEMV-K2	**1884490**	5
VC-MEMV-K3	**1884500**	5
VC-MEMV-K4	**1884513**	5
VC-BZS WH	**1852875**	5

VC-MP-...	VC-MEMV-...
Zinc die-cast	Zinc die-cast
Powder coating	Nickel-plated
-	-
IP65/IP66/IP67	IP65/IP66/IP67
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
VC-T1-PR-D1	**1607832**	50
VC-T2-PR-D1	**1607835**	50
VC-T3-PR-D1	**1607838**	50
VC-T4-PR-D1	**1607841**	50

-
-
EPDM, conductive
-
-40°C ... 125°C

Accessories
Half screw connections, Pg16

The Pg half screw connection covers particularly large cable cross-sections and allows several individual cables to be drawn in.

VC-K-KV-PG16 ...

Half screw connection Pg16, plastic

VC-M-KV-PG16 ...

Half screw connection Pg16, metal

Description	Cable diameter [mm]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Half screw connection Pg16, consisting of rubber seal with a hole and a pressure screw, for type VC 1 housing							
	4 ... 6.5	**VC-K-KV-PG16(4- 6,5)**	**1854459**	5	**VC-M-KV-PG16(4- 6,5)**	**1853942**	5
	5 ... 8	**VC-K-KV-PG16(5- 8)**	**1853735**	5	**VC-M-KV-PG16(5- 8)**	**1853955**	5
	6.5 ... 9.5	**VC-K-KV-PG16(6,5- 9,5)**	**1853748**	5	**VC-M-KV-PG16(6,5- 9,5)**	**1853968**	5
	7 ... 10.5	**VC-K-KV-PG16(7-10,5)**	**1853751**	5	**VC-M-KV-PG16(7-10,5)**	**1853971**	5
	9 ... 13	**VC-K-KV-PG16(9-13)**	**1853764**	5	**VC-M-KV-PG16(9-13)**	**1853984**	5
	11.5 ... 15.5	**VC-K-KV-PG16(11,5-15,5)**	**1854844**	5	**VC-M-KV-PG16(11,5-15,5)**	**1854857**	5
Elongated hole	7 x 14	**VC-K-KV-PG16 7/14**	**1607664**	5			
Half screw connection Pg16, consisting of rubber seal with several holes and a pressure screw, for type VC1 housing and HEAVYCON, further types upon request							
	1 x 3 / 1 x 8	**VC-K-KV-PG16 1X3/1X8**	**1885376**	5	**VC-M-KV-PG16 1X3/1X8**	**1885457**	5
	1 x 3 / 1 x 9	**VC-K-KV-PG16 1X3/1X9**	**1885389**	5	**VC-M-KV-PG16 1X3/1X9**	**1885460**	5
	1 x 6 / 1 x 8	**VC-K-KV-PG16 1X6/1X8**	**1885392**	5	**VC-M-KV-PG16 1X6/1X8**	**1885473**	5
	1 x 5 / 1 x 9	**VC-K-KV-PG16 1X5/1X9**	**1885402**	5	**VC-M-KV-PG16 1X5/1X9**	**1885486**	5
	1 x 3 / 2 x 8	**VC-K-KV-PG16 1X3/2X8**	**1885415**	5	**VC-M-KV-PG16 1X3/2X8**	**1885499**	5
	1 x 5 / 2 x 6	**VC-K-KV-PG16 1X5/2X6**	**1885428**	5	**VC-M-KV-PG16 1X5/2X6**	**1885509**	5
	2 x 6 / 1 x 7	**VC-K-KV-PG16 2X6/1X7**	**1885431**	5	**VC-M-KV-PG16 2X6/1X7**	**1885512**	5
	3 x 7	**VC-K-KV-PG16 3X7**	**1885444**	5	**VC-M-KV-PG16 3X7**	**1885525**	5
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M25		**VC-M-KV-PG16/M25 ST**	**1644407**	10	**VC-M-KV-PG16/M25 ST**	**1644407**	10
Closing cap, for closing unused bore holes in multiple seals		**See page 522**			**See page 522**		

Technical data			
Material data			
Sealing material		TPE	TPE
Cable gland material		Nickel-plated brass	Nickel-plated brass
Material, pressure screw		PA	Nickel-plated brass
Degree of protection		IP67	IP67
Torque	[Nm]	5.00	7.50
Ambient temperature (operation)		-40°C ... 80°C	-40°C ... 125°C

Housing Plastic and metal-powder-coating series	L1 [mm]
VC-K-...1, VC-M-...1	48
VC-K-...2, VC-M-...2	55
VC-K-...3, VC-M-...3	60
VC-K-...4, VC-M-...4	70

Table 1: Stripping lengths for cable sheaths

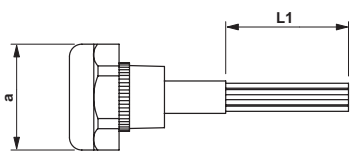
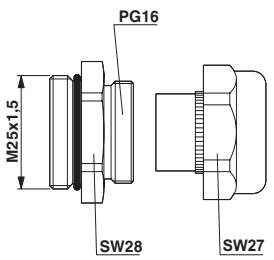
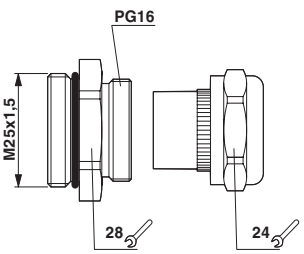


Figure 1: Stripping lengths for cable sheaths



Dimensional drawing: VC-K-KV-PG 16...



Dimensional drawing: VC-M-KV-PG 16...

Accessories
Half screw connections, Pg21

The Pg half screw connection covers particularly large cable cross-sections and allows several individual cables to be drawn in.

VC-K-KV-PG21 ...

Half screw connection Pg21, plastic

VC-M-KV-PG21 ...

Half screw connection Pg21, metal

Description	Cable diameter [mm]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Half screw connection Pg21, consisting of rubber seal with a hole and a pressure screw, for type VC 2 ...VC 4 housing							
	7 ... 10.5	**VC-K-KV-PG21(7-10,5)**	**1853890**	5	**VC-M-KV-PG21(7-10,5)**	**1853997**	5
	9 ... 13	**VC-K-KV-PG21(9-13)**	**1853900**	5	**VC-M-KV-PG21(9-13)**	**1854006**	5
	11.5 ... 15.5	**VC-K-KV-PG21(11,5-15,5)**	**1853913**	5	**VC-M-KV-PG21(11,5-15,5)**	**1854035**	5
	14 ... 18	**VC-K-KV-PG21(14-18)**	**1853926**	5	**VC-M-KV-PG21(14-18)**	**1854048**	5
	17 ... 20.5	**VC-K-KV-PG21(17-20,5)**	**1853939**	5	**VC-M-KV-PG21(17-20,5)**	**1854051**	5
Elongated hole	20 x 7	**VC-K-KV-PG21(20X7)**	**1885198**	5	**VC-M-KV-PG21(20X 7)**	**1885305**	5
Half screw connection Pg21, consisting of rubber seal, several holes and a pressure screw, for Type VC2 ... VC4 and HEAVYCON housing, additional types available on request							
	1 x 6 / 2 x 9	**VC-K-KV-PG21 1X6/2X9**	**1885538**	5	**VC-M-KV-PG21 1X6/2X9**	**1885619**	5
	1 x 8.5 / 1 x 12	**VC-K-KV-PG21-1X8,5/1X12**	**1885279**	5	**VC-M-KV-PG21- 1X8,5/1X12**	**1854970**	5
	2 x 4.5 / 1 x 13	**VC-K-KV-PG21-2X4,5/1X13**	**1885282**	5			
	2 x 6 / 2 x 8	**VC-K-KV-PG21 2X6/2X8**	**1885554**	5	**VC-M-KV-PG21 2X6/2X8**	**1885635**	5
	2 x 7.2 / 1 x 10.5	**VC-K-KV-PG21 2X7,2/1X10,5**	**1885567**	5	**VC-M-KV-PG21 2X7,2/1X10,5**	**1885648**	5
	3 x 7	**VC-K-KV-PG21 3X7**	**1885570**	5	**VC-M-KV-PG21 3X7**	**1885651**	5
	3 x 9	**VC-K-KV-PG21 3X9**	**1885583**	5	**VC-M-KV-PG21 3X9**	**1885664**	5
	4 x 6.5	**VC-K-KV-PG21 4X6,5**	**1885596**	5	**VC-M-KV-PG21 4X6,5**	**1885677**	5
	4 x 8	**VC-K-KV-PG21 4X8**	**1885606**	5	**VC-M-KV-PG21 4X8**	**1885680**	5
Dummy screw connection, rubber seal without hole							
		VC-K-KV-PG21-O	**1885363**	5	**VC-M-KV-PG21- 0**	**1854983**	5
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M32		**VC-M-KV-PG21/M32 ST**	**1644397**	10	**VC-M-KV-PG21/M32 ST**	**1644397**	10
Closing cap, for closing unused bore holes in multiple seals		**See page 522**			**See page 522**		

Technical data

Material data			
Sealing material		TPE	TPE
Cable gland material		Nickel-plated brass	Nickel-plated brass
Material, pressure screw		PA	Nickel-plated brass
Degree of protection		IP67	IP67
Torque	[Nm]	7.50	10.00
Ambient temperature (operation)		-40°C ... 80°C	-40°C ... 125°C

Housing Plastic and metal-powder-coating series	L1 [mm]
VC-K-...1, VC-M-...1	48
VC-K-...2, VC-M-...2	55
VC-K-...3, VC-M-...3	60
VC-K-...4, VC-M-...4	70

Table 1: Stripping lengths for cable sheaths

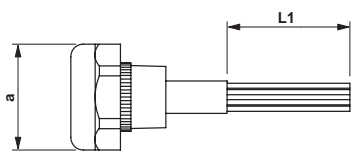
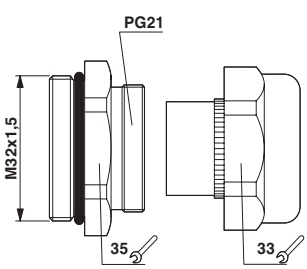
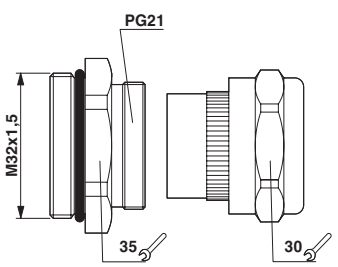


Figure 1: Stripping lengths for cable sheaths



Dimensional drawing: VC-K-KV-PG 21...



Dimensional drawing: VC-M-KV-PG 21...

Accessories
EMC half screw connections

The Pg half screw connection covers particularly large cable cross-sections and allows several individual cables to be drawn in.

VC-EMV-KV...

EMC half screw connections, Pg16

VC-EMV-KV...

EMC half screw connections, Pg21

Description	Cable diameter [mm]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
EMC half screw connection Pg16, for metal housing, consisting of rubber seal, iris spring, cone disc and pressure screw, for housings of type VC 1, shield diameter:							
6.5 mm	6.5 ... 9.5	**VC-EMV-KV-PG16(6,5- 9,5/ 6,5)**	**1854132**	1			
8.5 mm	7 ... 10.5	**VC-EMV-KV-PG16(7-10,5/ 8,5)**	**1854161**	1			
10.5 mm	9 ... 13	**VC-EMV-KV-PG16(9-13/10,5)**	**1854174**	1			
EMC half screw connection Pg21, for metal housing, consisting of rubber seal, iris spring, cone disc and pressure screw, for housings of type VC 2 ... VC 4, shield diameter:							
9.5 mm	9 ... 13				**VC-EMV-KV-PG21(9-13/ 9,5)**	**1854200**	1
12 mm	9 ... 13				**VC-EMV-KV-PG21(9-13/12)**	**1854213**	1
13.5 mm	11.5 ... 15.5				**VC-EMV-KV-PG21(11,5-15,5/13,5)**	**1854242**	1
14.5 mm	14 ... 18				**VC-EMV-KV-PG21(14-18/14,5)**	**1854255**	1
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M25		**VC-M-KV-PG16/M25 ST**	**1644407**	10			
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M32					**VC-M-KV-PG21/M32 ST**	**1644397**	10
Closing cap, for closing unused bore holes in multiple seals		**See page 522**			**See page 522**		

Technical data			
Material data			
Sealing material		TPE	TPE
Cable gland material		Brass	Brass
Degree of protection		IP67	IP67
Torque	[Nm]	7.50	10.00
Temperature data			
Ambient temperature (operation)		-40°C ... 125°C	-40°C ... 125°C

Housing EMC series	L1 [mm]	L2 [mm]
VC-MEMV-T1	48	8
VC-MEMV-T2	55	8
VC-MEMV-T3	60	8
VC-MEMV-T4	70	8

Table 2: Stripping lengths for shielded cable sheaths

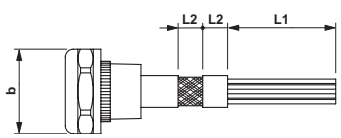
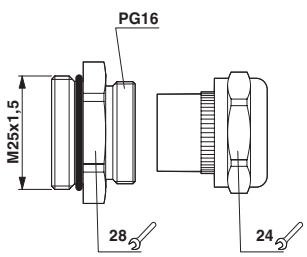
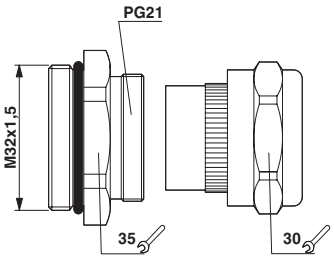


Figure 2: Stripping lengths for shielded cable sheaths



Dimensional drawing: VC-EMV-KV-PG16...



Dimensional drawing: VC-EMV-KV-PG21...

Accessories
Adapter plates for modular contact inserts

They offer the option to assemble VARIOCON connectors on the widespread wall openings of the HEAVYCON B series.

Notes:
For dimensional drawings, refer to page: 381.

HC-B...-ADP-VC-...

Description	Design	Type	Order No.	Pcs. / Pkt.
Adapter plates, 2 mm thick, for HEAVYCON-B16 panel cutouts, incl. flat seal				
	VC1	**HC-B 16-ADP-VC-1**	**1885758**	5
	VC2	**HC-B 16-ADP-VC-2**	**1885761**	5
	VC3	**HC-B 16-ADP-VC-3**	**1885774**	5
Adapter plates, 2 mm thick, for HEAVYCON-B24 panel cutouts, incl. flat seal				
	VC1	**HC-B 24-ADP-VC-1**	**1885813**	5
	VC2	**HC-B 24-ADP-VC-2**	**1885826**	5
	VC3	**HC-B 24-ADP-VC-3**	**1885839**	5
	VC4	**HC-B 24-ADP-VC-4**	**1885842**	5

Technical data	
Material data	
Material	V2A
Sealing material	NBR
Degree of protection	IP65

Accessories
Adapter plates for crimp contact carriers

They offer the option to assemble VARIOCON connectors on the widespread wall openings of the HEAVYCON B series.

Notes:
For dimensional drawings, refer to page: 381.

HC-B...-ADP-VC-C...

Description	Design	Type	Order No.	Pcs. / Pkt.
Adapter plates, 2 mm thick, for HEAVYCON-B16 panel cutouts, incl. flat seal				
	VC1	**HC-B 16-ADP-VC-C1**	**1885787**	5
	VC2	**HC-B 16-ADP-VC-C2**	**1885790**	5
	VC3	**HC-B 16-ADP-VC-C3**	**1885800**	10
Adapter plates, 2 mm thick, for HEAVYCON-B24 panel cutouts, incl. flat seal				
	VC1	**HC-B 24-ADP-VC-C1**	**1885855**	5
	VC2	**HC-B 24-ADP-VC-C2**	**1885868**	5
	VC3	**HC-B 24-ADP-VC-C3**	**1885871**	5
	VC4	**HC-B 24-ADP-VC-C4**	**1885884**	5

Technical data	
Material data	
Material	V2A
Sealing material	NBR
Degree of protection	IP65

Panel mounting adapter plates for D-SUB inserts in HC-B panel cutouts

With the help of the mounting adapter plates, both front and rear wall installation for PCB connection is possible on any device wall thickness.

VC-B...ADP.. are designed for standard HEAVYCON panel cutouts and VC-C...ADP... for VARIOCON crimp panel cutouts.

Notes:
For dimensional drawings, refer to page: 381.

VC-B...-ADP/2 DSUB...

Description	Design	Type	Order No.	Pcs. / Pkt.
Adapter plates, 1.5 mm thick, with metric countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-B 6-ADP/2 DSUB 09-M**	**1607855**	1
2 x D-SUB 15	VC2	**VC-B 10-ADP/2 DSUB 15-M**	**1607858**	1
2 x D-SUB 25	VC3	**VC-B 16-ADP/2 DSUB 25-M**	**1607861**	1
Adapter plates, 1.5 mm thick, with UNC countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-B 6-ADP/2 DSUB 09-U**	**1607856**	1
2 x D-SUB 15	VC2	**VC-B 10-ADP/2 DSUB 15-U**	**1607859**	1
2 x D-SUB 25	VC3	**VC-B 16-ADP/2 DSUB 25-U**	**1607862**	1

Technical data	
Material data	
Material	V2A
Sealing material	NBR
Inflammability class in acc. with UL 94	-
Degree of protection	IP65, when in locked state
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Panel mounting adapter plates for D-SUB inserts in VC-D panel cutouts

Notes:
For dimensional drawings, refer to page: 381.

VC-C...-ADP/2DSUB...

Description	Design	Type	Order No.	Pcs. / Pkt.
Adapter plates, 1.5 mm thick, with metric countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-C1-ADP/2 DSUB 09-M**	**1607864**	1
2 x D-SUB 15	VC2	**VC-C2-ADP/2 DSUB 15-M**	**1607867**	1
2 x D-SUB 25	VC3	**VC-C3-ADP/2 DSUB 25-M**	**1607870**	1
Adapter plates, 1.5 mm thick, with UNC countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-C1-ADP/2 DSUB 09-U**	**1607865**	1
2 x D-SUB 15	VC2	**VC-C2-ADP/2 DSUB 15-U**	**1607868**	1
2 x D-SUB 25	VC3	**VC-C3-ADP/2 DSUB 25-U**	**1607871**	1

Technical data	
Material data	
Material	V2A
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Sleeve adapter plates for D-SUB inserts

With the D-SUB adapter plates with the format D-SUB 9, 15 and 25, standard-D-SUB contact inserts can be used in type 1, 2 and 3 VARIOCON housings.

Notes:
For dimensional drawings, refer to page: 381.

VC-T...ADP/2 DSUB...

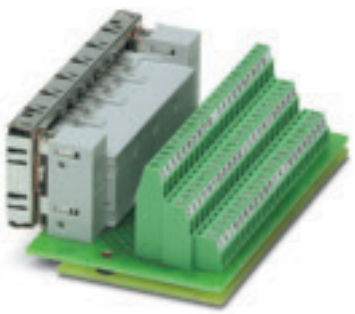
Description	Design	Type	Order No.	Pcs. / Pkt.
Adapter plates, 1.5 mm thick, with countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-T1-ADP/2 DSUB 09-M**	**1607873**	1
2 x D-SUB 15	VC2	**VC-T2-ADP/2 DSUB 15-M**	**1607876**	1
2 x D-SUB 25	VC3	**VC-T3-ADP/2 DSUB 25-M**	**1607879**	1
Adapter plates, 1.5 mm thick, with UNC countersunk screws, insert type:				
2 x D-SUB9	VC1	**VC-T1-ADP/2 DSUB 09-U**	**1607874**	1
2 x D-SUB 15	VC2	**VC-T2-ADP/2 DSUB 15-U**	**1607877**	1
2 x D-SUB 25	VC3	**VC-T3-ADP/2 DSUB 25-U**	**1607880**	1

Technical data		
Material data		
Material		Chrome-plated steel
Temperature data		
Ambient temperature (operation)		-40°C ... 125°C

VARIOCON interface

This VARIOCON interface offers 32 positions on the plug side and 2 x 32 screw connections for cross-sections up to 1.5 mm² on the connection side.

The connections are bridged on the PCB, so that a T-branch or potential doubling is possible.



VC-INTERFACE

Description	Type	Order No.	Pcs. / Pkt.
VARIOCON-Interface, with EMC shielding adapter, 32-pos. plug connector on 2 x 32-pos. screw connection, type: VC 3	**VC-INTERFACE/50 PS5312**	**1853654**	1

Technical data		
Rated voltage	[V]	-
Rated current	[A]	-
Inflammability class in acc. with UL 94		V0
Connection data		
Connection cross-section	[mm²]	0.14 mm² ... 1.5 mm²
Connection cross-section	AWG	28 ... 16
Temperature data		
Ambient temperature (operation)		-40°C ... 80°C

Accessories
Protective cover, marker label

VC-SD-T...

Protective cover for sleeve housings

Description	Design	Type	Order No.	Pcs. / Pkt.
Protective cover, for sleeve housings				
	VC1	**VC-SD-T1**	**1886728**	5
	VC2	**VC-SD-T2**	**1886731**	5
	VC3	**VC-SD-T3**	**1886744**	5
	VC4	**VC-SD-T4**	**1886757**	5
Protective cover, for panel mounting side				
	VC1			
	VC2			
	VC3			
	VC4			
Protective cover, for panel mounting frame				
	VC1			
	VC2			
	VC3			
	VC4			
Marker labels, unprinted, 5-section, for individual labeling with B-PEN or CMS system (25 labels per pack), white				

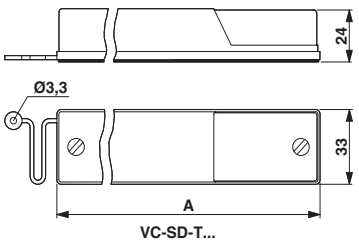
Technical data	
Material data	
Material	PA
Sealing material	-
Material of locking screw	-
Inflammability class in acc. with UL 94	V0
Degree of protection	IP50
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C

Type	A [mm]
VC-SD…1	59
VC-SD…2	74
VC-SD…3	89
VC-SD…4	104

Dimension table: VC-SD-A(T)...

Type	a [mm]
VC-SD 1	53.5
VC-SD 2	68.5
VC-SD 3	83.5
VC-SD 4	98.5

Dimension table: VC-SD...



VC-SD-T...

VC-SD-A...

Protective cover for panel mounting side

VC-SD

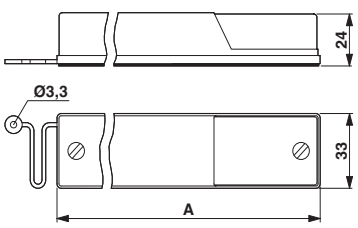
Protective cover for panel mounting frame

VC-BZS...

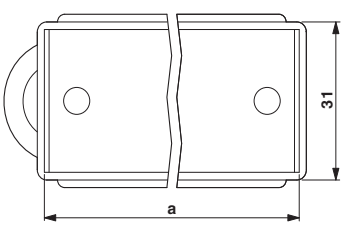
Type	Order No.	Pcs. / Pkt.
VC-SD-A1	**1886760**	5
VC-SD-A2	**1886773**	5
VC-SD-A3	**1886786**	5
VC-SD-A4	**1886799**	5
PA		
EPDM		
V2A		
V0		
IP65		
-40°C ... 80°C		

Type	Order No.	Pcs. / Pkt.
VC-SD1	**1853670**	5
VC-SD2	**1853683**	5
VC-SD3	**1853696**	5
VC-SD4	**1853706**	5
PA		
-		
-		
V0		
IP40		
-40°C ... 80°C		

Type	Order No.	Pcs. / Pkt.
VC-BZS WH	**1852875**	5
PA		
-		
-		
V0		
-		
-40°C ... 80°C		

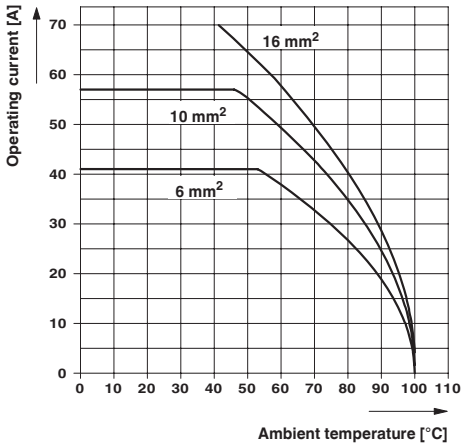


VC-SD-A...

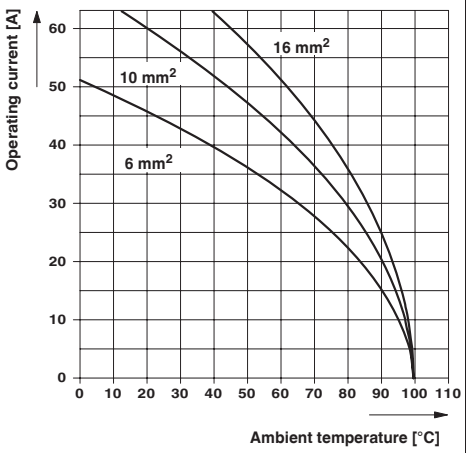


VC-SD

Derating diagrams
Power inserts

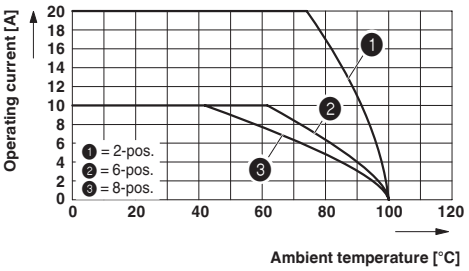


Derating diagram: VC-AMS 4



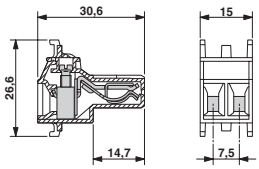
Derating diagram: VC-AML 4

Derating diagrams
Contact inserts

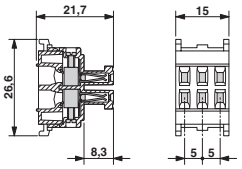


Derating diagram

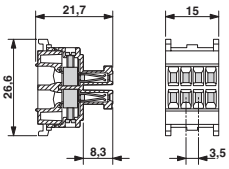
Dimensional drawings of contact inserts



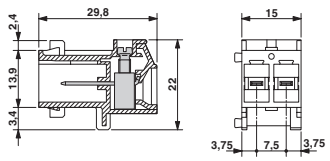
VC-TFS 2



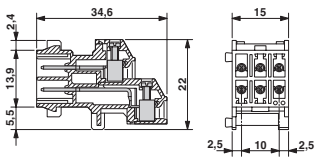
VC-TFS 6



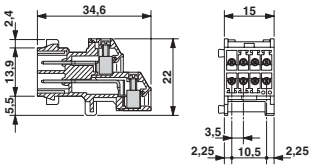
VC-TFS 8



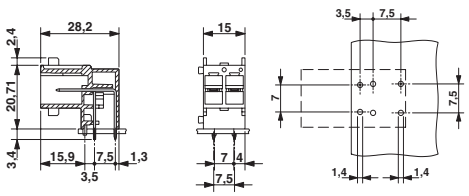
VC-AMS 2



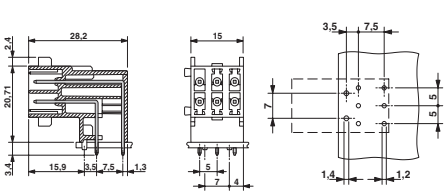
VC-AMS 6



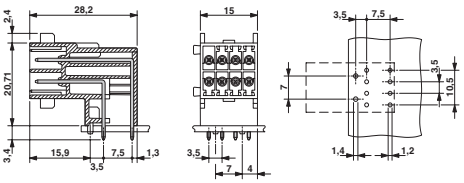
VC-AMS 8



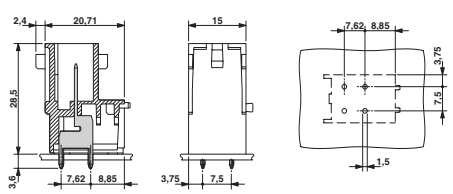
VC-AML 2



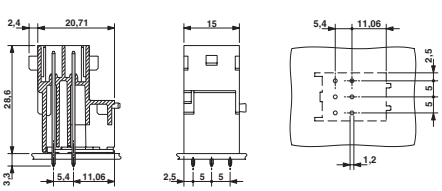
VC-AML 6



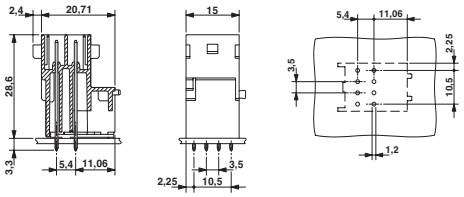
VC-AML 8



VC-AMLV 2

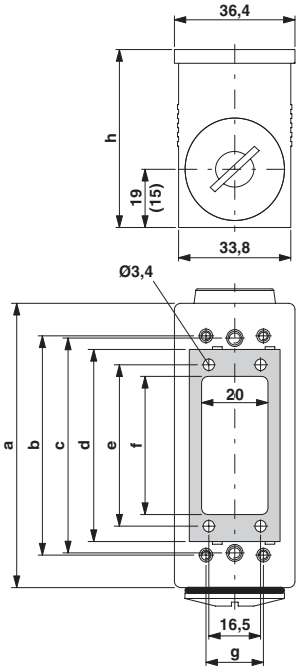


VC-AMLV 6

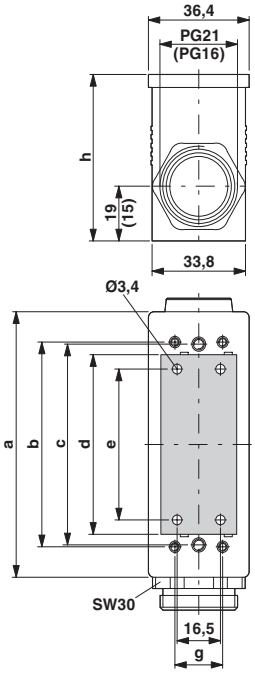


VC-AMLV 8

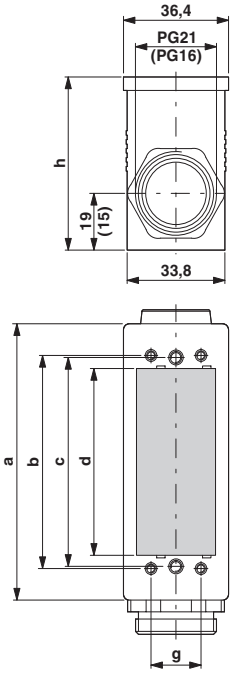
Dimensional drawings of supporting base elements



Open bottom



Bottom with 4 mounting holes

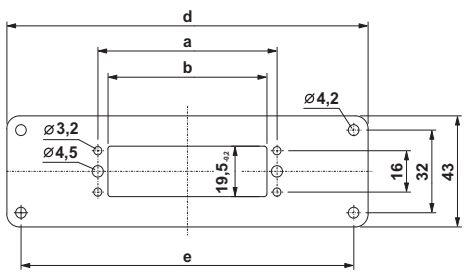


Closed bottom

Dimensions	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	h [mm]	Cable gland
Size 1	62.6	42.8	40	33	22,6	15	16	49	Pg 16
Size 2	77.6	57.8	55	48	37,6	30	16	55	Pg 21
Size 3	92.6	72.8	70	63	52,6	45	16	58	Pg 21
Size 4	107.6	87.8	85	78	67,6	60	16	61	Pg 21

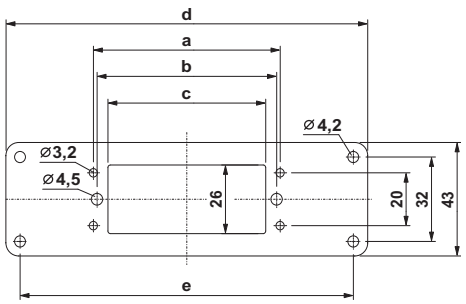
Dimensional drawings of adapter plates

Type	a [mm]	b [mm]	d [mm]	e [mm]
HC-B 16-ADP-VC-1	40.0	32.0	114	103
HC-B 16-ADP-VC-2	55.0	47.0	114	103
HC-B 16-ADP-VC-3	70.0	62.0	114	103
HC-B 24-ADP-VC-1	40.0	32.0	141	130
HC-B 24-ADP-VC-2	55.0	47.0	141	130
HC-B 24-ADP-VC-3	70.0	62.0	141	130
HC-B 24-ADP-VC-4	85.0	77.0	141	130



HC-B...-ADP-VC-...

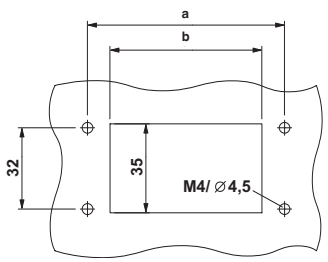
Type	a [mm]	b [mm]	c [mm]	d [mm]	e [mm]
HC-B 16-ADP-VC-C1	42.8	40.0	31.5	114	103
HC-B 16-ADP-VC-C2	57.8	55.0	46.5	114	103
HC-B 16-ADP-VC-C3	72.8	70.0	61.5	114	103
HC-B 24-ADP-VC-C1	42.8	40.0	31.5	141	130
HC-B 24-ADP-VC-C2	57.8	55.0	46.5	141	130
HC-B 24-ADP-VC-C3	72.8	70.0	61.5	141	130
HC-B 24-ADP-VC-C4	87.8	85.0	76.5	141	130



HC-B...-ADP-VC-C...

Type	a [mm]	b [mm]
VC-B 6-ADP...	70.0	52.0
VC-B 10-ADP...	83.0	65.0
VC-B 16-ADP...	103.0	86.0

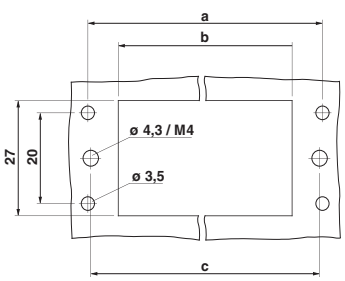
Dimension table: VC-B…-ADP/2DSUB...



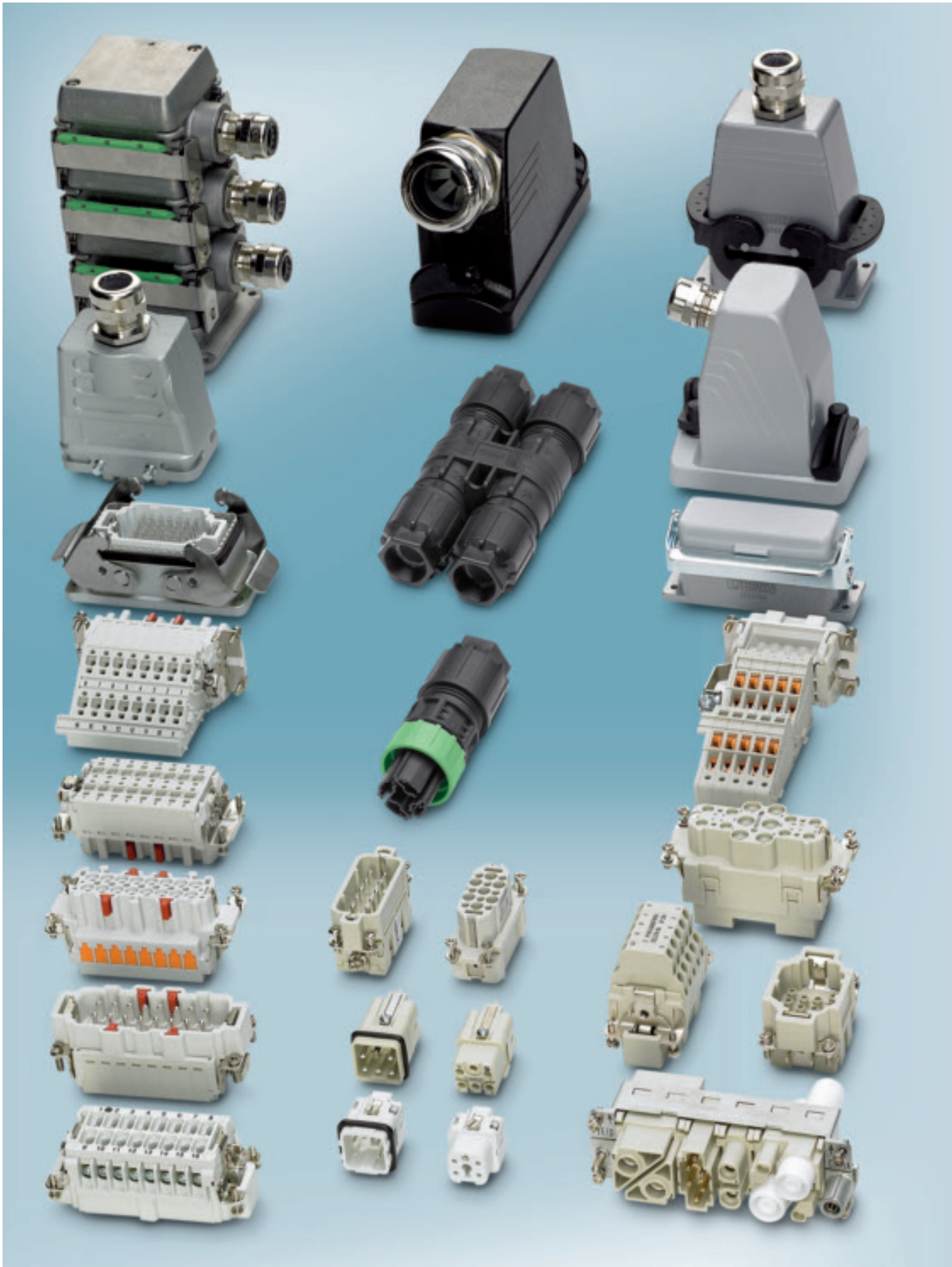
Dimensional drawing: VC-B…-ADP/2DSUB...

Type	a [mm]	b [mm]	c [mm]
VC-C1-ADP...	42.8	32.4	40.0
VC-C2-ADP...	57.8	47.4	55.0
VC-C3-ADP...	72.8	62.4	70.0

Dimension table: VC-C…-ADP/2DSUB...



Dimensional drawing: VC-C…-ADP/2DSUB...



Heavy-duty industrial plug connectors – PLUSCON heavy

PLUSCON heavy comprises an extensive range of rugged industrial plug connectors for quick commissioning and service under the most severe operating conditions.

QUICKON-Power Distribution covers a complete range of circular connectors for your power distribution solutions 4 x 2.5 mm^2, 690 V / 20 A with the QUICKCON IDC fast connection.

DUPLICON is a newly developed product from Phoenix Contact for decentral installation with the core focus on power distribution. The stackable connectors can be integrated into modular machines and systems extremely easily and flexibly. Thanks to its stackability, DUPLICON offers uniform installation of power rails in the control cabinet and PCBs in the field devices, and it can be extended by simple plugging in.

HEAVYCON connectors with the IP65 degree of protection have been established in industrial environments for many decades. The HEAVYCON-ADVANCE housing range is a further development of the classic HEAVYCON connector for panel feed-throughs up to the IP68 degree of protection. The housing is fixed directly on the mounting panel using a screw or bayonet latch, eliminating the need for a panel mounting base.

HEAVYCON offers you an extensive solution range of connectors for sensitive signals varying from a few mA to high currents of 200 A and with various numbers of positions. Contact inserts and contact insert modules are available with screw, crimp, spring-cage, push-in, axial screw and QUICKON fast connection technology. An extensive range of accessories rounds off the program for your applications.

On request, Phoenix Contact can also deliver connector sets and assembled cables. You can always rely on our solution expertise and wide range of products for your special requirements.

Power distributors – QUICKON

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Connectors	**394**

Power distributors – DUPLICON

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Housings	**406**
Accessories	**410**

Heavy-duty connectors – HEAVYCON

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Modular contact inserts	**448**
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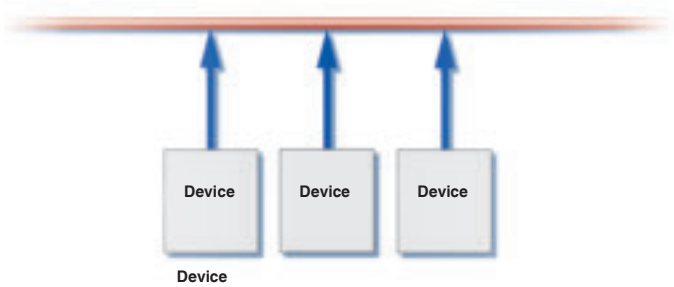
Dimensional drawings, connector pin assignments, derating diagrams **558**

Power distribution as per your requirements

Three electrotechnical basic versions

Distributed automation is the key to efficient system engineering and productive production processes. The focus is on factors such as optimized planning, quick commissioning and high availability. Distributed power distribution is the counterpart of the data bus. The power supply of field devices must be secured using an efficient system cabling.

The objectives of future installations are efficient installation, flexible expansion and service-friendly pluggability. Distributed power supply with a high degree of protection plays a decisive role in this. Phoenix Contact has restructured power distribution using electrotechnical basic versions and offers innovative solutions from the range of PLUSCON industrial plug connectors.



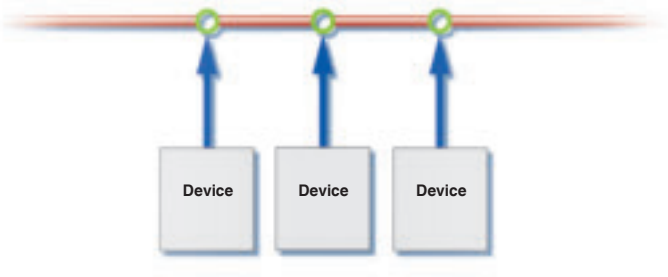
Continuous power bus

This version represents the puristic origin from the electrotechnical point of view. The power line is continuous and does not need to be interrupted for servicing.

The device connection is a tap. The current load in the power line is independent of contact points. The continuous tap is only possible with the insulation displacement connection method. Cable installation and bus extension often mean restrictions.

QUICKON,
T-distributor
5 x 4.0 mm²,
630 V / 32 A,
IDC fast connection

From page 396 onwards

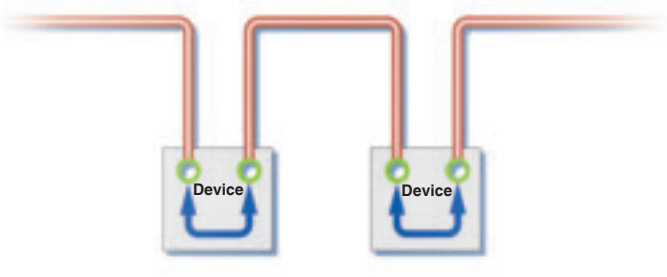


Through-connected power bus

Individual bus segments are through-connected using removable contacts, preferably a "clamped" T direct data link and a pluggable T-branch for the device.

Advantage: lower power losses in the bus and easy-to-service connector branch. The completely pluggable T-branch with three connectors is a version optimized for servicing.

The direct device connection, in which the conventional branch line can be omitted, is exceptionally efficient. The current carrying capacity in the bus is defined by the contact quality in the bus line.



Looped-through power bus

This is a looped-through version of the segmented power bus. Every field device has one "power input" and one "power output".

The T-branch is led into the device. The power in the power bus is defined by the cross-section dimensioning of the internal wiring in the device.

The power bus is often interrupted when a device is exchanged. Male and female contact inserts must be touch proof.

DUPLICON,
T-distributor
7 x 4.0 mm²,
690 V / 25 A,
screw connection

From page 402 onwards

DUPLICON,
device distributor
7 x 4.0 mm²,
690 V / 25 A,
screw connection

From page 402 onwards

QUICKON,
H-distributor
4 x 2.5 mm²,
690 V / 20 A,
IDC fast connection

From page 388 onwards

HEAVYCON,
modular device connector
3–n x 1.5...22.0 mm²,
up to 1000 V / 10-100 A,
various connection methods

From page 448 onwards

VARIOCON,
modular device connector
4–n x 1.5...16.0 mm²,
up to 690 V / 70 A,
screw and PCB connections

From page 350 onwards

QUICKON,
panel feed-through
4 x 2.5 mm²,
690 V / 20 A,
IDC fast connection

From page 389 onwards

QUICKON Power Distribution IP68

QUICKON is an insulation displacement connection method for insulation materials such as PVC and PE that can be cut (other materials on request). This fast connection technology from Phoenix Contact has established and proven itself in various applications in the last few years.

The main advantages are:

– Considerable time-savings during on-site connection since stripping conductor wires is no longer required
– Easy assembly without special tools
– High reliability through tried-and-tested connection contacts and
– Rugged housings with IP68 degree of protection

QUICKON Power Distribution comprises all important components for power distribution in expansive machines, systems and buildings. It also includes extremely rugged and compact H-distributors, conductor connectors and panel feed-throughs for control cabinets or devices.

The connector with the green screw locking is pin-compatible with the QUICKON connection and can be optionally used for the QUICKON fixed connection. It is polarized against incorrect plugging and has a pluggable coding to prevent confusion with other connectors and also has a leading PE contact. QUICKON Power Distribution connections meet the touch proof requirements in accordance with DIN EN 0105.

Function of QUICKON:

During connection, the conductor is pushed into the IDC terminal block with the splice body when the QUICKON nut is screwed on. To make complete contact, the QUICKON nut must be screwed tight up to marking I, II or III depending on the cable diameter. The screw force increases considerably right from the beginning in order to cut through the insulation. This point must be crossed in order to finally bring the conductor into the end position and to ensure the tight seal and strain relief similar to a conventional cable gland. The contact force acting on the conductor is independent of the user and always has the same quality.

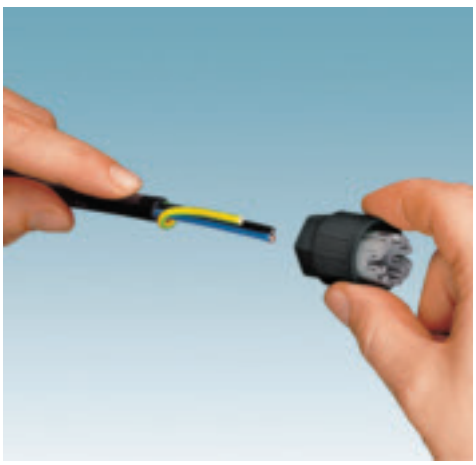
Assembly steps:

1. Strip the conductor

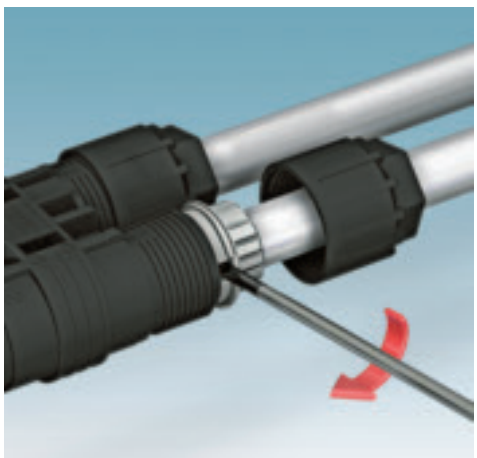
2. Insert the conductor into the QUICKON nut and fix it

3. Cut conductor ends flush

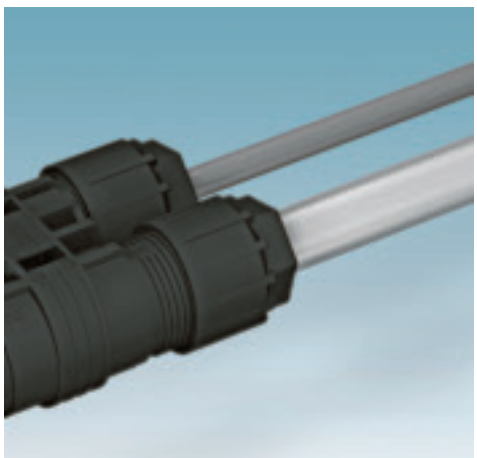
4. Screw QUICKON nut tight



With the QUICKON connection, a lagging PE is realized by routing the PE conductor in a half circle round the live wires. As a result, the PE wire is pulled out of the terminal block last if strong tension is exerted on the conductor.

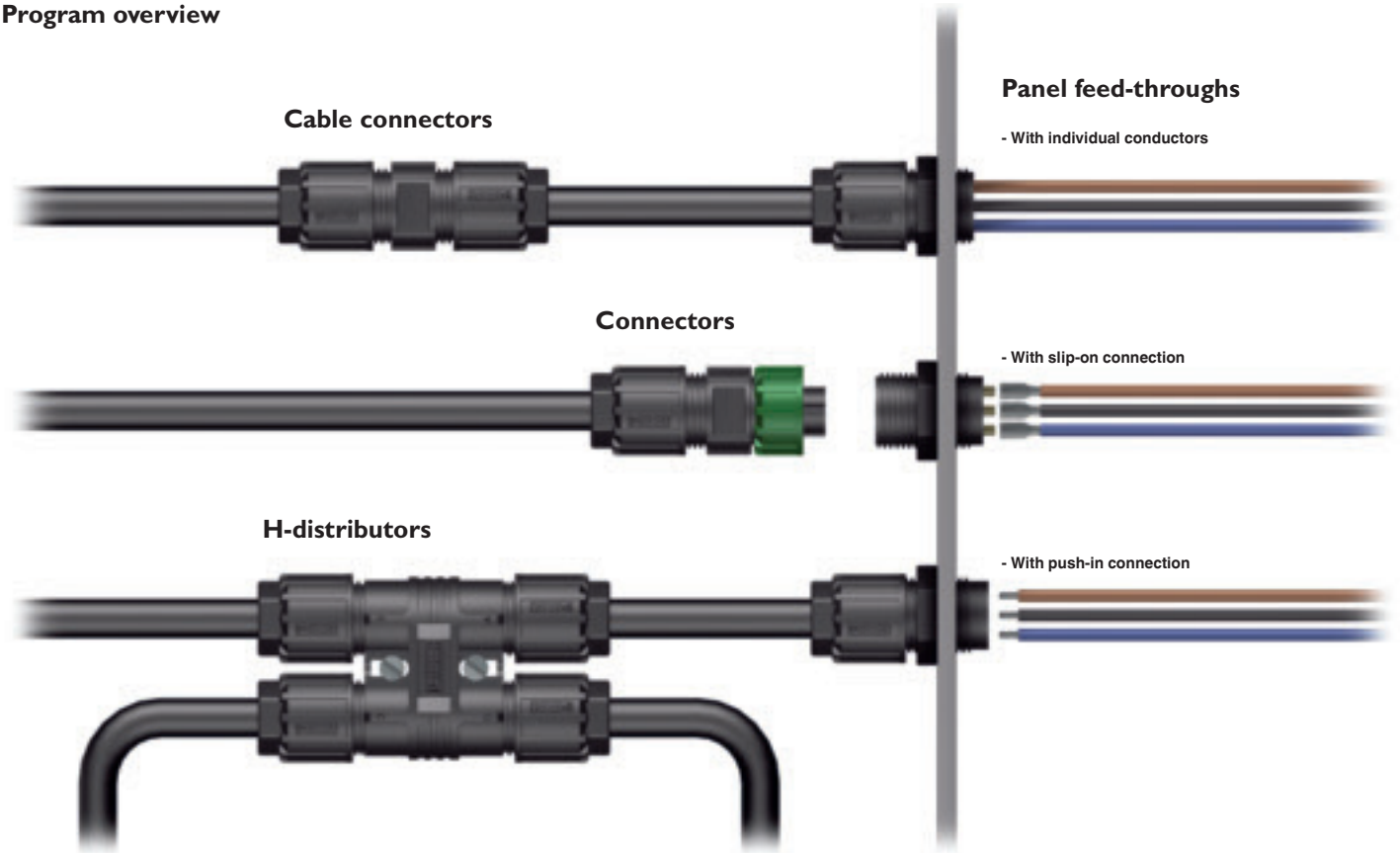


The QUICKON connection can be rewired up to 10 times with the same conductor cross-section. In the case of rewiring, the conductor must be cut off and the connection must be re-established. In order to remove the conductor, the nut is unscrewed completely and the splice body is removed from the connection with a commercial Philips screwdriver (blade width: 3-4 mm).



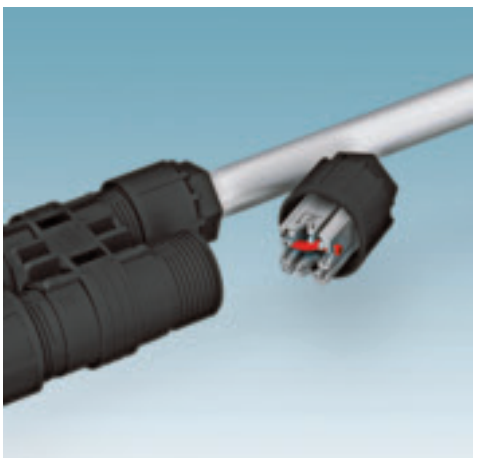
The correct setting for the QUICKON nut is marked on the connection with the marking I, II and III. In the case of thin conductors, the cable clamp type cage must close more for the conductor strain relief to become effective. Thus, with thin conductors, the QUICKON nut must be tightened more than with thick conductors, as is the case with a cable gland.

Program overview

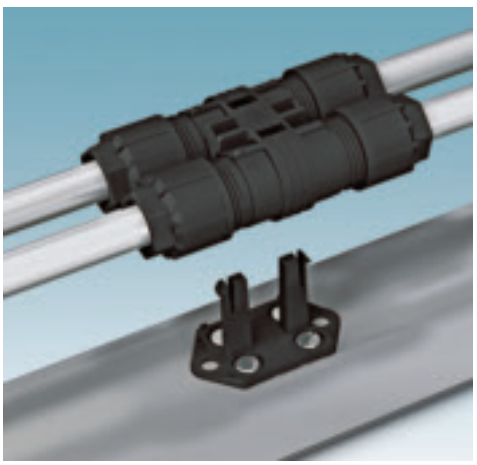


Note:
Detailed assembly instructions can be found in the online catalog at **www.phoenixcontact.com** in the download areas of the respective products.

The QUICKON H-distributor has four conductor connections. If only three connections are assigned, a conductor exit is available for test purposes during startup or servicing.



A conductor exit can also be used for bridging functions by simply cross wiring a core.



The assembly clip QPD-CLIP 2,5 BK is available for simplifying the assembly of the QUICKON H-distributor.

The H-distributor is simply snapped on after the clip has been assembled and can then be removed again without tools by pressing the positive latches together.

QUICKON H distributors, 2.5 mm²

The four QUICKON connections are internally connected with each other for use as an H-distributor with one continuous master cable and two cable branches or as a star distributor with one infeed line and three cable outlets.

The QUICKON connector is pin-compatible with the QUICKON connection, refer to page 394.

QPD H ...2,5...

QUICKON H-distributor, **with** QUICKON nut

QPD H ...2,5...

QUICKON H-distributor, **without** QUICKON nut, order QUICKON nuts or connectors separately

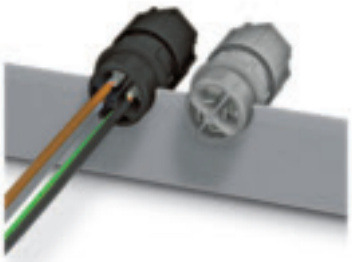
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
QUICKON H-distributor, black, **3+PE-pos.,** with four QUICKON nuts and one sealing bolt, for cable diameter:						
6 mm ... 10 mm	**QPD H 3PE2,5 6-10 BK**	**1582145**	1			
9 mm ... 14 mm	**QPD H 3PE2,5 9-14 BK**	**1582148**	1			
QUICKON H-distributor, gray, **4-pos.,** with four QUICKON nuts and one sealing bolt, for cable diameter:						
6 mm ... 10 mm	**QPD H 4X2,5 6-10 GY**	**1582239**	1			
9 mm ... 14 mm	**QPD H 4X2,5 9-14 GY**	**1582246**	1			
QUICKON H-distributor, black, **3+PE-pos.,** without QUICKON nut				**QPD H 3PE2,5 BK**	**1582154**	1
QUICKON H-distributor, gray, **4-pos.,** without QUICKON nut				**QPD H 4X2,5 GY**	**1582260**	1
QUICKON nut, black, **3+PE-pos.,** for connections of up to 2.5 mm², for cable diameter:						
6 mm ... 10 mm				**QPD N 2,5 6-10 BK**	**1582226**	1
9 mm ... 14 mm				**QPD N 2,5 9-14 BK**	**1582229**	1
QUICKON nut, gray, **4-pos.,** for connections of up to 2.5 mm², for cable diameter:						
6 mm ... 10 mm				**QPD N 2,5 6-10 GY**	**1582435**	1
9 mm ... 14 mm				**QPD N 2,5 9-14 GY**	**1582442**	1

Technical data

Electrical data		
Rated voltage (III/3)	690 V	690 V
Rated surge voltage	6 kV	6 kV
Rated current	20 A	20 A
Volume resistance	< 3 mΩ	< 3 mΩ
Surge voltage category / Pollution degree	III / 3	III / 3
Material data		
Housing material	PA	PA
Contact material	CuZn	CuZn
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Impact category	IK07	IK07
Degree of protection	IP68, 24 h / 2 m	IP68, 24 h / 2 m
Connector data QUICKON connection		
Core insulation	PVC / PE	PVC / PE
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	10	10
Conductor cross-section [mm²] solid / stranded	1 mm² ... 2.5 mm² / 1.5 mm² ... 2.5 mm²	1 mm² ... 2.5 mm² / 1.5 mm² ... 2.5 mm²
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

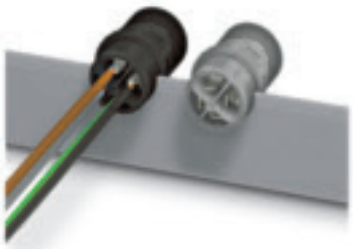
QUICKON panel feed-throughs, 2.5 mm²

Panel feed-throughs are cable glands that can be connected from the outside. As a result, devices need not be opened any longer to connect the cables. We provide pre-assembled single wires and a connection for flat plug-in contacts for internal wiring. We can also offer other conductor variants on request.



QPD W 3PE2,5...M25...

Panel feed-through **with** QUICKON nut



QPD W 3PE2,5 M25...

Panel feed-through **without** QUICKON nut, order QUICKON nuts or connectors separately

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
QUICKON panel feed-through, black, **3+PE-pos.,** for cable diameter **6 - 10 mm**, with M25x1,5 mounting flange and QUICKON nut						
with 0.5 m litz wire	**QPD W 3PE2,5 6-10 M25 0,5 BK**	**1582163**	1			
with 1.0 m litz wire	**QPD W 3PE2,5 6-10 M25 1,0 BK**	**1582160**	1			
with slip-on connection	**QPD W 3PE2,5 6-10 M25 FC BK**	**1582166**	1			
QUICKON panel feed-through, gray, **4-pos.,** for cable diameter **6 - 10 mm**, with M25x1.5 mounting flange and QUICKON nut						
with 0.5 m litz wire	**QPD W 4X2,5 6-10 M25 0,5 GY**	**1582281**	1			
with 1.0 m litz wire	**QPD W 4X2,5 6-10 M25 1,0 GY**	**1582274**	1			
with slip-on connection	**QPD W 4X2,5 6-10 M25 FC GY**	**1582288**	1			
QUICKON panel feed-through, black, **3+PE-pos.,** for cable diameter **9 - 14 mm**, with M25x1,5 mounting flange and QUICKON nut						
with 0.5 m litz wire	**QPD W 3PE2,5 9-14 M25 0,5 BK**	**1582175**	1			
with 1.0 m litz wire	**QPD W 3PE2,5 9-14 M25 1,0 BK**	**1582172**	1			
with slip-on connection	**QPD W 3PE2,5 9-14 M25 FC BK**	**1582178**	1			
QUICKON panel feed-through, gray, **4-pos.,** for cable diameter **9 - 14 mm**, with M25x1,5 mounting flange and QUICKON nut						
with 0.5 m litz wire	**QPD W 4X2,5 9-14 M25 0,5 GY**	**1582309**	1			
with 1.0 m litz wire	**QPD W 4X2,5 9-14 M25 1,0 GY**	**1582302**	1			
with slip-on connection	**QPD W 4X2,5 9-14 M25 FC GY**	**1582316**	1			
QUICKON panel feed-through, black, **3+PE-pos.,** with M25x1,5 mounting flange **without** QUICKON nut						
with 0.5 m litz wire				**QPD W 3PE2,5 M25 0,5 BK**	**1582187**	1
with 1.0 m litz wire				**QPD W 3PE2,5 M25 1,0 BK**	**1582190**	1
with slip-on connection				**QPD W 3PE2,5 M25 FC BK**	**1582196**	1
QUICKON panel feed-through, gray, **4-pos.,** with M25x1,5 mounting flange **without** QUICKON nut						
with 0.5 m litz wire				**QPD W 4X2,5 M25 0,5 GY**	**1582344**	1
with 1.0 m litz wire				**QPD W 4X2,5 M25 1,0 GY**	**1582337**	1
with slip-on connection				**QPD W 4X2,5 M25 FC GY**	**1582351**	1
QUICKON nut, black, **3+PE-pos.,** for connections of up to 2.5 mm², for cable diameter:						
6 mm ... 10 mm				**QPD N 2,5 6-10 BK**	**1582226**	1
9 mm ... 14 mm				**QPD N 2,5 9-14 BK**	**1582229**	1
QUICKON nut, gray, **4-pos.,** for connections of up to 2.5 mm², for cable diameter:						
6 mm ... 10 mm				**QPD N 2,5 6-10 GY**	**1582435**	1
9 mm ... 14 mm				**QPD N 2,5 9-14 GY**	**1582442**	1

Technical data

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	CuZn	CuZn
Inflammability class acc. to UL 94	V0	V0
Impact category	IK07	IK07
Degree of protection	IP68, 24 h / 2 m	IP68, 24 h / 2 m
Connector data QUICKON connection		
Core insulation	PVC / PE	PVC / PE
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	10	10
Conductor cross-section [mm²] solid / stranded	1 mm² ... 1.5 mm² / 1.5 mm² ... 2.5 mm²	1 mm² ... 1.5 mm² / 1.5 mm² ... 2.5 mm²
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

QUICKON panel feed-through, 2.5 mm²

QPD W 3PE1,5...BK K TH

Panel feed-through **without / with** QUICKON nuts, order QUICKON nuts or connectors separately

The QUICKON panel feed-throughs with 0.1 m long wires and ring cable lugs are especially suitable for establishing connections to drives with up to max 15 KW. The terminal box no longer needs to be opened for connecting the motor on site. The line can be connected either directly via the QUICKON fast connection or externally using QUICKON connectors.

Note:

– Wire colors
  Pos. 1 BK (black)
  Pos. 1 BN (brown)
  Pos. 3 GY (gray)
  Pos. ⏚ GNYE (green-yellow)

Description	Type	Order No.	Pcs. / Pkt.
Quickon panel feed-through, 3+PE-pos. 1.0 mm² ... 2.5 mm² / 690 V / 20 A, without Quickon nut, with four welded-on 1.5 mm² line wires, 1.0 m long, at the end with ring cable lugs	**QPD W 3PE1,5 M25 0,1 BK K TH**	**1577273**	1
Quickon panel feed-through, 3+PE-pos. 1.0 mm² ... 2.5 mm² / 690 V / 20 A, with Quickon nut, with four welded-on 1.5 mm² line wires, 1.0 m long, at the end with ring cable lugs			
For cable diameter 6-10 mm	**QPDW3PE1,5 6-10 M25 0,1 BKKTH**	**1582475**	1
For cable diameter 9-14 mm	**QPDW3PE1,5 9-14 M25 0,1 BKKTH**	**1582476**	1

Technical data	
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Surge voltage category	III
Material data	
Contact material	CuZn
Contact surface material	Tin-plated
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
No. of pos.	3
Wrench size, union nut	22 mm
Tightening torque, union nut	5 Nm
Tightening torque, contact carrier	7 Nm
Impact category	IK07
Pollution degree	3
Degree of protection	IP68, 24 h / 2 m
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 [mm²] solid / stranded	1 mm² ... 1.5 mm² / 1.5 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

QUICKON panel feed-throughs, 1.5 mm²

Q 1,5/4...KU-ESA BK

These QUICKON panel feed-throughs of up to 1.5 mm² have proven their worth in a number of applications for many years. The cross-section range and the conductor colors make them the perfect solution for sensor applications. We provide other color or wire versions on request.

Note:

– Conductor colors
  Pos. 1BN (Brown)
  Pos. 2 WH (white)
  Pos. 3 BU (Blue)
  Pos. 4 BK (Black)

For dimensional drawings, see page 397.

Description	Type	Order No.	Pcs. / Pkt.
Panel feed-through, for external wall mounting, with manual solder/slip-on connection, 4.8 x 0.8 mm 4-pos., M20 connection thread	**Q 1,5/4FL/24-M20KU-ESA BK**	**1643000**	10
Panel feed-through, with individual conductor exit, 4 x 0.5 m litz wire 1.5 mm² 4-pos., M20 connection thread	**Q 1,5/4A50/24-M20KU-ESA-BK**	**1585045**	10
Locking nut, (plastic), to lock the contact carrier from the inside of the device M20 / SW26 / tightening torque 4.5 Nm	**Q-MU M20**	**1640702**	25
Socket wrench, for loosening and fastening the QUICKON union nut, wrench size 19 mm	**QSS 19**	**1670895**	1
Diagonal cutter, for flush cutting of the coding bars	**MICROFOX SC**	**1205862**	1
Closing cap, for closing unused bore holes in multiple seals and cable glands	**SEALING PLUG 12X22 RD**	**1400260**	10
Insulating sleeve, as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor	**PT/FS 4,8**	**1670497**	25

Technical data	
Electrical data	
Rated voltage (III/3)	500 V (with insulating sleeve PT/FS 4,8. Without insulating sleeve 250 V AC.)
Rated surge voltage	6 kV
Rated current	15 A
Surge voltage category	III
Material data	
Contact material	CuZn
Contact surface material	Tin-plated
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
No. of pos.	4
Tightening torque, union nut	3 Nm
Tightening torque, contact carrier	4.5 Nm
Impact category	IK06
Pollution degree	3
Degree of protection	IP65/67
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
External cable diameter	6 mm ... 12 mm
Connection frequency	10
Conductor cross-section [mm²] solid / stranded	0.75 mm² ... 1 mm² / 0.75 mm² ... 1.5 mm²
Conductor cross-section [AWG]	18 ... 16
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C
Temperature when conductor connected	-5°C ... 50°C

QUICKON cable connectors, 2.5 mm²

For cable extension or repair.

Position identification and mechanical keying of the opposite Quickon connections vary.

For connectors suitable for coupling connectors, see page 394.

Cable connector, black, with 2 QUICKON nuts

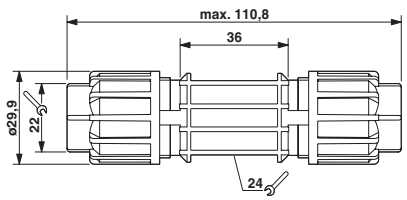
Coupling connector, black, with 1 QUICKON nut

Cable connector, gray, with 2 QUICKON nuts

Coupling connector, gray, with 1 QUICKON nut

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
3+PE-pos., cable Ø: 6-10 mm	**1582211**	1	-	-	-	-	-	-
3+PE-pos., cable Ø: 9-14 mm	**1582214**	1	-	-	-	-	-	-
3+PE-pos., cable Ø: 6-10 mm	-	-	**1582220**	1	-	-	-	-
3+PE-pos., cable Ø: 9-14 mm	-	-	**1582223**	1	-	-	-	-
4-pos., cable Ø: 6-10 mm	-	-	-	-	**1582393**	1	-	-
4-pos., cable Ø: 9-14 mm	-	-	-	-	**1582400**	1	-	-
4-pos., cable Ø: 6-10 mm	-	-	-	-	-	-	**1582414**	1
4-pos., cable Ø: 9-14 mm	-	-	-	-	-	-	**1582421**	1

Technical data	2.5 mm²
Electrical data	
Rated voltage (III/3)	690 V
Rated surge voltage	6 kV
Rated current	20 A
Volume resistance	3 mΩ
Surge voltage category / pollution degree	III / 3
Mechanical data	
Housing material	PA
Material contact / contact surface	CuZn / tin-plated
Inflammability class acc. to UL 94	V0
Degree of protection	IP68, 24 h / 2 m
Impact category	IK07
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 [mm²] solid / stranded	1 mm² ... 1.5 mm² / 1.5 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



Cable connector, QUICKON connection: 1.0 mm² ... 2.5 mm²

QUICKON cable connectors, 0.14 - 1.5 mm²

Notes:

Cable connectors for 0.34 and 0.75 mm² for sensor/actuator applications.

Position identification 1-4 (without PE).

Version up to 1.5 mm² with and without PE marking.

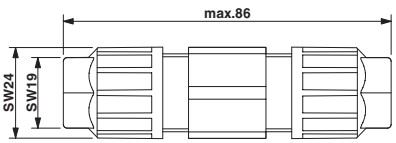
Cable connector, black, with 2 QUICKON nuts

Cable connector, black, with 2 QUICKON nuts

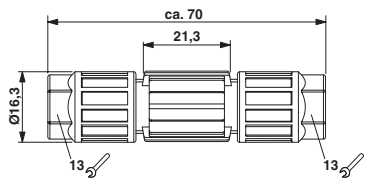
Cable connector, black, with 2 QUICKON nuts

Description	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.	Order No.	Pcs. / Pkt.
4-pos., cable Ø: 3.5-6 mm	**1641879**	1	-	-	-	-
4-pos., cable Ø: 4-8 mm	-	-	**1642140**	1	-	-
4-pos., cable Ø: 6-12 mm	-	-	-	-	**1642153**	1
3+PE-pos., cable Ø: 6-12 mm	-	-	-	-	**1642182**	1

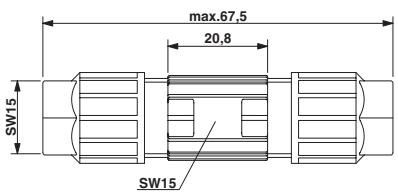
Technical data	0.34 mm²	0.75 mm²	1.5 mm²
Electrical data			
Rated voltage (III/3)	125 V	250 V	500 V
Rated surge voltage	2.5 kV	4 kV	6 kV
Rated current	5 A	9 A	15 A
Surge voltage category / pollution degree	III / 3	III / 3	III / 3
Mechanical data			
Housing material	PA	PA	PA
Material contact / contact surface	Steel / tin-plated	Steel / tin-plated	CuZn / tin-plated
Inflammability class acc. to UL 94	V0	V0	V0
Degree of protection	IP65/67	IP65/67	IP65/67
Impact category	IK06	IK06	IK06
Connector data QUICKON connection			
Core insulation	PVC/PE	PVC/PE	PVC/PE
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	VDE 0295 class 1 to 6 / min. 0.15 mm
Connection frequency	10	10	10
Conductor cross-section [mm²] solid / stranded	0.14 mm² ... 0.25 mm² / 0.14 mm² ... 0.34 mm²	0.34 mm² ... 0.5 mm² / 0.34 mm² ... 0.75 mm²	0.75 mm² ... 1 mm² / 0.75 mm² ... 1.5 mm²
Conductor cross-section [AWG]	26 ... 22	22 ... 18	18 ... 16
Temperature data			
Ambient temperature (operation)	-40°C ... 80°C	-40°C ... 80°C	-40°C ... 80°C
Temperature when conductor connected	-5°C ... 50°C	-5°C ... 50°C	-5°C ... 50°C



Cable connector, QUICKON connection: 0.75 mm² ... 1.5 mm²

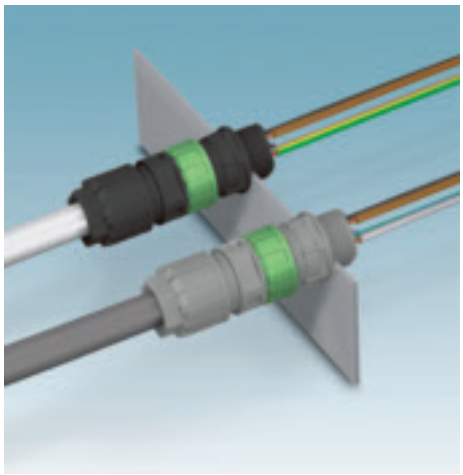


Cable connector, QUICKON connection: 0.14 mm² ... 0.34 mm²



Cable connector, QUICKON connection: 0.34 mm² ... 0.75 mm²

QUICKON connectors, 2.5 mm²



QPD P...2,5...

690 V / 20 A / 4 x 2.5 mm²

The QUICKON connector is pin-compatible with the QUICKON connection.

This connector with a capacitive PE contact is predestined for quick replacement of devices when servicing or in installations with pre-assembled conductors. It is polarized against incorrect plugging and is protected against finger contact in accordance with DIN EN 0105.

Two red keying profiles (see accessories) can be used to rule out the possibility of plugging in connectors of the same type incorrectly.

Like all QUICKON components, the QUICKON connector is extremely compact, robust and can be quickly connected. The green screw locking is an operating element in a contrasting color.

Description	Type	Order No.	Pcs. / Pkt.
QUICKON connectors, black, 3+PE-pos., for cable diameter:			
6 mm ... 10 mm	**QPD P 3PE2,5 6-10 BK**	**1582202**	1
9 mm ... 14 mm	**QPD P 3PE2,5 9-14 BK**	**1582205**	1
QUICKON connectors, gray, 4-pos., without PE, for conductors with diameter:			
6 mm ... 10 mm	**QPD P 4X2,5 6-10 GY**	**1582372**	1
9 mm ... 14 mm	**QPD P 4X2,5 9-14 GY**	**1582379**	1

Technical data	
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	CuZn
Inflammability class acc. to UL 94	V0
Mechanical data	
Impact category	IK07
Degree of protection	IP68, 24 h / 2 m
Insertion/withdrawal cycles	50
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 [mm²] solid / stranded	1 mm² ... 1.5 mm² / 1.5 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

QUICKON accessories

The mounting clip (1) is available for easy and toolless fastening of the H distributor.

DIN rail mounting is possible if two additional DIN rail adapters (2) are used.

Plastic labels (3) can be adhered in a recess at the center of the H distributor.

Various terminations are available for unused conductor ends. The red filler plugs (4) can be easily pushed into the QUICKON nut and provide IP68 protection when screwed tight.

In the case of an open QUICKON dome, which, for example, will later have a connector, the screw-on captive protective cap (5) is a good choice.

Please use the locking nut (6) to affix the panel feed-throughs to thin walls into which no thread can be drilled.

For the QUICKON panel feed-throughs with slip-on connection, use the insulating sleeve (7), if necessary.

Simple transparent protective caps (8) and (9) are fitted onto the open QUICKON dome or the connector.

The QUICKON nut can be screwed in easily and safely by means of a slotted socket wrench (10).

The red keying profiles (11) protect against incorrect plugging. They are simply inserted through the top into the QUICKON dome and into the connector and are automatically secured inside on the housing ribs. They are marked with arrows and can be mounted in four different positions owing to the symmetrical form. The keying profiles can be removed again using a screwdriver.

Matching rubber seals (12) that must replace the seals in the QUICKON nuts are available for connecting 1 or 2 ASi lines.

Description		Type	Order No.	Pcs. / Pkt.
Mounting clip, for QUICKON H distributors, color: black	①	**QPD CLIP 2,5 BK**	**1582235**	10
DIN rail adapter For M5 screws	②	**USA 10/4,6**	**1202713**	10
Plastic label For plotting and engraving Can be printed using thermal transfer printer	③	**GPE 13X 9 WH** **EMLP (13X9)R**	**0806932** **0819453**	10 1
Closing cap, for closing unused bore holes in multiple seals and cable glands Ø 10 mm Ø 14 mm	④	**SEALING PLUG 10X16 RD** **SEALING PLUG 14X22 RD**	**1400284** **1400270**	10 10
Protective cap, captive, IP68	⑤	**QPD QSK 2,5 FS**	**1582488**	10
Counter nut M25, SW: 32	⑥	**Q-MU M25**	**1640715**	25
Insulating sleeve, as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor	⑦	**PT/FS 4,8**	**1670497**	25
Protective cap made of transparent plastic for QPD QUICKON connection 4 x 2.5 mm², IP54.	⑧	**QPD QSK 2,5**	**1582150**	10
Protective cap made of transparent plastic for QPD connectors 4x2.5 mm², IP50.	⑨	**QPD PSK 2,5**	**1582151**	10
Allen wrench, for loosening and fastening the QUICKON union nut, WAF 22 mm	⑩	**QSS 22**	**1670206**	1
Keying profile, for inserting into the QPD 4X2,5 connector and the QUICKON dome	⑪	**CP-QPD**	**1582459**	10
Seal, from NBR, black, for IP65/67 degree of protection For one ASi line For two ASi lines	⑫	**KV-DI-PG16-1XASI** **KV-DI-PG16-2XASI**	**1582462** **1582464**	10 10

T distributor with QUICKON fast connection technology

For dimensional drawings, see page 397.

Q 4,0/5IDC/KU-T

Power T distributor, 5-pos., for 2,5 ... 4.0 mm²

The QUICKON T distributor allows fast connection to a 5-conductor master cable with stranded single wires. Instead of time-consuming installation, the branch line to the consumer is connected using the proven insulation displacement connection method without disconnecting the master cable.

For connection, it is simply stripped and inserted in the lower part of the housing. The upper part is then fitted and the electrical connection established by tightening the black wing nut. The branch line is connected using the proven QUICKON fast connection method, with color-coding in acc. with VDE 0293-308.

Note:

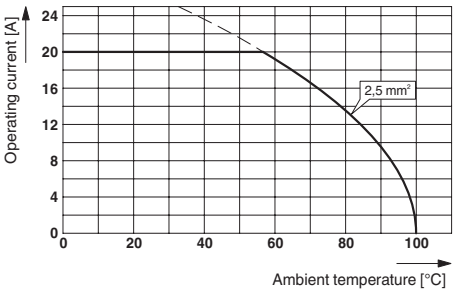
The QUICKON T distributor is designed for permanent installation.

There are other insert seals (Q-T-EDG...) for smaller cable cross-sections (9 to 14 mm).

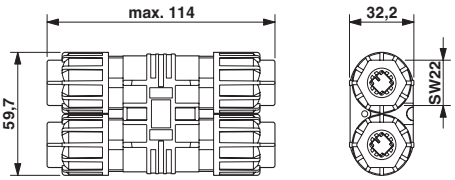
Description	Type	Order No.	Pcs. / Pkt.
T distributor, for round conductors	**Q 4,0/5IDC/KU-T**	**1641963**	1
Fixing nuts with O ring, plastic, to lock the distributor when mounting in a metal cabinet	**Q-MU-T**	**1640993**	10
Insert seal, for IP65 sealing of thin master cables, clamping range:			
9.0 mm ... 11.0 mm	**Q-T-EDG-K**	**1580011**	10
10,0 mm ... 12,5 mm	**Q-T-EDG-M**	**1580024**	10
11.5 mm ... 14.0 mm	**Q-T-EDG-G**	**1580037**	10
Closing cap, for closing unused bore holes in multiple seals and cable glands			
Ø 14 mm	**SEALING PLUG 14X22 RD**	**1400270**	10
Stripping tool, for conductors and cables of 4.5 ... 40 mm Ø	**KAMES MULTI**	**1209075**	1

Technical data	
Electrical data	
Rated voltage (III/3)	630 V
Rated surge voltage	8 kV
Rated current	32 A
Material data	
Housing material	PA
Contact material	Cu alloy
Contact surface material	Pre-nickel plated and tin-plated
Mechanical data	
No. of pos.	5
Pollution degree	3
Degree of protection	IP65
Connector data QUICKON connection	
Core insulation	PVC/PE
Structure of individual litz wire/ smallest wire diameter	Class 2 to 5 / 0.25 mm
External cable diameter	9 mm ... 16 mm (branch line)
External cable diameter	9 mm ... 16 mm (Master cable (for diameters < 13.5 mm, additional insert seals are available))
Conductor cross-section [mm²]	2.5 mm² ... 4 mm²
Conductor cross-section [AWG]	14 ... 12
Temperature data	
Ambient temperature (operation)	-40°C ... 80°C
Temperature when conductor connected	10°C ... 50°C (specifications of the cable manufacturer must also be observed)

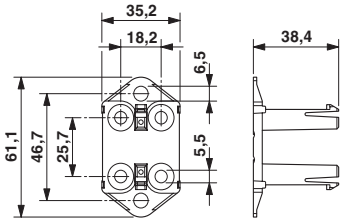
Derating diagram
H distributor, panel feed-through, connector, cable connector



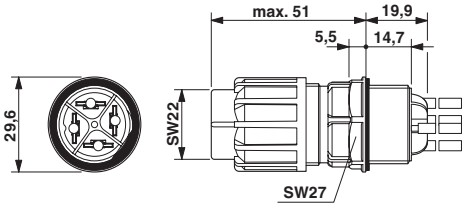
Dimensional drawing
H distributor



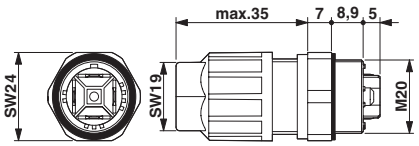
Dimensional drawing
Assembly clip



Dimensional drawing
Panel feed-through

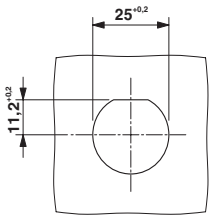


QPD W ... 2.5 ... M25 ...



Q1.5/4FL/24-M20KU-ESA-BK

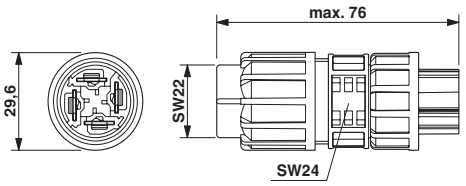
Mounting cutout
Panel feed-through



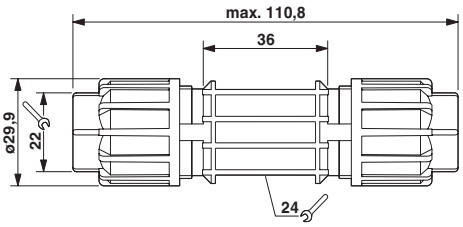
Pin assignment

	QPD ... 3PE2.5...	QPD ... 4X2.5...
PIN	Conductor color	Conductor color
1	BK	BN
2	BN	WH
3	GR	BU
⏚ / 4	GNYE	BK

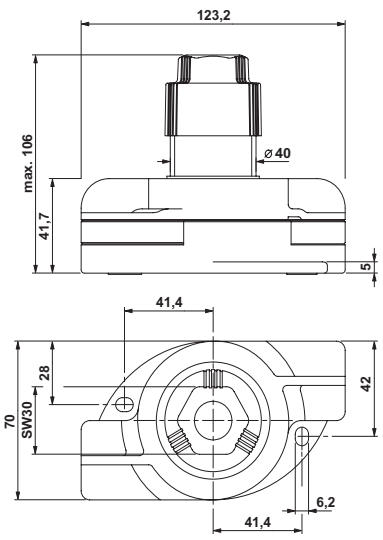
Dimensional drawing
Connector



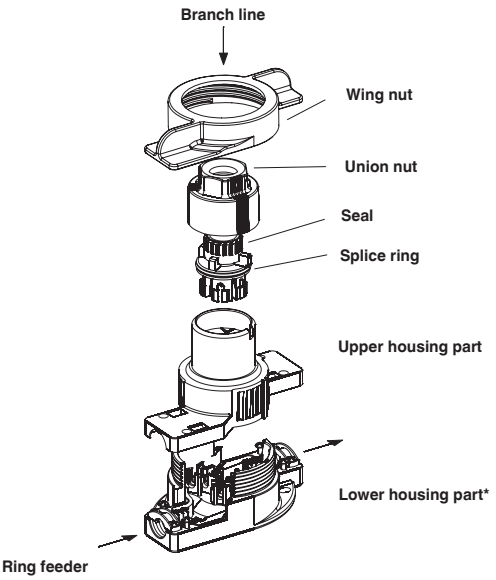
Dimensional drawing
Cable connector



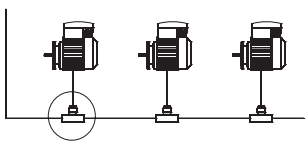
Dimensional drawings – QUICKON T distributors



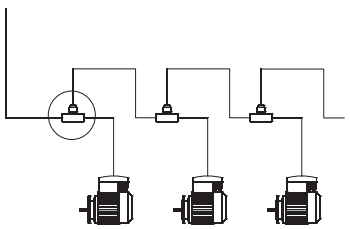
Power T distributor



Example of application



Field assembly



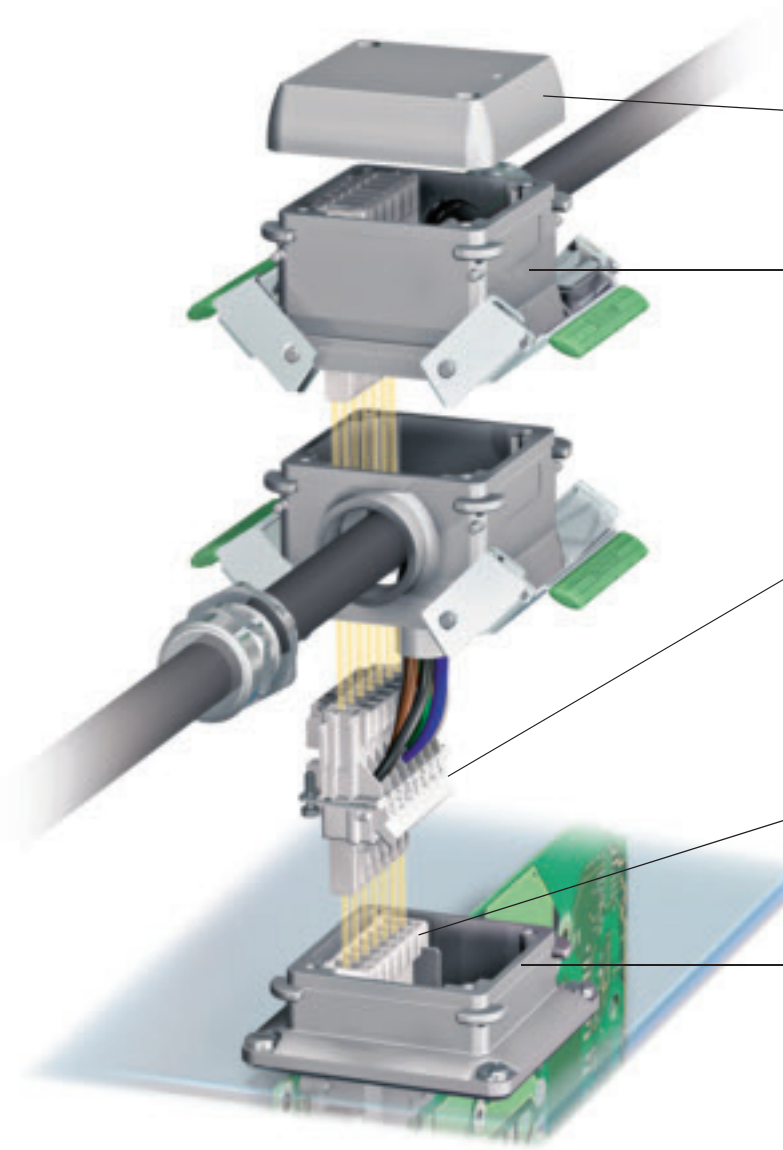
Pre-assembly

DUPLICON

DUPLICON is a seamless power distributor system for 6x4 mm^2 + PE conductors (25 A/400/690 V), from the power rail via ST-COMBI in the control cabinet right up to the PCB or plug connection on the power load. The system has very few components and is extremely flexible in its handling. The sturdy metal housings with innovative locking latches qualify DUPLICON for the harshest operating conditions.

The version fulfills the IP67 degree of protection. The contact inserts have a leading PE contact and the screw connections can be assembled with standard tools. DUPLICON serves as an interface between the control cabinet and device or actuators / drives. With 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 wide spectrum of applications.

The pluggable design means that all the cables can be assembled conveniently in the workshop and plugged together in the plant in no time at all. All connections are touch proof in acc. with DIN VDE 0105 and fulfill the requirements of the BGV A2 accident prevention regulations.



Covers (removable)
Testing possible when plugged in

Stackable housing
The square design enables three cable outlet directions

Contact insert
400/690 V / 25 A
6 x 4.0 mm^2 + PE
0.2 – 4.0 mm^2/AWG 24 – 12
Leading PE
Touch proof, IP20
Screw connection

PCB contact insert
With a choice of screw connection or pluggable with an ST-COMBI receptacle

Panel mounting base
Extremely sturdy for a large number of stackable housings

The range of products

Connector sets

They will simplify the first order for you and reduce your logistics costs. Sets of stackable connectors, panel feed-throughs, cable couplings, three-way distributors and T-boxes are available for typical DUPLICON applications.

The housing is equipped with either M20 or M25 threads. Please order cable glands separately.

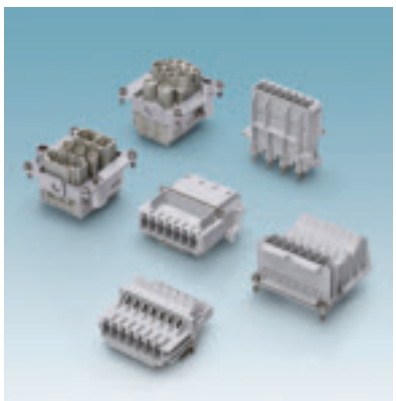
From page 402 onwards

Contact inserts

The existing range of contact inserts has been designed for uniform distribution of power and 24 V or a two-wire bus system such as AS-i or Profibus. Contact inserts offer screw connections in the stackable connector, in the T-box with two connections per position and a direct PCB connection in the device.

The advantages of the screw connection method are maximum reliability, universal application, minimum contact resistances and the most compact design. The program can, however, be extended with other connection methods or numbers of positions depending on the requirements. Don't hesitate to contact us.

Three modules from the HEAVYCON range can be integrated into the module frame for connecting the motors, for which signals and power often need to be supplied together in one connector.



From page 404 onwards

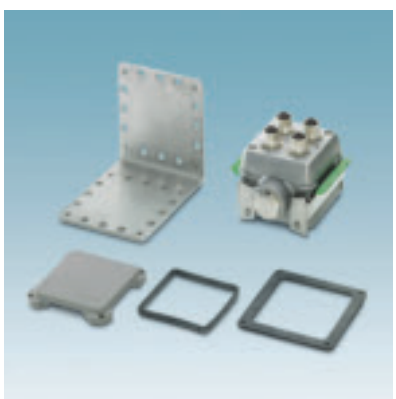
Housings

The housing range covers a flat assembly housing with a closed bottom and a panel mounting base with an open bottom for pluggable panel feed-throughs. Stackable housings with one and two cable inlets and a typical sleeve housing can be plugged into it for accommodating modular contact inserts. The patented locking latches are made of stainless spring steel and offer the highest vibration protection with extremely comfortable operating forces. The T-box can be used to implement cost-optimized power distribution where continuous pluggability of the main power line is not required. All housings are made of salt water resistant die-cast aluminum and are suitable for EMC applications.

From page 406 onwards

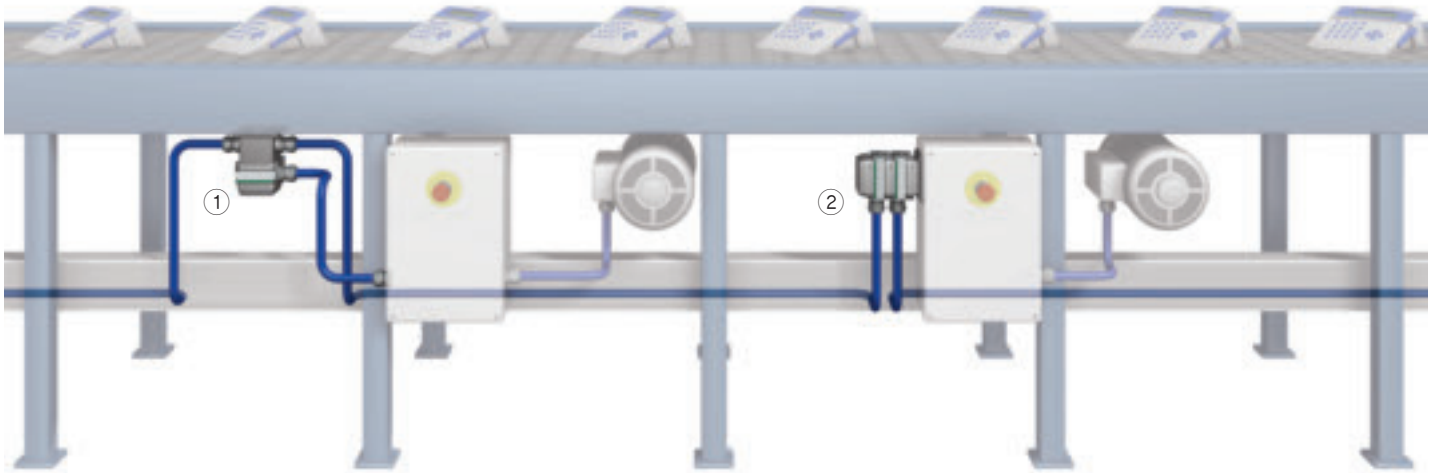
Accessories

A mounting bracket with two different side lengths is available to round off the DUPLICON connector range. The self-tapping mounting screws with a Torx head will simplify your mounting task. Replacement seals are available in the event of servicing. The dust protection cap made of ABS can be easily snapped on and recoated if required. The M12 adapter is used, for example, for the 24 V supply to small loads in the field and is equipped with M12 SPEEDCON.



From page 410 onwards

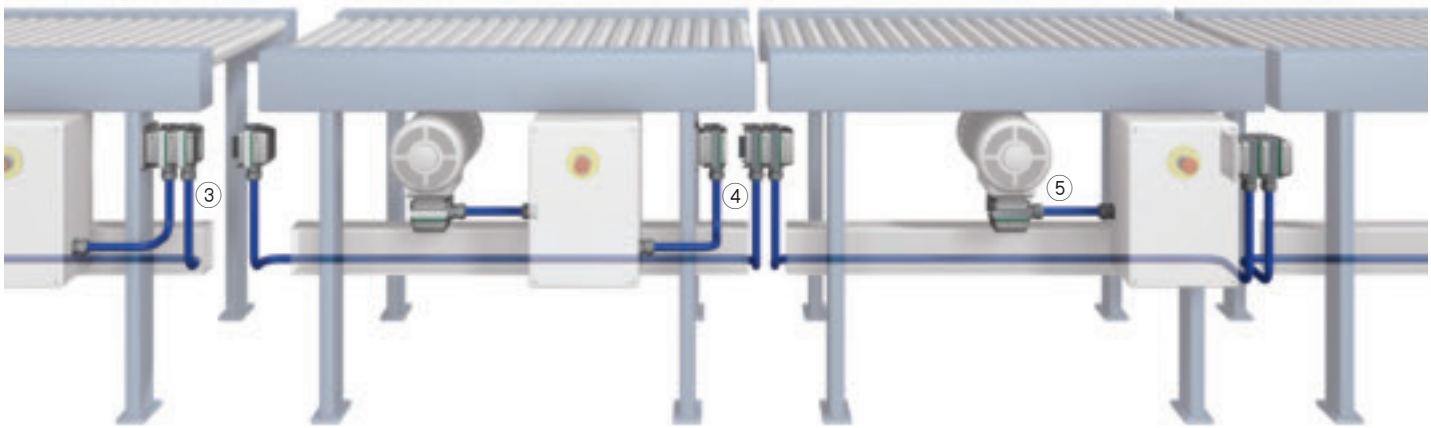
Stationary power distribution



DUPLICON primarily provides two alternatives for stationary power distribution:
① Using the T-box that is permanently installed next to the power consumer and is equipped with a pluggable cable outlet.
② Using a stackable device connection. A direct device connection is always the most favorable version, but requires structural integration.

The main advantages are separate pluggability of the cables during startup and uninterrupted device replacement during future servicing.

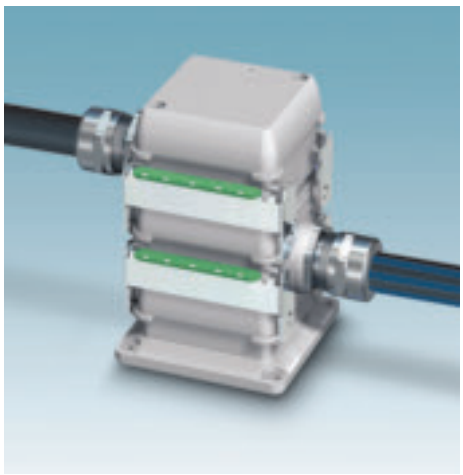
Modular power distribution



③ Thanks to the stackability, your power distribution can be pre-assembled. Plug & play means a quick and safe startup.
④ During servicing, the main power line is separated from the load without interruption and the system continues to operate.
⑤ DUPLICON is also predestined to be a motor connector. The square design enables various cable outlet directions and the vibration-proof locking withstands the harshest operating conditions. Modular contact inserts offer a host of possible applications.

For special requirements regarding contact inserts, please contact us.

Options for cable routing

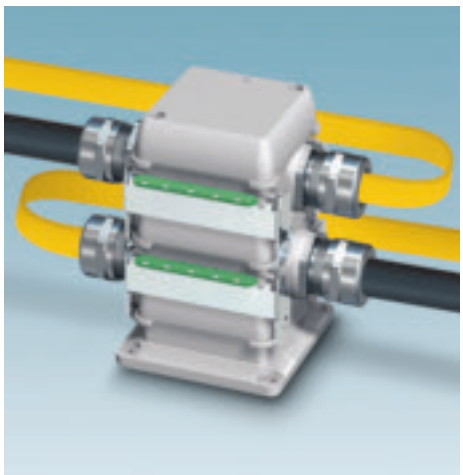


With hybrid cables

The classic and most simple case is introducing one cable 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

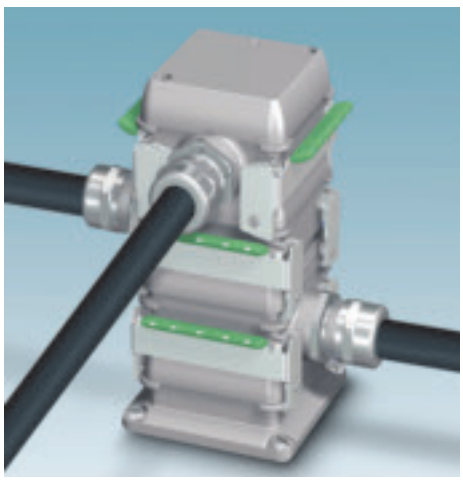
Cable glands with two bore holes allow thin power and 24 V cables to be routed into the stackable housing separately.



With opposite cables

The housings with two cable entries allow cables with larger diameters to be routed in or combined, e.g. with ASi cables or PROFIBUS.

Possibilities of power distribution



Stacked distributor

Since it is stackable, DUPLICON allows a flexible number of cable outlets. The square design enables cable outlets to be plugged in 90° steps. DUPLICON is simple to retrofit in existing installations. Disconnect the power line, assemble with stackable connectors, plug together – finished.

T-Box

For permanent installation, the DUPLICON T-Box is the most cost-effective and compact alternative for stackable distributors. The contact insert has two screw connections per position to loop through the power cable. The upward cable outlet can be plugged in four directions.

Device connection

As a device connection, DUPLICON is the most effective and inexpensive version of decentral power distribution. The direct PCB connection in the 90° and 180° version eliminates a jumpering level in the device. The contact insert is compatible with pluggable ST-COMBI (CLIPLINE) modular terminal blocks.

Connector sets

Suitable standard and EMC cable screw connections are listed in PLUSCON industrial plug connectors under HEAVYCON and VARIOCON accessories.

Note:
For installation instructions, see:
www.phoenixcontact.com/download

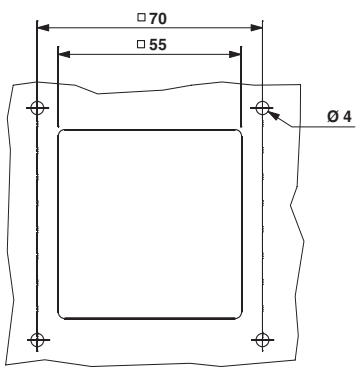
DC-B 6-SET-HD...M-7X4-UT

DUPLICON stackable connector set with a stackable housing and a contact insert

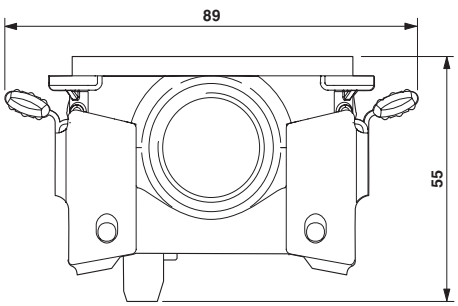
DC-B 6-SET-WF...M-7X4-UT

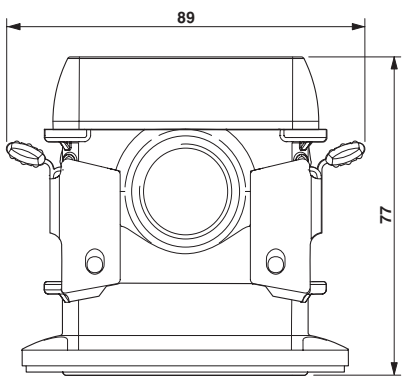
DUPLICON panel feed-through set with a panel mounting base, a stackable housing, two contact inserts and a housing cover

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
DUPLICON sets, stackable housing without cable screw connection						
With M20 thread	**DC-B 6-SET-HD-M20-M-7X4-UT**	**1602216**	1	**DC-B 6-SET-WF-M20R-M-7X4-UT**	**1602232**	1
With M25 thread	**DC-B 6-SET-HD-M25-M-7X4-UT**	**1602229**	1	**DC-B 6-SET-WF-M25R-M-7X4-UT**	**1602258**	1
Special cable screw connection M25, brass						
With 10 mm and 11 mm hole	**HC-M-KV-M25(1X10/1X11)**	**1580228**	10	**HC-M-KV-M25(1X10/1X11)**	**1580228**	10
Technical data						
Electrical data in acc. with IEC 61076-2-101						
Rated voltage (III/3)	400 V (L-PE) / 690 V (L-L)			400 V (L-PE) / 690 V (L-L)		
Rated surge voltage	6 kV			6 kV		
Rated current	25 A			25 A		
Surge voltage category / Pollution degree	III / 3			III / 3		
Volume resistance	1.5 mΩ			1.5 mΩ		
Material data						
Housing material	Aluminum, die-cast			Aluminum, die-cast		
Housing surface material	EMC-conductive			EMC-conductive		
Seal material	NBR			NBR		
Locking latch material	Stainless steel			Stainless steel		
Contact material	Cu			Cu		
Contact surface material	Ag			Ag		
Contact carrier material	PA			PA		
Material grip body interlock	PA			PA		
Inflammability class acc. to UL 94	V0			V0		
Mechanical data						
Degree of protection	IP65/IP66/IP67			IP65/IP66/IP67		
Insertion/withdrawal cycles	≥ 100			≥ 100		
Connection data						
Connection method	Screw connection			Screw connection		
Stripping length of the individual wire	10 mm			10 mm		
Conductor cross-section	0.2 mm² ... 4 mm² (6 mm² without ferrule)			0.2 mm² ... 4 mm² (6 mm² without ferrule)		
Connection cross-section AWG	24 ... 12 (AWG 10 without ferrule)			24 ... 12 (AWG 10 without ferrule)		
Tightening torque	0.5 Nm ... 0.6 Nm			0.5 Nm ... 0.6 Nm		
Temperature data						
Ambient temperature (operation)	-40°C ... 100°C			-40°C ... 100°C		



Panel cutout: DC-B 6-SET-WF...





DC-B 6-SET-CO...M-7X4-UT

DUPLICON coupling set with a basic housing (enclosed bottom), two stackable housings, two contact inserts and a housing cover

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
HC-M-KV-M25(1X10/1X11)	1580228	10

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 mm² ... 4 mm² (6 mm² without ferrule)	
24 ... 12 (AWG 10 without ferrule)	
0.5 Nm ... 0.6 Nm	
-40°C ... 100°C	

DC-B 6-SET-3D...M-7X4-UT

DUPLICON distributor set with a basic housing (enclosed bottom), three stackable housings, with three contact inserts and a housing cover

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
HC-M-KV-M25(1X10/1X11)	1580228	10

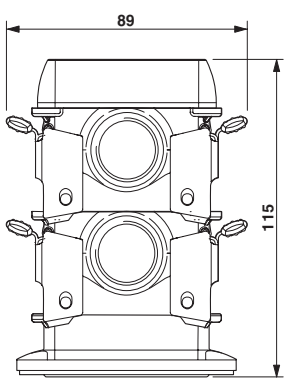
400 V (L-PE) / 690 V (L-L)	
6 kV	
25 A	
III / 3	
1.5 mΩ	
Aluminum, die-cast	
EMC-conductive	
NBR	
Stainless steel	
Cu	
Ag	
PA	
PA	
V0	
IP65/IP66/IP67	
≥ 100	
Screw connection	
10 mm	
0.2 mm² ... 4 mm² (6 mm² without ferrule)	
24 ... 12 (AWG 10 without ferrule)	
0.5 Nm ... 0.6 Nm	
-40°C ... 100°C	

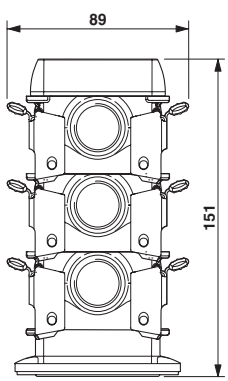
DC-B 6-SET-TB-...-M-7X4-UT

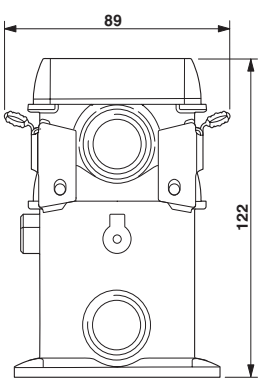
DUPLICON T-box set with a T-box with T-box contact insert (two connections per position), a stackable housing with a stackable contact insert and a housing cover

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
HC-M-KV-M25(1X10/1X11)	1580228	10

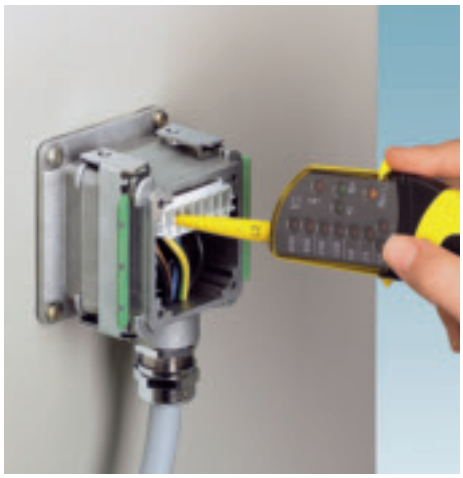
400 V (L-PE) / 690 V (L-L)	
6 kV	
25 A	
- / 3	
1.5 mΩ	
Aluminum, die-cast	
EMC-conductive	
NBR	
Stainless steel	
Cu	
Ag	
PA	
PA	
V0	
IP65/IP66/IP67	
≥ 100	
Screw connection	
10 mm	
0.2 mm² ... 4 mm² (6 mm² without ferrule)	
24 ... 12	
0.5 Nm ... 0.6 Nm	
-40°C ... 100°C	

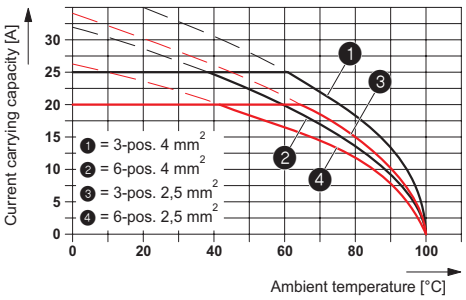






Contact inserts





Derating diagram

DC-B 6-ID-7X4-UT

Stackable contact insert

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 plug 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:

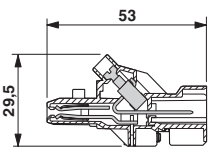
Coding stars with 4 coding branches are available for the purpose of coding several plug connectors of the same kind against being plugged in incorrectly, Order No. 3040588.

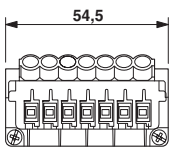
EB 2-6 dual insertion bridges with a 2 mm pitch (Order No. 0201155) are available for bridging two adjacent connections.

For installation instructions, see:
www.phoenixcontact.com/download

Description	Type	Order No.	Pcs. / Pkt.
Stackable contact insert, 6 x 4 mm² + PE Screw connection	**DC-B 6-ID-7X4-UT**	**1602203**	10
T-Box contact insert, 6 x 4 mm² + PE With two screw connections per position			
Panel mounting contact insert, 6 x 4 mm² + PE 180° PCB connection			
Panel mounting contact insert, 6 x 4 mm² + PE 90° PCB connection			
Keying star, with four keying branches, to key the connector			
	PC	**3040588**	50
Insertion bridge, fully insulated	**EB 2- 6**	**0201155**	100
T20 replacement screw			
M3 screw, V2A, for fixing the contact inserts for PCB connection in the panel mounting base			

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
No. of pos.	6
Material data	
Contact material	Cu
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
Degree of protection	IP20, touch proof
Insertion/withdrawal cycles	≥ 100
Connection data	
Connection method	Screw connection
Stripping length of the individual wire	10 mm
Conductor cross-section	0.2 mm² ... 4 mm² (6 mm² 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





DC-B 6-IBT-7X4-UT

T-Box contact insert

Type	Order No.	Pcs. / Pkt.
DC-B 6-IBT-7X4-UT	1581065	10
PC	3040588	50
EB 2- 6	0201155	100

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 mm² ... 4 mm²
24 ... 12
0.5 Nm ... 0.6 Nm
-40°C ... 100°C

DC-B 6-IB-7X4-PCB-180

Panel mounting contact insert,
180° PCB connection

Type	Order No.	Pcs. / Pkt.
DC-B 6-IB-7X4-PCB-180	1602177	10
PC	3040588	50
VC-TR-S	1607826	50
DC-PCB-M3X20	1602407	100

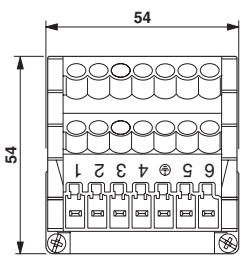
400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
6
Cu
Ag
PA
V0
IP20, touch proof
≥ 100
Solder connection
-
-
-
-
-40°C ... 100°C

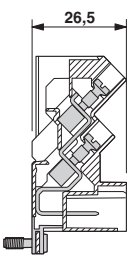
DC-B 6-IB-7X4-PCB-90

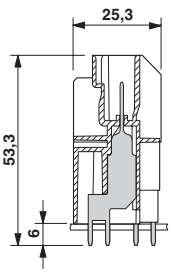
Panel mounting contact insert,
90° PCB connection

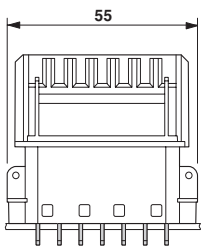
Type	Order No.	Pcs. / Pkt.
DC-B 6-IB-7X4-PCB- 90	1602180	10
PC	3040588	50
VC-TR-S	1607826	50
DC-PCB-M3X20	1602407	100

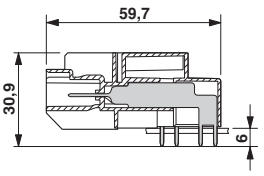
400 V (L-PE) / 690 V (L-L)
6 kV
25 A
III / 3
6
Cu
Ag
PA
V0
IP20, touch proof
≥ 100
Solder connection
-
-
-
-
-40°C ... 100°C

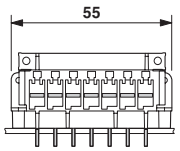












Housing

Note:

Suitable cable screw connections are listed in PLUSCON Industrial Plug Connectors under HEAVYCON and VARIOCON accessories.

For installation instructions, see: www.phoenixcontact.com/download

DC-B 6-CT-M

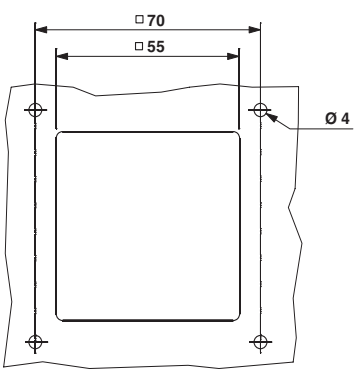
Housing cover, with two M3 screws, V2A, captive, seal and hole for retaining cord, for self-tapping M3 screw

DC-B 6-HB-M

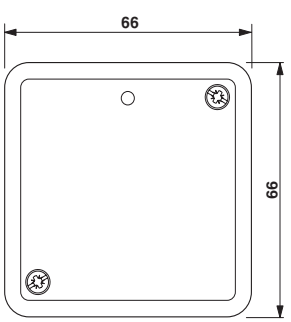
Panel mounting base, with seal

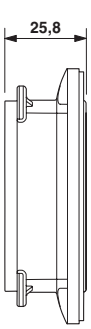
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Aluminum housing cover	**DC-B 6-CT-M**	**1602025**	10			
Aluminum panel mounting base, with open base				**DC-B 6-HB-M**	**1602038**	10
Aluminum basic housing with enclosed base						
Aluminum stackable housing						
With 2 x M20 thread						
With 2 x M25 thread						
With 1 x M20 thread						
With 1 x M25 thread						
T-Box housing						
With 2 x M20 thread						
With 2 x M25 thread						
Special cable screw connection M25, brass						
With 10 mm and 11 mm hole						

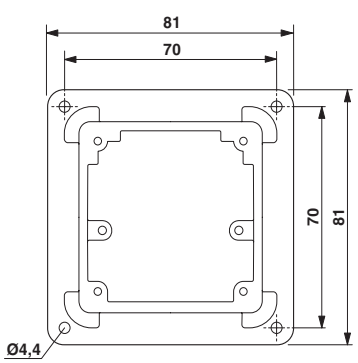
Technical data		
Material data		
Housing material	Aluminum, die-cast	Aluminum, die-cast
Housing surface material	EMC-conductive	EMC-conductive
Seal material	NBR	NBR
Locking latch material	-	-
Material grip body interlock	-	-
Mechanical data		
Degree of protection	IP65/IP66/IP67	IP65/IP66/IP67
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



Panel cutout: DC-B 6-HB-M







DC-B 6-HM-M

Basic housing

DC-B 6-HD-...-M

Stackable housing for DUPLICON contact inserts,
without cable screw connection, with two locking latches and seal

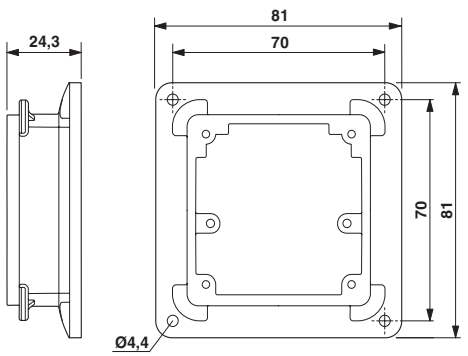
DC-B 6-HTC-...-M...

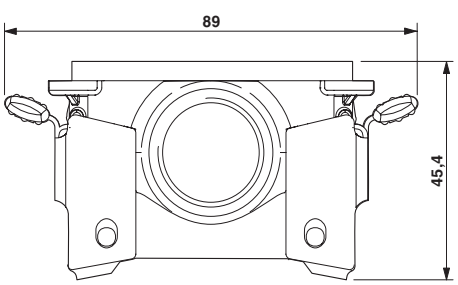
T-Box,
box mounting base

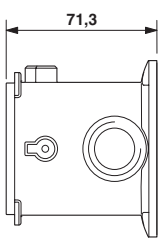
Type	Order No.	Pcs. / Pkt.
DC-B 6-HM-M	1602164	10
Aluminum, die-cast		
EMC-conductive		
-		
-		
-		
IP65/IP66/IP67		
-40°C ... 125°C		

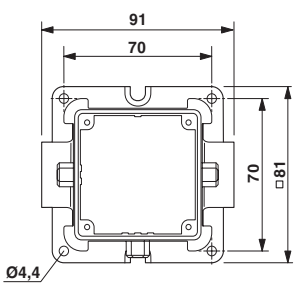
Type	Order No.	Pcs. / Pkt.
DC-B 6-HD-M20/M20-M	1602067	10
DC-B 6-HD-M25/M25-M	1602070	10
DC-B 6-HD-M20-M	1602041	10
DC-B 6-HD-M25-M	1602054	10
HC-M-KV-M25(1X10/1X11)	1580228	10
Aluminum, die-cast		
EMC-conductive		
NBR		
Stainless steel		
PA		
IP65/IP66/IP67		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
DC-B 6-HTC-M20-M20-M	1581049	10
DC-B 6-HTC-M25-M25-M	1581052	10
HC-M-KV-M25(1X10/1X11)	1580228	10
Aluminum, die-cast		
EMC-conductive		
-		
-		
-		
IP65/IP66/IP67		
-40°C ... 125°C		









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 overshot.

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.

Note:
For contact insert modules, see from page: 450.

DC-B 6-MHR...

Hinged retaining frame

Description	Type	Order No.	Pcs. / Pkt.
Hinged retaining frame, for sleeve housing, labeling: Upper case letters (A, B, C, ...)	**DC-B 6-MHR-T3**	**1581285**	2
Hinged retaining frame, for panel mounting base, labeling: Lower case letters (a, b, c, ...)	**DC-B 6-MHR-A3**	**1581287**	2
Cable lug for PE connection extension to 16 mm²	**HC-M-MHR-PE16**	**1636981**	10
Coding elements	**see starting with page 553**		

Technical data		
Material data		
Hinged retaining frame material		Die-cast zinc alloy
Connection data		
Connection cross-section	[mm²]	4 mm² ... 6 mm² (for PE conductor – power side)
Connection cross-section	[mm²]	1 mm² ... 2.5 mm² (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)
Temperature data		
Ambient temperature (operation)		-40°C ... 125°C

Sleeve housing, EMC-protected

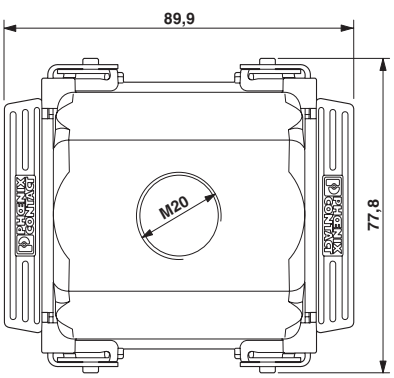
DC-B 6-H-80/O1STM...

Sleeve housing with seal and vibration-free brackets, EMC-protected, without cable gland

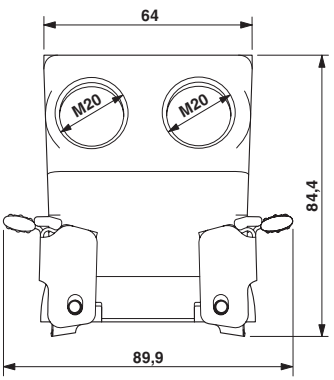
DC-B 6-H-80/O2STM...

Sleeve housing with seal and vibration-free brackets, EMC-protected, without cable gland

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with one cable entry						
1 x M20, straight	**DC-B 6-H-80/O1STM20G-M**	**1581173**	10			
1 x M20, lateral	**DC-B 6-H-80/O1STM20S-M**	**1581117**	10			
1 x M25, straight	**DC-B 6-H-80/O1STM25G-M**	**1581194**	10			
1 x M25, lateral	**DC-B 6-H-80/O1STM25S-M**	**1581138**	10			
1 x M32, straight	**DC-B 6-H-80/O1STM32G-M**	**1581215**	10			
1 x M32, lateral	**DC-B 6-H-80/O1STM32S-M**	**1581159**	10			
Sleeve housing, with two cable entries						
2 x M20, straight				**DC-B 6-H-80/O2STM20G-M**	**1581180**	10
2 x M20, lateral				**DC-B 6-H-80/O2STM20S-M**	**1581124**	10
2 x M25, straight				**DC-B 6-H-80/O2STM25G-M**	**1581201**	10
2 x M25, lateral				**DC-B 6-H-80/O2STM25S-M**	**1581145**	10
Technical data						
Material data						
Housing material	Aluminum, die-cast			Aluminum, die-cast		
Housing surface material	EMC-conductive			EMC-conductive		
Seal material	NBR			NBR		
Locking latch material	Stainless steel			Stainless steel		
Material grip body interlock	PA			PA		
Mechanical data						
Degree of protection	IP65/IP66/IP67			IP65/IP66/IP67		
Temperature data						
Ambient temperature (operation)	-40°C ... 125°C			-40°C ... 125°C		



Dimensional drawing with straight cable outlet



Dimensional drawing with lateral cable outlet

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.

DC-B 6-ADP-...

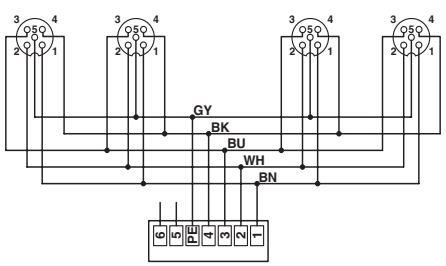
M12 adapters

DC-B 6-A-SA

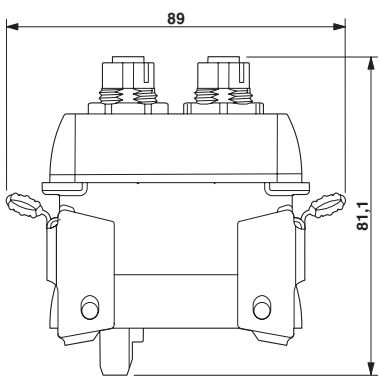
Mounting brackets

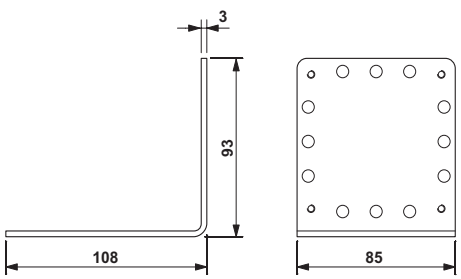
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
M12 adapter for low-voltage distribution, A-coded						
	DC-B 6-ADP-4M12-FS-5CON-7X4-UT	**1581010**	1			
Mounting bracket, made of 3 mm high-grade steel plate, with predrilled holes, with long and short sides						
				DC-B 6-A-SA	**1602313**	5
M4 Torx head screw T20, 12 mm long, self-tapping, consisting of high-strength steel, anti-corrosive, for housing installation						
Profile gasket for stackable housing						
Flat seal for panel mounting base						
Dust protection cover, for snapping on, with retaining cord eyelet, can be painted over						

Technical data		
Material data		
Material	-	High-grade steel V2A
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	Gray
Design	DC-B6	DC-B6
Degree of protection	IP65/IP66/IP67	-
Tightening torque	-	-
Temperature data		
Ambient temperature (operation)	-40°C ... 100°C	-



Circuit diagram





T20-M4X12

Screw

DC-B 6-A-H...-G

Replacement seals

DC-B 6-CT-P

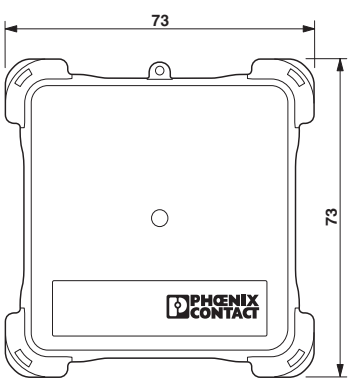
Dust protection cover

Type	Order No.	Pcs. / Pkt.
T20-M4X12	1602410	100

Type	Order No.	Pcs. / Pkt.
DC-B 6-A-HD-G	1602326	10
DC-B 6-A-HB-G	1602339	10

Type	Order No.	Pcs. / Pkt.
DC-B 6-CT-P	1581078	10

Steel	-	-
-	-	-
-	-	-
-	-	ABS
-	NBR	-
-	-	-
-	-	-
Chromated	Black	Gray
-	DC-B6	DC-B6
-	-	IP44
1.5 Nm ... 2 Nm	-	-
-	-	-40°C ... 100°C



HEAVYCON

Heavy-duty industrial connectors of the HEAVYCON series can be used under the harshest conditions. The sturdy metal housings of the connectors are resistant to dirt, water, vibrations and high mechanical stress. The housings are equipped with longitudinal, lateral and central locking latches in order to meet very different requirements.

The ADVANCE housings can be used without a panel mounting base because the connector forms a seal directly on the housing wall. The elimination of the panel mounting base produces excellent EMC attenuation values.

Versions with fixed numbers of positions and modules for side-by-side mounting are available as contact inserts. The B series inserts with fixed numbers of positions are available with very different connection methods: screw, crimp, spring-cage, push-in and QUICKON fast connection. QUICKON connection eliminates the need to strip the cores; this saves a lot of time and money. The modular HC-Modular system makes it possible to individually design contact inserts. A wide range of modules is available: modules with different numbers of positions - including for high voltages and high currents, for coaxial cables, for bus cables, for D-SUB and for compressed air.

The range of products

From page 474 onwards

ADVANCE housing with bayonet and screw locking

The HEAVYCON ADVANCE housings are suitable for a wide range of applications. There is no need for the usual panel mounting base! ADVANCE was developed on the basis of standards CECC 75 301-801, edition 1.

- Cost savings by doing without the panel mounting base
- Suitable for all HC contact inserts of the B, BB, D, DD, HS, HV and K series
- Compatibility with standard panel cutouts
- EMC protection by means of EMC screw connection and conductive seal
- 50% larger wiring space than the standard
- Suitable for high-voltage inserts HC-HV...
- IP65 / IP68 / IP69k degree of protection

From page 480 onwards

Standard housing with locking latch

HEAVYCON housings have single, double or central locking latches. Housings with a double locking latch are exceptionally space-saving when mounted laterally, housings with a single locking latch can be aligned close to each other in the longitudinal direction. Housings with central locking latches are extremely easy to operate due to the large lever arm.

Thanks to the special shape of the central locking latch, female and male inserts are separated when the locking latch is opened.

Single and double locking latches of the B6/B10/B16/B24 series can be replaced within a few seconds. These single and double locking latches are made of high-grade steel/plastic and are exceptionally resistant to adverse conditions. The HEAVYCON standard housings comply with the IP65 degree of protection.

Contact inserts with fixed numbers of positions

Contact inserts with fixed numbers of positions are available (in mixed arrangements as well). Contact inserts are available for extremely varied parameters such as number of positions, connection cross-section, rated voltage and current. Contact inserts of the A/B/BB/D/DD/HS/HV and K series are available. Inserts of the B series are available with screw, crimp, spring-cage, push-in and QUICKON connection.

Matching crimp contacts are available as pin and socket contacts with different cross-sections with a silver or gold-plated surface as well as for POF cables.

From page 422 onwards

Modular contact inserts

Modular contact inserts enable efficient individual designing of the B-shaped contact inserts. A wide module range is available for this purpose – modules with different numbers of positions, for high voltages and currents, for coaxial cables, bus cables, D-SUB and compressed air. Optimized connectors can thus also be assembled for unusual applications.

Suitable crimp contacts are available as pin and socket contacts with different cross-sections with a silver or gold-plated surface as well as for POF and coaxial cables.

From page 450 onwards

Terminal adapters

The terminal adapters were developed specially for type B (500 V) and type D (250 V) heavy-duty industrial connectors. They combine plug connector contact inserts with modular terminal blocks to form a space-saving connection element. Together with the corresponding HEAVYCON panel mounting base, this ensures that the cable entry through the control cabinet walls meets industrial requirements.

The range includes terminal adapters with screw, PUSH-in and QUICKON connections.

From page 466 onwards

Screw connections and other accessories

Screw connections make cables of extremely varied diameters water-proof and dust-proof.

HEAVYCON screw connections made of plastic and brass as well as EMC screw connections are available. Versions with bending protection and strain relief clamp can be used for applications involving extreme stresses.

Other accessories offered are cover plates, adapter plates, connector mounting frames, coding elements, protective covers, conductor feed-throughs, replacement clamps, screw connection adapters, corrugated pipes, replacement bolts and replacement seals.

From page 520 onwards

Heavy-duty industrial connectors – PLUSCON heavy
Cross list – HEAVYCON

The system cross list represents a simplified view of the correlation between a contact insert and the housing design.

The upper rows describe the contact insert as per the number of positions, voltage, current and connection method.

The marking in the columns indicates the matching housing design.

Notes:

– Connectors may only be actuated when there is no voltage
– Contact inserts of the HV series (690 V 16 A) can be delivered on request
– For terminal adapters, see page 466
– For modular contact inserts, see page 450

Series		A				B						
Number of positions	Power (controller)	3/4	10	16	32	5	6	10	16	32[3]	24	48[3]
Rated voltage [V]	Power (controller)	230/400	250	250	250	230/400	500	500	500	500	500	500
Rated current [A]	Power (controller)	10	16	16	16	16	16	16	16	16	16	16
Connection method S = screw C = crimp Q = QUICKON[1] L = FO Z = spring-cage PI = push-in		S	S C	S C	S C	C	S C Q Z PI	S C Q Z PI	S C Q Z PI	S C Q Z PI	S C Q Z PI	S C Q Z PI
Type		HC-A 3/A 4...	HC-A 10...	HC-A 16...	HC-A 16... HC-A 16...32	HC-B 5...	HC-B 6...	HC-B 10...	HC-B 16...	HC-B 16... HC-B 16...32	HC-B 24...	HC-B 24... HC-B 24...48
	Page	421	424	425	425	428	426	427	427	427	427	427
HEAVYCON housing / **Standard housing** / **Type B / ADVANCE**	**HC-B 6...**	481										
	HC-B 6-TM...	474					●					
	HC-B 10...	483										
	HC-B 10-TM...	475						●				
	HC-B 16...	489										
	HC-B 16-TM...	475							●			
	HC-B 24...	497										
	HC-B 24-TM...	475									●	
	HC-B 32...	505										
	HC-B 48...	507								●		
Type D	**HC-D 7...**	509										●
	HC-D 15...	511	●			●						
	HC-D 25...	513		●								
	HC-D 50...	515			●							
EMC type	**HC-B 6...EMV**	518					●					
	HC-B 10...EMV	519						●				
	HC-B 16...EMV	519							●			
	HC-B 24...EMV	519									●	

[1]) With QUICKON connection
DIN VDE 0627/86
DIN VDE 0110/02.79
DIN VDE 0110/04.97
IEC 60 664-1
DIN / IEC 60 512
[2]) 250 V only for D 7 in plastic housing
[3]) Both contact inserts must be ordered in this case (see the type rwo)

HEAVYCON contact inserts

BB

D

DD

HS

K

	10	18	32	46	7/8	15	25	50[3]	40	80	64	128[3]	24	42	72	144[3]	108	216[3]	6	12[3]	4(8)	6(12)	6(36)	8(24)	12(2)
	500	500	500	500	42/ 250[2]	250	250	250	250	250	250	250	250	250	250	250	250	250	500	500	400	690 (400)	690 (160)	400 (160)	690 (250)
	16	16	16	16	10	10	10	10	10	10	10	10	10	10	10	10	10	10	35	35	80(16)	40(10)	40(10)	16(10)	16(10)
	C	C	C	C	C L	C L	C L	C L	C L	C L	C L	C L	C L	C L	C L	C L	C L	C L	S	S	S	S	C L	C L	C L
	HC-BB 10...	HC-BB 18...	HC-BB 32...	HC-BB 46...	HC-D 7/D 8...	HC-D 15...	HC-D 25...	2 x HC-D 25...	HC-D 40...	2 x HC-D 40...	HC-D 64...	2 x HC-D 64...	HC-DD 24...	HC-DD 42...	HC-DD 72...	HC-DD 72... HC-DD 72...144	HC-DD 108...	HC-DD 108... HC-DD 108...216	HC-HS 6...	HC-HS 6... HC-HS 6...12	HC-K 4/8 ...	HC-K 6/12 ...	HC-K 6/36 ...	HC-K 8/24 ...	HC-K 12/2 ...
	436	437	437	437	438	439	439	439	440	440	440	440	442	443	443	443	443	443	445	445	446	446	447	447	447
	●												●												
		●												●										●	
			●						●						●				●			●	●		●
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Screw connection

The screw connection has been designed to meet the most stringent requirements. An important characteristic is the maintenance-free connection of conductors. All kinds of copper conductors can be clamped without pretreatment. Splicing protection can also be used in the form of ferrules. A special characteristic of the screw clamping body is the multi-conductor connection, which is often necessary. The metal parts of the screw connections are made of high-grade, strain-crack and corrosion-proof copper alloys. This eliminates the possibility of electrolytic corrosion in the presence of moisture and the risk of rusting. The consequences, such as unreliable electrical contacts and/or jammed screws, are also prevented. A further advantage is the low temperature rise due to good electrical conductivity. The surface of the metal parts is protected by a lead-free, galvanic nickel or tin plating.

Axial screw connection

In this method, the core ends to be contacted are inserted into the connection area of the male or female contact. A tapered mandrel (part of the contact) is then screwed into the stranded core from the front. The litz wires of the cores are pressed against the contact panel to establish a reliable connection between the cores and the contact. The mandrel is pressed using a hexagonal wrench that is applied to the front side of the contact. This connection method combines the advantages of screw and crimp connections:

– Minimum space requirements
– Easy handling
– No special tools required

Crimp connection

Male/female contacts having different cross-sections and with silver and gold-plated surfaces are available for users.

The crimp connection belongs to the group of non-detachable electric connections.

The core and the crimp contact are connected using crimping pliers or a crimping machine and by accurately deforming the crimping area of the crimp contact and the core. Strip the core, position the crimp contact in the crimping pliers, insert the core and close the crimping pliers. Finished.

During crimping, it must be ensured that the conductor cross-section, the crimp contact and the crimping tool all match.

The crimping method offers uniform crimping quality and constant, low contact resistances. The requirements regarding crimp connections are defined in DIN EN 60352-2. A quality feature of the crimp connection is its tensile strength. Tensile force is a simple method to check the crimping quality.

After crimping with the core, crimp contacts are snapped into the contact insert. A contact is loosened using a contact removal tool.

Crimp connection is the ideal connection system in case of harsh environmental conditions such as extreme temperature fluctuations, vibrations and shocks, and corrosive atmospheres.

Spring-cage connection

The spring-cage connection comprises a spring that presses a stripped conductor against a power rail.

The terminal point is opened using a standard screwdriver. After the conductor has been inserted into the clamping space, the screwdriver is removed and the conductor automatically makes contact. In spring-cage terminal blocks of Phoenix Contact, the contact force thus does not depend on the operator. They provide a vibration-resistant and gas-tight connection having long-term stability. The connection therefore functions extremely reliably.

Convenient operation is ensured by the front connection, i.e. the conductor and the screwdriver are guided in parallel from the same direction and lie in the field of vision of the operator. After the conductor is connected, it can be checked from the connection side. Splicing protection can also be used in the form of a ferrule.

The current-carrying metals consist of high-grade copper alloys. Especially advantageous is the low temperature rise due to good electrical conductivity.

Push-in connection

Stranded conductors with ferrule or rigid conductors can be directly plugged into the connection without using a tool. The contact spring is automatically opened when the conductor is pushed in and thereby ensures the required pressure force against the current bar.

A screwdriver is only required for connecting small cross-sections and for loosening the conductors. The screwdriver is used to open the connection space.

The push-in connection thus offers:

– Simple handling
– No need for a tool
– Extremely short connection time and
– A gas-tight, vibration and shock-resistant connection

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

The current-carrying metals consist of high-grade copper alloys. Especially advantageous is the low temperature rise due to good electrical conductivity.

QUICKON fast connection for individual cores

The QUICKON connection for individual cores is equipped with an insulation displacement contact. In the case of this connection method, a non-stripped core is positioned before the gap of the insulation displacement contact and then pressed into the gap. This cuts the conductor insulation and establishes a gas-tight contact between the core and the contact.

The core does not have to be stripped first in this case. This saves at least 60% of the connection time.

In order to connect the core, insert it into the wiring space, press it into the gap using the lever action of a screwdriver, and that's it.

This takes only a few seconds.

The initial/final status is clearly indicated.

The patented contact metals of the fast connection terminal blocks consist of a special, high-grade copper alloy. This combines good electrical conductivity with excellent elastic characteristics. The surface of the metal parts is protected by a lead-free, galvanic nickel or tin plating.

Cores can be connected up to 10 times. The used core end must first be cut before connecting it again.

Contact inserts for the most varied parameters are available.

The main ones are:
– Rated voltage
– Rated current
– Number of positions and
– Connection system

The selection table on page 330 will help you find the right contact insert. Connectors can be plugged and removed multiple times. This plugging process takes place between the male and female parts. The socket part, i.e. the female insert containing the female contacts is normally connected to the live conductor end.

Numerous available contact inserts are integrated into series.

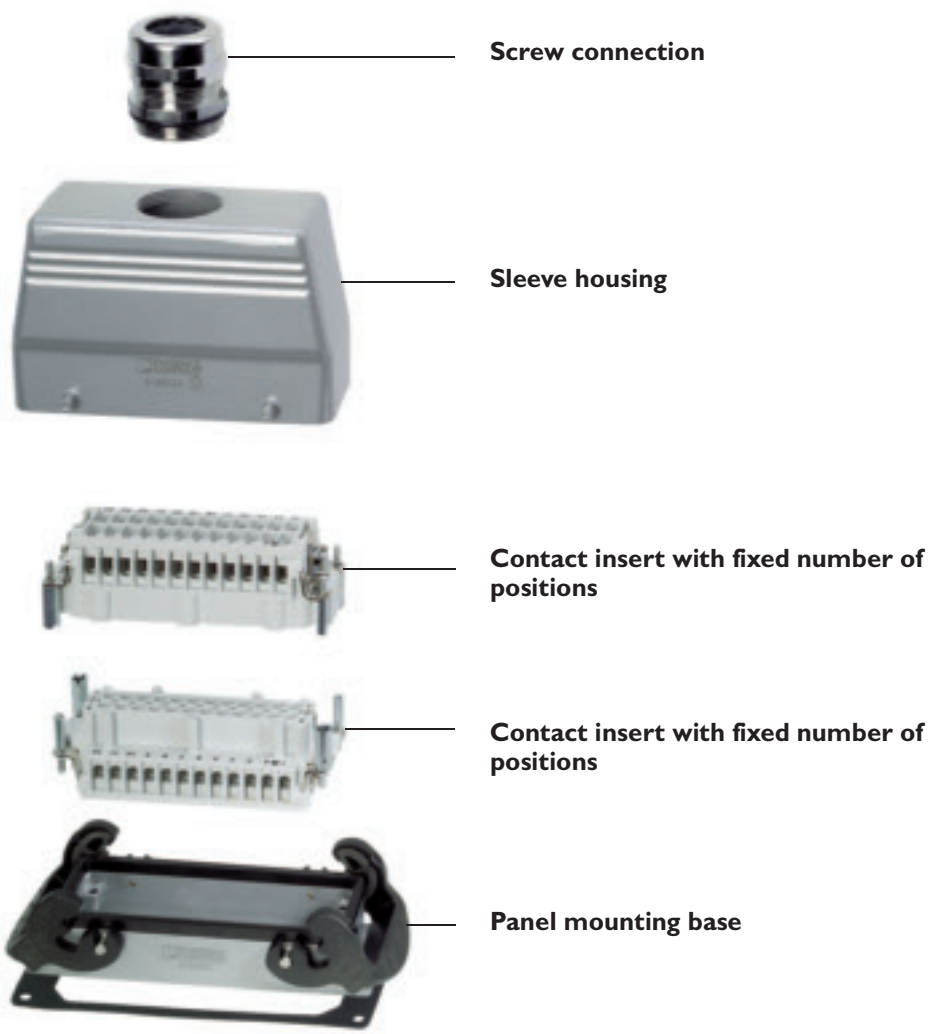
The following series are available:
– A (250 V, 16 A)
– B (500 V, 16 A)
– BB (500 V, 16 A, higher position density)
– D (250 V, 10 A)
– DD (250 V, 10 A, higher position density)
– HS (500 V, 35 A)
– HV (690 V, 16 A)
– K (combination inserts)

In case of inserts with a fixed number of positions, contact inserts with two different contact sizes for signal and power circuits are offered as well (combination inserts).

HEAVYCON contact inserts of the B series are available with six connection systems. In addition to the well-known connection methods
– Screw
– Axial screw
– Crimp and
– Spring-cage connection

the methods of
– QUICKON fast connection and
– Push-in connection are available.

System configuration – standard housing with contact inserts having a fixed number of positions



QUICKON connection

In case of a QUICKON connection, the core no longer needs to be stripped. The conductor is directly inserted into the terminal point and connected by levering it slightly with the screwdriver.

Owing to the elimination of conductor preparation and screwing steps, the connection and mounting time is reduced by 60%. Thanks to the contacting indicator on the screwdriver insert, it can be clearly seen at a glance whether all conductors have been connected properly. The QUICKON connection method can be used to connect cores up to 10 times. In order to re-establish the contact of the conductor, the already contacted end is cut. Contact inserts with QUICKON connection allow the use of 2.3 mm test plugs of the MPS type.

Push-in connection

The push-in method is almost identical to the well-known spring-cage connection method.

In the case of contact inserts with the push-in method, cores with ferrules or solid conductors can be directly inserted into the terminal point without first needing to open the terminal point using a screwdriver. The push-in method thus requires an exceptionally short connection time and is easy to handle.

PE contact

Contact inserts with screw, crimp and push-in connection methods contain PE connections with tension sleeves. The tension sleeve connections guarantee an extremely safe PE contact. The conductor pull-out forces are considerably higher when compared with pull-out forces of conventional PE head contact terminal points.

Keying

One thing that the contact inserts with screw, crimp, QUICKON and push-in connections all have in common is that quick keying is possible with the help of connector keying profiles in addition to the conventional keying method. These keying profiles can be used to prevent confusion between the same connectors that are located next to each other. With the conventional keying method, the mounting screws of contact inserts must be replaced with keying bolts, keying sockets or keying pins. This requires a lot of time. Keying profiles enable keying in just a few seconds. Profiles need to be snapped into the keying grooves of the contact inserts. Keying profiles can be used to protect up to six plug connections against incorrect plugging depending on the size of male and female inserts.

Note:

Contact inserts for 16 A and 400/690 V in 3/6/10-pos. versions are available on request.

QUICKON, the fast connection for multi-strand cables

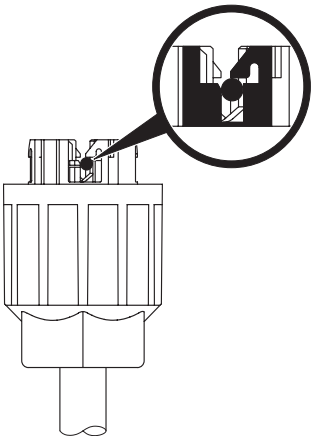
This fast connection has been specially designed for applications in which circular connectors need to be connected efficiently.

The connection can be unscrewed, and the components can be used more than once.

With this connection system, a multi-position conductor is connected with a minimum of effort.

The significantly reduced connection time can be attributed to the simple and quick handling of this QUICKON connection.

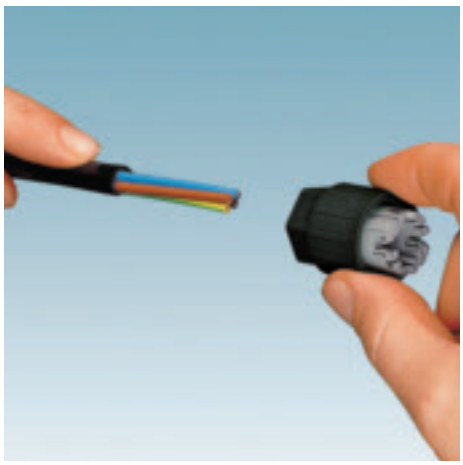
3. Snap the cores into the marked (1,2,3,...) core entries.



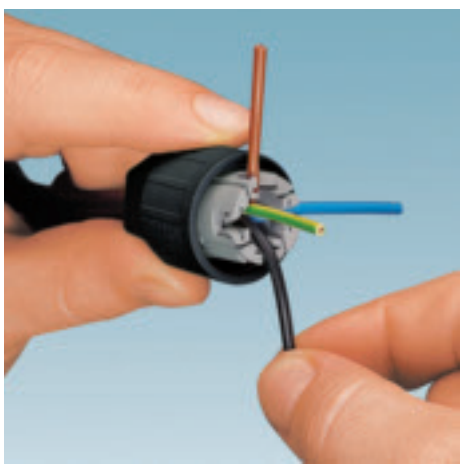
The fast connection technology automatically creates the contact and strain relief when tightened. Special seals protect against dust and water (IP65 / IP67).

Conductor connection

1. Remove the cable sheath (approx. 40 mm)



2. Slide the pre-assembled union nut onto the conductor as far as it will go.



4. Cut off the projecting core ends flush, so that there is no overhang.

5. Place the union nut on the contact carriers and tighten with the required torque (3 Nm).

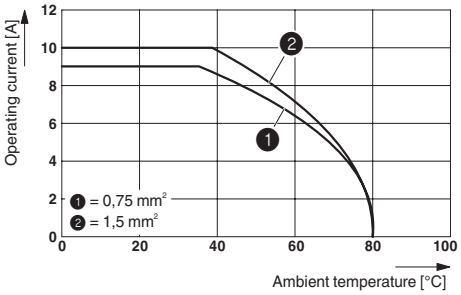
Repeated connection of the conductor

1. Open the union nut.

2. Pull out the conductor from the terminal block to remove it.

   When the connection is undone, the splice ring drops out of the union nut and must therefore be screwed into the union nut by about two turns if the conductor is to be reconnected, before continuing as described above (conductor connection).

HEAVYCON Connectors, A series, with QUICKON-ONE connection



Derating diagram: HC-A3...Q1,5...

HC-A3-...Q1,5-...-G-PA

3-pos.

The convenience of the QUICKON-ONE connection can now be utilized with a classic square connector – a 4-position (3+PE) industrial connector of type A. Male and female designs are available as sleeve and coupling versions.

With QUICKON-ONE, only one part – the union nut – has to be slid onto the conductor. This is because the splice ring, the seal and the strain relief cap are connected to the union nut.

The ground conductor must be wrapped around the cores once before the union nut is slid on. The ground conductor is therefore the last to become disconnected when extreme tension is applied.

Note:

– If the conductor makes contact again, it must be cut off above the last contact point
– QUICKON components may only be operated when under no load

For dimensional drawings, see page 558.

Description	Type	Order No.	Pcs. / Pkt.
Connector, with sleeve housing for a locking latch, 3-pos. + PE			
Female	**HC-A3-BUQ1,5-TFL-G-PA**	**1641510**	1
Male	**HC-A3-STQ1,5-TFL-G-PA**	**1641581**	1
Connector, with coupling housing with a locking latch, 3-pos. + PE			
Female	**HC-A3-BUQ1,5-KML-G-PA**	**1641617**	1
Male	**HC-A3-STQ1,5-KML-G-PA**	**1641604**	1
Socket wrench, for loosening and fastening the QUICKON union nut, wrench size 19 mm	**QSS 19**	**1670895**	1
Diagonal cutter, for flush cutting of the coding bars	**MICROFOX SC**	**1205862**	1
Cable connector, for connecting round conductors, 3-pos.+PE	**Q 1,5/4IDC/24-24KU-KU BK PE**	**1642182**	1

Technical data	
Electrical data	
Rated voltage (III/3)	250 V / 400 V
Rated surge voltage	4 kV
Rated current	10 A
Surge voltage category	III
Material data	
Contact material	Cu alloy
Contact surface material	Silver-plated
Contact carrier material	PA / PC
Inflammability class acc. to UL 94	V0
Mechanical data	
Wrench size, union nut	19 mm
Tightening torque, union nut	3 Nm
Design	A3
Pollution degree	3
Degree of protection	IP65
Insertion/withdrawal cycles	500
Connector data QUICKON connection	
Core insulation	PVC/PE
Core diameter including insulation	1.8 mm ... 3 mm
Structure of individual litz wire/ smallest wire diameter	VDE 0295 Cl.2-5, min. wire diameter 0.2 mm
External cable diameter	6 mm ... 12 mm
Stripping length of the sheath	40 mm
Connection frequency	10 (For the same conductor cross-section)
Conductor cross-section [mm²]	0.75 mm² ... 1.5 mm²
Conductor cross-section [AWG]	18 ... 16
Temperature data	
Ambient temperature (operation)	-25°C ... 80°C
Temperature when conductor connected	-5°C ... 50°C (specifications of the cable manufacturer must also be observed)

A-Series contact inserts, screw connection

To determine the matching housings, refer to the cross-reference list on page 414.

The A series contains contact inserts with screw and crimp connection, although the 3 and 4-position contact inserts are only available with screw connection. The screw connections of A10/A16 are equipped with wire protection.

– HC-A 3-EST / HC-A 4-EST profile gaskets of NBR
– HC-A 4-E...S contact inserts already contain an IP65 sealing screw
– Plug connectors may only be operated when under no load

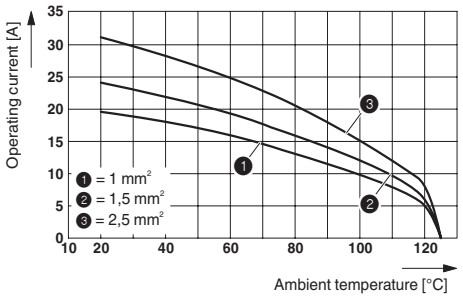
For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

Notes:

For connector pin assignments, see from page 566.

For more accessories, see from page 520.

Derating curve HC-A 10-E... / HC-A 16-E..., see page 424.



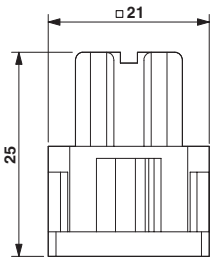
Derating diagram: Series HC-A 3-E..S / HC-A 4-E..S

HC-A 3-E...S

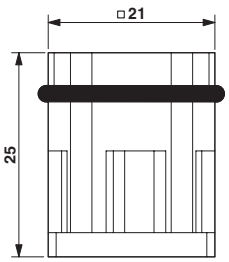
3-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-A 3-EBUS**	**1773093**	10
Male	**HC-A 3-ESTS**	**1773080**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
HEAVYCON housing, series D	**D7 see starting on page 508**		
PE screw			
Coding elements			
Connector assembly frame			

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	230 V / 400 V
Rated surge voltage	4 kV
Rated current	10 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	3
Conductor cross-section	0.5 mm² ... 1.5 mm²
Connection cross-section AWG	20 ... 16
Stripping length of the individual wire	5 mm
Tightening torque	0.25 Nm
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40°C ... 125°C



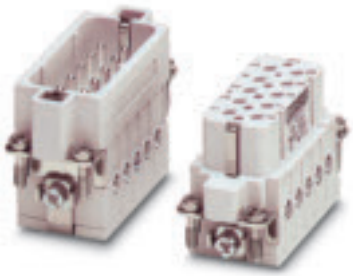
Female insert



Male insert

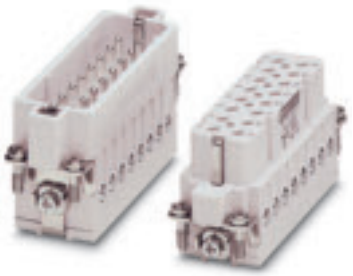
HC-A 4-E...S

4-pos.



HC-A 10-E...S

10-pos.



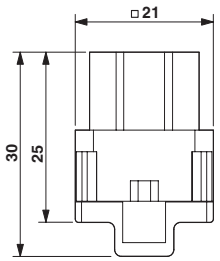
HC-A 16-E...S

16-pos.

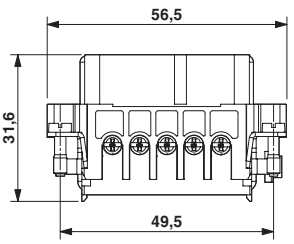
Type	Order No.	Pcs. / Pkt.
HC-A 4-EBUS	**1774908**	10
HC-A 4-ESTS	**1774911**	10
D7 see starting on page 508		
230 V / 400 V		
4 kV		
10 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
4		
0.5 mm² ... 1.5 mm²		
20 ... 16		
5 mm		
0.25 Nm		
≥ 500		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-A 10-EBUS	**1773077**	10
HC-A 10-ESTS	**1773051**	10
D15 see starting on page 510		
see page 552		
see page 553		
See page 538		
250 V		
4 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
10		
0.5 mm² ... 2.5 mm²		
20 ... 14		
7 mm		
0.5 Nm		
≥ 500		
-40°C ... 125°C		

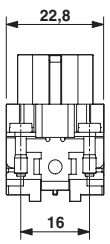
Type	Order No.	Pcs. / Pkt.
HC-A 16-EBUS	**1677005**	10
HC-A 16-ESTS	**1677021**	10
HC-A 16-EBUS-32	**1677047**	10
HC-A 16-ESTS-32	**1677063**	10
D25/D50 see starting on page 512		
see page 552		
see page 553		
See page 538		
250 V		
4 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
16		
0.5 mm² ... 2.5 mm²		
20 ... 14		
7 mm		
0.5 Nm		
≥ 500		
-40°C ... 125°C		

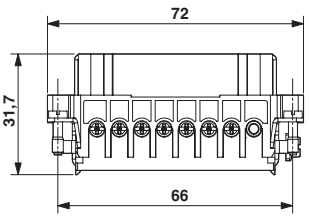


Female insert

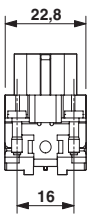


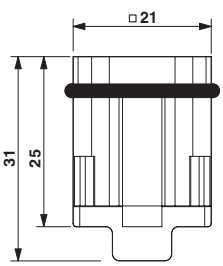
Female insert



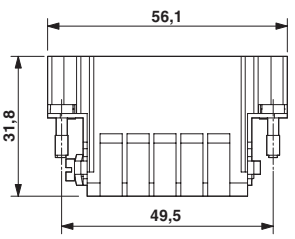


Female insert

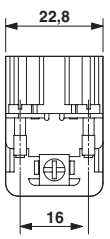


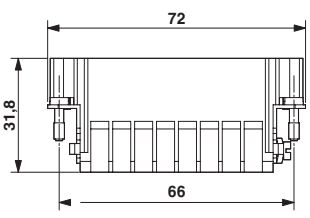


Male insert

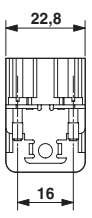


Male insert





Male insert



A-Series contact inserts, crimp connection

To determine the matching housings, refer to the cross-reference list on page 414.

The A-series contains contact inserts with screw and crimp connection, although the 3 and 4-position contact inserts are only available with screw connection.

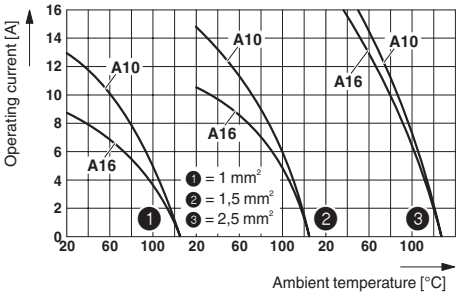
– Plug connectors may only be operated when under no load

Notes:

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

For connector pin assignments, see from page 566.

For more accessories, see from page 520.



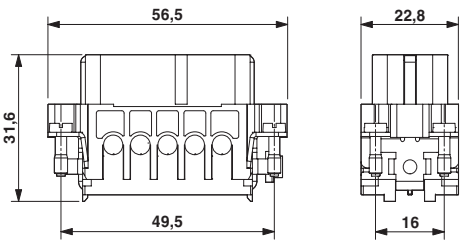
Derating diagram: HC-A...C series

HC-A 10-E...C

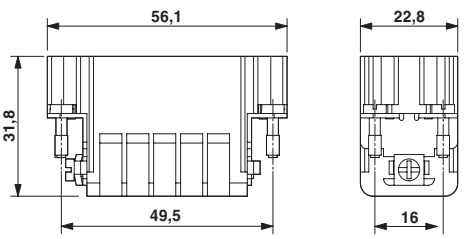
10-pos., without crimp contacts

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-A 10-EBUC**	**1676983**	10
Male	**HC-A 10-ESTC**	**1676996**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
HEAVYCON housing, series D	**D15 see starting on page 510**		
Crimp contacts	**CK 2,5-ED-... see page 528**		
Replacement PE screw	**see page 552**		
Coding elements	**see page 553**		
Connector assembly frame	**See page 538**		

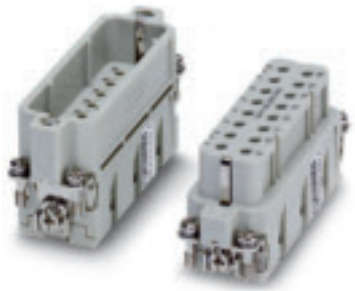
Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	250 V
Rated surge voltage	4 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag (alternatively Au)
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	10
Conductor cross-section	0.5 mm² ... 4 mm²
Connection cross-section AWG	20 ... 12
Stripping length of the individual wire	8 mm
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Female insert



Male insert

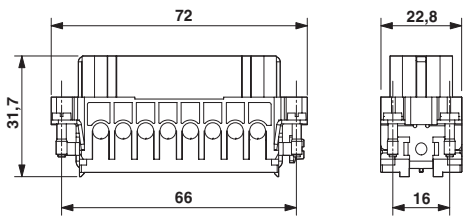


HC-A 16-E...C

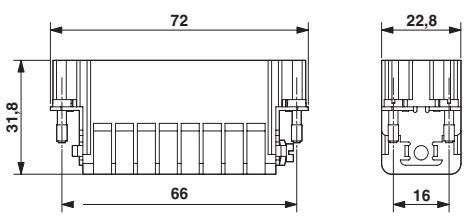
16-pos.,
without crimp contacts

Type	Order No.	Pcs. / Pkt.
HC-A 16-EBUC	**1677018**	10
HC-A 16-ESTC	**1677034**	10
HC-A 16-EBUC-32	**1677050**	10
HC-A 16-ESTC-32	**1677076**	10
D25/D50 see page 512 onwards		
CK 2,5-ED-... see page 528		
see page 552		
see page 553		
See page 538		

250 V
4 kV
16 A
III / 3
Copper alloy
Ag (alternatively Au)
PA
V0
16
0.5 mm² ... 4 mm²
20 ... 12
8 mm
≥ 500
-40°C ... 125°C



Female insert



Male insert

B-Series contact inserts, screw connection

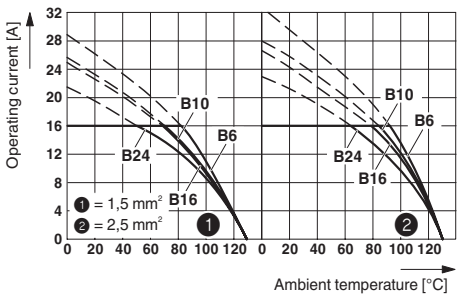
The new contact inserts with a screw connection now have an option of additional keying with the help of the keying profile CP-HC.

– HC-B6..../HC-B10.... for two keying profiles
– HC-B16..../HC-B24.... for four keying profiles

In the conventional keying method, mounting screws of contact inserts must be replaced with keying bolts, keying sockets or keying pins. This requires a lot of time. Keying profiles enable keying in just a few seconds. Keying profiles need to be snapped into the keying grooves of the contact inserts.

Contact inserts with a screw connection are already equipped with wire protection and captive connection screws. The PE connection is established using the tension sleeve technology.

Connectors may only be operated when under no-load conditions.



Derating diagram

HC-B 6-I-UT-...

6-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-B 6-I-UT-F**	**1648128**	10
Male	**HC-B 6-I-UT-M**	**1648115**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
HEAVYCON housing, B series	**B6 see page 480**		
HEAVYCON-ADVANCE housing, B series	**B6 see page 474**		
Coding elements	**See page 553**		
PE multiplier	**See page 552**		
PE screw	**See page 552**		
Connector assembly frame	**See page 538**		

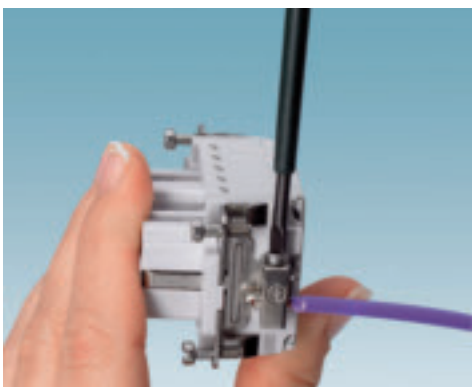
Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Number of positions (without PE)	6
Conductor cross-section	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	20 ... 14
Stripping length of the individual wire	8 mm
Tightening torque	0.5 Nm ... 0.8 Nm
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40°C ... 125°C

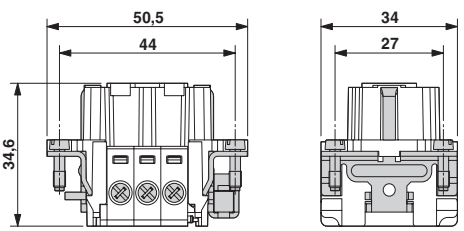
Notes:

For connector pin assignments, see page 566.

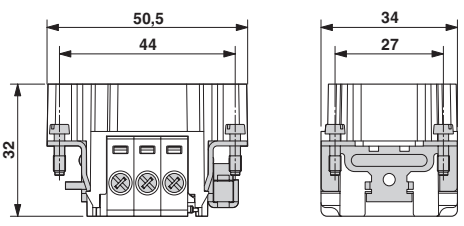
For more accessories, see from page 520.

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**





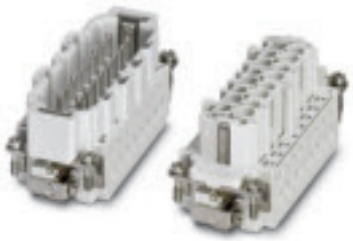
Female insert



Male insert

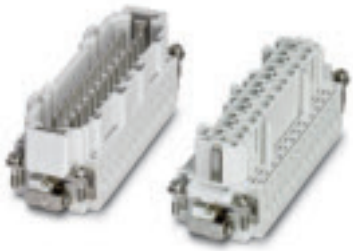
HC-B 10-I-UT-...

10-pos.



HC-B 16-I-UT-...

16-pos.



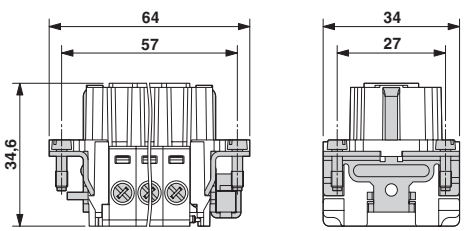
HC-B 24-I-UT-...

24-pos.

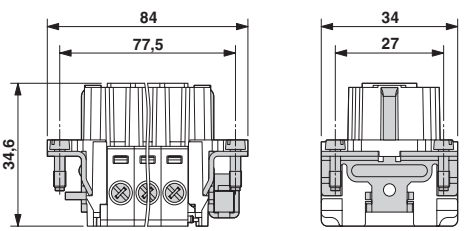
Type	Order No.	Pcs. / Pkt.
HC-B 10-I-UT-F	1648186	10
HC-B 10-I-UT-M	1648173	10
B10 see page 482		
B10 see page 475		
See page 553		
See page 552		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
10		
0.5 mm² ... 2.5 mm²		
20 ... 14		
8 mm		
0.5 Nm ... 0.8 Nm		
≥ 500		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 16-I-UT-F	1648241	10
HC-B 16-I-UT-M	1648238	10
HC-B 16-I-UT-F-32	1584884	10
HC-B 16-I-UT-M-32	1584871	10
B16/B32 see page 488		
B16 see page 475		
See page 553		
See page 552		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
16		
0.5 mm² ... 2.5 mm²		
20 ... 14		
8 mm		
0.5 Nm ... 0.8 Nm		
≥ 500		
-40°C ... 125°C		

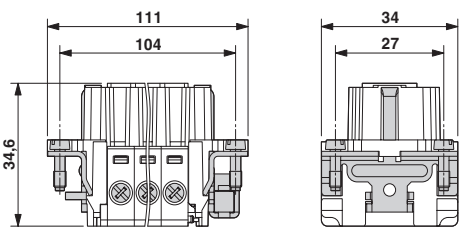
Type	Order No.	Pcs. / Pkt.
HC-B 24-I-UT-F	1648306	10
HC-B 24-I-UT-M	1648296	10
HC-B 24-I-UT-F-48	1584949	10
HC-B 24-I-UT-M-48	1584936	10
B24/B48 see page 496		
B24 see page 475		
See page 553		
See page 552		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
24		
0.5 mm² ... 2.5 mm²		
20 ... 14		
8 mm		
0.5 Nm ... 0.8 Nm		
≥ 500		
-40°C ... 125°C		



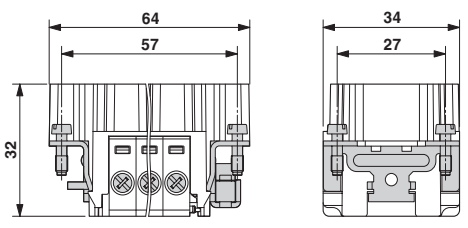
Female insert



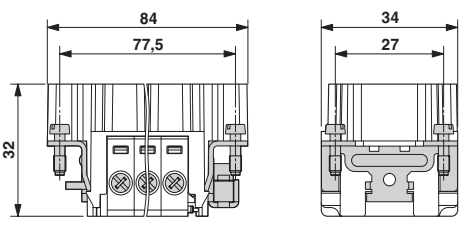
Female insert



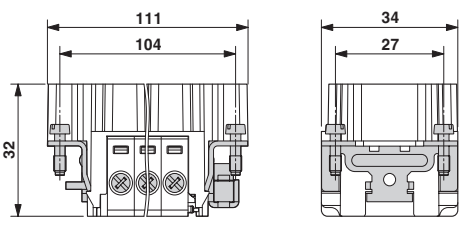
Female insert



Male insert



Male insert



Male insert

B-Series contact inserts, crimp connection

Notes:

- Connectors may only be operated without load/voltage.
- For mounting cutout drawings during use without housings, see **www.phoenixcontact.net/catalog**
- For connector pin assignments, see page 566.
- HC-B5-ESTC profile gaskets from NBR.
- Unlocking the crimp contacts for HC-B 5...using contact removal tool CK 2,5-EWZ see page 537 .
- Snapped in crimp contacts can be removed with a screwdriver (B6-B24).
- HC-B 5-E...C does not have an IP sealing screw
- For derating curves, see page: 570.
- For extra accessories, see page 520.

HC-B 5-E...C

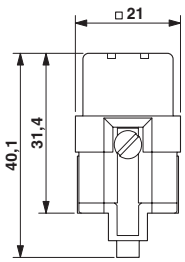
5-pos.
without crimp contacts

HC-B 6-I-CT-...

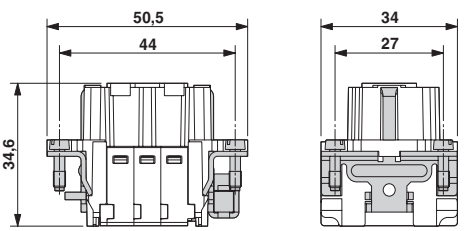
6-pos.
without crimp contacts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X						
Female	**HC-B 5-EBUC**	**1687820**	10	**HC-B 6-I-CT-F**	**1648160**	10
Male	**HC-B 5-ESTC**	**1687817**	10	**HC-B 6-I-CT-M**	**1648157**	10
Contact insert, contact marking: X+1... 2X						
Female						
Male						
HEAVYCON housing series	**D7 see starting on page 508**			**B6 see page 480**		
HEAVYCON-ADVANCE housing, B series				**B6 see page 474**		
Crimp contacts	**CK 2,5-ED-... see page 528**			**CK 2,5-ED-... see page 528**		
PE multiplier	**See page 552**			**See page 552**		
Coding elements	**See page 553**			**See page 553**		
PE screw	**See page 552**			**See page 552**		
Connector assembly frame	**See page 538**			**See page 538**		

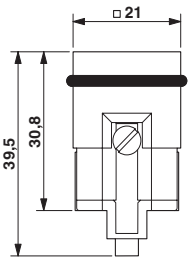
Technical data		
Electrical data in acc. with IEC 61076-2-101		
Rated voltage	230 V / 400 V	500 V
Rated surge voltage	4 kV	6 kV
Rated current	16 A	16 A
Surge voltage category / Pollution degree	III / 3	III / 3
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag
Contact carrier material	PA	PA
Inflammability class acc. to UL 94	V0	V0
Number of positions (without PE)	5	6
Conductor cross-section	0.5 mm² ... 2.5 mm²	0.5 mm² ... 4 mm²
Connection cross-section AWG	20 ... 14	20 ... 12
Stripping length of the individual wire	7.5 mm	7.5 mm
Insertion/withdrawal cycles	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



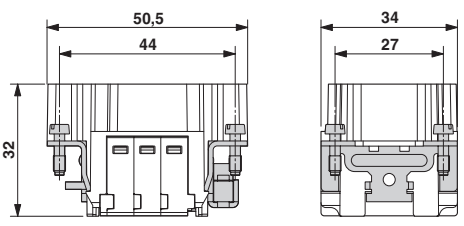
Female insert



Female insert



Male insert



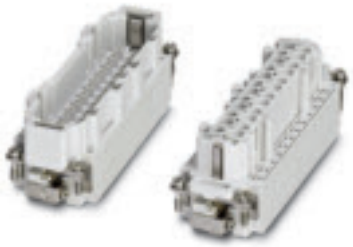
Male insert

HC-B 10-I-CT-...

10-pos.,
without crimp contacts

HC-B 16-I-CT-F

16-pos.,
without crimp contacts



HC-B 24-I-CT-F

24-pos.,
without crimp contacts

Type	Order No.	Pcs. / Pkt.
HC-B 10-I-CT-F	**1648225**	10
HC-B 10-I-CT-M	**1648212**	10
B10 see page 482		
B10 see page 475		
CK 2,5-ED-... see page 528		
See page 552		
See page 553		
See page 552		
See page 538		

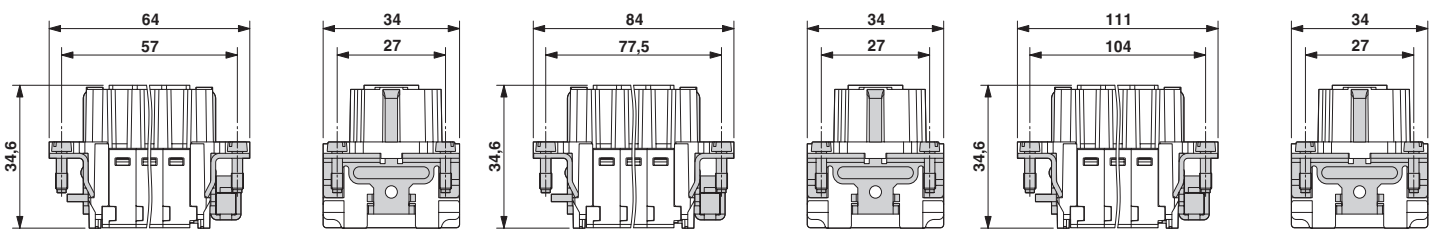
500 V
6 kV
16 A
III / 3
Copper alloy
Ag
PA
V0
10
0.5 mm² ... 4 mm²
20 ... 12
7.5 mm
≥ 500
-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 16-I-CT-F	**1648283**	10
HC-B 16-I-CT-M	**1648270**	10
HC-B 16-I-CT-F-32	**1584923**	10
HC-B 16-I-CT-M-32	**1584910**	10
B16/B32 see page 488		
B16 see page 475		
CK 2,5-ED-... see page 528		
See page 552		
See page 553		
See page 552		
See page 538		

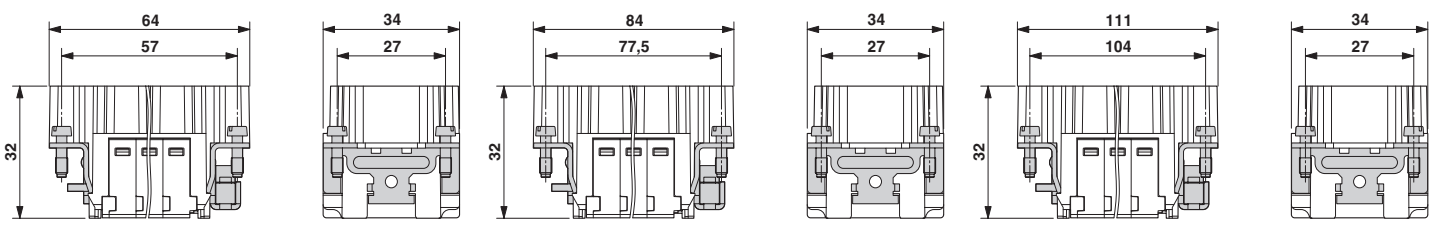
500 V
6 kV
16 A
III / 3
Copper alloy
Ag
PA
V0
16
0.5 mm² ... 4 mm²
20 ... 12
7.5 mm
≥ 500
-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 24-I-CT-F	**1648348**	10
HC-B 24-I-CT-M	**1648335**	10
HC-B 24-I-CT-F-48	**1584981**	10
HC-B 24-I-CT-M-48	**1584978**	10
B24/B48 see page 496		
B24 see page 475		
CK 2,5-ED-... see page 528		
See page 552		
See page 553		
See page 552		
See page 538		

500 V
6 kV
16 A
III / 3
Copper alloy
Ag
PA
V0
24
0.5 mm² ... 4 mm²
20 ... 12
7.5 mm
≥ 500
-40°C ... 125°C



Female insert **Female insert** **Female insert**



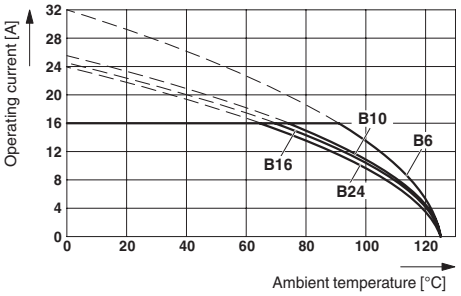
Male insert **Male insert** **Male insert**

B-Series contact inserts, QUICKON connection

With this connection method, the wires can be connected by simply levering over the screwdriver. The wire does not need to be stripped before connection. This saves at least 60% connection time. With the QUICKON connection method, conductors can be connected 10 times over.

- The contact inserts have an additional keying option with the help of the keying profiles CP-HC,
  HC-B6...Q; HC-B10...Q for two keying profiles
  HC-B16...Q; HC-B24...Q for four keying profiles
- If the conductor is connected again, it must be cut through above the last contact point
- Recommended screwdriver:
  SZF 1-0,6x3,5 (similar to DIN 5264)
- Connectors may only be operated when under no load

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**
For connector pin assignments, see from page 566.
For more accessories, see from page 520.



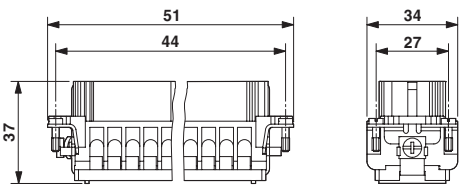
Derating diagram: HC-B...Q2,5 series

HC-B 6-E...Q-2,5

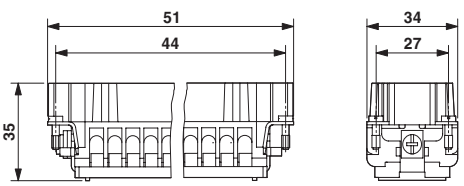
6-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-B 6-EBUQ-2,5**	**1605556**	10
Male	**HC-B 6-ESTQ-2,5**	**1605611**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
Housing HC standard	**B6 see page 480**		
Housing HC-ADVANCE	**B6 see page 474**		
Replacement PE screw	**see page 552**		
Coding elements	**see page 553**		
Connector assembly frame	**See page 538**		
PE multiplier	**See page 552**		

Technical data	
Rated voltage	400 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Number of positions (without PE)	6
Conductor cross-section	0.34 mm² ... 2.5 mm²
Connection cross-section AWG	22 ... 14
Insertion/withdrawal cycles	≥ 500
Connection frequency	10
Conductor insulation material	PVC / PE
Structure of individual litz wire / smallest wire diameter	VDE 0295 Cl.1-5 / 0.2 mm
Core diameter including insulation	1 mm ... 3.5 mm
Ambient temperature (operation)	-40°C ... 125°C
Temperature when conductor connected	-25°C ... 50°C



Female insert



Male insert

HC-B 10-E...Q-2,5

10-pos.

HC-B 16-E...Q-2,5

16-pos.

HC-B 24-E...Q-2,5

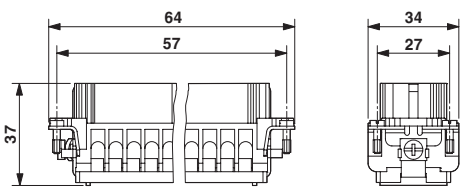
24-pos.

Type	Order No.	Pcs. / Pkt.
HC-B 10-EBUQ-2,5	1605569	10
HC-B 10-ESTQ-2,5	1605624	10
B10 see page 482		
B10 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

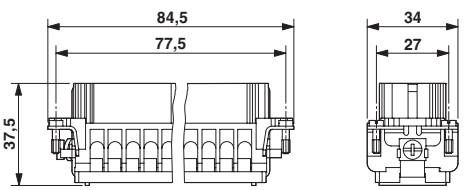
Type	Order No.	Pcs. / Pkt.
HC-B 16-EBUQ-2,5	1605572	10
HC-B 16-ESTQ-2,5	1605637	10
HC-B 16-EBUQ-2,5-32	1605598	10
HC-B 16-ESTQ-2,5-32	1605653	10
B16/B32 see page 488		
B16 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

Type	Order No.	Pcs. / Pkt.
HC-B 24-EBUQ-2,5	1605585	10
HC-B 24-ESTQ-2,5	1605640	10
HC-B 24-EBUQ-2,5-48	1605608	10
HC-B 24-ESTQ-2,5-48	1605666	10
B24/B48 see page 496		
B24 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

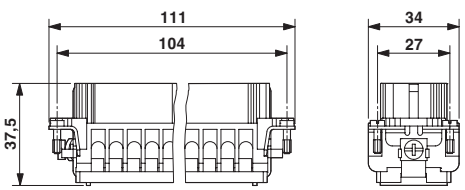
400 V	400 V	400 V
6 kV	6 kV	6 kV
16 A	16 A	16 A
III / 3	III / 3	III / 3
Copper alloy	Copper alloy	Copper alloy
Ag	Ag	Ag
PA	PA	PA
V0	V0	V0
10	16	24
0.34 mm² ... 2.5 mm²	0.34 mm² ... 2.5 mm²	0.34 mm² ... 2.5 mm²
22 ... 14	22 ... 14	22 ... 14
≥ 500	≥ 500	≥ 500
10	10	10
PVC / PE	PVC / PE	PVC / PE
VDE 0295 Cl.1-5 / 0.2 mm	VDE 0295 Cl.1-5 / 0.2 mm	VDE 0295 Cl.1-5 / 0.2 mm
1 mm ... 3.5 mm	1 mm ... 3.5 mm	1 mm ... 3.5 mm
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C
-25°C ... 50°C	-25°C ... 50°C	-25°C ... 50°C



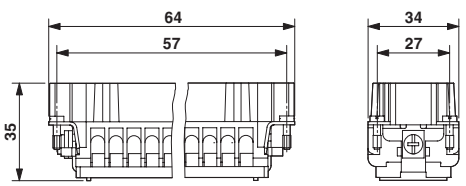
Female insert



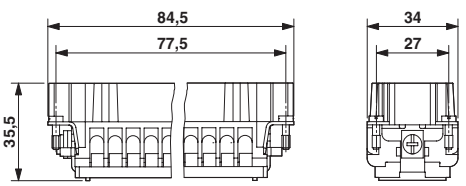
Female insert



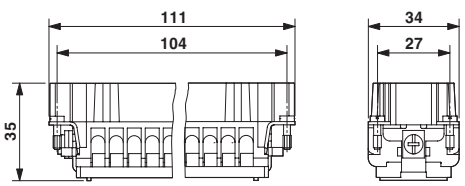
Female insert



Male insert



Male insert



Male insert

B-Series contact inserts, spring-cage connection

Spring-cage connections have good shock and vibration resistance at the connection point. The spring-cage connection requires operational effort and only a minimum of tools; once installed, it offers an opportunity for testing from the inside of the panel mounting base.

Product versions with double connections are available for applications in which two conductors are to be connected per position.

– For contact inserts for the connection of two conductors (HC-B....E...ZZ), housings with a height ≥ 72 mm must be used
– Recommended screwdriver: SZF 1-0,6x3,5 (similar to DIN 5264).
– Plug connectors may only be operated when under no load
– PE multipliers can be used for HC-B ... Z and not for HC-B ... ZZ

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

Notes:

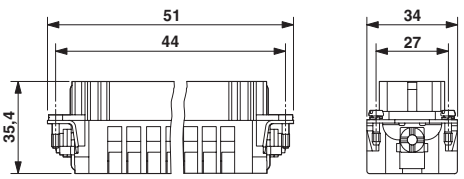
For connector pin assignments, see from page 566.
For more accessories, see from page 520.
For derating curve, refer to page 570.
For dimensional drawings for HC-B...ZZ, see page 559.

HC-B 6-E...

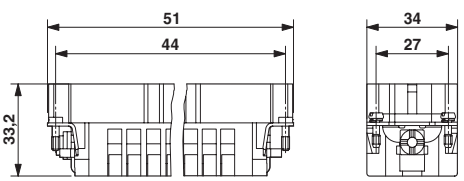
6-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X, single connection			
Female	**HC-B 6-EBUZ**	**1687862**	1
Male	**HC-B 6-ESTZ**	**1687859**	1
Contact insert, contact marking: X+1... 2X, single connection			
Female			
Male			
Contact insert, contact marking: 1 ... X, connection for two conductors			
Female	**HC-B 6-EBUZZ**	**1647365**	1
Male	**HC-B 6-ESTZZ**	**1687860**	1
Housing HC standard	**B6 see page 480**		
Housing HC-ADVANCE	**B6 see page 474**		
Replacement PE screw	**see page 552**		
Coding elements	**see page 553**		
Connector assembly frame	**See page 538**		
PE multiplier	**See page 552**		

Technical data	HC-B...Z	HC-B...ZZ
Rated voltage	500 V	500 V
Rated surge voltage	6 kV	6 kV
Rated current	16 A	16 A
Surge voltage category / Pollution degree	III / 3	III / 3
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag	Ag
Contact carrier material	PC	PC
Inflammability class acc. to UL 94	V0	V0
Number of positions (without PE)	6	6
Conductor cross-section	0.14 mm² ... 2.5 mm²	0.14 mm² ... 2.5 mm²
Connection cross-section AWG	26 ... 14	26 ... 14
Stripping length of the individual wire	8 mm +-1 mm	10 mm +-1 mm
Insertion/withdrawal cycles	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



HC-B 6-EBUZ female insert



HC-B 6-ESTZ male insert

HC-B 10-E...

10-pos.

HC-B 16-E...

16-pos.

HC-B 24-E...

24-pos.

Type	Order No.	Pcs. / Pkt.
HC-B 10-EBUZ	1687888	1
HC-B 10-ESTZ	1687875	1
HC-B 10-EBUZZ	1647381	1
HC-B 10-ESTZZ	1647378	1
B10 see page 482		
B10 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

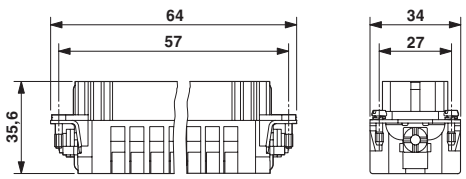
HC-B...Z	HC-B...ZZ
500 V	500 V
6 kV	6 kV
16 A	16 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag	Ag
PC	PC
V0	V0
10	10
0.14 mm² ... 2.5 mm²	0.14 mm² ... 2.5 mm²
26 ... 14	26 ... 14
8 mm +-1 mm	10 mm +-1 mm
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 16-EBUZ	1687901	1
HC-B 16-ESTZ	1687891	1
HC-B 16-EBUZ-32	1647446	1
HC-B 16-ESTZ-32	1647433	1
HC-B 16-EBUZZ	1647404	1
HC-B 16-ESTZZ	1605310	1
B16/B32 see page 488		
B16 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

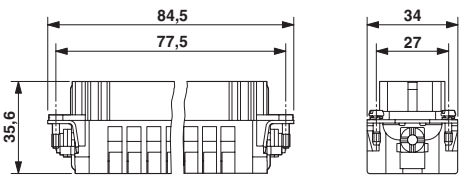
HC-B...Z	HC-B...ZZ
500 V	500 V
6 kV	6 kV
16 A	16 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag	Ag
PC	PC
V0	V0
16	16
0.14 mm² ... 2.5 mm²	0.14 mm² ... 2.5 mm²
26 ... 14	26 ... 14
8 mm +-1 mm	10 mm +-1 mm
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 24-EBUZ	1687927	1
HC-B 24-ESTZ	1687914	1
HC-B 24-EBUZ-48	1647488	10
HC-B 24-ESTZ-48	1647475	1
HC-B 24-EBUZZ	1647420	1
HC-B 24-ESTZZ	1605255	1
B24/B48 see page 496		
B24 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		

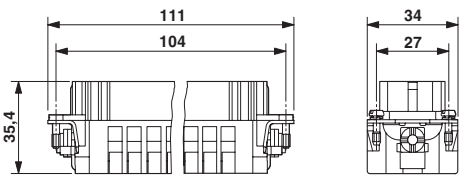
HC-B...Z	HC-B...ZZ
500 V	500 V
6 kV	6 kV
16 A	16 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag	Ag
PC	PC
V0	V0
24	24
0.14 mm² ... 2.5 mm²	0.14 mm² ... 2.5 mm²
26 ... 14	26 ... 14
8 mm +-1 mm	10 mm +-1 mm
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C



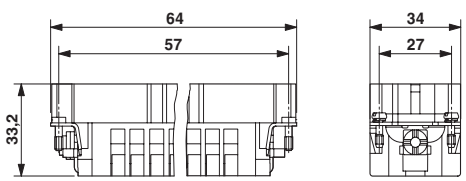
HC-B 10-EBUZ female insert



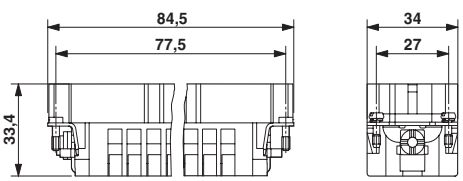
HC-B 16-EBUZ female insert



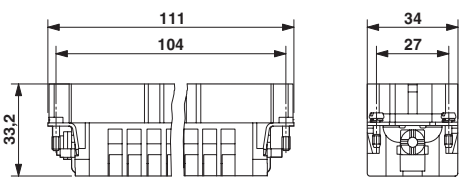
HC-B 24-EBUZ female insert



HC-B 10-ESTZ male insert



HC-B 16-ESTZ male insert



HC-B 24-ESTZ male insert

B-Series contact inserts, push-in connection

Stranded conductors with ferrules or solid conductors can be inserted directly into the push-in connection with this method.

The push-in connection offers:

– A simple, reliable and tool-free connection,
– Extremely short connection times
– A gas-tight, vibration-proof and shockproof connection
– PE connection by means of spring cage technology

Note:

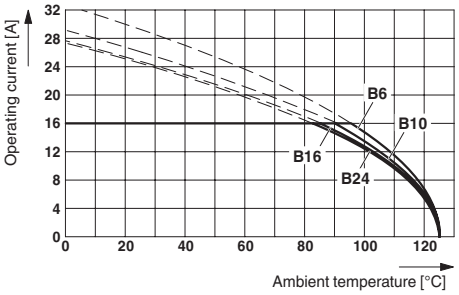
– Screwdriver to open the terminal points: SZF 0-0,4X2,5
– For solid and stranded wires with 0.5 mm² - 2.5 mm² with insulating collar: Length: 10 mm
– The contact inserts have additional keying with the help of the keying profile CP-HC HC-B6...; HC-B10... for two keying profiles
HC-B16...; HC-B24... for four keying profiles
– Connectors may only be operated when under no load

Notes:

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

For connector pin assignments, see from page 566.

For more accessories, see from page 520.



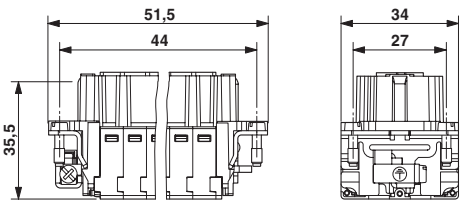
Derating diagram: HC-B...DT series

HC-B 6-I-DT-...

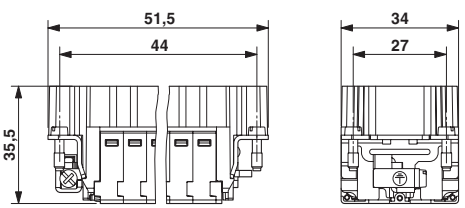
6-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-B 6-I-DT-F**	**1648144**	10
Male	**HC-B 6-I-DT-M**	**1648131**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
Housing HC standard	**B6 see page 480**		
Housing HC-ADVANCE	**B6 see page 474**		
PE screw	**see page 552**		
Coding elements	**see page 553**		
Connector assembly frame	**See page 538**		
PE multiplier	**See page 552**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	6
Conductor cross-section	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	20 ... 14
Stripping length of the individual wire	10 mm (13 mm if ferrules are used)
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Female insert



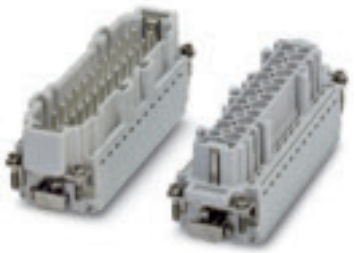
Male insert

HC-B 10-I-DT-...

10-pos.

HC-B 16-I-DT-...

16-pos.



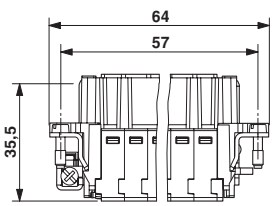
HC-B 24-I-DT-...

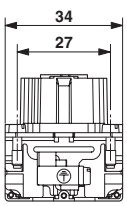
24-pos.

Type	Order No.	Pcs. / Pkt.
HC-B 10-I-DT-F	**1648209**	10
HC-B 10-I-DT-M	**1648199**	10
B10 see page 482		
B10 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
10		
0.5 mm² ... 2.5 mm²		
20 ... 14		
10 mm (13 mm if ferrules are used)		
≥ 500		
-40°C ... 125°C		

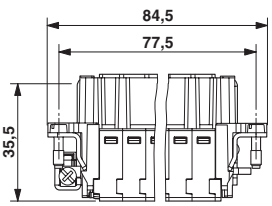
Type	Order No.	Pcs. / Pkt.
HC-B 16-I-DT-F	**1648267**	10
HC-B 16-I-DT-M	**1648254**	10
HC-B 16-I-DT-F-32	**1584907**	10
HC-B 16-I-DT-M-32	**1584897**	10
B16/B32 see page 488		
B16 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
16		
0.5 mm² ... 2.5 mm²		
20 ... 14		
10 mm (13 mm if ferrules are used)		
≥ 500		
-40°C ... 125°C		

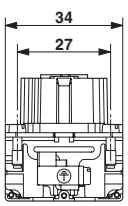
Type	Order No.	Pcs. / Pkt.
HC-B 24-I-DT-F	**1648322**	10
HC-B 24-I-DT-M	**1648319**	10
HC-B 24-I-DT-F-48	**1584965**	10
HC-B 24-I-DT-M-48	**1584952**	10
B24/B48 see page 496		
B24 see page 475		
see page 552		
see page 553		
See page 538		
See page 552		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag		
PA		
V0		
24		
0.5 mm² ... 2.5 mm²		
20 ... 14		
10 mm (13 mm if ferrules are used)		
≥ 500		
-40°C ... 125°C		



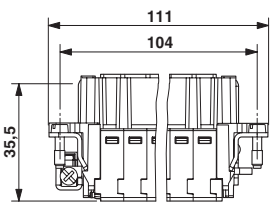


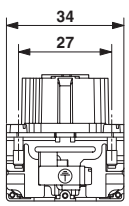
Female insert



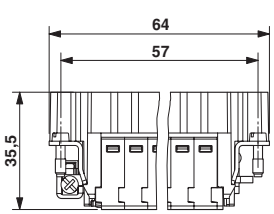


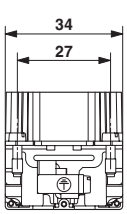
Female insert



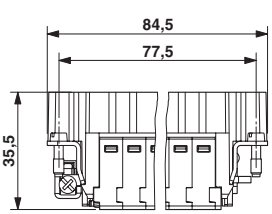


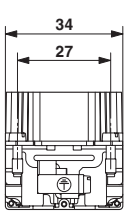
Female insert



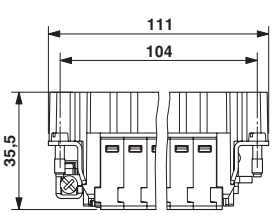


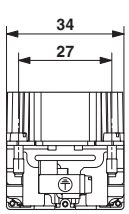
Male insert





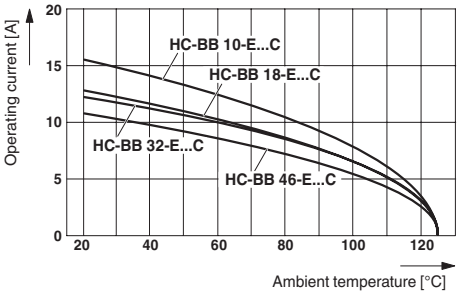
Male insert





Male insert

BB-Series contact inserts, crimp connection



Derating diagram: Conductor cross-section 1.5 mm²

HC-BB 10-E...C

10-pos.,
without crimp contacts

To determine the matching housings, refer to the cross-reference list on page 414.

The BB series is the economical and space-saving plug-in connection for applications in which high numbers of contacts are necessary. Up to 46 cores with max. 4.0 mm² can be connected in a single-row arrangement. The high number of contacts demands a large wiring space, and consequently we recommend ≤ 72 mm tall HEAVYCON housings or the HEAVYCON-ADVANCE range with screw locking.

Note:

– Plug connectors may only be operated when under no load

Notes:

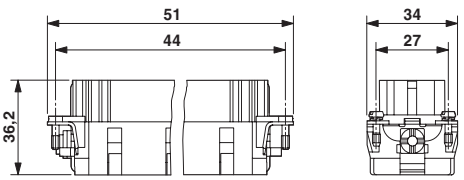
For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

For connector pin assignments, see from page 566.

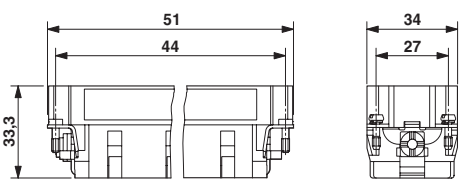
For more accessories, see from page 520.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-BB 10-EBUC**	**1687435**	1
Male	**HC-BB 10-ESTC**	**1687448**	1
Housing HC standard	**B6 see page 480**		
Housing HC-ADVANCE	**B6 see page 474**		
Crimp contacts	**CK 2,5-ED-... see page 528**		
Replacement PE screw	**see page 552**		
Coding elements	**see page 553**		
PE multiplier	**See page 552**		
Connector assembly frame	**See page 538**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag (alternatively Au)
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	10
Conductor cross-section	0.5 mm² ... 4 mm²
Connection cross-section AWG	20 ... 12
Stripping length of the individual wire	7.5 mm
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40°C ... 125°C



Female insert



Male insert

HC-BB 18-E...C

18-pos.,
without crimp contacts

HC-BB 32-E...C

32-pos.,
without crimp contacts

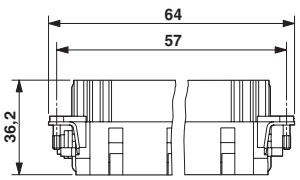
HC-BB 46-E...C

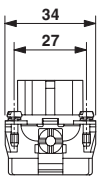
46-pos.,
without crimp contacts

Type	Order No.	Pcs. / Pkt.
HC-BB 18-EBUC	**1687451**	1
HC-BB 18-ESTC	**1687464**	1
B10 see page 482		
B10 see page 475		
CK 2,5-ED-... see page 528		
see page 552		
see page 553		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
18		
0.5 mm² ... 4 mm²		
20 ... 12		
7.5 mm		
≥ 500		
-40°C ... 125°C		

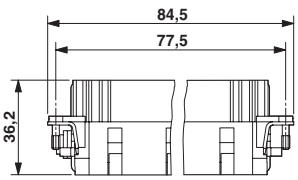
Type	Order No.	Pcs. / Pkt.
HC-BB 32-EBUC	**1687477**	1
HC-BB 32-ESTC	**1687480**	1
B16/B32 see page 488		
B16 see page 475		
CK 2,5-ED-... see page 528		
see page 552		
see page 553		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
32		
0.5 mm² ... 4 mm²		
20 ... 12		
7.5 mm		
≥ 500		
-40°C ... 125°C		

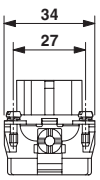
Type	Order No.	Pcs. / Pkt.
HC-BB 46-EBUC	**1687493**	1
HC-BB 46-ESTC	**1687503**	1
B24/B48 see page 496		
B24 see page 475		
CK 2,5-ED-... see page 528		
see page 552		
see page 553		
See page 552		
See page 538		
500 V		
6 kV		
16 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
46		
0.5 mm² ... 4 mm²		
20 ... 12		
7.5 mm		
≥ 500		
-40°C ... 125°C		



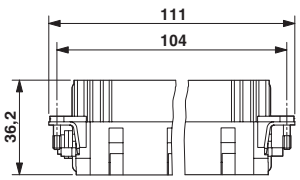


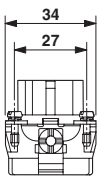
Female insert



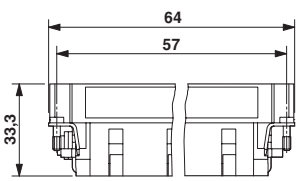


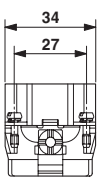
Female insert



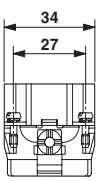


Female insert

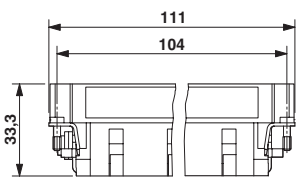


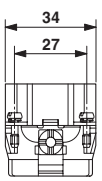


Male insert



Male insert





Male insert

D-Series contact inserts, crimp connection

To determine the matching housings, refer to the cross-reference list on page 414.

Type D contact carriers can only be equipped with crimp contacts CK 1,6.... These must be ordered separately depending on the conductor cross-section and are crimped with a machine or with crimping pliers.

The contacts are then snapped into the contact carrier with the aid of the assembly tool and, when necessary, removed with the aid of the removal tool.

Contacts for fiber optics also fit into the contact take-up of the D contact carriers.

Note:

The D7/D8 series inserts may be installed in plastic housings only at voltages >42 V, since no connection can be established between the protective conductor and the housing.

For D15 and D25 series contact inserts, male and female coding connectors are obligatory to ensure proper contact when inserting at an angle.

– Keying the HC-D 7-EBUC / HC-D 8-EBUC contact inserts through CK 1,6 ED-BB dummy sockets
– Profile gaskets of HC-D 7-ESTC / HC-D 7-ESTC-R / HC-D 8-ESTC made of NBR
– Contact inserts HC-D 7-E...C / HC-D 8-E...C already contain an IP65 sealing screw.
– Plug connectors may only be operated when under no load

Notes:

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

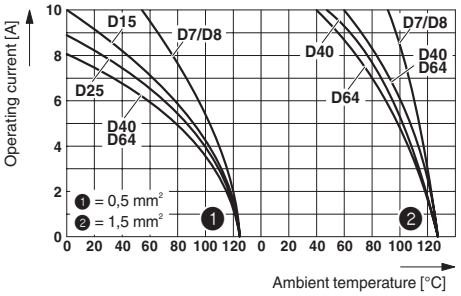
For connector pin assignments, see from page 567.

For more accessories, see from page 520.

For HC-D...R dimensional drawings, see page 559.

HC-D8...C does not have a PE contact

For stripping length of crimp contacts, see crimp contacts



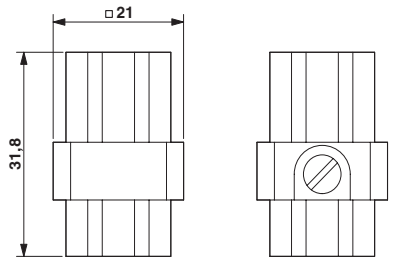
Derating diagram: HC-D...C series

HC-D 7-E...C...

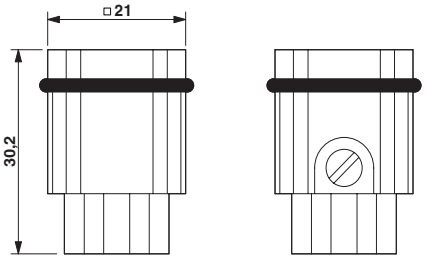
7-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X, for turned contacts CK 1,6 ED...			
Female	**HC-D 7-EBUC**	**1772230**	10
Male	**HC-D 7-ESTC**	**1772243**	10
Contact insert, contact marking: 1... X, for rolled contacts CK 1,6-ER... / CK 1,6-BR...			
Female	**HC-D 7-EBUC-R**	**1679508**	10
Male	**HC-D 7-ESTC-R**	**1679456**	10
Housing HC standard	**D7 see starting on page 508**		
Coding elements	**see page 554**		
Crimp contacts	**CK 1,6-... see page 528**		
Replacement PE screw			

Technical data	HC...E...C	HC...E...R
Electrical data in acc. with IEC 61076-2-101		
Rated voltage	250 V	250 V
Rated surge voltage	4 kV	4 kV
Rated current	10 A	10 A
Surge voltage category / Pollution degree	III / 3	III / 3
Material data		
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag (alternatively Au)	Ag (alternatively Au)
Contact carrier material	PA	PA
Inflammability class acc. to UL 94	V0	V0
Mechanical data		
Number of positions (without PE)	7	7
Conductor cross-section	0.14 mm² ... 2.5 mm²	0.14 mm² ... 1.5 mm²
Connection cross-section AWG	26 ... 14	26 ... 16
Insertion/withdrawal cycles	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



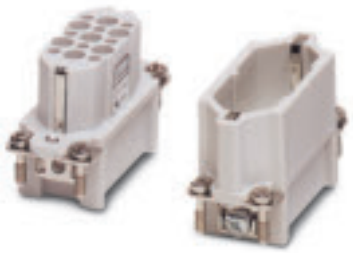
Female insert (turned contacts)



Male insert (turned contacts)

HC-D 8-E...C

8-pos.,
without PE contact



HC-D 15-E...C...

15-pos.

HC-D 25-E...C...

25-pos.

Type	Order No.	Pcs. / Pkt.
HC-D 8-EBUC	**1775745**	10
HC-D 8-ESTC	**1775758**	10
D7 see starting on page 508		
see page 554		
CK 1,6-... see page 528		

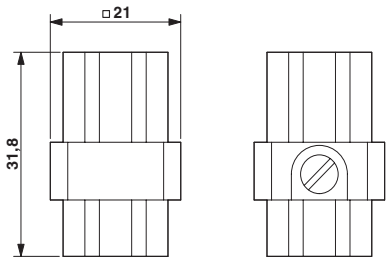
50 V	
0.8 kV	
10 A	
III / 3	
Copper alloy	
Ag (alternatively Au)	
PA	
V0	
8	
0.14 mm² ... 2.5 mm²	
26 ... 14	
≥ 500	
-40°C ... 125°C	

Type	Order No.	Pcs. / Pkt.
HC-D 15-EBUC	**1772311**	10
HC-D 15-ESTC	**1772324**	10
HC-D 15-EBUC-R	**1679511**	10
HC-D 15-ESTC-R	**1679469**	10
D15 see starting on page 510		
see page 553		
CK 1,6-... see page 528		
see page 552		

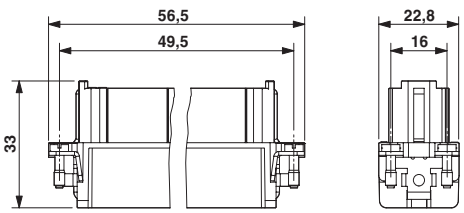
HC...E...C	HC...E...R
250 V	250 V
4 kV	4 kV
10 A	10 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag (alternatively Au)	Ag (alternatively Au)
PA	PA
V0	V0
15	15
0.14 mm² ... 2.5 mm²	0.14 mm² ... 1.5 mm²
26 ... 14	26 ... 16
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-D 25-EBUC	**1772405**	10
HC-D 25-ESTC	**1772418**	10
HC-D 25-EBUC-R	**1679524**	10
HC-D 25-ESTC-R	**1679472**	10
D25/D50 see page 512 onwards		
see page 553		
CK 1,6-... see page 528		
see page 552		

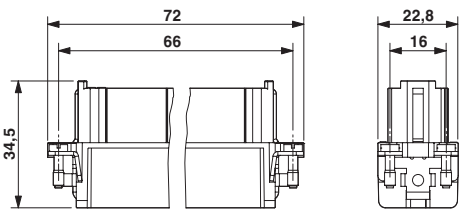
HC...E...C	HC...E...R
250 V	250 V
4 kV	4 kV
10 A	10 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag (alternatively Au)	Ag (alternatively Au)
PA	PA
V0	V0
25	25
0.14 mm² ... 2.5 mm²	0.14 mm² ... 1.5 mm²
26 ... 14	26 ... 16
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C



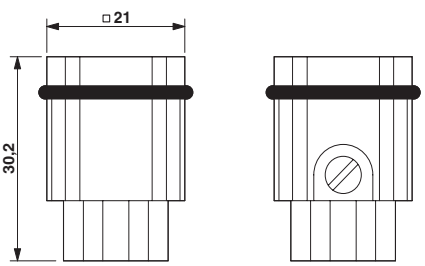
Female insert (turned contacts)



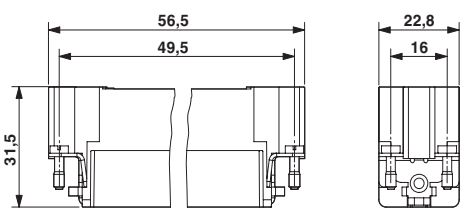
Female insert (turned contacts)



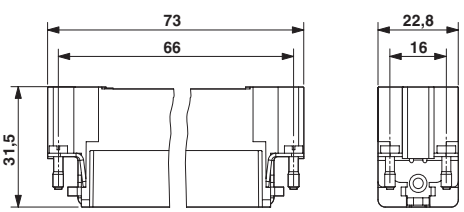
Female insert (turned contacts)



Male insert (turned contacts)



Male insert (turned contacts)



Male insert (turned contacts)

D-Series contact inserts, crimp connection

– For D40 and D64-Series contact inserts, keying pins and sockets are obligatory to avoid not making proper contact if accidentally inserted at an angle
– Connectors may only be operated when under no load

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**
For connector pin assignments, see from page 567.
For more accessories, see from page 520.
For HC-D...R dimensional drawings, see page 559.
For derating curves see page 438.
For stripping length of crimp contacts, see crimp contacts

HC-D 40-E...C

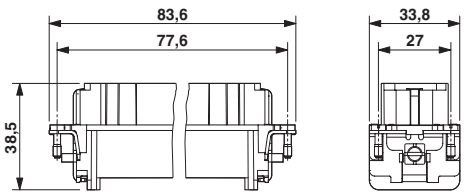
40-pos.,
without crimp contacts

HC-D 64-E...C

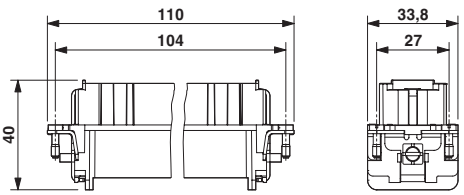
64-pos.,
without crimp contacts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X, for turned contacts CK 1,6 ED...						
Female	**HC-D 40-EBUC**	**1772492**	10	**HC-D 64-EBUC**	**1772515**	10
Male	**HC-D 40-ESTC**	**1772502**	10	**HC-D 64-ESTC**	**1772528**	10
Contact insert, contact marking: 1... X, for rolled contacts CK 1,6-ER... / CK 1,6-BR...						
Female	**HC-D 40-EBUC-R**	**1679537**	10	**HC-D 64-EBUC-R**	**1679546**	10
Male	**HC-D 40-ESTC-R**	**1679485**	5	**HC-D 64-ESTC-R**	**1679498**	10
Housing HC standard	**B16/B32 see page 488**			**B24/B48 see page 496**		
Housing HC-ADVANCE	**B16 see page 475**			**B24 see page 475**		
Crimp contacts	**CK 1,6-... see page 528**			**CK 1,6-... see page 528**		
Replacement PE screw	**see page 552**			**see page 552**		
Coding elements	**see page 553**			**see page 553**		
Connector assembly frame	**See page 538**			**See page 538**		

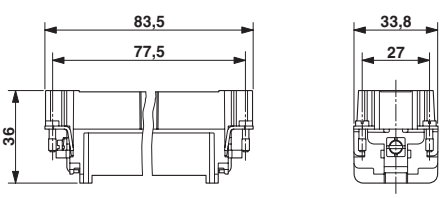
Technical data	HC...E...C	HC...E...R	HC...E...C	HC...E...R
Electrical data in acc. with IEC 61076-2-101				
Rated voltage	250 V	250 V	250 V	250 V
Rated surge voltage	4 kV	4 kV	4 kV	4 kV
Rated current	10 A	10 A	10 A	10 A
Surge voltage category / Pollution degree	III / 3	III / 3	III / 3	III / 3
Material data				
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)
Contact carrier material	PA	PA	PA	PA
Inflammability class acc. to UL 94	V0	V0	V0	V0
Number of positions (without PE)	40	40	64	64
Conductor cross-section	0.14 mm² ... 2.5 mm²	0.14 mm² ... 1.5 mm²	0.14 mm² ... 2.5 mm²	0.14 mm² ... 1.5 mm²
Connection cross-section AWG	26 ... 14	26 ... 16	26 ... 14	26 ... 16
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C



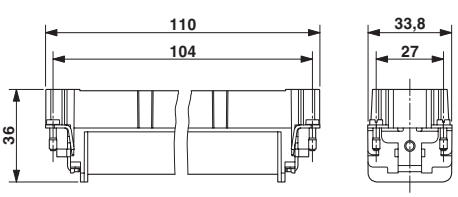
Female insert (turned contacts)



Female insert (turned contacts)

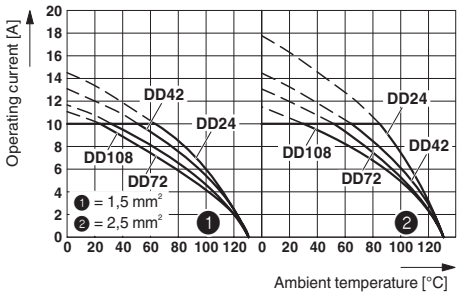


Male insert (turned contacts)



Male insert (turned contacts)

DD series contact inserts, crimp connection



Derating diagram

HC-DD 24-I-CT-...

24-pos.,
without crimp contacts

Contacts for fiber optics CK 1,6-ED...POF can also be used in contact inserts of the DD series.

The DD series is an economical and space-saving solution for applications where a high number of contacts is necessary. Up to 216 contacts can be accommodated. The high number of contacts makes a large wiring space necessary. For this reason, we recommend housings of type B in a tall version (h ≥ 72 mm).

Snapped-in crimp contacts can be removed using a contact removal tool VC-EW 1,6.

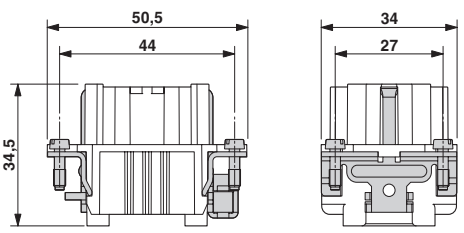
The PE connection is established using tension sleeve technology. Conductor pull-out forces of a tension sleeve connection are considerably higher than the pull-out forces of commonly used PE head contact screws.

Notes:

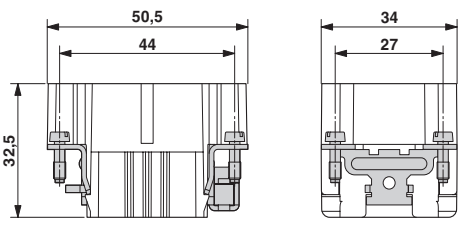
- Connectors may only be operated without load/voltage.
- For contact inserts of the DD series, keying pins (HC-CST; 1676857) and keying sockets (HC-CBU; 1676860) are prescribed to avoid not making proper contact when inserting at an angle.
- For mounting cutout drawings during use without housings, see **www.phoenixcontact.net/catalog**
- For connector pin assignments, see page 568
- Order crimp contacts separately.
- For more accessories, see page 520.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-DD 24-I-CT-F**	**1584046**	10
Male	**HC-DD 24-I-CT-M**	**1584033**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
HEAVYCON housing, B series	**B6 see page 480**		
HEAVYCON-ADVANCE housing, B series	**B6 see page 474**		
Crimp contacts	**CK 1,6-... see page 528**		
PE screw	**See page 552**		
PE multiplier	**See page 552**		
Connector assembly frame	**See page 538**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	250 V
Rated surge voltage	4 kV
Rated current	10 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag (alternatively Au)
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	24
Conductor cross-section	0.14 mm² ... 2.5 mm²
Connection cross-section AWG	26 ... 14
Stripping length of the individual wire	8 mm / 6 mm (2.5 mm²)
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Female insert



Male insert

HC-DD 42-I-CT-...

42-pos.,
without crimp contacts

HC-DD 72-I-CT-...

72-pos.,
without crimp contacts

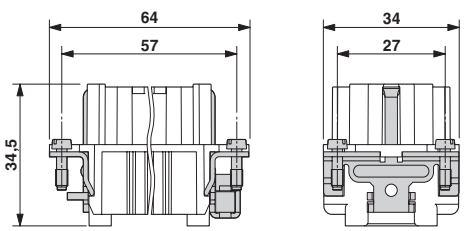
HC-DD 108-I-CT-...

108-pos.,
without crimp contacts

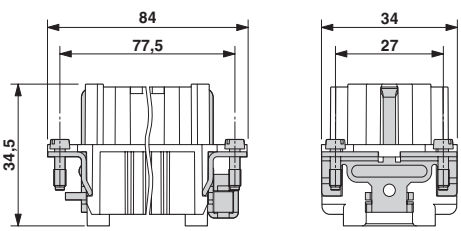
Type	Order No.	Pcs. / Pkt.
HC-DD 42-I-CT-F	**1584062**	10
HC-DD 42-I-CT-M	**1584059**	10
B10 see page 482		
B10 see page 475		
CK 1,6-... see page 528		
See page 552		
See page 552		
See page 538		
250 V		
4 kV		
10 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PA		
V0		
42		
0.14 mm² ... 2.5 mm²		
26 ... 14		
8 mm / 6 mm (2.5 mm²)		
≥ 500		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-DD 72-I-CT-F	**1584091**	10
HC-DD 72-I-CT-M	**1584075**	10
HC-DD 72-I-CT-F-144	**1584101**	10
HC-DD 72-I-CT-M-144	**1584088**	10
B16/B32 see page 488		
B16 see page 475		
CK 1,6-... see page 528		
See page 552		
See page 552		
See page 538		
250 V		
4 kV		
10 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PA		
V0		
72		
0.14 mm² ... 2.5 mm²		
26 ... 14		
8 mm / 6 mm (2.5 mm²)		
≥ 500		
-40°C ... 125°C		

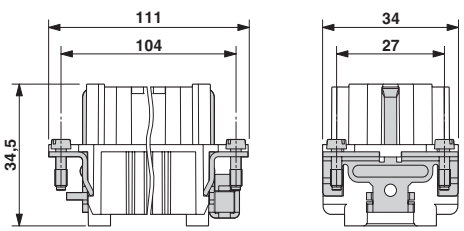
Type	Order No.	Pcs. / Pkt.
HC-DD 108-I-CT-F	**1584130**	10
HC-DD 108-I-CT-M	**1584114**	10
HC-DD 108-I-CT-F-216	**1584143**	10
HC-DD 108-I-CT-M-216	**1584127**	10
B24/B48 see page 496		
B24 see page 475		
CK 1,6-... see page 528		
See page 552		
See page 552		
See page 538		
250 V		
4 kV		
10 A		
III / 3		
Copper alloy		
Ag (alternatively Au)		
PA		
V0		
108		
0.14 mm² ... 2.5 mm²		
26 ... 14		
8 mm / 6 mm (2.5 mm²)		
≥ 500		
-40°C ... 125°C		



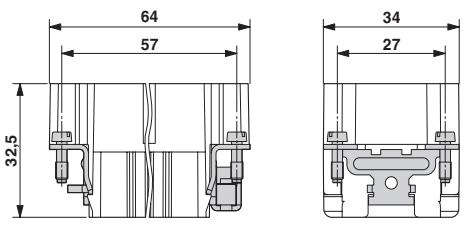
Female insert



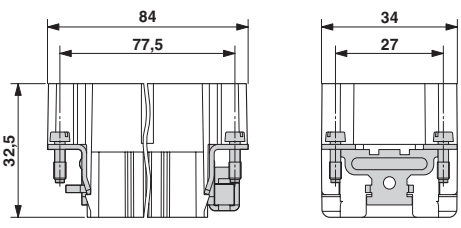
Female insert



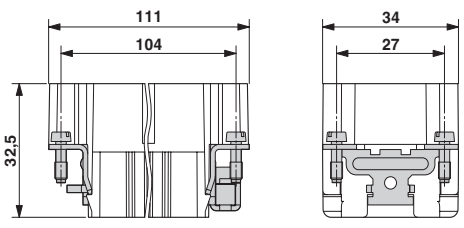
Female insert



Male insert



Male insert



Male insert

Contact insert series HC-HS... / HC-K 4/0..., screw connection

To determine the matching housings, refer to the cross-reference list on page 414.

– Plug connectors may only be operated when under no load

Notes:

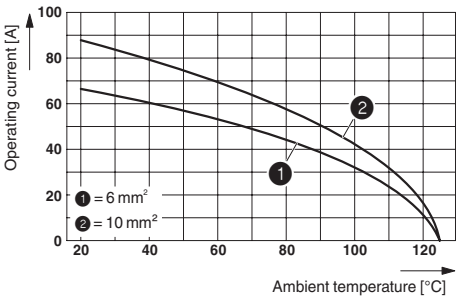
For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**

For connector pin assignments, see from page 567.

For more accessories, see from page 520.

For derating curve, refer to page 570.

For more notes on axial connection methods to be followed, see page 575.



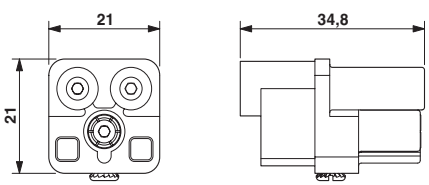
Derating diagram: Series HC-HS2-D7-E...S

HC-HS2-D7-E...S

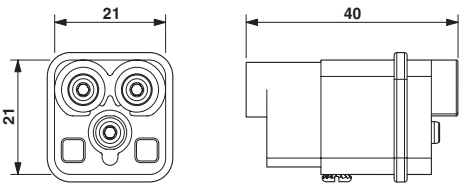
2-pos.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert, contact marking: 1 ... X			
Female	**HC-HS 2-D7-EBUS**	**1586264**	10
Male	**HC-HS 2-D7-ESTS**	**1586277**	10
Contact insert, contact marking: X+1... 2X			
Female			
Male			
Housing HC standard	**D7 see starting on page 508**		
Housing HC-ADVANCE			
Coding elements			
Connector assembly frame			
Keying profile, for keying HC-HS 2-D7-E...S	**1586280 HC-HS 2-CP**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	400 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category / Pollution degree	III / 3
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Number of positions (without PE)	2
Connection method	Axial screw connection
Conductor cross-section	4 mm² ... 6 mm²
Connection cross-section AWG	10
Stripping length of the individual wire	8 mm +1
Tightening torque	1.8 Nm
Insertion/withdrawal cycles	≥ 500
Ambient temperature (operation)	-40°C ... 125°C



Female insert



Male insert

HC-K 4/0-E...S

4-pos.

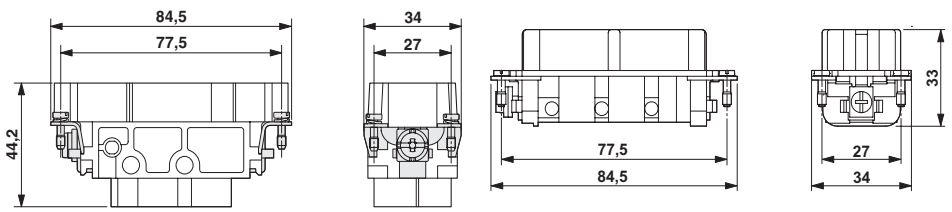
HC-HS 6-E...S

6-pos.

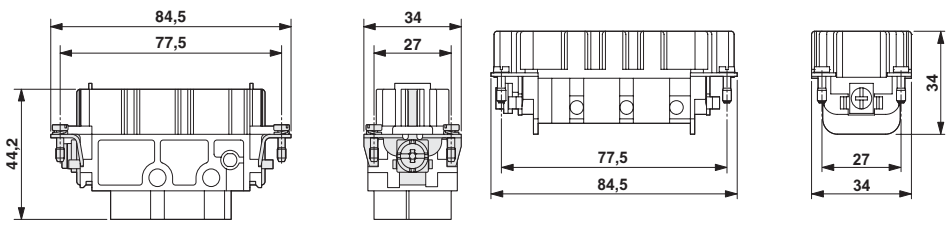
Type	Order No.	Pcs. / Pkt.
HC-K 4/0-EBUS	**1679427**	1
HC-K 4/0-ESTS	**1679414**	1
B24/B48 see page 496		
B24 see page 475		

Type	Order No.	Pcs. / Pkt.
HC-HS 6-EBUS	**1773132**	10
HC-HS 6-ESTS	**1773129**	10
HC-HS 6-EBUS-12	**1674561**	10
HC-HS 6-ESTS-12	**1674574**	10
B16/B32 see page 488		
B16 see page 475		
see page 553		
See page 538		

830 V	500 V
8 kV	6 kV
80 A	35 A
III / 3	III / 3
Cu alloy	Copper alloy
Ag	Ag
PC	PA
V0	V0
-	6
Screw connection	Screw connection
1.5 mm² ... 16 mm²	0.5 mm² ... 6 mm²
16 ... 6	20 ... 10
14 mm	10 mm
3 Nm (4.0 mm² ... 16 mm²) / 2 Nm (2.5 mm²) / 1.2 Nm (1.5 mm²)	1.2 Nm
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C



Female insert **Female insert**

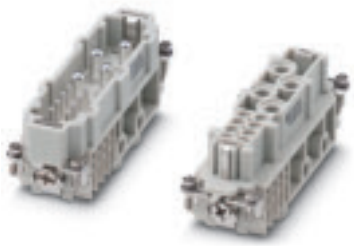


Male insert **Male insert**

Combination inserts

Notes:

- HC-K 4/8-E...S connection screws without wire protection
- For mounting cutout drawings during use without housings, see **www.phoenixcontact.net/catalog**
- For connector pin assignments, see page 566.
- For derating curves, refer to page 571.
- A 2 mm Allen screw must be used for HC-K 6/12...S.
- The CK 2,5-ED... power contacts are dismantled with the aid of a size 0 (DIN 5260) Phillips head screwdriver.
- For more notes for axial screw connection method to be followed, see page 575.
- Connectors may only be operated without load/voltage.



HC-K 4/8-E...S

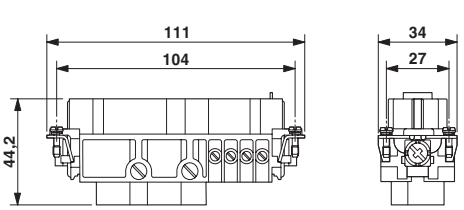
With four power and eight control contacts

HC-K 6/12-E...S

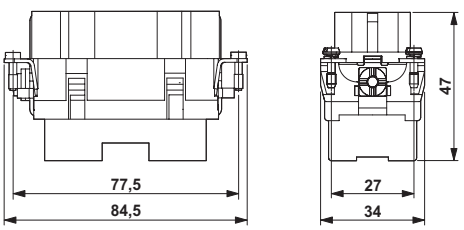
With 6 power and 12 control contacts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Combination insert						
Female	**HC-K 4/8-EBUS**	**1679320**	1	**HC-K 6/12-EBUS**	**1636363**	1
Male	**HC-K 4/8-ESTS**	**1679333**	1	**HC-K 6/12-ESTS**	**1636350**	1
Housing HC standard	**B24/B48 see page 496**			**B16/B32 see page 488**		
Housing HC-ADVANCE	**B24 see page 475**			**B16 see page 475**		
Power crimp contacts						
Control crimp contacts						
PE screw	**See page 552**			**See page 552**		
Connector assembly frame	**See page 538**			**See page 538**		

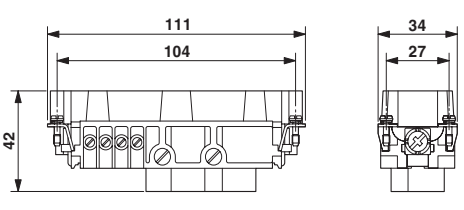
Technical data	Power contacts	Control contacts	Power contacts	Control contacts
Electrical data in acc. with IEC 61076-2-101				
Rated voltage	400 V	400 V	690 V	230 V / 400 V
Rated surge voltage	6 kV	6 kV	8 kV	4 kV
Rated current	80 A	16 A	40 A	10 A
Surge voltage category / Pollution degree	III / 3	III / 3	III / 3	III / 3
Material data				
Contact material	Cu alloy	Cu alloy	Cu alloy	Cu alloy
Contact surface material	Ag	Ag	Ag	Ag
Contact carrier material	PA	PA	PC	PC
Inflammability class acc. to UL 94	HB	HB	V0	V0
Mechanical data				
Number of positions	4	8	6	12
Connection method	Screw connection	Screw connection	Axial screw connection	Screw connection
Conductor cross-section	1.5 mm² ... 16 mm²	0.5 mm² ... 2.5 mm²	2.5 mm² ... 8 mm²	0.2 mm² ... 2.5 mm²
Connection cross-section AWG	16 ... 6	20 ... 14	12 ... 10	24 ... 14
Tightening torque	2 Nm (1.5 mm² - 2.5 mm²) / 3 Nm (4 - 16 mm²)	0.5 Nm	1.5 Nm (2.5 - 4 mm²) / 2 Nm (6 - 8 mm²)	0.8 Nm
Stripping length of the individual wire	14 mm	7 mm	5 mm +1 (2.5 - 4 mm²)	10 mm
Stripping length of the individual wire	-	-	8 mm +1 (6 - 8 mm²)	-
Wire diameter including insulation	-	-	6.1 mm	-
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C



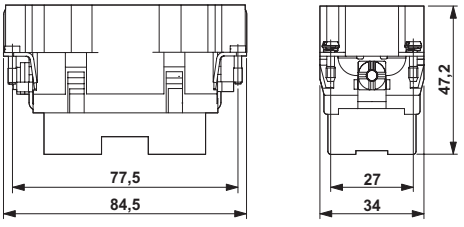
Female insert



Female insert



Female insert



Male insert

HC-K 6/36-E...C

For 6 power and 36 control contacts, without crimp contact

HC-K 8/24-E...C

For 8 power and 24 control contacts, without crimp contact

HC-K 12/2-E...C

For 12 power and 2 control contacts, without crimp contacts

Type	Order No.	Pcs. / Pkt.
HC-K 6/36-EBUC	**1636389**	1
HC-K 6/36-ESTC	**1636376**	1
B16/B32 see page 488		
B16 see page 475		
CK 4.0-ED... see page 529		
CK 1.6-ED... see page 528		
See page 552		
See page 538		

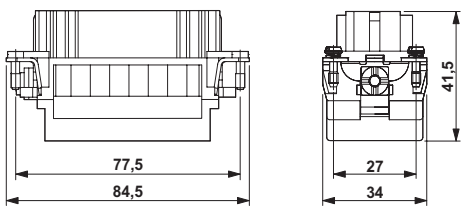
Power contacts	Control contacts
690 V	160 V
8 kV	2.5 kV
40 A	10 A
III / 3	III / 3
Cu alloy	Cu alloy
Ag	Ag (alternatively Au)
PC	PC
V0	V0
6	36
Crimp connection	Crimp connection
1.5 mm² ... 6 mm²	0.14 mm² ... 2.5 mm²
16 ... 10	26 ... 14
- / -	-
9 mm (1.5 mm² - 2.5 mm²)	8 mm (0.14 - 1.5 mm²)
9.5 mm (4 -6 mm²)	6 mm (2.5 mm²)
5 mm	-
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-K 8/24-EBUC	**1636321**	1
HC-K 8/24-ESTC	**1636318**	1
B10 see page 482		
B10 see page 475		
CK 2,5-ED... see page 528		
CK 1.6-ED... see page 528		
See page 552		
See page 538		

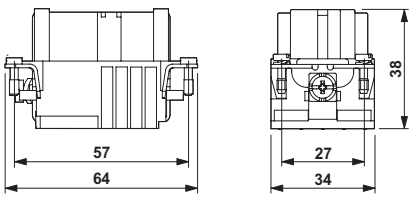
Power contacts	Control contacts
230 V / 400 V	160 V
4 kV	2.5 kV
16 A	10 A
III / 3	III / 3
Cu alloy	Cu alloy
Ag (alternat. Au)	Ag (alternatively Au)
PA	PA
V0	V0
8	24
Crimp connection	Crimp connection
0.5 mm² ... 4 mm²	0.14 mm² ... 2.5 mm²
20 ... 12	26 ... 14
- / -	-
7.5 mm	8 mm (0.14 - 2 mm²)
-	6 mm (2.5 mm²)
-	-
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-K12/ 2-EBUC	**1636347**	1
HC-K12/ 2-ESTC	**1636334**	1
B16/B32 see page 488		
B16 see page 475		
CK 4.0-ED... see page 529		
CK 1.6-ED... see page 528		
See page 552		
See page 538		

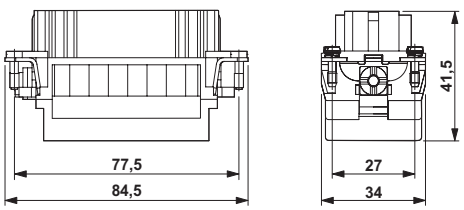
Power contacts	Control contacts
690 V	250 V
8 kV	4 kV
40 A	10 A
III / 3	III / 3
Cu alloy	Cu alloy
Ag	Ag (alternatively Au)
PC	PC
V0	V0
12	2
Crimp connection	Crimp connection
1.5 mm² ... 6 mm²	0.14 mm² ... 2.5 mm²
16 ... 10	26 ... 14
- / -	-
9 mm (1.5 mm² - 2.5 mm²)	8 mm (0.14 - 1.5 mm²)
9.5 mm (4 -6 mm²)	6 mm (2.5 mm²)
-	-
≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C



Female insert



Female insert



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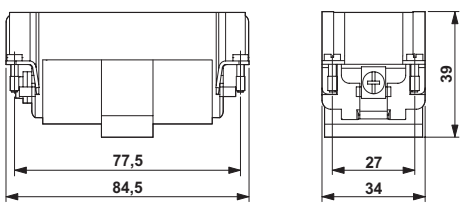
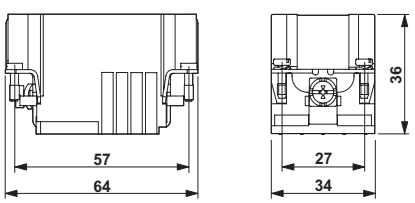
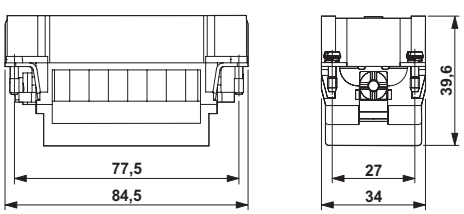


Male insert



Male insert



Male insert

HEAVYCON-MODULAR is a variable contact insert that can be individually adapted to a particular application. Several connectors with a fixed number of positions can now be integrated into one connector. Irrespective of whether the circuits to be combined are power / high-voltage / signal / bus / coaxial / fiber optics / compressed air / .....circuits.

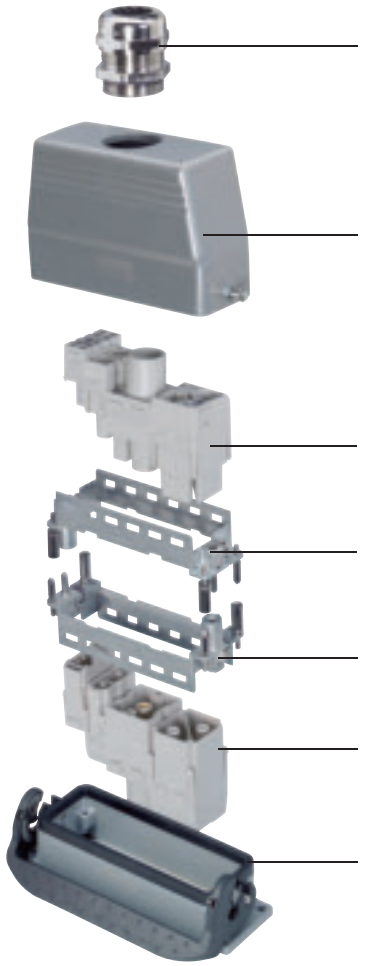
The individually designed contact insert makes it possible to snap on several modules in one hinged retaining frame. Hinged retaining frames are available for the housing sizes B6 / B10 / B16 and B24. These frames have up to six module slots. Since you can choose the modules from a range of 20 modules (refer to the module overview), no desire remains unfulfilled.

The module slots of the hinged retaining frame for sleeves are marked with the upper-case letters A / B / ... .

For marking the module slots, the panel mounting bases, sleeve housings and coupling housings are provided with the lower-case letters a / b / ... .

The frames of the sizes B6 / B10 / B16 / B24 provide 2 / 3 / 4 / 6 module slots. Please note that some modules require two module slots.

System configuration – standard housing with modular contact inserts



TYPE		HC-M-HS200/40-MOD...	HC-M-HS200/70-MOD...	HC-M-HS-MOD...	HC-M-02-HS-70/16-MOD...
Remark		200A axial connection module	200A axial connection module	100A axial connection module	70A 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 mm²	40 ... 70 mm²	16 ... 35 mm²	6 ... 16 mm²
Connection method		Axial screw connection	Axial screw connection	Axial screw connection	Axial screw connection
Number of module slots		2	2	2	1

TYPE		HC-M-02-HS-70/22-MOD...	HC-M-02-MOD...	HC-M-HV-MOD...	HC-M-03-MOD...
Remark		70A axial connection module	40A axial connection module	High voltage module	Crimp connection module
Number of positions		2	2	2	3
Rated current	[A]	70	40	16	40
Rated voltage	[V]	1000	1000	2900/5000	500
Conductor cross-section		14 ... 22 mm²	2.5 ... 10 mm²	0.5 ... 4 mm²	1.5 ... 6 mm²
Connection method		Axial screw connection	Axial screw connection	Crimp connection	Crimp connection
Number of module slots		1	1	2	1

TYPE		HC-M-03/04-MOD...	HC-M-04-MOD...	HC-M-05-MOD...	HC-M-06-MOD...
Remark		Crimp connection module	Crimp connection module	Spring-cage connection module	Crimp connection module
Number of positions		3 power contacts 4 signal contacts	4	5	6
Rated current	[A]	40 / 10	40	16	16
Rated voltage	[V]	830 / 830	830	400	500
Conductor cross-section		1.5 ... 6 mm²/0.14 ... 2.5 mm²	1.5 ... 6 mm²	0.14 ... 2.5 mm²	0.5 ... 4 mm²
Connection method		Crimp connection	Crimp connection	Spring-cage connection	Crimp connection
Number of module slots		1	1	1	1

TYPE		HC-M-06P-MOD...	HC-M-08-MOD...	HC-M-12-MOD...	HC-M-17-MOD...
Remark		Crimp connection module	Crimp connection module	Crimp connection module	Crimp connection module
Number of positions		6	8	12	17
Rated current	[A]	16	16	10	10
Rated voltage	[V]	830	400	250	160
Conductor cross-section		0.5 ... 4 mm²	0.5 ... 4 mm²	0.14 ... 2.5 mm²	0.14 ... 2.5 mm²
Connection method		Crimp connection	Crimp connection	Crimp connection	Crimp connection
Number of module slots		1	1	1	1

TYPE		HC-M-20-MOD...	HC-M-25-MOD...	HC-M-DSUB09-MOD...	HC-M-DSUB09/02T-MOD...
Remark		Crimp connection module	Crimp connection module	D-SUB09 module	Profibus module
Number of positions		20	25	9	2
Rated current	[A]	16	5	1	5
Rated voltage	[V]	500	50	50	50
Conductor cross-section		0.5 ... 4 mm²	0.09 ... 0.5 mm²	0.09 ... 0.5 mm²	0.09 ... 0.5 mm²
Connection method		Crimp connection	Crimp connection	Crimp connection	Screw connection
Number of module slots		2	1	1	1

TYPE		HC-M-EMV-MOD...	HC-M-04-MOD...	HC-M-PN2-MOD...	HC-M-PN3-MOD...
Remark		Bus module	Coaxial module	Pneumatic module	Pneumatic module
Number of positions		2 x 4	4	2	3
Rated current	[A]	16	16	-	-
Rated voltage	[V]	42	50	-	-
Conductor cross-section		0.14 ... 2.5 mm²	-	-	-
Connection method		Crimp connection	Crimp connection	Pneumatic hose connection	Pneumatic hose connection
Number of module slots		2	1	1	1

Modular contact inserts
High-current modules

For more accessories, see from page 520.
For derating curve, refer to page 571.

HC-M-HS 200/40-MOD...

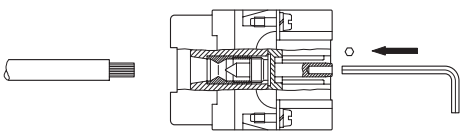
For conductors of 25 mm² ... 40 mm²

Separate PE modules are available for current circuits with PE conductor. With the PE modules, the PE contacting to the hinged retaining frame and thus to the plug connector housing is also ensured.

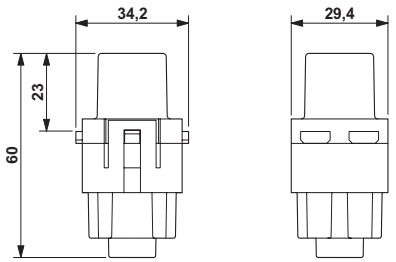
Note:
- Only use flexible conductors
- Wires are connected using a 5 mm Allen wrench
- Housing height h ≥ 72 mm
- Plug connectors may only be operated when under no load
- For more notes on axial connection methods to be followed, see page 575

Description	Type	Order No.	Pcs. / Pkt.
Contact insert module, 200 A, axial screw connection			
Female	**HC-M-HS 200/40-MOD-BU**	**1637171**	1
Male	**HC-M-HS 200/40-MOD-ST**	**1637168**	1
Housing HC-B6...B48	**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**		
Hinged retaining frames	**see page 464**		

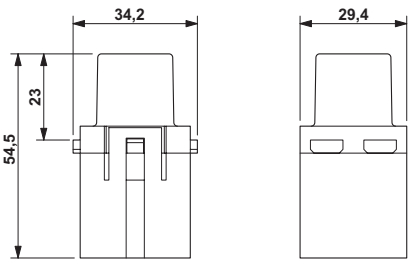
Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	1000 V
Rated surge voltage	8 kV
Rated current	200 A
Surge voltage category	III
Material data	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	1
Number of module slots	2
Pollution degree	3
Connection method	Axial screw connection
Conductor cross-section	25 mm² ... 40 mm²
Connection cross-section AWG	3 ... 2
Stripping length of the individual wire	16 mm
Tightening torque	8 Nm (25-35 mm²) / 9 Nm (40 mm²)
Insertion/withdrawal cycles	≥ 500
Core diameter including insulation	12 mm
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Operation of the axial screw modules



Female insert



Male insert

HC-M-HS 200/40-MOD...-PE

PE module,
for conductors of 25 mm² ... 40 mm²

HC-M-HS 200/70-MOD...

For conductors of 40 mm² ... 70 mm²)

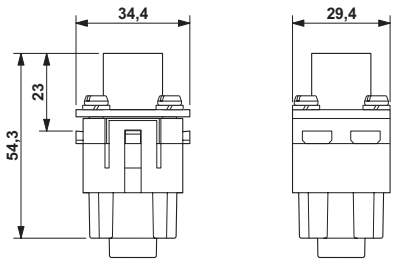
HC-M-HS 200/70-MOD...-PE

PE module,
for conductors of 40 mm² ... 70 mm²)

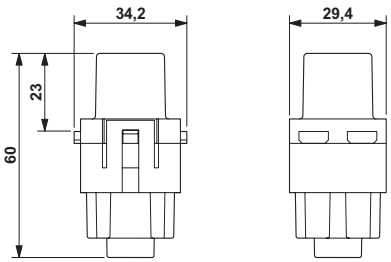
Type	Order No.	Pcs. / Pkt.
HC-M-HS 200/40-MOD-BU-PE	**1637197**	1
HC-M-HS 200/40-MOD-ST-PE	**1637184**	1
see from page 480		
see from page 474		
see page 464		
-		
-		
200 A		
-		
Copper alloy		
Ag		
PC		
V0		
1		
2		
-		
Axial screw connection		
25 mm² ... 40 mm²		
3 ... 2		
16 mm		
8 Nm (25-35 mm²) / 9 Nm (40 mm²)		
≥ 500		
12 mm		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-M-HS 200/70-MOD-BU	**1636897**	1
HC-M-HS 200/70-MOD-ST	**1636884**	1
see from page 480		
see from page 474		
see page 464		
1000 V		
8 kV		
200 A		
III		
Copper alloy		
Ag		
PC		
V0		
1		
2		
3		
Axial screw connection		
40 mm² ... 70 mm²		
1 ... 2/00		
16 mm		
9 Nm (40 - 50 mm²) / 10 Nm (70 mm²)		
≥ 500		
16 mm		
-40°C ... 125°C		

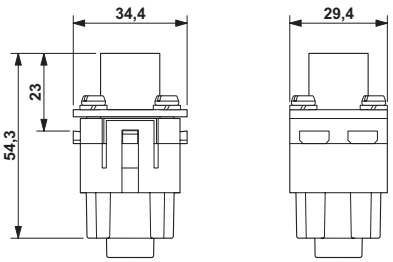
Type	Order No.	Pcs. / Pkt.
HC-M-HS 200/70-MOD-BU-PE	**1636910**	1
HC-M-HS 200/70-MOD-ST-PE	**1636907**	1
see from page 480		
see from page 474		
see page 464		
-		
-		
200 A		
-		
Copper alloy		
Ag		
PC		
V0		
1		
2		
-		
Axial screw connection		
40 mm² ... 70 mm²		
1 ... 2/00		
16 mm		
9 Nm (40 - 50 mm²) / 10 Nm (70 mm²)		
≥ 500		
16 mm		
-40°C ... 125°C		



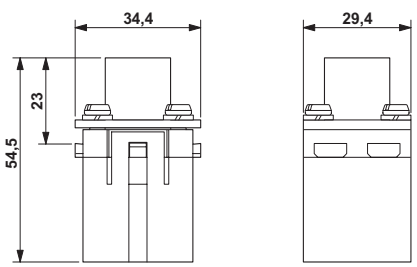
Female insert



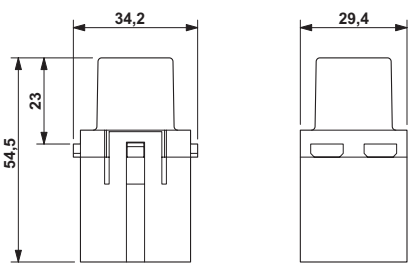
Female insert



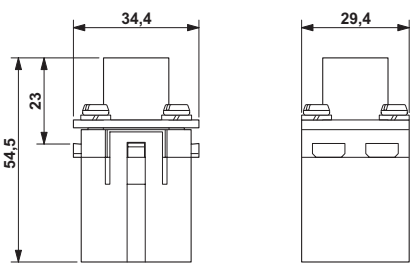
Female insert



Male insert



Male insert



Male insert

Modular contact inserts
2-pos. - 5-pos. modules

For connector pin assignments, see from page 569.

For more accessories, see from page 520.

For derating curve, refer to page 571.

- For HC-M-HS.../ HC-M-HV..., HC housings (h 72 mm) must be used.
- For instructions for axial screw connection method to be followed, see page 575.
- HC-M-HS...Connection of the wires with a 4 mm Allen screw.
- For HC-M-02-MOD...Connection of the wires with a 2 mm Allen screw.
- Crimp HC-MHR-PE16 with crimp pliers for non-insulated cable connections in accordance with DIN 46230 (crimping area 16 mm²)
- For HC-M-02-HS-70/..Use a 2.5 mm Allen screw.
- Connectors may only be operated without load/voltage.

HC-M-HS-MOD-...

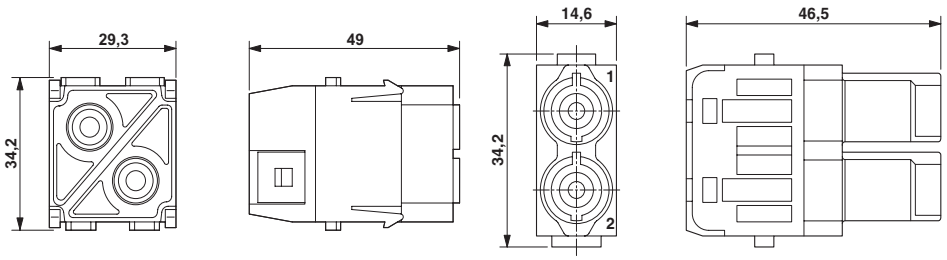
2-pos., axial connection

HC-M-02-HS-70/16-MOD-...

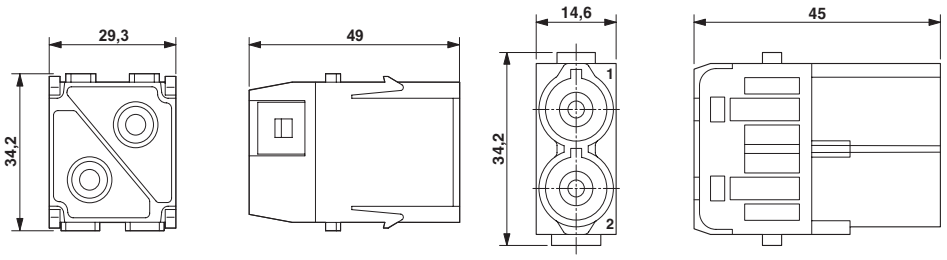
2-pos., axial screw connection, 16 mm²

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert module						
Female	**HC-M-HS-MOD-BU**	**1605001**	1	**HC-M-02-HS-70/16-MOD-BU**	**1585715**	2
Male	**HC-M-HS-MOD-ST**	**1605000**	1	**HC-M-02-HS-70/16-MOD-ST**	**1585702**	2
Cable lug						
for PE connection extension to 16 mm²	**HC-M-MHR-PE16**	**1636981**	10			
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		
Crimp contacts						

Technical data		
Electrical data in acc. with IEC 61076-2-101		
Rated voltage	1000 V	1000 V
Rated surge voltage	8 kV	8 kV
Rated current	100 A	70 A
Surge voltage category / Pollution degree	III / 3	III / 3
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag	Ag
Contact carrier material	PC	PC
Inflammability class acc. to UL 94	V0	V0
Number of positions (without PE)	2	2
Number of module slots	2	1
Connection method	Axial screw connection	Axial screw connection
Conductor cross-section	16 mm² ... 35 mm²	6 mm² ... 16 mm²
Connection cross-section AWG	4 ... 2	8 ... 6
Stripping length of the individual wire	13 mm	11 mm + 1
Tightening torque	6 Nm (16 mm²) / 7 Nm (25 mm²) / 8 Nm (35 mm²)	2 Nm (6 mm²) / 3 Nm (10 mm²) / 4 Nm (16 mm²)
Insertion/withdrawal cycles	≥ 500	≥ 500
Core diameter including insulation	11.4 mm	8.9 mm
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



Socket module **Socket module**



Male insert **Pin module**

HC-M-02-HS-70/22-MOD-...

2-pos.,
axial screw connection, 22 mm²

HC-M-HV-MOD-...

2-pos,
without crimp contacts

HC-M-02-MOD-...

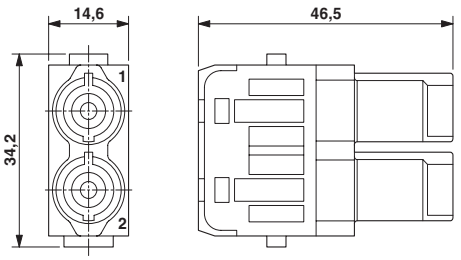
2-pos.,
axial connection

Type	Order No.	Pcs. / Pkt.
HC-M-02-HS-70/22-MOD-BU	1585731	2
HC-M-02-HS-70/22-MOD-ST	1585728	2
see from page 480		
see from page 474		
see page 464		

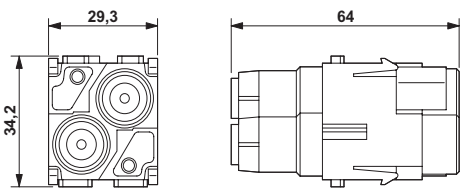
Type	Order No.	Pcs. / Pkt.
HC-M-HV-MOD-BU	1604999	1
HC-M-HV-MOD-ST	1604998	1
see from page 480		
see from page 474		
see page 464		
CK 2,5-ED-... see page 528		

Type	Order No.	Pcs. / Pkt.
HC-M-02-MOD-BU	1679359	2
HC-M-02-MOD-ST	1679346	2
HC-M-MHR-PE16	1636981	10
see from page 480		
see from page 474		
see page 464		

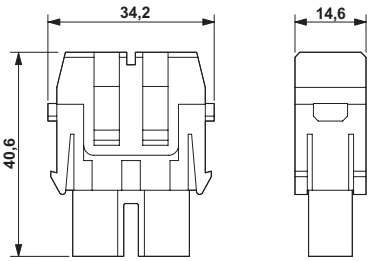
1000 V	2900 V / 5000 V	1000 V
8 kV	15 kV	8 kV
70 A	16 A	40 A
III / 3	III / 3	III / 3
Copper alloy	Copper alloy	Copper alloy
Ag	Ag (alternatively Au)	Ag
PC	PC / PTFE	PC
V0	V0	V0
2	2	2
1	2	1
Axial screw connection	Crimp connection	Axial screw connection
14 mm² ... 22 mm²	0.5 mm² ... 4 mm²	2.5 mm² ... 8 mm²
4	20 ... 12	12 ... 10
11 mm + 1 (14 mm² ... 16 mm²) / 12.5 mm + 1 (for 22 mm²)	9.5 mm	8 mm + 1 (For 6 mm² ... 8 mm²) / 5 mm + 1 (For 2.5 mm² ... 4 mm²)
4 Nm (for 14 mm² ... 16 mm²) / 5 Nm (22 mm²)	-	1.5 Nm (2.5 - 4 mm²) / 2 Nm (6 -8 mm²)
≥ 500	≥ 500	≥ 500
10 mm	8 mm	4 mm (2.5 mm² ... 4 mm²) / 6 mm (6 mm²) / 10.5 mm (8 mm²)
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C



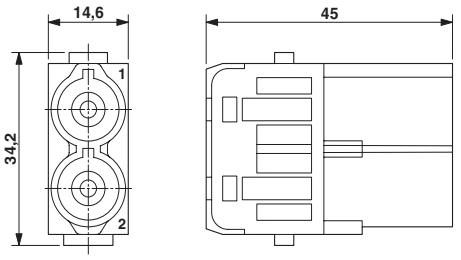
Socket module



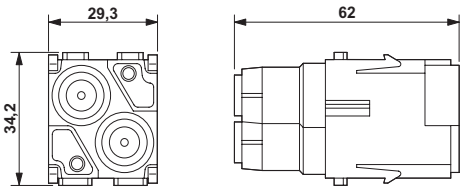
Female insert



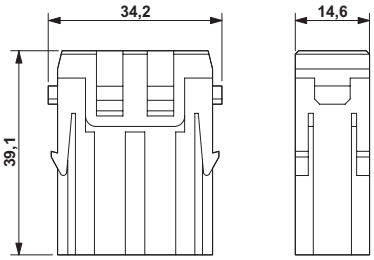
Female insert



Pin module



Male insert



Male insert

Modular contact inserts

Notes:
- Connectors may only be operated without load/voltage.
- Order crimp contacts separately.
- For derating curves, refer to page 571.
- For connector pin assignments, see page 569.
- Housing height ≥ 52 mm

HC-M-03-MOD-...

3-pos, without crimp contacts

HEAVYCON-MODULAR is a variable contact insert that can be adapted to the relevant application. Several power or signal circuits can now be assembled in one single connector. Irrespective of whether the circuits to be combined are power / high-voltage / signal / bus / coax / fiber optics / compressed air / ... circuits.

In the individually designed contact insert, it is possible to snap on several modules in one hinged retaining frame. Hinged retaining frames are available for the housing sizes B6 / B10 / B16 and B24. These frames have up to six module slots. Since you can choose the modules from a comprehensive range of modules (refer to the module overview in the PLUSCON catalog), no desire remains unfulfilled.

The module slots of the hinged retaining frame for sleeves are marked with the letters A / B / ... in the upper case.

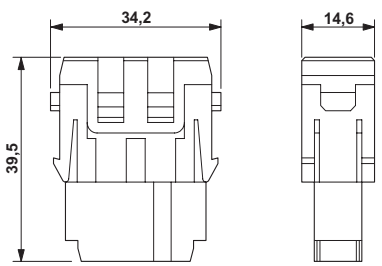
For marking the module slots, the panel mounting bases, sleeve housings and coupling housings are provided with the letters a / b / ... in the lower case.

Frames with sizes B6 / B10 / B16 / B24 provide 2 / 3 / 4 / 6 module slots.

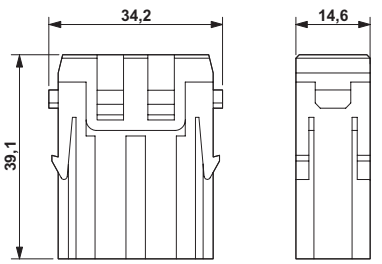
Touch-proof pin modules can be installed on that side of the connection on which voltage is to be supplied.

Description	Type	Order No.	Pcs. / Pkt.
Contact insert module			
Female	**HC-M-03-MOD-BUC**	**1645972**	2
Male	**HC-M-03-MOD-STC**	**1645969**	2
Housing HC-B6...B48	**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**		
Hinged retaining frames	**see page 464**		
Power crimp contacts	**CK 4.0-ED... see page 529**		
Control crimp contacts			

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	40 A
Surge voltage category / Pollution degree	III / 3
Material data	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PC
Inflammability class acc. to UL 94	V0
Mechanical data	
Number of positions (without PE)	3
Number of module slots	1
Connection method	Crimp connection
Conductor cross-section	1.5 mm² ... 6 mm²
Connection cross-section AWG	16 ... 10
Stripping length of the individual wire	9 mm (9.6 mm (4.0 -6.0 mm²))
Tightening torque	-
Insertion/withdrawal cycles	≥ 500
Core diameter including insulation	7.5 mm
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



Female insert



Male insert

HC-M-03/04-MOD-...

Three power contacts, four control contacts, without crimp contacts

HC-M-04-MOD-...

4-pos, without crimp contacts

HC-M-05-MOD-...Z

5 pos., spring-cage connection

Type	Order No.	Pcs. / Pkt.
HC-M-03/04-MOD-BUC	**1585786**	2
HC-M-03/04-MOD-STC	**1585799**	2
see from page 480		
see from page 474		
see page 464		
CK 4.0-ED... see page 529		
CK 1.6-ED... see page 528		

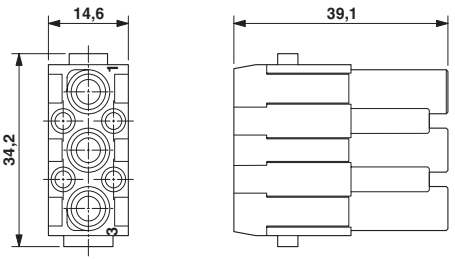
Power contacts	Control contacts
830 V	830 V
8 kV	8 kV
40 A	10 A
III / 3	III / 3
Copper alloy	Copper alloy
Ag	Ag (alternatively Au)
PC	PC
V0	V0
3	4
1	1
Crimp connection	Crimp connection
1.5 mm² ... 6 mm²	0.14 mm² ... 2.5 mm²
16 ... 10	26 ... 14
9 mm (9.6 mm (4.0 -6.0 mm²)) / -	8 mm (6 mm (2,5 mm²)) / -
-	-
≥ 500	≥ 500
5 mm	
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-M-04-MOD-BUC	**1585605**	2
HC-M-04-MOD-STC	**1585618**	2
see from page 480		
see from page 474		
see page 464		
CK 4.0-ED... see page 529		

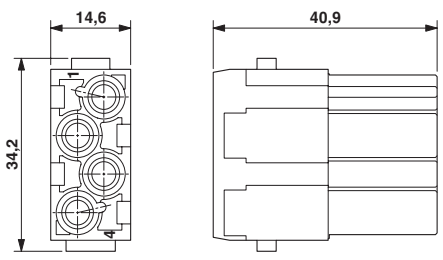
830 V
8 kV
40 A
III / 3
Copper alloy
Ag
PC
V0
4
1
Crimp connection
1.5 mm² ... 6 mm²
16 ... 10
9 mm / 9.6 mm (4 mm² ... 6 mm²)
-
≥ 500
-
-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-M-05-MOD-BUZ	**1647721**	2
HC-M-05-MOD-STZ	**1647718**	2
see from page 480		
see from page 474		
see page 464		

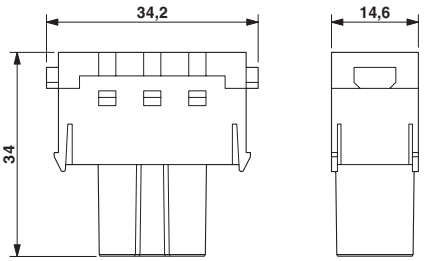
400 V
6 kV
16 A
III / 3
Copper alloy
Ag
PC
V0
5
1
Spring-cage connection
0.14 mm² ... 2.5 mm²
26 ... 14
7 mm
-
≥ 500
-
-40°C ... 125°C



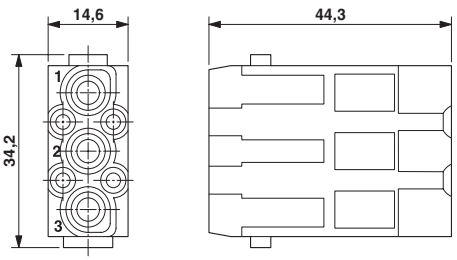
Socket module



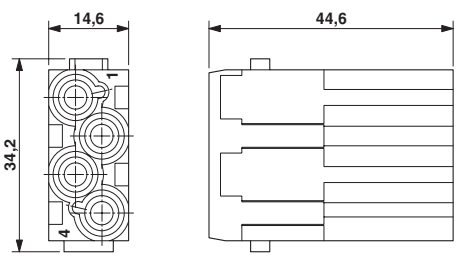
Socket module



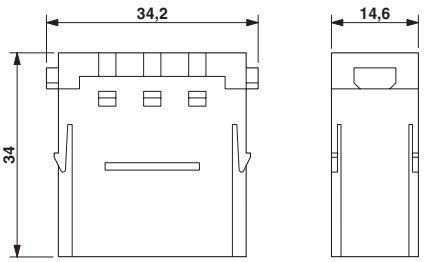
Female insert



Pin module



Pin module



Male insert

Modular contact inserts
Modules for crimp contacts

HC-M-06P-MOD... is a shock-protected plug / socket module. The pin contacts here cannot be touched when open.

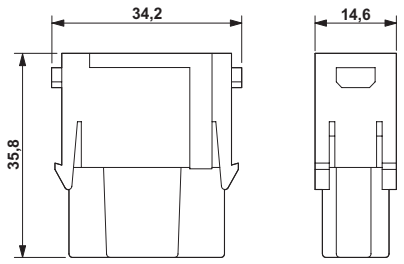
Note:
- For HC-M-06_MOD..., housings (h ≥ 52 mm) must be used
- Connectors may only be operated when under no load

For connector pin assignments, see from page 569.
For more accessories, see from page 520.
For derating curve, refer to page 571.

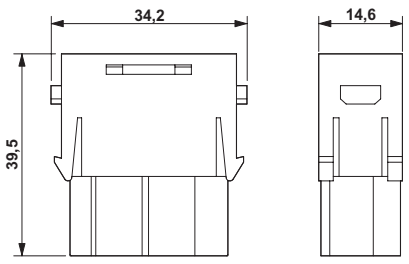
HC-M-06-MOD-...
6-pos., without crimp contacts

HC-M-06P-MOD-...
6-pos, without crimp contacts

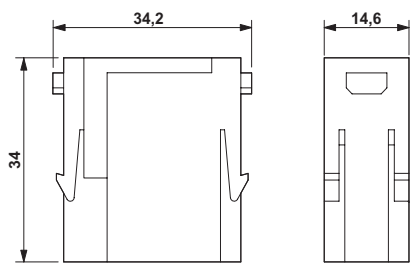
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert module						
Female	**HC-M-06-MOD-BU**	**1663462**	2	**HC-M-06P-MOD-BU**	**1636460**	2
Male	**HC-M-06-MOD-ST**	**1663459**	2	**HC-M-06P-MOD-ST**	**1636457**	2
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		
Crimp contacts	**CK 2,5-ED... see page 528**			**CK 2,5-ED... see page 528**		
Technical data						
Electrical data in acc. with IEC 61076-2-101						
Rated voltage	500 V			830 V		
Rated surge voltage	6 kV			8 kV		
Rated current	16 A			16 A		
Surge voltage category	III			III		
Material data						
Contact material	Copper alloy			Copper alloy		
Contact surface material	Ag (alternatively Au)			Ag (alternatively Au)		
Contact carrier material	PC			PC		
Inflammability class acc. to UL 94	V0			V0		
Mechanical data						
Number of positions (without PE)	6			6		
Number of module slots	1			1		
Pollution degree	3			3		
Connection method	Crimp connection			Crimp connection		
Conductor cross-section	0.5 mm² ... 4 mm²			0.5 mm² ... 4 mm²		
Connection cross-section AWG	20 ... 12			20 ... 12		
Stripping length of the individual wire	7.5 mm			7.5 mm		
Insertion/withdrawal cycles	≥ 500			≥ 500		
Temperature data						
Ambient temperature (operation)	-40°C ... 125°C			-40°C ... 125°C		



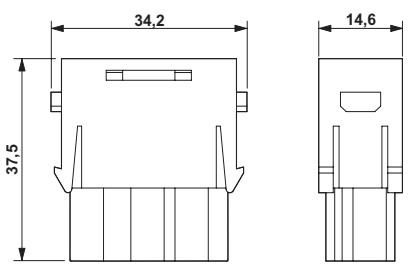
Female insert



Female insert



Male insert



Male insert

HC-M-08-MOD-...

8-pos,
without crimp contacts

HC-M-12-MOD-...

12-pos,
without crimp contacts

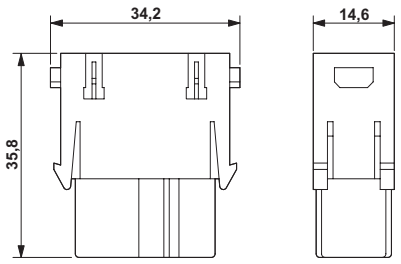
HC-M-17-MOD-...

17-pos,
without crimp contacts

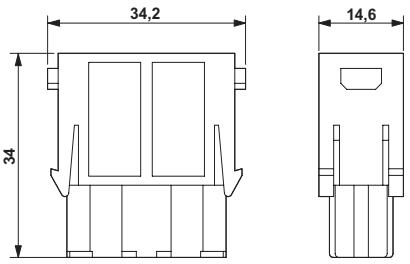
Type	Order No.	Pcs. / Pkt.
HC-M-08-MOD-BU	**1605003**	2
HC-M-08-MOD-ST	**1605002**	2
see from page 480		
see from page 474		
see page 464		
CK 2,5-ED... see page 528		
400 V		
6 kV		
16 A		
III		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
8		
1		
3		
Crimp connection		
0.5 mm² ... 4 mm²		
20 ... 12		
7.5 mm		
≥ 500		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-M-12-MOD-BU	**1663323**	2
HC-M-12-MOD-ST	**1663310**	2
see from page 480		
see from page 474		
see page 464		
CK 1.6-ED... see page 528		
250 V		
3 kV		
10 A		
III		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
12		
1		
3		
Crimp connection		
0.14 mm² ... 2.5 mm²		
26 ... 14		
8 mm (6 mm (for 2.5 mm²))		
≥ 500		
-40°C ... 125°C		

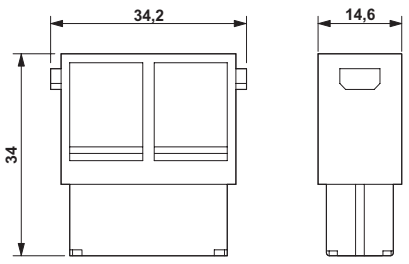
Type	Order No.	Pcs. / Pkt.
HC-M-17-MOD-BU	**1636486**	2
HC-M-17-MOD-ST	**1636473**	2
see from page 480		
see from page 474		
see page 464		
CK 1.6-ED... see page 528		
160 V		
2.5 kV		
10 A		
III		
Copper alloy		
Ag (alternatively Au)		
PC		
V0		
17		
1		
3		
Crimp connection		
0.14 mm² ... 2.5 mm²		
26 ... 14		
8 mm (6 mm (for 2.5 mm²))		
≥ 500		
-40°C ... 125°C		



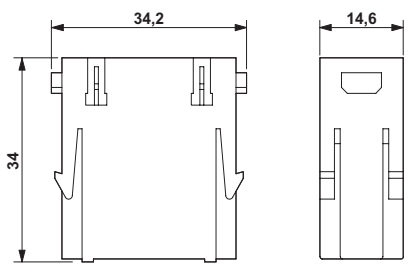
Female insert



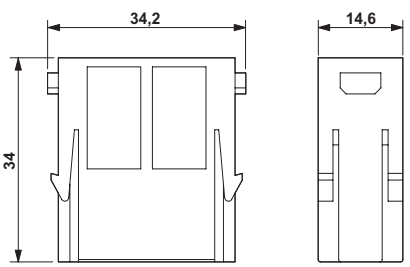
Female insert



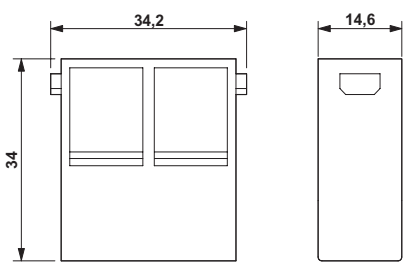
Female insert



Male insert



Male insert



Male insert

Modular contact inserts
Modules for crimp contacts

– When module HC-M-25-MOD... is used, keying sockets / keying pins must be used
– Connectors may only be operated when under no load

For connector pin assignments, see from page 569.
For more accessories, see from page 520.
For derating curve, refer to page 571.

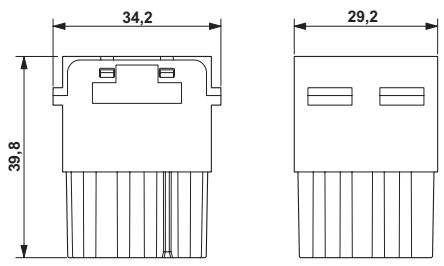
HC-M-20-MOD-...

20-pos,
without crimp contacts

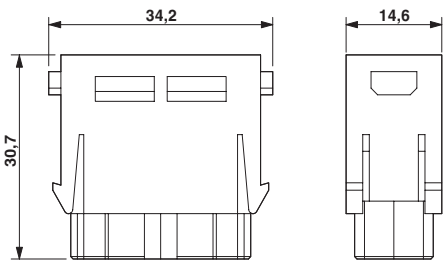
HC-M-25-MOD-...

25-pos,
without crimp contacts

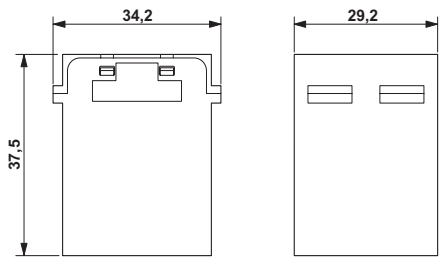
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert module						
Female	**HC-M-20-MOD-BU**	**1636936**	1	**HC-M-25-MOD-BU**	**1605005**	2
Male	**HC-M-20-MOD-ST**	**1636923**	1	**HC-M-25-MOD-ST**	**1605004**	2
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		
Crimp contacts	**CK 2,5-ED... see page 528**			**VS-...-CD-1,0 see page 324**		
Technical data						
Electrical data in acc. with IEC 61076-2-101						
Rated voltage	500 V			50 V		
Rated surge voltage	6 kV			0.8 kV		
Rated current	16 A			5 A		
Surge voltage category	III			III		
Material data						
Contact material	Copper alloy			Copper alloy		
Contact surface material	Ag (alternatively Au)			Au		
Contact carrier material	PC			PC		
Inflammability class acc. to UL 94	V0			V0		
Mechanical data						
Number of positions (without PE)	20			25		
Number of module slots	2			1		
Pollution degree	3			3		
Connection method	Crimp connection			Crimp connection		
Conductor cross-section	0.5 mm² ... 4 mm²			0.09 mm² ... 0.5 mm²		
Connection cross-section AWG	20 ... 12			28 ... 20		
Stripping length of the individual wire	7.5 mm			3.8 mm		
Insertion/withdrawal cycles	≥ 500			≥ 500		
Temperature data						
Ambient temperature (operation)	-40°C ... 125°C			-40°C ... 125°C		



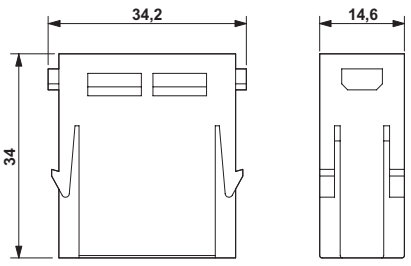
Female insert



Female insert



Male insert



Male insert

Modular contact inserts
D-SUB 09 modules

- HC-M-DSUB 09.... modules are designed for turned crimp contacts in acc. with DIN 41652
- Use of keying sockets / keying pins is prescribed
- HC-M-DSUB 09/02T-MOD-BU modules can transfer PROFIBUS signals (RS-485-based systems). T functionality with branch lines as per IEC 61156 up to 1.5 Mbaud. Pin 3 and 8 occupied

For more accessories, see from page 520.

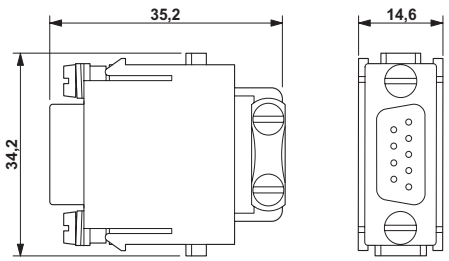
HC-M-DSUB 09-MOD-...

D-SUB 09 module,
without crimp contacts

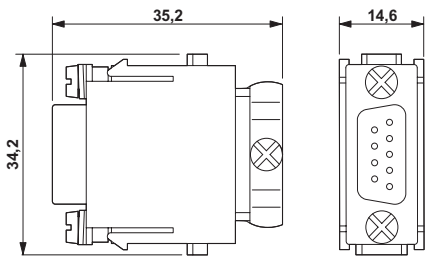
HC-M-DSUB 09/02T-MOD-BU

2-pos. mounted DSUB 09 module for PROFIBUS

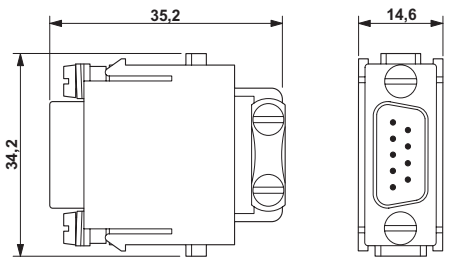
Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Contact insert module						
Female	**HC-M-DSUB 09-MOD-BU**	**1647543**	2	**HC-M-DSUB 09/O2T-MOD-BU**	**1636444**	2
Male	**HC-M-DSUB 09-MOD-ST**	**1647530**	2			
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		
Crimp contacts	**VS-...-CD-1,0/14,8/... see page 324**					
Technical data						
Electrical data in acc. with IEC 61076-2-101						
Rated voltage	50 V			50 V		
Rated surge voltage	0.8 kV			0.8 kV		
Rated current	1 A			5 A		
Surge voltage category	III			III		
Material data						
Contact material	Copper alloy			Copper alloy		
Contact surface material	Au			Au		
Contact carrier material	PC			PC		
Inflammability class acc. to UL 94	V0			V0		
Mechanical data						
Number of positions (without PE)	9			2		
Number of module slots	1			1		
Pollution degree	3			3		
Connection method	Crimp connection			Screw connection		
Conductor cross-section	0.09 mm² ... 0.5 mm²			0.09 mm² ... 0.5 mm²		
Connection cross-section AWG	28 ... 20			28 ... 20		
Stripping length of the individual wire	3.8 mm			3.8 mm		
Tightening torque	-			0.15 Nm		
Insertion/withdrawal cycles	≥ 500			≥ 500		
Temperature data						
Ambient temperature (operation)	-40°C ... 125°C			-40°C ... 125°C		



Female insert



Female insert



Male insert

Modular contact inserts
Modules for shielded cables

- Housing height h ≥ 72 mm
- The clamping area of the clamps is 4 mm - 6 mm / 6 mm - 9 mm
- Plug connectors may only be operated when under no load
- Shield guide independent of the housing potential
- Suitable for transmission of sensitive signals

For derating curve, refer to page 571.
For more accessories, see from page 520.
For additonal information of applications see page 574.

HC-M-EMV-MOD-...

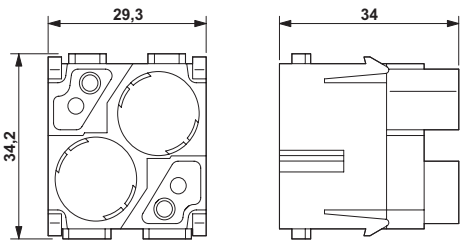
EMC module for two EMC connectors

HC-M-EMV-.../3-9,5

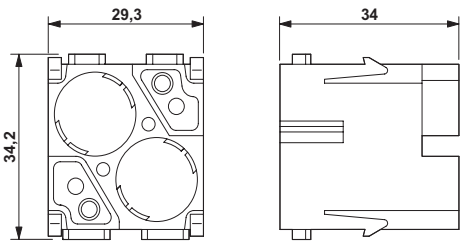
EMC connector, 4-position, without crimp contacts

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
EMC contact insert module, for 2 EMC plug connectors						
Female	**HC-M-EMV-MOD-BU**	**1678570**	2			
Male	**HC-M-EMV-MOD-ST**	**1678567**	2			
EMC plug connectors						
Female				**HC-M-EMV-BU/3-9,5**	**1636091**	1
Male				**HC-M-EMV-ST/3-9,5**	**1636088**	1
Removal tool						
- For EMC connector HC-M-EMV...				**HC-M-EMV-KON-EWZ**	**1678635**	1
Removal tool						
- For contacts CK1,6-ED.../CK1,6-ER.../CK1,6...POF				**VC-EW 1,6**	**1884869**	1
Crimp contacts				**CK 1.6-ED... see page 528**		
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		

Technical data		
Rated voltage	-	50 V
Rated surge voltage	-	0.8 kV
Rated current	-	10 A
Surge voltage category / Pollution degree	- / -	III / 3
Contact material	-	Copper alloy
Contact surface material	-	Ag (alternatively Au)
Contact carrier material	PC	PC
Inflammability class acc. to UL 94	V0	V0
Number of positions (without PE)	2	4
Number of module slots	2	-
Connection method	-	Crimp connection
Conductor cross-section	-	0.14 mm² ... 2.5 mm²
Connection cross-section AWG	-	26 ... 14
Stripping length of the individual wire	-	8 mm (6 mm (for 2.5 mm²))
Tightening torque	-	-
Insertion/withdrawal cycles	≥ 500	≥ 500
Core diameter including insulation	-	2.4 mm
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 85°C



Female insert



Male insert

Modular contact inserts
Modules for coaxial cables

– To remove the coaxial female contacts, the socket module must first be opened
– Connectors may only be operated when under no load
– Use of keying pins/sockets is necessary (HC-CST-MOD / HC-CBU-MOD)

For overview of coaxial conductors that can be used, see page 574.
see page for additonal information of applications 574.

HC-M-04-MOD-...

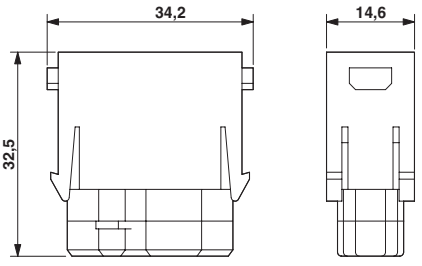
4-pos.,
without coaxial contacts

HC-M-04-...-KOAX-...

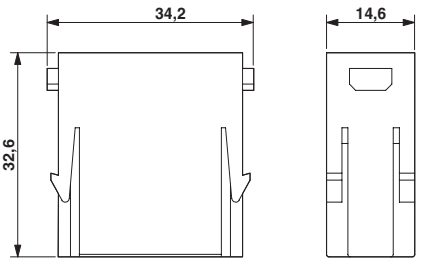
Coaxial contacts,
for 4-pos. coaxial contact insert module

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Coaxial contact insert module, for HC-M-04... contacts						
Female	**HC-M-04-MOD-BU**	**1676789**	2			
Male	**HC-M-04-MOD-ST**	**1676792**	2			
Coaxial contacts, 50Ω wave impedance, as per DIN 61626; solder/crimp contact						
Female				**HC-M-04-BU-KOAX-50**	**1676802**	10
Male				**HC-M-04-ST-KOAX-50**	**1676815**	10
Coaxial contacts, 75Ω wave impedance, as per DIN 61626; solder/crimp contact						
Female				**HC-M-04-BU-KOAX-75**	**1686258**	10
Male				**HC-M-04-ST-KOAX-75**	**1686245**	10
Removal tool						
- For coax contacts HC-M-04...KOAX...				**HC-M4-KOAX-EWZ**	**1676747**	1
Crimping pliers for crimping ferrules						
- For turned coax contacts HC-M-04...KOAX...				**CRIMPFOX-HCM-KOAX**	**1206023**	1
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		

Technical data		
Rated voltage	50 V	-
Rated surge voltage	3 kV	-
Rated current	1.5 A	-
Volume resistance (phase conductor/inner conductor)	≤ 3 mΩ / ≤ 10 mΩ	- / -
Insulation resistance	≥ 10 GΩ	10 GΩ
Surge voltage category / Pollution degree	III / 3	- / -
Contact material	-	Copper alloy
Contact surface material	-	Au
Contact carrier material	PC	-
Inflammability class acc. to UL 94	V0	-
Number of positions (without PE)	4	-
Number of module slots	1	-
Connection method	Crimp connection	-
Insertion/withdrawal cycles	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-



Female insert



Male insert

Modular contact inserts
Pneumatic modules

For active components in devices or control cabinets, the combination of electronics and pneumatics is laid down in 60204/VDE 0113, part 1.

– When assembling the hoses, please observe the minimum bending radii of the hoses
– Use of keying pins/sockets is necessary (HC-CST-MOD / HC-CBU-MOD)

For more accessories, see from page 520.

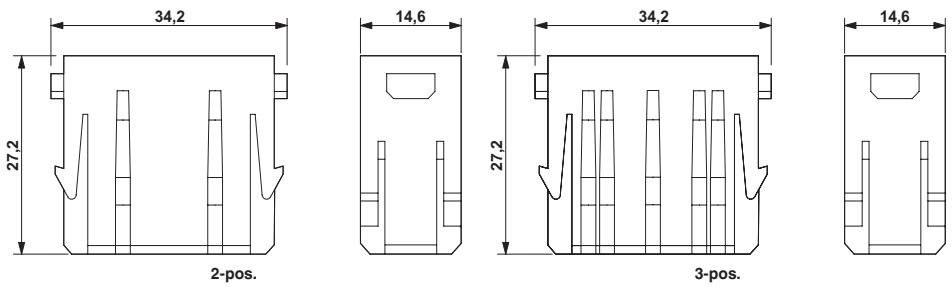
HC-M-PN2-MOD-ST-BU

Pneumatic module for HC-M-PN... pneumatic contacts, 2 pos.

HC-M-PN3-MOD-ST-BU

Pneumatic module for HC-M-PN3... pneumatic contacts, 3 pos.

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Pneumatic module						
Socket/male	**HC-M-PN2-MOD-ST-BU**	**1674998**	2	**HC-M-PN3-MOD-ST-BU**	**1663475**	2
Housing HC-B6...B48	**see from page 480**			**see from page 480**		
Housing HC-ADVANCE B6...B24	**see from page 474**			**see from page 474**		
Hinged retaining frames	**see page 464**			**see page 464**		
Technical data						
Material data						
Contact carrier material	PC			PC		
Inflammability class acc. to UL 94	V0			V0		
Mechanical data						
Number of positions (without PE)	2			3		
Number of module slots	1			1		
Insertion/withdrawal cycles	≥ 500			≥ 500		
Temperature data						
Ambient temperature (operation)	-40°C ... 80°C			-40°C ... 80°C		



Modular contact inserts
Pneumatic modules

Socket contacts with a valve can be used for special applications.

The contacts are designed for PU hoses with an internal diameter of 1.6 mm, 3 mm, 4 mm and 6 mm.

For mounting cutout drawings for use without housings, see **www.phoenixcontact.net/catalog**
For connector pin assignments, see from page 569.
For more accessories, see from page 520.

HC-M-PN...
Pneumatic contacts

HC-M-PN...-V
Pneumatic contacts with valve

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Pneumatic contact, for 2-pos. pneumatic module, for hose diameter of 6.0 mm						
Socket	**HC-M-PN2-6,00-BU**	**1676763**	10	**HC-M-PN2-6,00-BU-V**	**1676776**	10
Male	**HC-M-PN2-6,00-ST**	**1676750**	10			
Pneumatic contact, for 3-pos. pneumatic module, for hose diameter of 1.6 mm						
Socket	**HC-M-PN3-1,60-BU**	**1663514**	10	**HC-M-PN3-1,60-BU-V**	**1663543**	10
Male	**HC-M-PN3-1,60-ST**	**1663488**	10			
Pneumatic contact, for 3-pos. pneumatic module, for hose diameter of 3.0 mm						
Socket	**HC-M-PN3-3,00-BU**	**1663527**	10	**HC-M-PN3-3,00-BU-V**	**1663556**	10
Male	**HC-M-PN3-3,00-ST**	**1663491**	10			
Pneumatic contact, for 3-pos. pneumatic module, for hose diameter of 4.0 mm						
Socket	**HC-M-PN3-4,00-BU**	**1663530**	10	**HC-M-PN3-4,00-BU-V**	**1663569**	10
Male	**HC-M-PN3-4,00-ST**	**1663501**	10			

Technical data		
Material data		
Contact material	Delrin acetal	Delrin acetal
Seal material	Buna-N	Buna-N
Valve material	Polypropylene	Polypropylene
Mechanical data		
Insertion/withdrawal cycles	≥ 500	≥ 500
Operating pressure, vacuum	6.00 bar	6.00 bar
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

Modular contact inserts
Hinged retaining frames

- Assembly and disassembly of the modules without tools
- Polarization for protection against polarity reversal
- Alphabetical identification of the module positions
- Crimp the HC-MHR-PE16 using the crimping pliers for non-insulated cable connections in acc. with DIN 46230 (crimping range 16 mm²)

HC-M-MHR-T...-N

Hinged retaining frame for sleeve housings

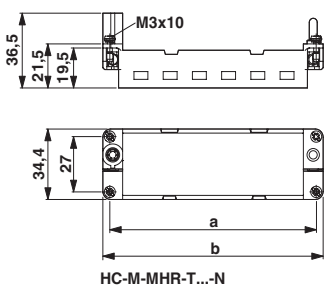
HC-M-MHR-A...-N

Hinged retaining frame for panel mounting bases, box mounting bases, and coupling housings

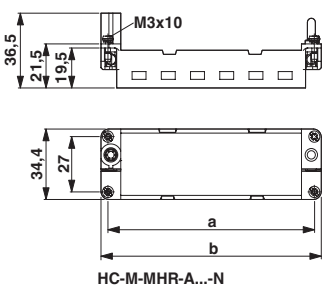
Description	Design	Module slots	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Hinged retaining frame, for sleeve housing, labeling: Upper case letters (A, B, C, ...)								
	B6	2	**HC-M-MHR-T2-N**	**1679249**	2			
	B10	3	**HC-M-MHR-T3-N**	**1679252**	2			
	B16	4	**HC-M-MHR-T4-N**	**1679265**	2			
	B24	6	**HC-M-MHR-T6-N**	**1679278**	2			
Hinged retaining frame, for panel mounting bases, box mounting bases, and coupling housings, labeling: Lower case letters (a, b, c, ...)								
	B6	2				**HC-M-MHR-A2-N**	**1679281**	2
	B10	3				**HC-M-MHR-A3-N**	**1679294**	2
	B16	4				**HC-M-MHR-A4-N**	**1679304**	2
	B24	6				**HC-M-MHR-A6-N**	**1679317**	2
Fixing wedge, for fixing the hinged retaining frames (20 pieces in the block). Prevents the hinged retaining frame from opening unintentionally.			**HC-M-MHR-FIX**	**1585155**	2	**HC-M-MHR-FIX**	**1585155**	2
Cable lug for PE connection extension to 16 mm²			**HC-M-MHR-PE16**	**1636981**	10	**HC-M-MHR-PE16**	**1636981**	10

Technical data			
Material data			
Hinged retaining frame material		Die-cast zinc alloy	Die-cast zinc alloy
Connection data			
Connection cross-section	[mm²]	4 mm² ... 6 mm² (for PE conductor – power side)	4 mm² ... 6 mm² (for PE conductor – power side)
Connection cross-section	[mm²]	1 mm² ... 2.5 mm² (for PE conductor – control side)	1 mm² ... 2.5 mm² (for PE conductor – control side)
Connection cross-section	AWG	12 ... 10 (for PE conductor – power side)	12 ... 10 (for PE conductor – power side)
Connection cross-section	AWG	18 ... 14 (for PE conductor – control side)	18 ... 14 (for PE conductor – control side)
Insertion/withdrawal cycles		≥ 500	≥ 500
Temperature data			
Ambient temperature (operation)		-40°C ... 125°C	-40°C ... 125°C

Type	a [mm]	b [mm]
HC-M-MHR-...2-N	44.0	51.0
HC-M-MHR-...3-N	57.0	64.0
HC-M-MHR-...4-N	77.5	84.5
HC-M-MHR-...6-N	104.0	111.0



HC-M-MHR-T...-N



HC-M-MHR-A...-N

Modular contact inserts
Accessories

Contact insert frames are used to produce a free-hanging connection.

Unused module slots can be filled with dummy modules.

The contact insert frames can accommodate the following modules:
– HC-M-03-MOD...
– HC-M-06-MOD...
– HC-M-08-MOD...
– HC-M-12-MOD...

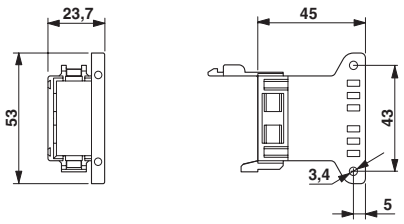
HC-M-MH...

Contact insert frame with / without strain relief

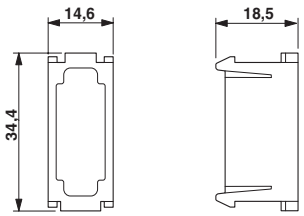
HC-M-BM

Dummy module

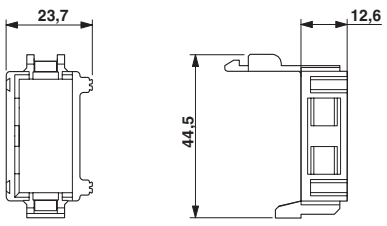
Description	Color	Type	Order No.	Pcs. / Pkt.
Contact insert frame, for accommodating contact inserts, can be snapped together as desired.				
With strain relief		**HC-M-MHMZ**	**1676831**	2
Without strain relief		**HC-M-MHOZ**	**1676844**	2
Dummy module, for vacant slots in the hinged retaining frame				
		HC-M-BM	**1676828**	2
Marker tags, 5-section, unprinted, labeling with X-PEN, M-PEN, plotter or BKMT 20 x 8 label				
Lettering field size: 20 x 8 mm	white	**SS-ZB WH**	**5031171**	50
Lettering field size: 20 x 8 mm	yellow	**SS-ZB YE**	**5031650**	50



HC-M-MHMZ



HC-M-BM



HC-M-MHOZ

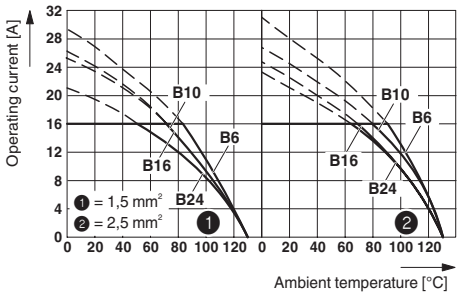
Terminal adapter type B, with screw connection

Terminal adapters have an additional keying option using the keying profile CP-HC.

– HC-B6..../HC-B10.... for two keying profiles
– HC-B16..../HC-B24.... for four keying profiles
– Connectors may only be operated when under no load
– The PE connection is established using the tension sleeve technology

Notes:

For dimensional drawings, refer to page 560.
For more accessories, see from page 520.



Derating diagram

HC-B 6-A-UT-PE...

Type B6 terminal adapter, screw connection

Description	Type	Order No.	Pcs. / Pkt.
Terminal adapter, protective conductor connection on the left for the right control cabinet wall			
Socket	**HC-B 6-A-UT-PER-F**	**1648066**	5
Male	**HC-B 6-A-UT-PER-M**	**1648072**	5
Terminal adapter, protective conductor connection on the right for the left control cabinet wall			
Socket	**HC-B 6-A-UT-PEL-F**	**1648018**	5
Male	**HC-B 6-A-UT-PEL-M**	**1648024**	5
Foot element, for mounting on ⊏, ⌐ oder ⌊ DIN rail At least two foot elements are necessary per adapter.	**HC-KA-FE**	**1775240**	10
Locking screw barrel, to firmly connect contact inserts and rail-mountable terminal block adapters	**HC-VSH**	**1660083**	10
Panel mounting base HC-B...	**B 6 see page 481**		
Zack marker strip, 10-section	**ZB 6,6 ...**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Number of positions (without PE)	6
Material	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Design	B6
Connection data	
Stripping length of the individual wire	12 mm
Conductor cross-section	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	20 ... 14
Tightening torque	0.5 Nm ... 0.8 Nm
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

HC-B 10-A-UT-PE...

Type B10 terminal adapter,
screw connection

HC-B 16-A-UT-PE...

Type B16 terminal adapter,
screw connection

HC-B 24-A-UT-PE...

Type B24 terminal adapter,
screw connection

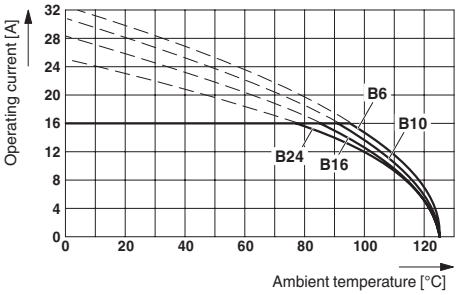
Type	Order No.	Pcs. / Pkt.
HC-B 10-A-UT-PER-F	**1648078**	5
HC-B 10-A-UT-PER-M	**1648084**	5
HC-B 10-A-UT-PEL-F	**1648030**	5
HC-B 10-A-UT-PEL-M	**1648036**	5
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
B 10 see page 483 onwards		
ZB 6,6 ...		

Type	Order No.	Pcs. / Pkt.
HC-B 16-A-UT-PER-F	**1648090**	5
HC-B 16-A-UT-PER-M	**1648096**	5
HC-B 16-A-UT-PEL-F	**1648042**	5
HC-B 16-A-UT-PEL-M	**1648048**	5
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
B 16 see page 489 onwards		
ZB 6,6 ...		

Type	Order No.	Pcs. / Pkt.
HC-B 24-A-UT-PER-F	**1648102**	5
HC-B 24-A-UT-PER-M	**1648108**	5
HC-B 24-A-UT-PEL-F	**1648054**	5
HC-B 24-A-UT-PEL-M	**1648060**	5
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
B 24 see page 497 onwards		
ZB 6,6 ...		

500 V	500 V	500 V
6 kV	6 kV	6 kV
16 A	16 A	16 A
III / 3	III / 3	III / 3
10	16	24
Copper alloy	Copper alloy	Copper alloy
Ag	Ag	Ag
PA	PA	PA
V0	V0	V0
B10	B16	B24
12 mm	12 mm	12 mm
0.5 mm² ... 2.5 mm²	0.5 mm² ... 2.5 mm²	0.5 mm² ... 2.5 mm²
20 ... 14	20 ... 14	20 ... 14
0.5 Nm ... 0.8 Nm	0.5 Nm ... 0.8 Nm	0.5 Nm ... 0.8 Nm
≥ 500	≥ 500	≥ 500
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C

Terminal adapter type B, with push-in connection



Derating diagram

HC-B 6-A-DT-PE...

Terminal adapter type B6, push-in connection

- For solid and stranded conductors with 10 mm long ferrules with and without insulating collars
- PE connection by means of spring cage technology
- Screwdriver to open the terminal points.
- Connectors may only be operated when under no load
- Terminal adapters have an additional keying option using the keying profile CP-HC. Refer to page 554

Notes:

For dimensional drawings, refer to page 560.

For more accessories, see from page 520.

Test plug, see CLIPLINE catalog

Description	Type	Order No.	Pcs. / Pkt.
Terminal adapter, protective conductor connection on the left for the right control cabinet wall			
Socket	**HC-B 6-A-DT-PER-F**	**1648377**	10
Male	**HC-B 6-A-DT-PER-M**	**1648380**	10
Terminal adapter, protective conductor connection on the right for the left control cabinet wall			
Socket	**HC-B 6-A-DT-PEL-F**	**1648351**	10
Male	**HC-B 6-A-DT-PEL-M**	**1648364**	10
Foot element, for mounting on ⊏, ⌐ oder ⌊ DIN rail At least two foot elements are necessary per adapter.	**HC-KA-FE**	**1775240**	10
Locking screw barrel, to firmly connect contact inserts and rail-mountable terminal block adapters	**HC-VSH**	**1660083**	10
Screwdriver			
Blade: 0,4 x 2.5 x 75 mm, length: 156 mm	**SZF 0-0,4X2,5**	**1204504**	10
Zack marker strip	**ZBF-U:SO/CMS**	**0810779**	1
Panel mounting base HC-B...	**B 6 see page 481**		

Technical data	
Electrical data in acc. with IEC 61076-2-101	
Rated voltage	500 V
Rated surge voltage	6 kV
Rated current	16 A
Surge voltage category / Pollution degree	III / 3
Number of positions (without PE)	6
Material	
Contact material	Copper alloy
Contact surface material	Ag
Contact carrier material	PA
Inflammability class acc. to UL 94	V0
Design	B6
Connection data	
Connection method	Push-in connection
Stripping length of the individual wire	10 mm (13 mm if ferrules are used)
Conductor cross-section	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	22 ... 12
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

HC-B 10-A-DT-PE...

Terminal adapter type B10,
push-in connection

HC-B 16-A-DT-PE...

Terminal adapter type B16,
push-in connection

HC-B 24-A-DT-PE...

Terminal adapter type B24,
push-in connection

Type	Order No.	Pcs. / Pkt.
HC-B 10-A-DT-PER-F	**1648416**	10
HC-B 10-A-DT-PER-M	**1648429**	10
HC-B 10-A-DT-PEL-F	**1648393**	10
HC-B 10-A-DT-PEL-M	**1648403**	10
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
SZF 0-0,4X2,5	**1204504**	10
ZBF-U:SO/CMS	**0810779**	1
B 10 see page 483 onwards		

Type	Order No.	Pcs. / Pkt.
HC-B 16-A-DT-PER-F	**1648458**	10
HC-B 16-A-DT-PER-M	**1648461**	10
HC-B 16-A-DT-PEL-F	**1648432**	10
HC-B 16-A-DT-PEL-M	**1648445**	10
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
SZF 0-0,4X2,5	**1204504**	10
ZBF-U:SO/CMS	**0810779**	1
B 16 see page 489 onwards		

Type	Order No.	Pcs. / Pkt.
HC-B 24-A-DT-PER-F	**1648490**	10
HC-B 24-A-DT-PER-M	**1648500**	10
HC-B 24-A-DT-PEL-F	**1648474**	10
HC-B 24-A-DT-PEL-M	**1648487**	10
HC-KA-FE	**1775240**	10
HC-VSH	**1660083**	10
SZF 0-0,4X2,5	**1204504**	10
ZBF-U:SO/CMS	**0810779**	1
B 24 see page 497 onwards		

500 V	
6 kV	
16 A	
III / 3	
10	
Copper alloy	
Ag	
PA	
V0	
B10	
Push-in connection	
10 mm (13 mm if ferrules are used)	
0.5 mm² ... 2.5 mm²	
22 ... 12	
≥ 500	
-40°C ... 125°C	

500 V	
6 kV	
16 A	
III / 3	
16	
Copper alloy	
Ag	
PA	
V0	
B16	
Push-in connection	
10 mm (13 mm if ferrules are used)	
0.5 mm² ... 2.5 mm²	
22 ... 12	
≥ 500	
-40°C ... 125°C	

500 V	
6 kV	
16 A	
III / 3	
24	
Copper alloy	
Ag	
PA	
V0	
B24	
Push-in connection	
10 mm (13 mm if ferrules are used)	
0.5 mm² ... 2.5 mm²	
22 ... 12	
≥ 500	
-40°C ... 125°C	

Terminal adapter type D, with screw connection

The plug connectors may only be operated when under no load.

Notes:

For dimensional drawings, see page 560.
For extra accessories, see page 520.
For derating curve, refer to page 573.

HC-D 40-A-UT-PEL-F

Type D40 terminal adapter, screw connection

HC-D 64-A-UT-PEL-F

Type D64 terminal adapter, screw connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Terminal adapter, protective conductor connection on the right for the left control cabinet wall						
Socket	**HC-D 40-A-UT-PEL-F**	**1584253**	10	**HC-D 64-A-UT-PEL-F**	**1584295**	10
Male	**HC-D 40-A-UT-PEL-M**	**1584240**	10	**HC-D 64-A-UT-PEL-M**	**1584282**	10
Terminal adapter, protective conductor connection on the left for the right control cabinet wall						
Socket	**HC-D 40-A-UT-PER-F**	**1584279**	10	**HC-D 64-A-UT-PER-F**	**1584321**	10
Male	**HC-D 40-A-UT-PER-M**	**1584266**	10	**HC-D 64-A-UT-PER-M**	**1584318**	10
Foot element, for mounting on ⊏, ⌐ oder ⌊ DIN rail At least two foot elements are necessary per adapter.	**HC-KA-FE**	**1775240**	10	**HC-KA-FE**	**1775240**	10
Locking screw barrel, to firmly connect contact inserts and rail-mountable terminal block adapters	**HC-VSH**	**1660083**	10	**HC-VSH**	**1660083**	10
Panel mounting base HC-B...	**See page 489 onwards**			**See page 497 onwards**		
Zack marker strip, 10-section	**ZB 5 (see CLIPLINE catalog)**			**ZB 5 (see CLIPLINE catalog)**		

Technical data

Electrical data in acc. with IEC 61076-2-101		
Rated voltage	250 V	250 V
Rated surge voltage	4 kV	4 kV
Rated current	10 A	10 A
Surge voltage category / Pollution degree	III / 3	III / 3
No. of pos.	40	64
Material		
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag	Ag
Contact carrier material	PA	PA
Inflammability class acc. to UL 94	V0	V0
Design	D40	D64
Connection data		
Connection method	Screw connection	Screw connection
Stripping length of the individual wire	10 mm	10 mm
Conductor cross-section	0.5 mm² ... 2.5 mm²	0.2 mm² ... 2.5 mm²
Connection cross-section AWG	22 ... 12	22 ... 12
Tightening torque	0.5 Nm ... 0.8 Nm	0.5 Nm ... 0.8 Nm
Insertion/withdrawal cycles	≥ 500	≥ 500
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

Terminal adapter type D, with push-in connection

- For solid and stranded conductors with 10 mm long ferrules with and without insulating collars
- PE connection by means of spring cage technology
- Connectors may only be operated when under no load

Notes:

For more accessories, see from page 520.
For dimensional drawings, see page 560.
For derating curve, refer to page 573.

HC-D 40-A-TWIN-PE...

Terminal adapter type D40, push-in connection

HC-D 64-A-TWIN-PE...

Terminal adapter type D64, push-in connection

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Terminal adapter, protective conductor connection on the left for the right control cabinet wall, for two conductors per position						
Socket	**HC-D 40-A-TWIN-PER-F**	**1580163**	4	**HC-D 64-A-TWIN-PER-F**	**1580202**	4
Male	**HC-D 40-A-TWIN-PER-M**	**1580176**	4	**HC-D 64-A-TWIN-PER-M**	**1580215**	4
Terminal adapter, protective conductor connection on the right for the left control cabinet wall, for two conductors per position						
Socket	**HC-D 40-A-TWIN-PEL-F**	**1580147**	4	**HC-D 64-A-TWIN-PEL-F**	**1580189**	4
Male	**HC-D 40-A-TWIN-PEL-M**	**1580150**	4	**HC-D 64-A-TWIN-PEL-M**	**1580192**	4
Foot element, for mounting on ⊏, ⎽⎽, or ⎿ DIN rail At least two foot elements are necessary per adapter.	**HC-KA-FE**	**1775240**	10	**HC-KA-FE**	**1775240**	10
Locking screw barrel, to firmly connect contact inserts and rail-mountable terminal block adapters	**HC-VSH**	**1660083**	10	**HC-VSH**	**1660083**	10
Screwdriver Blade: 0,6 x 3.5 x 100 mm, length: 181 mm	**SZF 1-0,6X3,5**	**1204517**	10	**SZF 1-0,6X3,5**	**1204517**	10
Panel mounting base HC-B...	**See page 489 onwards**			**See page 497 onwards**		
Zack marker strip, 10-section	**ZB 5 (see CLIPLINE catalog)**			**ZB 5 (see CLIPLINE catalog)**		

Technical data		
Electrical data in acc. with IEC 61076-2-101		
Rated voltage	250 V	250 V
Rated surge voltage	6 kV	6 kV
Rated current	10 A	10 A
Surge voltage category / Pollution degree	III / 3	III / 3
Number of positions (without PE)	40	64
Material		
Contact material	Copper alloy	Copper alloy
Contact surface material	Ag	Ag
Contact carrier material	PA	PA
Inflammability class acc. to UL 94	V0	V0
Design	D40	D64
Connection data		
Connection method	Push-in connection	Push-in connection
Stripping length of the individual wire	10 mm	10 mm
Conductor cross-section	0.5 mm² ... 2.5 mm²	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	22 ... 12	22 ... 12
Insertion/withdrawal cycles	≥ 500	≥ 500
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

Advantages:
– Cost savings by elimination of the panel mounting base
– Suitable for all HC contact inserts of the B series (6-24-pos.), BB (10 - 46-pos.), D (40 - 64-pos.) and DD (24 - 108-pos.), HS, HV
– Compatibility with standard panel cutouts
– Effective EMC protection by means of EMC screw connection and conductive seal
– 50% increased cabling space
– Suitable for high-voltage inserts HC-HV..., IP65 / IP67 / IP69k degree of protection

The ADVANCE housings with screw or bayonet locking are suitable for a wide range of applications. There is no need for a panel mounting base.

The ADVANCE housings were developed based on the DIN EN 175 301-801 standards, edition 1, and also offer numerous advantages.

ADVANCE housings

Area of application:
– For extremely demanding requirements, e.g. in the automotive industry, in machine and system engineering and in MCR technology

Housing material:
– Die-cast aluminum alloy

Bayonet and screw locking:
– Stainless steel (V2A)
– NBR sealing material

Housings for increased environmental requirements

Area of application:
– For particularly aggressive ambient conditions and harsh climatic atmospheres in all areas of application, e.g. chemicals, railways and off-shore

Housing material:
– Non-corroding aluminum die-cast alloy

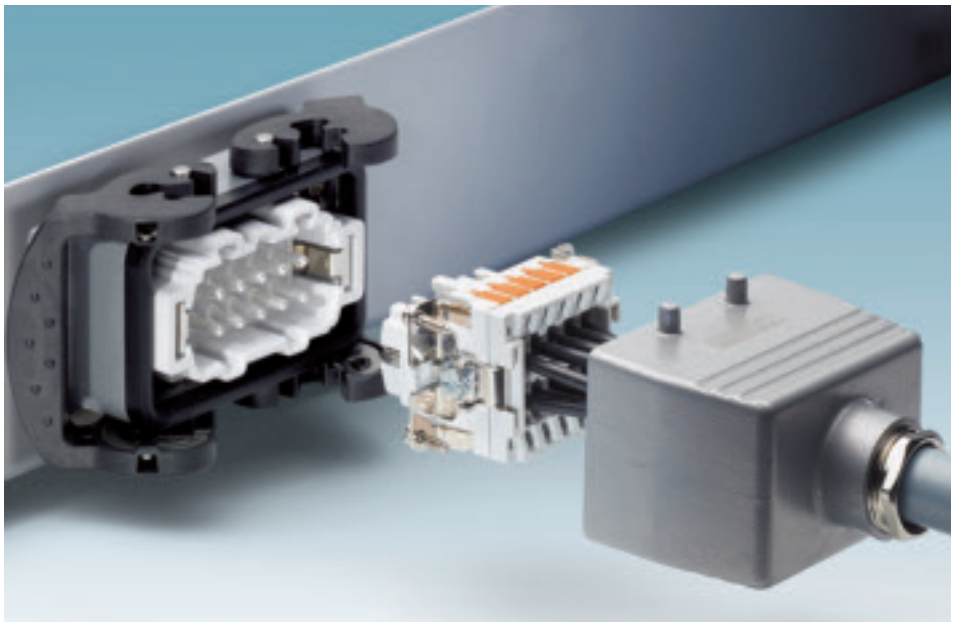
Bayonet and screw locking:
– Stainless steel (V2A)
– Viton sealing material

EMC housings

Area of application:
– For sensitive interfaces that have to be shielded against electromagnetic fields. Housings for use in off-shore systems are available on request.

Housing material:
– Die-cast aluminum alloy

Bayonet and screw locking:
– Stainless steel (V2A)
– NBR sealing material



The rugged metal HEAVYCON housings are resistant to dirt, water, vibrations and high mechanical stresses. All metal housings have a very resistant epoxide powder coating. Various housing forms such as panel mounting bases, box mounting bases, sleeve and coupling housings are available. In the case of box mounting bases with only one cable outlet, the outlet is on the left.

Housing combinations:

Owing to the numerous housing types, it must be ensured that only matching housings are combined.

Sleeve housing **for** double locking latch:
– Panel mounting base with double locking latch
– Box mounting base with double locking latch and
– Coupling housing with double locking latch

Sleeve housing **with** double locking latch:
– Panel mounting base for double locking latch
– Box mounting base for double locking latch

Sleeve housing **for** single locking latch:
– Panel mounting base with single locking latch
– Box mounting base with single locking latch and
– Coupling housing with single locking latch

The HEAVYCON standard housings are equipped with single locking, double locking or central locking latches in order to meet very different requirements. Housings with a double locking latch are exceptionally space-saving on the side; housings with single locking latch can be aligned close to each other in the longitudinal direction.

Housings with a central locking latch, a centrally arranged locking latch, are easy to operate due to the the large lever arm. Thanks to the special shape of the central locking latch, female and male inserts are already separated when the locking latch is opened. Even stable latches can be damaged in extreme conditions. Easy replacement of the damaged latch is an important feature in this case. It is not necessary to loosen the housing or the connections first to do so. Single and double locking latches of the B6/B10/B16/B24 series can be replaced within a few seconds. These single and double locking latches are made of high-grade steel/plastic and are exceptionally resistant to adverse conditions. Different housing series have been developed in order to accommodate the numerous contact inserts. The B/D and HV housing series are distinguished. For sensitive interfaces that have to be protected against electromagnetic fields, EMC housing versions are available. The housing must be equipped with screw connections for cable seals. Housings with built-in screw connections, with threads for using a full screw connection (screw connection contains screw connection supports) and housings with built-in screw connection supports for using pressure nuts and screw connection seals are available.

	Cable diameter in [mm]
Pg11/13.5	7,5 - 12,5
Pg16	7,5 - 15,0
Pg21	10,0 - 19,0
Pg29	18,0 - 27,0
Pg36	24,0 - 33,0
M20	5,0 - 12,0
M25	9,0 - 18,0
M32	16,0 - 21,0
M40	23,0 - 32,0

Conductor sealing range for housings with screw connection

ADVANCE housings, standard design

HC-B 6- ... -STA

Standard housing,
type: B6 for metric screw connection,
without support

To determine the matching housings, refer to the cross-reference list on page 414.

HEAVYCON-ADVANCE sleeve housings form a seal directly on the equipment panel. Using HEAVYCON-ADVANCE represents a particularly economical choice because there is no need for the panel mounting base.

The series HC-...STA.... housings fulfill the requirements of mechanical and plant engineering. They are identified by the gray color.

Housings with screw locking must be operated with a screwdriver and therefore are designed for uses in which the connection can only be opened by tools.

Housings with bayonet locking are designed for manual operations.

ADVANCE housings with bayonet locking have the IP65/IP67 degree of protection.

ADVANCE housings with bayonet locking are IP68/IP69K-proof.

For more accessories, see from page 520.
For dimensional drawings, see page 561.
Wall cutout drawings, see page 561.

Description	Screw thread	Conductor exit	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with bayonet locking					
	1x M20	Straight	**HC-B 6-TMB-100/O1STM20G-STA**	**1604175**	10
	1x M20	Lateral	**HC-B 6-TMB-100/O1STM20S-STA**	**1604201**	10
	1x M25	Straight	**HC-B 6-TMB-100/O1STM25G-STA**	**1604230**	10
	1x M25	Lateral	**HC-B 6-TMB-100/O1STM25S-STA**	**1604269**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Sleeve housing, with screw locking					
	1x M20	Straight	**HC-B 6-TMS-100/O1STM20G-STA**	**1604052**	10
	1x M20	Lateral	**HC-B 6-TMS-100/O1STM20S-STA**	**1604081**	10
	1x M25	Straight	**HC-B 6-TMS-100/O1STM25G-STA**	**1604117**	10
	1x M25	Lateral	**HC-B 6-TMS-100/O1STM25S-STA**	**1604146**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Panel mounting flange					
For bayonet locking			**HC-B-BF**	**1604641**	20
For screw locking			**HC-B-AF**	**1686533**	20
Mounting flange set, consisting of 2 mounting flanges with 4 self-tapping Torx screws (Torx20, M4) and 4 fan-type spacers (hole Ø = 3.6 mm)					
For bayonet locking			**HC-B-BF-SET**	**1604654**	1
For screw locking			**HC-B-AF-SET**	**1604638**	1
Contact inserts, B series / BB / D / DD / HS / M / K			**B6/BB10/DD24/M see page 426 onwards**		
Protective cover			**See page 551**		
Screw connections / adapters			**See page 520 onwards**		

Technical data	Bayonet locking	Screw locking
Material		
Housing material	Aluminum, die-cast	Aluminum, die-cast
Housing surface material	Powder-coated, gray	Powder-coated, gray
Seal material	NBR	NBR
Material, lock	High-grade steel	High-grade steel
Material, lock (grip body)	PA-GF	-
Mechanical data		
Torque locking screw	-	3 Nm
Design	B6	B6
Degree of protection	IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

HC-B 10- ... -STA

Standard housing,
type: B10 for metric screw connection,
without support

HC-B 16- ... -STA

Standard housing,
type: B16 for metric screw connection,
without support

HC-B 24- ... -STA

Standard housing,
type: B24 for metric screw connection,
without support

Type	Order No.	Pcs. / Pkt.
HC-B 10-TMB-100/O1STM25G-STA	**1604298**	10
HC-B 10-TMB-100/O1STM25S-STA	**1604324**	10
HC-B 10-TMB-100/O1STM32G-STA	**1604353**	10
HC-B 10-TMB-100/O1STM32S-STA	**1604382**	10
HC-B 10-TMS-100/O1STM25G-STA	**1690040**	10
HC-B 10-TMS-100/O1STM25S-STA	**1690082**	10
HC-B 10-TMS-100/O1STM32G-STA	**1690121**	10
HC-B 10-TMS-100/O1STM32S-STA	**1690163**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B10/BB18/DD42/M/K8-24 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B10	B10
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 16-TMB-100/O1STM32G-STA	**1604418**	10
HC-B 16-TMB-100/O1STM32S-STA	**1604447**	10
HC-B 16-TMB-100/O1STM40G-STA	**1604476**	10
HC-B 16-TMB-100/O1STM40S-STA	**1604502**	10
HC-B 16-TMS-100/O1STM25G-STA	**1644630**	10
HC-B 16-TMS-100/O1STM25S-STA	**1644643**	10
HC-B 16-TMS-100/O1STM32G-STA	**1690202**	10
HC-B 16-TMS-100/O1STM32S-STA	**1690244**	10
HC-B 16-TMS-100/O1STM40G-STA	**1690286**	10
HC-B 16-TMS-100/O1STM40S-STA	**1690325**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B16/BB32/D40/DD72/HS6/M/K see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B16	B16
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 24-TMB-100/O1STM32G-STA	**1604531**	10
HC-B 24-TMB-100/O1STM32S-STA	**1604560**	10
HC-B 24-TMB-100/O1STM40G-STA	**1604599**	10
HC-B 24-TMB-100/O1STM40S-STA	**1604625**	10
HC-B 24-TMS-100/O1STM32G-STA	**1690367**	10
HC-B 24-TMS-100/O1STM32S-STA	**1690406**	10
HC-B 24-TMS-100/O1STM40G-STA	**1690448**	10
HC-B 24-TMS-100/O1STM40S-STA	**1690480**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B24/BB46/D64/DD108/M/K4-8 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B24	B24
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

ADVANCE housings for increased environmental requirements

To determine the matching housings, refer to the cross-reference list on page 414.

Housings HC....EUA.... are available for harsher ambient conditions, such as the chemical industry. An especially corrosion-resistant aluminum alloy and VITON seals are used here. Housings for harsher ambient conditions are identified by their black color.

ADVANCE housings with screw locking have the IP68/IP69K degree of protection.

ADVANCE housings with bayonet locking are IP65/IP67-proof.

Using HEAVYCON-ADVANCE represents a particularly economical choice because there is no need for the panel mounting base.

Housings with screw locking must be operated with a screwdriver and therefore are designed for uses in which the connection can only be opened by tools.

Housings with bayonet locking are designed for manual operations.

For more accessories, see from page 520.
For dimensional drawings, see page 561.
Wall cutout drawings, see page 561.
Locking with an Allen screw on request (Allen screw 5 mm).
Designs for offshore applications on request

HC-B 6- ... -EUA

Housings for increased environmental requirements, type: B6 for metric screw connection, without support

Description	Screw thread	Conductor exit	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with bayonet locking					
	1x M20	Straight	**HC-B 6-TMB-100/O1STM20G-EUA**	**1604162**	10
	1x M20	Lateral	**HC-B 6-TMB-100/O1STM20S-EUA**	**1604191**	10
	1x M25	Straight	**HC-B 6-TMB-100/O1STM25G-EUA**	**1604227**	10
	1x M25	Lateral	**HC-B 6-TMB-100/O1STM25S-EUA**	**1604256**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Sleeve housing, with screw locking					
	1x M20	Straight	**HC-B 6-TMS-100/O1STM20G-EUA**	**1604049**	10
	1x M20	Lateral	**HC-B 6-TMS-100/O1STM20S-EUA**	**1604078**	10
	1x M25	Straight	**HC-B 6-TMS-100/O1STM25G-EUA**	**1604104**	10
	1x M25	Lateral	**HC-B 6-TMS-100/O1STM25S-EUA**	**1604133**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Panel mounting flange					
For bayonet locking			**HC-B-BF**	**1604641**	20
For screw locking			**HC-B-AF**	**1686533**	20
Mounting flange set, consisting of 2 mounting flanges with 4 self-tapping Torx screws (Torx20, M4) and 4 fan-type spacers (hole Ø = 3.6 mm)					
For bayonet locking			**HC-B-BF-SET**	**1604654**	1
For screw locking			**HC-B-AF-SET**	**1604638**	1
Contact inserts, B series / BB / D / DD / HS / M / K			**B6/BB10/DD24/M see page 426 onwards**		
Protective covers			**See page 551**		
Screw connections / adapters			**See page 520 onwards**		

Technical data	Bayonet locking	Screw locking
Material		
Housing material	Die-cast aluminum, corrosion resistant	Die-cast aluminum, corrosion resistant
Housing surface material	Powder-coated, black	Powder-coated, black
Seal material	Viton	Viton
Material, lock	High-grade steel	High-grade steel
Material, lock (grip body)	PA-GF	-
Mechanical data		
Torque locking screw	-	3 Nm
Design	B6	B6
Degree of protection	IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

HC-B 10- ... -EUA

Housings for increased environmental requirements, type: B10 for metric screw connection, without support

HC-B 16- ... -EUA

Housings for increased environmental requirements, type: B16 for metric screw connection, without support

HC-B 24- ... -EUA

Housings for increased environmental requirements, type: B24 for metric screw connection, without support

Type	Order No.	Pcs. / Pkt.
HC-B 10-TMB-100/O1STM25G-EUA	**1604285**	10
HC-B 10-TMB-100/O1STM25S-EUA	**1604311**	10
HC-B 10-TMB-100/O1STM32G-EUA	**1604340**	10
HC-B 10-TMB-100/O1STM32S-EUA	**1604379**	10
HC-B 10-TMS-100/O1STM25G-EUA	**1690037**	10
HC-B 10-TMS-100/O1STM25S-EUA	**1690079**	10
HC-B 10-TMS-100/O1STM32G-EUA	**1690118**	10
HC-B 10-TMS-100/O1STM32S-EUA	**1690150**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B10/BB18/DD42/M/K8-24 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Die-cast aluminum, corrosion resistant	Die-cast aluminum, corrosion resistant
Powder-coated, black	Powder-coated, black
Viton	Viton
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B10	B10
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 16-TMB-100/O1STM32G-EUA	**1604405**	10
HC-B 16-TMB-100/O1STM32S-EUA	**1604434**	10
HC-B 16-TMB-100/O1STM40G-EUA	**1604463**	10
HC-B 16-TMB-100/O1STM40S-EUA	**1604492**	10
HC-B 16-TMS-100/O1STM32G-EUA	**1690192**	10
HC-B 16-TMS-100/O1STM32S-EUA	**1690231**	10
HC-B 16-TMS-100/O1STM40G-EUA	**1690273**	10
HC-B 16-TMS-100/O1STM40S-EUA	**1690312**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B16/BB32/D40/DD72/HS6/M/K see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Die-cast aluminum, corrosion resistant	Die-cast aluminum, corrosion resistant
Powder-coated, black	Powder-coated, black
Viton	Viton
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B16	B16
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 24-TMB-100/O1STM32G-EUA	**1604528**	10
HC-B 24-TMB-100/O1STM32S-EUA	**1604557**	10
HC-B 24-TMB-100/O1STM40G-EUA	**1604586**	10
HC-B 24-TMB-100/O1STM40S-EUA	**1604612**	10
HC-B 24-TMS-100/O1STM32G-EUA	**1690354**	10
HC-B 24-TMS-100/O1STM32S-EUA	**1690396**	10
HC-B 24-TMS-100/O1STM40G-EUA	**1690435**	10
HC-B 24-TMS-100/O1STM40S-EUA	**1690477**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B24/BB46/D64/DD108/M/K4-8 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Die-cast aluminum, corrosion resistant	Die-cast aluminum, corrosion resistant
Powder-coated, black	Powder-coated, black
Viton	Viton
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B24	B24
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

ADVANCE EMC housings

To determine the matching housings, refer to the cross-reference list on page 414.

EMC housings HC....EMC can be used for shielded conductors. They are identified by their silver-colored surface. The excellent attenuation values against electromagnetic influences are achieved by having the housing directly mounted on the mounting panel and by using a conductive profile gasket.

EMC screw connection must be used with the ADVANCE-EMC housings. EMC screw connections contact the conductor shield with many contact springs and secure excellent attenuation values. Using HEAVYCON-ADVANCE represents a particularly economical choice because there is no need for the panel mounting base.

Housings with screw locking must be operated with a screwdriver and therefore are designed for uses in which the connection can only be opened by tools.

Housings with bayonet locking are designed for manual operations.

For more accessories, see from page 520.
For dimensional drawings, see page 561.
Wall cutout drawings, see page 561.

HC-B 6- ... -EMV

EMC housing,
type: B6 for metric screw connection,
without support

Description	Screw thread	Conductor exit	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with bayonet locking					
	1x M20	Straight	**HC-B 6-TMB-100/O1STM20G-EMV**	**1604159**	10
	1x M20	Lateral	**HC-B 6-TMB-100/O1STM20S-EMV**	**1604188**	10
	1x M25	Straight	**HC-B 6-TMB-100/O1STM25G-EMV**	**1604214**	10
	1x M25	Lateral	**HC-B 6-TMB-100/O1STM25S-EMV**	**1604243**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Sleeve housing, with screw locking					
	1x M20	Straight	**HC-B 6-TMS-100/O1STM20G-EMV**	**1604036**	10
	1x M20	Lateral	**HC-B 6-TMS-100/O1STM20S-EMV**	**1604065**	10
	1x M25	Straight	**HC-B 6-TMS-100/O1STM25G-EMV**	**1604094**	10
	1x M25	Lateral	**HC-B 6-TMS-100/O1STM25S-EMV**	**1604120**	10
	1x M32	Straight			
	1x M32	Lateral			
	1x M40	Straight			
	1x M40	Lateral			
Panel mounting flange					
For bayonet locking			**HC-B-BF**	**1604641**	20
For screw locking			**HC-B-AF**	**1686533**	20
Mounting flange set, consisting of 2 mounting flanges with 4 self-tapping Torx screws (Torx20, M4) and 4 fan-type spacers (hole Ø = 3.6 mm)					
For bayonet locking			**HC-B-BF-SET**	**1604654**	1
For screw locking			**HC-B-AF-SET**	**1604638**	1
Contact inserts, B series / BB / D / DD / HS / M / K			**B6/BB10/DD24/M see page 426 onwards**		
Protective covers			**See page 551**		
Screw connections / adapters			**See page 520 onwards**		

Technical data	Bayonet locking	Screw locking
Material		
Housing material	Aluminum, die-cast	Aluminum, die-cast
Housing surface material	EMC coating, silver	EMC coating, silver
Seal material	NBR, conductive	NBR, conductive
Material, lock	High-grade steel	High-grade steel
Material, lock (grip body)	PA-GF	-
Mechanical data		
Torque locking screw	-	3 Nm
Design	B6	B6
Degree of protection	IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

HC-B 10- ... -EMV

EMC housing,
type: B10 for metric screw connection,
without support

HC-B 16- ... -EMV

EMC housing,
type: B16 for metric screw connection,
without support

HC-B 24- ... -EMV

EMC housing,
type: B24 for metric screw connection,
without support

Type	Order No.	Pcs. / Pkt.
HC-B 10-TMB-100/O1STM25G-EMV	**1604272**	10
HC-B 10-TMB-100/O1STM25S-EMV	**1604308**	10
HC-B 10-TMB-100/O1STM32G-EMV	**1604337**	10
HC-B 10-TMB-100/O1STM32S-EMV	**1604366**	10
HC-B 10-TMS-100/O1STM25G-EMV	**1690024**	10
HC-B 10-TMS-100/O1STM25S-EMV	**1690066**	10
HC-B 10-TMS-100/O1STM32G-EMV	**1690105**	10
HC-B 10-TMS-100/O1STM32S-EMV	**1690147**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B10/BB18/DD42/M/K8-24 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
EMC coating, silver	EMC coating, silver
NBR, conductive	NBR, conductive
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B10	B10
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 16-TMB-100/O1STM32G-EMV	**1604395**	10
HC-B 16-TMB-100/O1STM32S-EMV	**1604421**	10
HC-B 16-TMB-100/O1STM40G-EMV	**1604450**	10
HC-B 16-TMB-100/O1STM40S-EMV	**1604489**	10
HC-B 16-TMS-100/O1STM32G-EMV	**1690189**	10
HC-B 16-TMS-100/O1STM32S-EMV	**1690228**	10
HC-B 16-TMS-100/O1STM40G-EMV	**1690260**	10
HC-B 16-TMS-100/O1STM40S-EMV	**1690309**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B16/BB32/D40/DD72/HS6/M/K see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
EMC coating, silver	EMC coating, silver
NBR, conductive	NBR, conductive
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B16	B16
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Type	Order No.	Pcs. / Pkt.
HC-B 24-TMB-100/O1STM32G-EMV	**1604515**	10
HC-B 24-TMB-100/O1STM32S-EMV	**1604544**	10
HC-B 24-TMB-100/O1STM40G-EMV	**1604573**	10
HC-B 24-TMB-100/O1STM40S-EMV	**1604609**	10
HC-B 24-TMS-100/O1STM32G-EMV	**1690341**	10
HC-B 24-TMS-100/O1STM32S-EMV	**1690383**	10
HC-B 24-TMS-100/O1STM40G-EMV	**1690422**	10
HC-B 24-TMS-100/O1STM40S-EMV	**1690464**	10
HC-B-BF	**1604641**	20
HC-B-AF	**1686533**	20
HC-B-BF-SET	**1604654**	1
HC-B-AF-SET	**1604638**	1
B24/BB46/D64/DD108/M/K4-8 see page 426 onwards		
See page 551		
See page 520 onwards		

Bayonet locking	Screw locking
Aluminum, die-cast	Aluminum, die-cast
EMC coating, silver	EMC coating, silver
NBR, conductive	NBR, conductive
High-grade steel	High-grade steel
PA-GF	-
-	3 Nm
B24	B24
IP65/67	IP65 / IP68 (0.2 bar, 24h) / IP69K
-40°C ... 125°C	-40°C ... 125°C

Sleeve housing for single locking latch, type B6

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 6-TFL...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	40	Straight	1x Pg13,5	**HC-B 6-TFL-40/M1PG13,5G**	**1771121**	10
	43	Lateral	1x Pg13,5	**HC-B 6-TFL-43/M1PG13,5S**	**1771118**	10
	72	Lateral	1x Pg21	**HC-B 6-TFL-72/M1PG21S**	**1679634**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	40	Straight	1x M20	**HC-B 6-TFL-40/O1M20G**	**1604731**	10
	43	Lateral	1x M20	**HC-B 6-TFL-43/O1M20S**	**1604732**	10
	43	Lateral	1x M25	**HC-B 6-TFL-43/O1M25S**	**1604733**	10
	72	Lateral	1x M20	**HC-B 6-TFL-72/O1M20S**	**1604734**	10
	72	Straight	1x M25	**HC-B 6-TFL-72/O1M25G**	**1604735**	10
	72	Lateral	1x M25	**HC-B 6-TFL-72/O1M25S**	**1604736**	10
	72	Lateral	1x M32	**HC-B 6-TFL-72/O1M32S**	**1604737**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	72	Straight	1x M20	**HC-B 6-TFL-72/O1STM20G**	**1645299**	10
	72	Lateral	1x M20	**HC-B 6-TFL-72/O1STM20S**	**1644928**	10
	72	Straight	1x M25	**HC-B 6-TFL-72/O1STM25G**	**1644931**	10
	72	Lateral	1x M25	**HC-B 6-TFL-72/O1STM25S**	**1644944**	10
	72	Straight	1x M32	**HC-B 6-TFL-72/O1STM32G**	**1645309**	10
	72	Lateral	1x M32	**HC-B 6-TFL-72/O1STM32S**	**1644957**	10
	72	Lateral	2x M20	**HC-B 6-TFL-72/O2STM20S**	**1645914**	10
Sleeve housing, for single locking latch, with metric screw connection						
	40	Straight	1x M20	**HC-B 6-TFL-40/M1M20G**	**1586303**	10
	43	Lateral	1x M20	**HC-B 6-TFL-43/M1M20S**	**1586316**	10
	72	Straight	1x M25	**HC-B 6-TFL-72/M1M25G**	**1586329**	10
	72	Lateral	1x M25	**HC-B 6-TFL-72/M1M25S**	**1586332**	10
Contact inserts HC-B6/BB10/DD24/M				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

For dimensional drawings, see page 561.

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

Supporting base elements with single locking latch, type B6

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	27		
Protective cover: PA	27	Yes	
Protective cover: AL	27	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
	52		1x Pg16
	52		2x Pg16
Protective cover: PA	52	Yes	1x Pg16
Protective cover: PA	52	Yes	2x Pg16
Box mounting base, with single locking latch, for metric screw connections, with supports			
	52		1x M20
	52		1x M25
	52		2x M20
	52		2x M25
	74		1x M25
	74		1x M32
	74		2x M32
Protective cover: PA	52	Yes	1x M25
Protective cover: PA	52	Yes	2x M20
Protective cover: PA	52	Yes	2x M25
Protective cover: PA	74	Yes	2x M32
Box mounting base, with single locking latch, with a metric screw connection			
	52		1x M20
	52		2x M20
	52	Yes	1x M20
	52	Yes	2x M20
Coupling housing, with single locking latch, with a Pg screw connection			
	73		1x Pg13,5
Coupling housing, with single locking latch, for metric screw connections, with supports			
	73		1x M20
Coupling housing, with single locking latch, for metric screw connections, without supports			
	73		1x M20
	73		1x M25
	73		1x M32
Coupling housing, with single locking latch, with metric screw connection			
	73		1x M20
Contact inserts HC-B6/BB10/DD24/M			
Replacement latch			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

HC-B 6-AML...

Panel mounting base
(incl. flat seal)

HC-B 6-SML...

Box mounting base

HC-B 6-KML...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 6-AML	1771134	10
HC-B 6-AMLD	1771147	10
HC-B 6-AMLD-AL	1645464	10
See from page 418		
See page 540		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-B 6-SML-52/M1PG16	1771150	10
HC-B 6-SML-52/M2PG16	1771163	10
HC-B 6-SMLD-52/M1PG16	1771176	10
HC-B 6-SMLD-52/M2PG16	1771189	10
HC-B 6-SML-52/O1M20	1604721	10
HC-B 6-SML-52/O1M25	1604722	10
HC-B 6-SML-52/O2M20	1604723	10
HC-B 6-SML-52/O2M25	1604724	10
HC-B 6-SML-74/O1M25	1604725	10
HC-B 6-SML-74/O1M32	1646845	10
HC-B 6-SML-74/O2M32	1646858	10
HC-B 6-SMLD-52/O1M25	1604728	10
HC-B 6-SMLD-52/O2M20	1604729	10
HC-B 6-SMLD-52/O2M25	1604730	10
HC-B 6-SMLD-74/O2M32	1646861	10
HC-B 6-SML-52/M1M20	1586730	10
HC-B 6-SML-52/M2M20	1586743	10
HC-B 6-SMLD-52/M1M20	1586756	10
HC-B 6-SMLD-52/M2M20	1586769	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-B 6-KML-73/M1PG13,5G	1771192	10
HC-B 6-KML-73/O1M20	1604719	10
HC-B 6-KML-73/O1STM20	1646997	10
HC-B 6-KML-73/O1STM25	1646971	10
HC-B 6-KML-73/O1STM32	1646984	10
HC-B 6-KML-73/M1M20	1586646	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

52 mm x 35 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	NBR	NBR
High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C

Sleeve housing for single locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 10-TFL...

Sleeve housing

Supporting base elements with single locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	45	Straight	1x Pg16	**HC-B 10-TFL-45/M1PG16G**	**1771312**	10
	52	Lateral	1x Pg16	**HC-B 10-TFL-52/M1PG16S**	**1771309**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	45	Straight	1x M20	**HC-B 10-TFL-45/O1M20G**	**1604758**	10
	45	Straight	1x M25	**HC-B 10-TFL-45/O1M25G**	**1604759**	10
	52	Lateral	1x M20	**HC-B 10-TFL-52/O1M20S**	**1604760**	10
	52	Lateral	1x M25	**HC-B 10-TFL-52/O1M25S**	**1604761**	10
	72	Straight	1x M25	**HC-B 10-TFL-72/O1M25G**	**1604762**	10
	72	Lateral	1x M25	**HC-B 10-TFL-72/O1M25S**	**1604763**	10
	72	Straight	1x M32	**HC-B 10-TFL-72/O1M32G**	**1604764**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	72	Straight	1x M20	**HC-B 10-TFL-72/O1STM20G**	**1647077**	10
	72	Lateral	1x M20	**HC-B 10-TFL-72/O1STM20S**	**1647064**	10
	72	Straight	1x M25	**HC-B 10-TFL-72/O1STM25G**	**1644960**	10
	72	Lateral	1x M25	**HC-B 10-TFL-72/O1STM25S**	**1644973**	10
	72	Straight	1x M32	**HC-B 10-TFL-72/O1STM32G**	**1644986**	10
	72	Lateral	1x M32	**HC-B 10-TFL-72/O1STM32S**	**1645312**	10
Sleeve housing, for single locking latch, with metric screw connection						
	45	Straight	1x M20	**HC-B 10-TFL-45/M1M20G**	**1586345**	10
	52	Lateral	1x M20	**HC-B 10-TFL-52/M1M20S**	**1586358**	10
	72	Straight	1x M25	**HC-B 10-TFL-72/M1M25G**	**1587014**	10
	72	Lateral	1x M25	**HC-B 10-TFL-72/M1M25S**	**1587027**	10
Contact inserts HC-B10/BB18/DD42/M/K8-24				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	27		
Protective cover: PA	27	Yes	
Protective cover: AL	27	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
	52		1x Pg16
	52		2x Pg16
Protective cover: PA	52	Yes	1x Pg16
Protective cover: PA	52	Yes	2x Pg16
Box mounting base, with single locking latch, for metric screw connections, with supports			
	52		1x M20
	52		2x M20
	74		1x M25
	74		1x M32
	74		2x M25
	74		2x M32
Protective cover: PA	52	Yes	1x M20
Protective cover: PA	52	Yes	2x M20
Protective cover: PA	52	Yes	2x M25
Protective cover: PA	74	Yes	1x M25
Protective cover: PA	74	Yes	1x M32
Protective cover: PA	74	Yes	2x M25
Protective cover: PA	74	Yes	2x M32
Box mounting base, with single locking latch, with a metric screw connection			
	52		1x M20
	52		2x M20
	52	Yes	1x M20
	52	Yes	2x M20
Coupling housing, with single locking latch, with a Pg screw connection			
	73		1x Pg16
Coupling housing, with single locking latch, for metric screw connections, with supports			
	73		1x M25
Coupling housing, with single locking latch, for metric screw connections, without supports			
	73		1x M20
	73		1x M25
	73		1x M32
Coupling housing, with single locking latch, with metric screw connection			
	73		1x M25
Contact inserts HC-B10/BB18/DD42/M/K8-24			
Replacement latch			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For dimensional drawings, see page 562.

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

HC-B 10-AML...

Panel mounting base
(incl. flat seal)

HC-B 10-SML...

Box mounting base

HC-B 10-KML...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 10-AML	**1771338**	10
HC-B 10-AMLD	**1771354**	10
HC-B 10-AMLD-AL	**1645477**	10
See from page 418		
See page 540		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-B 10-SML-52/M1PG16	**1771383**	10
HC-B 10-SML-52/M2PG16	**1771396**	10
HC-B 10-SMLD-52/M1PG16	**1771422**	10
HC-B 10-SMLD-52/M2PG16	**1771435**	10
HC-B 10-SML-52/O1M20	**1646269**	10
HC-B 10-SML-52/O2M20	**1646272**	10
HC-B 10-SML-74/O1M25	**1646395**	10
HC-B 10-SML-74/O1M32	**1646418**	10
HC-B 10-SML-74/O2M25	**1646285**	10
HC-B 10-SML-74/O2M32	**1646421**	10
HC-B 10-SMLD-52/O1M20	**1646434**	10
HC-B 10-SMLD-52/O2M20	**1604750**	10
HC-B 10-SMLD-52/O2M25	**1604751**	10
HC-B 10-SMLD-74/O1M25	**1646447**	10
HC-B 10-SMLD-74/O1M32	**1646463**	10
HC-B 10-SMLD-74/O2M25	**1646450**	10
HC-B 10-SMLD-74/O2M32	**1646476**	10
HC-B 10-SML-52/M1M20	**1586772**	10
HC-B 10-SML-52/M2M20	**1586785**	10
HC-B 10-SMLD-52/M1M20	**1586798**	10
HC-B 10-SMLD-52/M2M20	**1586808**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-B 10-KML-73/M1PG16	**1771451**	10
HC-B 10-KML-73/O1M25	**1604743**	10
HC-B 10-KML-73/O1STM20	**1647048**	10
HC-B 10-KML-73/O1STM25	**1647035**	10
HC-B 10-KML-73/O1STM32	**1647051**	10
HC-B 10-KML-73/M1M25	**1586659**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

65 mm x 35 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	NBR	NBR
High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C

Sleeve housing for double locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 10-TFQ...

Sleeve housing

Supporting base elements with double locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for double locking latch, with Pg screw connection						
	45	Straight	1x Pg16	**HC-B 10-TFQ-45/M1PG16G**	**1771257**	10
	52	Lateral	1x Pg16	**HC-B 10-TFQ-52/M1PG16S**	**1771244**	10
Sleeve housing, for double locking latch, for metric screw connections, with supports						
	45	Straight	1x M20	**HC-B 10-TFQ-45/O1M20G**	**1604769**	10
	45	Straight	1x M25	**HC-B 10-TFQ-45/O1M25G**	**1604770**	10
	52	Lateral	1x M20	**HC-B 10-TFQ-52/O1M20S**	**1604771**	10
	52	Lateral	1x M25	**HC-B 10-TFQ-52/O1M25S**	**1604772**	10
	72	Straight	1x M25	**HC-B 10-TFQ-72/O1M25G**	**1604773**	10
	72	Lateral	1x M25	**HC-B 10-TFQ-72/O1M25S**	**1604774**	10
	72	Straight	1x M32	**HC-B 10-TFQ-72/O1M32G**	**1604775**	10
Sleeve housing, for double locking latch, for metric screw connections, without supports						
	72	Straight	1x M20	**HC-B 10-TFQ-72/O1STM20G**	**1647093**	10
	72	Lateral	1x M20	**HC-B 10-TFQ-72/O1STM20S**	**1647080**	10
	72	Straight	1x M25	**HC-B 10-TFQ-72/O1STM25G**	**1644999**	10
	72	Lateral	1x M25	**HC-B 10-TFQ-72/O1STM25S**	**1645008**	10
	72	Straight	1x M32	**HC-B 10-TFQ-72/O1STM32G**	**1645011**	10
	72	Lateral	1x M32	**HC-B 10-TFQ-72/O1STM32S**	**1645325**	10
Sleeve housing, for double locking latch, with metric screw connections						
	45	Straight	1x M20	**HC-B 10-TFQ-45/M1M20G**	**1586361**	10
	52	Lateral	1x M20	**HC-B 10-TFQ-52/M1M20S**	**1586374**	10
	72	Straight	1x M25	**HC-B 10-TFQ-72/M1M25G**	**1587030**	10
	72	Lateral	1x M25	**HC-B 10-TFQ-72/M1M25S**	**1587043**	10
Contact inserts HC-B10/BB18/DD42/M/K8-24				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with double locking latch	27		
Box mounting base, with double locking latch, with Pg screw connection			
	52		1x Pg16
	52		2x Pg16
Box mounting base, with double locking latch, for metric screw connections, with supports			
	52		1x M20
	52		2x M20
	52		2x M25
	74		1x M25
	74		1x M32
	74		2x M25 supports
	74		2x M32 supports
Box mounting base, with double locking latch, with metric screw connection			
	52		1x M20
	52		2x M20
Coupling housing, with double locking latch, with Pg screw connection			
	73		1x Pg16
Coupling housing, with double locking latch, for metric screw connections, with supports			
	73		1x M20
	73		1x M25
Coupling housing, with double locking latch, for metric screw connections, without supports			
	73		1x M20
	73		1x M25
	73		1x M32
Coupling housing, with double locking latch, with metric screw connection			
	73		1x M25
Contact inserts HC-B10/BB18/DD42/M/K8-24			
Replacement latch			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For dimensional drawings, see page 562.

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

HC-B 10-AMQ

Panel mounting base
(incl. flat seal)

HC-B 10-SMQ...

Box mounting base

HC-B 10-KMQ...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 10-AMQ	**1771325**	10

Sleeve housing with double locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

HC-B 10-TMQ...

Sleeve housing

Supporting base elements for double locking latch, type B10

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with double locking latch, with Pg screw connection						
	45	Straight	1x Pg16	**HC-B 10-TMQ-45/M1PG16G**	**1771286**	10
	52	Lateral	1x Pg16	**HC-B 10-TMQ-52/M1PG16S**	**1771273**	10
	45	Straight	1x M20	**HC-B 10-TMQ-45/O1M20G**	**1587386**	10
	52	Lateral	1x M20	**HC-B 10-TMQ-52/O1M20S**	**1604780**	10
	52	Lateral	1x M25	**HC-B 10-TMQ-52/O1M25S**	**1604781**	10
Sleeve housing, with double locking latch, for metric screw connections, without supports						
	72	Lateral	1x M20	**HC-B 10-TMQ-72/O1STM20S**	**1647116**	10
	72	Straight	1x M25	**HC-B 10-TMQ-72/O1STM25G**	**1647132**	10
	72	Lateral	1x M25	**HC-B 10-TMQ-72/O1STM25S**	**1647103**	10
	72	Straight	1x M32	**HC-B 10-TMQ-72/O1STM32G**	**1647158**	10
	72	Lateral	1x M32	**HC-B 10-TMQ-72/O1STM32S**	**1647129**	10
Sleeve housing, with double locking latch, with metric screw connection						
	45	Straight	1x M20	**HC-B 10-TMQ-45/M1M20G**	**1586387**	10
	52	Lateral	1x M20	**HC-B 10-TMQ-52/M1M20S**	**1586390**	10
	72	Straight	1x M25	**HC-B 10-TMQ-72/M1M25G**	**1587056**	10
	72	Lateral	1x M25	**HC-B 10-TMQ-72/M1M25S**	**1587069**	10
Contact inserts HC-B10/BB18/DD42/M/K8-24				**See from page 418**		
Replacement latch				**See page 540**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Locking latch material	High-grade steel, handle: PA-GF
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for double locking latch			
	27	Yes	
Box mounting base, for double locking latch, with Pg screw connection			
	52	Yes	1x Pg16
	52	Yes	2x Pg16
Box mounting base, for double locking latch, for metric screw connections, with supports			
	52	Yes	1x M20
	52	Yes	2x M20
	52	Yes	2x M25
	74	Yes	1x M25
	74	Yes	2x M25
	74	Yes	2x M32
Box mounting base, for double locking latch, with metric screw connection			
	52	Yes	1x M20
	52	Yes	2x M20
Contact inserts HC-B10/BB18/DD42/M/K8-24			
Screw connection, adapter			
Adapter plates			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Material, protective cover	
Temperature data	
Ambient temperature (operation)	

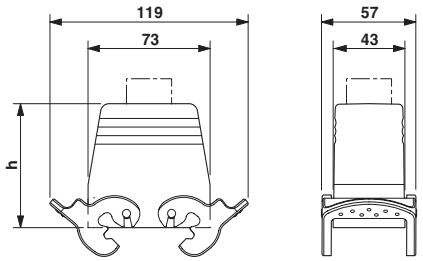
For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

h = 52 mm -> a = 40 mm, b = 52 mm
h = 74 mm -> a = 45 mm, b = 57 mm



HC-B 10-AFQD

Panel mounting base
(incl. flat seal)

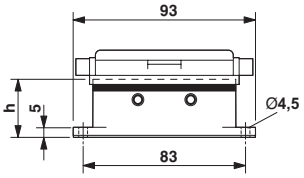
HC-B 10-SFQD...

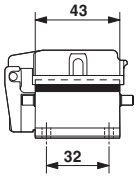
Box mounting base

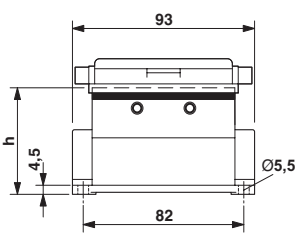
Type	Order No.	Pcs. / Pkt.
HC-B 10-AFQD	**1771341**	10
See from page 418		
See from page 544		

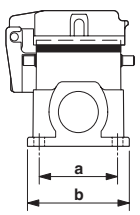
Type	Order No.	Pcs. / Pkt.
HC-B 10-SFQD-52/M1PG16	**1771406**	10
HC-B 10-SFQD-52/M2PG16	**1771419**	10
HC-B 10-SFQD-52/O1M20	**1646489**	10
HC-B 10-SFQD-52/O2M20	**1646492**	10
HC-B 10-SFQD-52/O2M25	**1604748**	10
HC-B 10-SFQD-74/O1M25	**1646502**	10
HC-B 10-SFQD-74/O2M25	**1646515**	10
HC-B 10-SFQD-74/O2M32	**1646531**	10
HC-B 10-SFQD-52/M1M20	**1586837**	10
HC-B 10-SFQD-52/M2M20	**1586840**	10
See from page 418		
See from page 520		
See from page 544		

65 mm x 35 mm	-
IP65	IP65
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
PA	PA
-40°C ... 125°C	-40°C ... 125°C









Sleeve housing for single locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 16-TFL...

Sleeve housing

Supporting base elements with single locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-B 16-TFL-76/M1PG21G**	**1771574**	10
	76	Lateral	1x Pg21	**HC-B 16-TFL-76/M1PG21S**	**1771561**	10
	76	Straight	1x Pg29	**HC-B 16-TFL-76/M1PG29G**	**1775606**	10
	76	Lateral	1x Pg29	**HC-B 16-TFL-76/M1PG29S**	**1775596**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	45	Straight	1x M25	**HC-B 16-TFL-45/O1M25G**	**1604795**	10
	60	Lateral	1x M25	**HC-B 16-TFL-60/O1M25S**	**1604796**	10
	76	Straight	1x M25	**HC-B 16-TFL-76/O1M25G**	**1604798**	10
	76	Lateral	1x M25	**HC-B 16-TFL-76/O1M25S**	**1604799**	10
	76	Straight	1x M32	**HC-B 16-TFL-76/O1M32G**	**1604800**	10
	76	Lateral	1x M32	**HC-B 16-TFL-76/O1M32S**	**1604801**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 16-TFL-76/O1STM25G**	**1645024**	10
	76	Lateral	1x M25	**HC-B 16-TFL-76/O1STM25S**	**1645037**	10
	76	Straight	1x M32	**HC-B 16-TFL-76/O1STM32G**	**1645040**	10
	76	Lateral	1x M32	**HC-B 16-TFL-76/O1STM32S**	**1645053**	10
	76	Straight	1x M40	**HC-B 16-TFL-76/O1STM40G**	**1644656**	10
	76	Lateral	1x M40	**HC-B 16-TFL-76/O1STM40S**	**1644672**	10
Sleeve housing, for single locking latch, with metric screw connection						
	76	Straight	1x M25	**HC-B 16-TFL-76/M1M25G**	**1586400**	10
	76	Lateral	1x M25	**HC-B 16-TFL-76/M1M25S**	**1586413**	10
	76	Straight	1x M32	**HC-B 16-TFL-76/M1M32G**	**1586426**	10
	76	Lateral	1x M32	**HC-B 16-TFL-76/M1M32S**	**1586439**	10
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective cover				**See from page 550**		

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	27		
Protective cover: PA	27	Yes	
Protective cover: AL	27	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
	67		1x Pg21
	67		2x Pg21
Protective cover: PA	67	Yes	1x Pg21
Protective cover: PA	67	Yes	2x Pg21
Box mounting base, with single locking latch, for metric screw connections, with supports			
	67		1x M25
	67		2x M25
	84		1x M32
	84		2x M32
	84		2x M40
Protective cover: PA	67	Yes	1x M25
Protective cover: PA	67	Yes	2x M25
Protective cover: PA	84	Yes	1x M32
Protective cover: PA	84	Yes	1x M40
Protective cover: PA	84	Yes	2x M32
Protective cover: PA	84	Yes	2x M40
Box mounting base, with single locking latch, with a metric screw connection			
			1x M25
	67		2x M25
	67	Yes	1x M25
	67	Yes	2x M25
Coupling housing, with single locking latch, with a Pg screw connection			
	80		1x Pg21
Coupling housing, with single locking latch, for metric screw connections, with supports			
	80		1x M32
Coupling housing, with single locking latch, for metric screw connections, without supports			
	80		1x M25
	80		1x M40
Coupling housing, with single locking latch, with metric screw connection			
	80		1x M32
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K			
Replacement latch			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For dimensional drawings, see page 563.

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

HC-B 16-AML...

Panel mounting base
(incl. flat seal)

HC-B 16-SML...

Box mounting base

HC-B 16-KML...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 16-AML	**1771590**	10
HC-B 16-AMLD	**1771613**	10
HC-B 16-AMLD-AL	**1645480**	10
See from page 418		
See page 540		
See from page 550		
86 mm x 35 mm		
IP65		
Aluminum, die-cast		
Powder-coated, gray		
NBR		
High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 16-SML-67/M1PG21	**1771642**	10
HC-B 16-SML-67/M2PG21	**1771655**	10
HC-B 16-SMLD-67/M1PG21	**1771684**	10
HC-B 16-SMLD-67/M2PG21	**1771697**	10
HC-B 16-SML-67/O1M25	**1604784**	10
HC-B 16-SML-67/O2M25	**1604785**	10
HC-B 16-SML-84/O1M32	**1646299**	10
HC-B 16-SML-84/O2M32	**1646308**	10
HC-B 16-SML-84/O2M40	**1646324**	10
HC-B 16-SMLD-67/O1M25	**1604786**	10
HC-B 16-SMLD-67/O2M25	**1604787**	10
HC-B 16-SMLD-84/O1M32	**1645671**	10
HC-B 16-SMLD-84/O1M40	**1645697**	10
HC-B 16-SMLD-84/O2M32	**1645684**	10
HC-B 16-SMLD-84/O2M40	**1645707**	10
HC-B 16-SML-67/M1M25	**1586853**	10
HC-B 16-SML-67/M2M25	**1586866**	10
HC-B 16-SMLD-67/M1M25	**1586879**	10
HC-B 16-SMLD-67/M2M25	**1586882**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		
-		
IP65		
Aluminum, die-cast		
Powder-coated, gray		
NBR		
High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 16-KML-80/M1PG21	**1687710**	10
HC-B 16-KML-80/O1M32	**1687626**	10
HC-B 16-KML-80/O1STM25	**1646890**	10
HC-B 16-KML-80/O1STM40	**1644792**	10
HC-B 16-KML-80/M1M32	**1586675**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		
-		
IP65		
Aluminum, die-cast		
Powder-coated, gray		
NBR		
High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Sleeve housing for double locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 16-TFQ...

Sleeve housing

Supporting base elements with double locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for double locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-B 16-TFQ-76/M1PG21G**	**1771516**	10
	76	Lateral	1x Pg21	**HC-B 16-TFQ-76/M1PG21S**	**1771503**	10
	76	Straight	1x Pg29	**HC-B 16-TFQ-76/M1PG29G**	**1775567**	10
	76	Lateral	1x Pg29	**HC-B 16-TFQ-76/M1PG29S**	**1775554**	10
Sleeve housing, for double locking latch, for metric screw connections, with supports						
	45	Straight	1x M25	**HC-B 16-TFQ-45/O1M25G**	**1604806**	10
	60	Lateral	1x M25	**HC-B 16-TFQ-60/O1M25S**	**1604807**	10
	76	Lateral	1x M25	**HC-B 16-TFQ-76/O1M25S**	**1604809**	10
	76	Straight	1x M32	**HC-B 16-TFQ-76/O1M32G**	**1604810**	10
	76	Lateral	1x M32	**HC-B 16-TFQ-76/O1M32S**	**1604811**	10
Sleeve housing, for double locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 16-TFQ-76/O1STM25G**	**1645338**	10
	76	Lateral	1x M25	**HC-B 16-TFQ-76/O1STM25S**	**1645066**	10
	76	Straight	1x M32	**HC-B 16-TFQ-76/O1STM32G**	**1645079**	10
	76	Lateral	1x M32	**HC-B 16-TFQ-76/O1STM32S**	**1645341**	10
	76	Straight	1x M40	**HC-B 16-TFQ-76/O1STM40G**	**1644698**	10
	76	Lateral	1x M40	**HC-B 16-TFQ-76/O1STM40S**	**1644711**	10
Sleeve housing, for double locking latch, with metric screw connections						
	76	Straight	1x M25	**HC-B 16-TFQ-76/M1M25G**	**1586442**	10
	76	Lateral	1x M25	**HC-B 16-TFQ-76/M1M25S**	**1586455**	10
	76	Straight	1x M32	**HC-B 16-TFQ-76/M1M32G**	**1586468**	10
	76	Lateral	1x M32	**HC-B 16-TFQ-76/M1M32S**	**1586471**	10
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with double locking latch	27		
Box mounting base, with double locking latch, with Pg screw connection	67		1x Pg21
	67		2x Pg21
Box mounting base, with double locking latch, for metric screw connections, with supports	67		1x M25
	67		2x M25
	84		1x M25
	84		1x M32
	84		2x M32
Box mounting base, with double locking latch, with metric screw connection	67		1x M25
	67		2x M25
Coupling housing, with double locking latch, with Pg screw connection	80		1x Pg21
Coupling housing, with double locking latch, for metric screw connections, with supports	80		1x M32
Coupling housing, with double locking latch, for metric screw connections, without supports	80		1x M25
	80		1x M40
Coupling housing, with double locking latch, with metric screw connection	80		1x M32
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K			
Replacement latch			
Screw connection, adapter			
Protective covers			

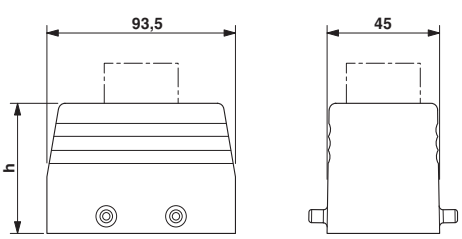
Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-B 16-AMQ

Panel mounting base
(incl. flat seal)

HC-B 16-SMQ...

Box mounting base

HC-B 16-KMQ...

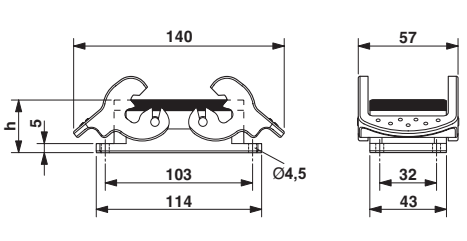
Coupling housing

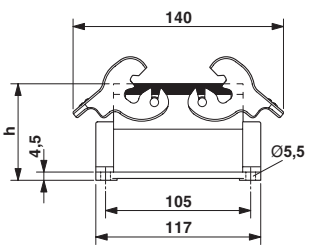
Type	Order No.	Pcs. / Pkt.
HC-B 16-AMQ	1771587	10
See from page 418		
See page 540		
See from page 550		

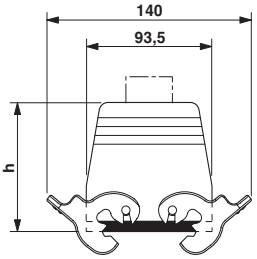
Type	Order No.	Pcs. / Pkt.
HC-B 16-SMQ-67/M1PG21	1771626	10
HC-B 16-SMQ-67/M2PG21	1771639	10
HC-B 16-SMQ-67/O1M25	1604788	10
HC-B 16-SMQ-67/O2M25	1604790	10
HC-B 16-SMQ-84/O1M25	1604792	10
HC-B 16-SMQ-84/O1M32	1604793	10
HC-B 16-SMQ-84/O2M32	1604794	10
HC-B 16-SMQ-67/M1M25	1586895	10
HC-B 16-SMQ-67/M2M25	1586905	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

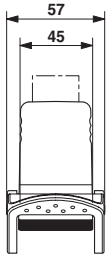
Type	Order No.	Pcs. / Pkt.
HC-B 16-KMQ-80/M1PG21	1687749	10
HC-B 16-KMQ-80/O1M32	1604968	10
HC-B 16-KMQ-80/O1STM25	1646887	10
HC-B 16-KMQ-80/O1STM40	1644779	10
HC-B 16-KMQ-80/M1M32	1586688	10
See from page 418		
See page 540		
See from page 520		
See from page 550		

86 mm x 35 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	NBR	NBR
High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF	High-grade steel, handle: PA-GF
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C









Sleeve housing with double locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

HC-B 16-TMQ...

Sleeve housing

Supporting base elements for double locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with double locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-B 16-TMQ-76/M1PG21G**	**1771545**	10
	76	Lateral	1x Pg21	**HC-B 16-TMQ-76/M1PG21S**	**1771532**	10
	76	Straight	1x Pg29	**HC-B 16-TMQ-76/M1PG29G**	**1775583**	10
	76	Lateral	1x Pg29	**HC-B 16-TMQ-76/M1PG29S**	**1775570**	10
Sleeve housing, with double locking latch, for metric screw connections, with supports						
	65	Straight	1x M25	**HC-B 16-TMQ-65/O1M25G**	**1604815**	10
	65	Lateral	1x M25	**HC-B 16-TMQ-65/O1M25S**	**1604816**	10
	76	Lateral	1x M25	**HC-B 16-TMQ-76/O1M25S**	**1604818**	10
	76	Straight	1x M32	**HC-B 16-TMQ-76/O1M32G**	**1604819**	10
	76	Lateral	1x M32	**HC-B 16-TMQ-76/O1M32S**	**1604820**	10
Sleeve housing, with double locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 16-TMQ-76/O1STM25G**	**1647187**	10
	76	Lateral	1x M25	**HC-B 16-TMQ-76/O1STM25S**	**1647161**	10
	76	Straight	1x M32	**HC-B 16-TMQ-76/O1STM32G**	**1647190**	10
	76	Lateral	1x M32	**HC-B 16-TMQ-76/O1STM32S**	**1647174**	10
	76	Straight	1x M40	**HC-B 16-TMQ-76/O1STM40G**	**1644737**	10
	76	Lateral	1x M40	**HC-B 16-TMQ-76/O1STM40S**	**1644753**	10
Sleeve housing, with double locking latch, with metric screw connection						
	76	Straight	1x M25	**HC-B 16-TMQ-76/M1M25G**	**1586484**	10
	76	Lateral	1x M25	**HC-B 16-TMQ-76/M1M25S**	**1586497**	10
	76	Straight	1x M32	**HC-B 16-TMQ-76/M1M32G**	**1586507**	10
	76	Lateral	1x M32	**HC-B 16-TMQ-76/M1M32S**	**1586510**	10
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K				**See from page 418**		
Replacement latch				**See page 540**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Locking latch material	High-grade steel, handle: PA-GF
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for double locking latch			
	27	Yes	
Box mounting base, for double locking latch, with Pg screw connection			
	67	Yes	1x Pg21
	67	Yes	2x Pg21
Box mounting base, for double locking latch, for metric screw connections, with supports			
	67	Yes	2x M25
	68	Yes	1x M25
	84	Yes	1x M32
	84	Yes	2x M32
Box mounting base, for double locking latch, with metric screw connection			
	67	Yes	1x M25
	67	Yes	2x M25
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K			

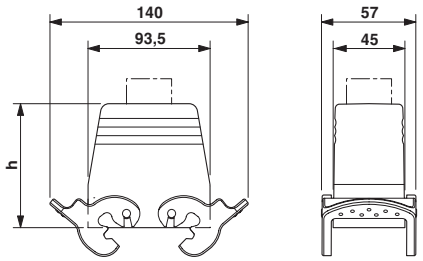
Screw connection, adapter	
Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Material, protective cover	
Temperature data	
Ambient temperature (operation)	

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-B 16-AFQD

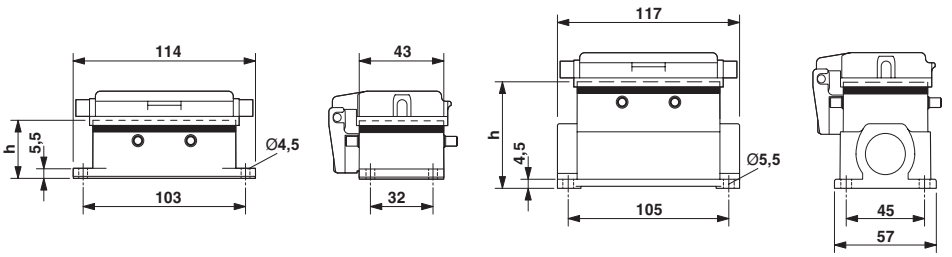
Panel mounting base
(incl. flat seal)

HC-B 16-SFQD...

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-B 16-AFQD	**1771600**	10
See from page 418		
86 mm x 35 mm		
IP65		
Aluminum, die-cast		
Powder-coated, gray		
NBR		
PA		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 16-SFQD-67/M1PG21	**1771668**	10
HC-B 16-SFQD-67/M2PG21	**1771671**	10
HC-B 16-SFQD-67/O2M25	**1604783**	10
HC-B 16-SFQD-68/O1M25	**1646366**	10
HC-B 16-SFQD-84/O1M32	**1645655**	10
HC-B 16-SFQD-84/O2M32	**1645668**	10
HC-B 16-SFQD-67/M1M25	**1586918**	10
HC-B 16-SFQD-67/M2M25	**1586921**	10
See from page 418		
See from page 520		
-		
IP65		
Aluminum, die-cast		
Powder-coated, gray		
NBR		
PA		
-40°C ... 125°C		



Sleeve housing with central locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

The centrally located double locking latch is especially easy to operate due to the large lever arm.

Advantages:

– Minimum pulling forces due to the specific geometry of the main latch

HC-B 16-TMZ...

Sleeve housing

Supporting base elements for central locking latch, type B16

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

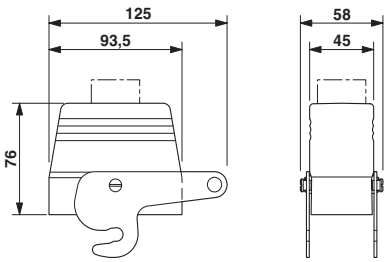
Advantages:

– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with central locking latch, for metric screw connections, without supports						
	76	Straight	1x M32	**HC-B 16-TMZ-76/O1STM32G**	**1584635**	10
	76	Lateral	1x M32	**HC-B 16-TMZ-76/O1STM32S**	**1584648**	10
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Adapter plates				**See from page 544**		
Technical data						
Mechanical data						
Type of protection (when plugged in)				IP65		
Material data						
Housing material				Aluminum, die-cast		
Housing surface material				Powder-coated, gray		
Locking latch material				Steel, galvanized		
Temperature data						
Ambient temperature (operation)				-40°C ... 125°C		

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for central locking latch			
	27		
Sleeve housing, for center locking latch, for metric screw connections, with supports			
	84		1x M32
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K			
Screw connection, adapter			
Adapter plates			
Technical data			
Mechanical data			
Panel cutout			
Type of protection (when plugged in)			
Material data			
Housing material			
Housing surface material			
Material for housing grommet			
Temperature data			
Ambient temperature (operation)			

For more accessories, see from page 520.



HC-B 16-AFZ

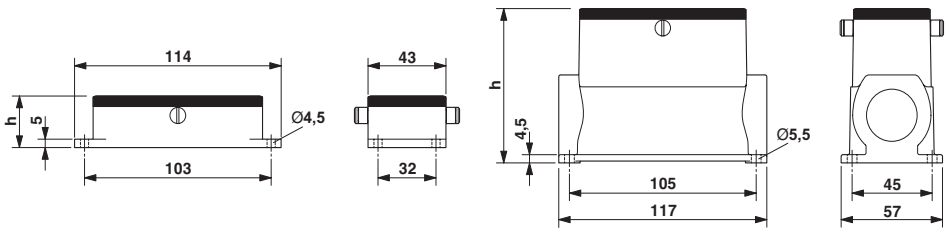
Panel mounting base
(incl. flat seal)

HC-B 16-SFZ

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-B 16-AFZ	**1584622**	10
See from page 418		
See from page 544		
86 mm x 35 mm IP65		
Aluminum, die-cast Powder-coated, gray NBR		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 16-SFZ-84/O1M32	**1584619**	10
See from page 418		
See from page 520		
See from page 544		
- IP65		
Aluminum, die-cast Powder-coated, gray NBR		
-40°C ... 125°C		



Sleeve housing for single locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 24-TFL...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-B 24-TFL-76/M1PG21G**	**1771901**	10
	76	Lateral	1x Pg21	**HC-B 24-TFL-76/M1PG21S**	**1771888**	10
	76	Straight	1x Pg29	**HC-B 24-TFL-76/M1PG29G**	**1771914**	10
	76	Lateral	1x Pg29	**HC-B 24-TFL-76/M1PG29S**	**1771891**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	56	Straight	1x M25	**HC-B 24-TFL-56/O1M25G**	**1604839**	10
	60	Lateral	1x M25	**HC-B 24-TFL-60/O1M25S**	**1604840**	10
	60	Lateral	1x M32	**HC-B 24-TFL-60/O1M32S**	**1604841**	10
	76	Straight	1x M25	**HC-B 24-TFL-76/O1M25G**	**1604842**	10
	76	Straight	1x M32	**HC-B 24-TFL-76/O1M32G**	**1604843**	10
	76	Lateral	1x M32	**HC-B 24-TFL-76/O1M32S**	**1604844**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 24-TFL-76/O1STM25G**	**1645082**	10
	76	Lateral	1x M25	**HC-B 24-TFL-76/O1STM25S**	**1645354**	10
	76	Straight	1x M32	**HC-B 24-TFL-76/O1STM32G**	**1645367**	10
	76	Lateral	1x M32	**HC-B 24-TFL-76/O1STM32S**	**1645370**	10
	76	Straight	1x M40	**HC-B 24-TFL-76/O1STM40G**	**1644669**	10
	76	Lateral	1x M40	**HC-B 24-TFL-76/O1STM40S**	**1644685**	10
Sleeve housing, for single locking latch, with metric screw connection						
	76	Straight	1x M25	**HC-B 24-TFL-76/M1M25G**	**1586523**	10
	76	Lateral	1x M25	**HC-B 24-TFL-76/M1M25S**	**1586536**	10
	76	Straight	1x M32	**HC-B 24-TFL-76/M1M32G**	**1586549**	10
	76	Lateral	1x M32	**HC-B 24-TFL-76/M1M32S**	**1586552**	10
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective cover				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

For dimensional drawings, see page 563.

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

Supporting base elements with single locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	27		
Protective cover: PA	27	Yes	
Protective cover: AL	27	Yes	
	67		1x Pg21
	67		2x Pg21
Protective cover: PA	67	Yes	1x Pg21
Protective cover: PA	67	Yes	2x Pg21
Box mounting base, with single locking latch, for metric screw connections, with supports			
	68		1x M25
	68		2x M25
	84		1x M32
	84		1x M40
	84		2x M32
	84		2x M40
Protective cover: PA	67	Yes	1x M25
Protective cover: PA	67	Yes	2x M25
Protective cover: PA	84	Yes	1x M32
Protective cover: PA	84	Yes	2x M32
Protective cover: PA	84	Yes	2x M40
Box mounting base, with single locking latch, with a metric screw connection			
	67		1x M25
	67		2x M25
	67	Yes	1x M25
	67	Yes	2x M25
Coupling housing, with single locking latch, with a Pg screw connection			
	79		1x Pg21
	79		1x Pg29
Coupling housing, with single locking latch, for metric screw connections, with supports			
	80		1x M25
	80		1x M32
Coupling housing, with single locking latch, for metric screw connections, without supports			
	80		1x M25
	80		1x M32
	80		1x M40
Coupling housing, with single locking latch, with metric screw connection			
	79		1x M32
	79		1x M40

Contact inserts HC-B24/BB46/D64/DD108/M/K4-8

Replacement latch
Screw connection, adapter
Protective covers

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

HC-B 24-AML...

Panel mounting base
(incl. flat seal)

HC-B 24-SML...

Box mounting base

HC-B 24-KML...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 24-AML	**1771930**	10
HC-B 24-AMLD	**1771943**	10
HC-B 24-AMLD-AL	**1645493**	10
See from page 418		
See page 540		
See from page 550		
113 mm x 35 mm		
IP65		
Aluminum, die-cast Powder-coated, gray NBR High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 24-SML-67/M1PG21	**1771985**	10
HC-B 24-SML-67/M2PG21	**1771998**	10
HC-B 24-SMLD-67/M1PG21	**1772036**	10
HC-B 24-SMLD-67/M2PG21	**1772049**	10
HC-B 24-SML-68/O1M25	**1646337**	10
HC-B 24-SML-68/O2M25	**1646340**	10
HC-B 24-SML-84/O1M32	**1645752**	10
HC-B 24-SML-84/O1M40	**1645765**	10
HC-B 24-SML-84/O2M32	**1604832**	10
HC-B 24-SML-84/O2M40	**1645778**	10
HC-B 24-SMLD-67/O1M25	**1604833**	10
HC-B 24-SMLD-67/O2M25	**1604834**	10
HC-B 24-SMLD-84/O1M32	**1645781**	10
HC-B 24-SMLD-84/O2M32	**1645794**	10
HC-B 24-SMLD-84/O2M40	**1645817**	10
HC-B 24-SML-67/M1M25	**1586934**	10
HC-B 24-SML-67/M2M25	**1586947**	10
HC-B 24-SMLD-67/M1M25	**1586950**	10
HC-B 24-SMLD-67/M2M25	**1586963**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		
-		
IP65		
Aluminum, die-cast Powder-coated, gray NBR High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Type	Order No.	Pcs. / Pkt.
HC-B 24-KML-79/M1PG21	**1772078**	10
HC-B 24-KML-79/M1PG29	**1772081**	10
HC-B 24-KML-80/O1M25	**1604823**	10
HC-B 24-KML-80/O1M32	**1604824**	10
HC-B 24-KML-80/O1STM25	**1647255**	10
HC-B 24-KML-80/O1STM32	**1647268**	10
HC-B 24-KML-80/O1STM40	**1644805**	10
HC-B 24-KML-80/M1M32	**1586691**	10
HC-B 24-KML-80/M1M40	**1586701**	10
See from page 418		
See page 540		
See from page 520		
See from page 550		
-		
IP65		
Aluminum, die-cast Powder-coated, gray NBR High-grade steel, handle: PA-GF		
-40°C ... 125°C		

Sleeve housing for double locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 24-TFQ...

Sleeve housing

Supporting base elements with double locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for double locking latch, with Pg screw connection						
	60	Lateral	1x Pg21	**HC-B 24-TFQ-60/M1PG21S**	**1661480**	10
	76	Straight	1x Pg21	**HC-B 24-TFQ-76/M1PG21G**	**1771781**	10
	76	Lateral	1x Pg21	**HC-B 24-TFQ-76/M1PG21S**	**1771765**	10
	76	Straight	1x Pg29	**HC-B 24-TFQ-76/M1PG29G**	**1771794**	10
	76	Lateral	1x Pg29	**HC-B 24-TFQ-76/M1PG29S**	**1771778**	10
Sleeve housing, for double locking latch, for metric screw connections, with supports						
	56	Straight	1x M25	**HC-B 24-TFQ-56/O1M25G**	**1604847**	10
	56	Straight	1x M32	**HC-B 24-TFQ-56/O1M32G**	**1604848**	10
	60	Lateral	1x M25	**HC-B 24-TFQ-60/O1M25S**	**1604849**	10
	60	Lateral	1x M32	**HC-B 24-TFQ-60/O1M32S**	**1604850**	10
	76	Straight	1x M25	**HC-B 24-TFQ-76/O1M25G**	**1604851**	10
	76	Lateral	1x M25	**HC-B 24-TFQ-76/O1M25S**	**1604852**	10
	76	Straight	1x M32	**HC-B 24-TFQ-76/O1M32G**	**1604853**	10
	76	Lateral	1x M32	**HC-B 24-TFQ-76/O1M32S**	**1604854**	10
Sleeve housing, for double locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 24-TFQ-76/O1STM25G**	**1645095**	10
	76	Lateral	1x M25	**HC-B 24-TFQ-76/O1STM25S**	**1645105**	10
	76	Straight	1x M32	**HC-B 24-TFQ-76/O1STM32G**	**1645118**	10
	76	Lateral	1x M32	**HC-B 24-TFQ-76/O1STM32S**	**1645121**	10
	76	Straight	1x M40	**HC-B 24-TFQ-76/O1STM40G**	**1644708**	10
	76	Lateral	1x M40	**HC-B 24-TFQ-76/O1STM40S**	**1644724**	10
	76	Straight	2x M40	**HC-B 24-TFQ-76/O2STM40G**	**1645448**	10
Sleeve housing, for double locking latch, with metric screw connections						
	60	Lateral	1x M25	**HC-B 24-TFQ-76/M1M25G**	**1586565**	10
	76	Straight	1x M25	**HC-B 24-TFQ-76/M1M25S**	**1586578**	10
	60	Lateral	1x M32	**HC-B 24-TFQ-76/M1M32G**	**1586581**	10
	76	Straight	1x M32	**HC-B 24-TFQ-76/M1M32S**	**1586594**	10
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

For more accessories, see from page 520.

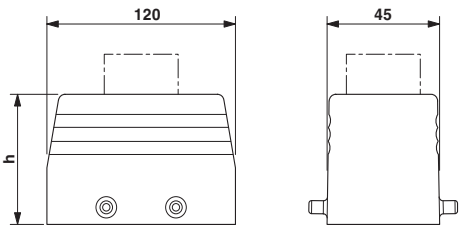
Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with double locking latch	27		
Box mounting base, with double locking latch, with Pg screw connection	67		1x Pg21
	67		2x Pg21
Box mounting base, with double locking latch, for metric screw connections, with supports	67		1x M25
	68		2x M25
	84		1x M32
	84		1x M40
	84		2x M32
	84		2x M40
Box mounting base, with double locking latch, with metric screw connection	67		1x M25
	67		2x M25
Coupling housing, with double locking latch, with Pg screw connection	79		1x Pg21
	79		1x Pg29
Coupling housing, with double locking latch, for metric screw connections, with supports	80		1x M25
Coupling housing, with double locking latch, for metric screw connections, without supports	80		1x M25
	80		1x M32
	80		1x M40
Coupling housing, with double locking latch, with metric screw connection	79		1x M32
	79		1x M40
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8			
Replacement latch			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	



HC-B 24-AMQ

Panel mounting base
(incl. flat seal)

HC-B 24-SMQ...

Box mounting base

HC-B 24-KMQ...

Coupling housing

Type	Order No.	Pcs. / Pkt.
HC-B 24-AMQ	**1771927**	10

Sleeve housing with double locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating
– Easy-to-replace stable latch

HC-B 24-TMQ...

Sleeve housing

Supporting base elements for double locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with double locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-B 24-TMQ-76/M1PG21G**	**1771846**	10
	76	Lateral	1x Pg21	**HC-B 24-TMQ-76/M1PG21S**	**1771820**	10
	76	Straight	1x Pg29	**HC-B 24-TMQ-76/M1PG29G**	**1771859**	10
	76	Lateral	1x Pg29	**HC-B 24-TMQ-76/M1PG29S**	**1771833**	10
Sleeve housing, with double locking latch, for metric screw connections, with supports						
	76	Straight	1x M25	**HC-B 24-TMQ-76/O1M25G**	**1604858**	10
	76	Lateral	1x M25	**HC-B 24-TMQ-76/O1M25S**	**1604859**	10
	76	Straight	1x M32	**HC-B 24-TMQ-76/O1M32G**	**1604860**	10
Sleeve housing, with double locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-B 24-TMQ-76/O1STM25G**	**1647226**	10
	76	Lateral	1x M25	**HC-B 24-TMQ-76/O1STM25S**	**1647200**	10
	76	Straight	1x M32	**HC-B 24-TMQ-76/O1STM32G**	**1647239**	10
	76	Lateral	1x M32	**HC-B 24-TMQ-76/O1STM32S**	**1647213**	10
	76	Straight	1x M40	**HC-B 24-TMQ-76/O1STM40G**	**1644740**	10
	76	Lateral	1x M40	**HC-B 24-TMQ-76/O1STM40S**	**1644766**	10
Sleeve housing, with double locking latch, with metric screw connection						
	76	Straight	1x M25	**HC-B 24-TMQ-76/M1M25G**	**1586604**	10
	76	Lateral	1x M25	**HC-B 24-TMQ-76/M1M25S**	**1586617**	10
	76	Straight	1x M32	**HC-B 24-TMQ-76/M1M32G**	**1586620**	10
	76	Lateral	1x M32	**HC-B 24-TMQ-76/M1M32S**	**1586633**	10
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8				**See from page 418**		
Replacement latch				**See page 540**		
Screw connection, adapter				**See from page 520**		
Protective covers				**See from page 550**		

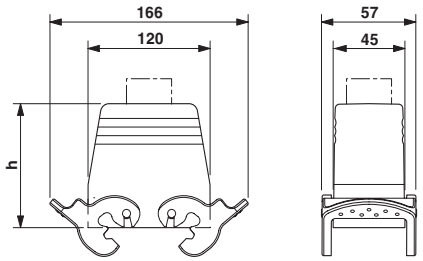
Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Locking latch material	High-grade steel, handle: PA-GF
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for double locking latch			
	27	Yes	
Box mounting base, for double locking latch, with Pg screw connection			
	67	Yes	1x Pg21
	67	Yes	2x Pg21
Box mounting base, for double locking latch, for metric screw connections, with supports			
	67	Yes	1x M25
	67	Yes	2x M25
	84	Yes	1x M32
	84	Yes	2x M32
Box mounting base, for double locking latch, with metric screw connection			
	67	Yes	1x M25
	67	Yes	2x M25
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8			
Screw connection, adapter			
Adapter plates			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Material, protective cover	
Temperature data	
Ambient temperature (operation)	

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.



HC-B 24-AFQD

Panel mounting base
(incl. flat seal)

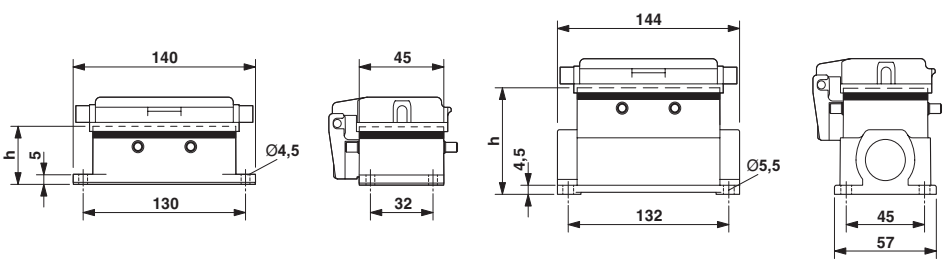
HC-B 24-SFQ...

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-B 24-AFQD	**1771956**	10
See from page 418		
See from page 544		

Type	Order No.	Pcs. / Pkt.
HC-B 24-SFQD-67/M1PG21	**1772010**	10
HC-B 24-SFQD-67/M2PG21	**1772023**	10
HC-B 24-SFQD-67/O1M25	**1604830**	10
HC-B 24-SFQD-67/O2M25	**1604831**	10
HC-B 24-SFQD-84/O1M32	**1645736**	10
HC-B 24-SFQD-84/O2M32	**1645749**	10
HC-B 24-SFQD-67/M1M25	**1586992**	10
HC-B 24-SFQD-67/M2M25	**1587001**	10
See from page 418		
See from page 520		
See from page 544		

113 mm x 35 mm	-
IP65	IP65
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
PA	PA
-40°C ... 125°C	-40°C ... 125°C



Sleeve housing with central locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

The centrally located double locking latch is especially easy to operate due to the large lever arm.

Advantages:

– minimum pulling forces due to the specific geometry of the main latch

HC-B 24-TMZ...

Sleeve housing

Supporting base elements for central locking latch, type B24

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:

– Laser identification with Order No.
– Extremely resistant powder coating

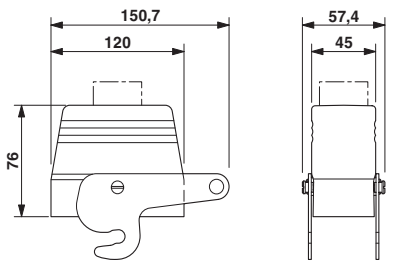
Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with central locking latch, for metric screw connections, without supports						
	76	Straight	1x M32	**HC-B 24-TMZ-76/O1STM32G**	**1584596**	10
	76	Lateral	1x M32	**HC-B 24-TMZ-76/O1STM32S**	**1584606**	10
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Adapter plates				**See from page 544**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Locking latch material	Steel, galvanized
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for central locking latch			
	27		
Box mounting base, for double locking latch, for metric screw connections			
	84		1x M32
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8			
Screw connection, adapter			
Adapter plates			

Technical data
Mechanical data
Panel cutout
Type of protection (when plugged in)
Material data
Housing material
Housing surface material
Material for housing grommet
Temperature data
Ambient temperature (operation)

For more accessories, see from page 520.



HC-B 24-AFZ

Panel mounting base
(incl. flat seal)

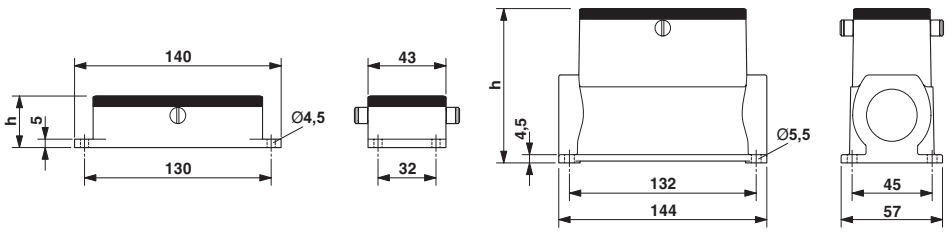
HC-B 24-SFZ-84/O1M32

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-B 24-AFZ	**1584583**	10
See from page 418		
See from page 544		

Type	Order No.	Pcs. / Pkt.
HC-B 24-SFZ-84/O1M32	**1584570**	10
See from page 418		
See from page 520		
See from page 544		

113 mm x 35 mm	-
IP65	IP65
Aluminum, die-cast Powder-coated, gray	Aluminum, die-cast Powder-coated, gray
NBR	NBR
-40°C ... 125°C	-40°C ... 125°C



Sleeve housing for double locking latch, type B32

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 32-TFQ...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for double locking latch, with Pg screw connection						
	80	Straight	1x Pg21	**HC-B 32-TFQ-80/M1PG21G**	**1775677**	10
	80	Lateral	1x Pg21	**HC-B 32-TFQ-80/M1PG21S**	**1775651**	10
	80	Straight	1x Pg29	**HC-B 32-TFQ-80/M1PG29G**	**1775680**	10
	80	Lateral	1x Pg29	**HC-B 32-TFQ-80/M1PG29S**	**1775664**	10
Sleeve housing, for double locking latch, for metric screw connections, with supports						
	80	Straight	1x M25	**HC-B 32-TFQ-80/O1M25G**	**1604870**	10
	80	Lateral	1x M25	**HC-B 32-TFQ-80/O1M25S**	**1604871**	10
	80	Lateral	1x M32	**HC-B 32-TFQ-80/O1M32S**	**1604872**	10
Sleeve housing, for double locking latch, for metric screw connections, without supports						
	80	Straight	1x M25	**HC-B 32-TFQ-80/O1STM25G**	**1645134**	10
	80	Lateral	1x M25	**HC-B 32-TFQ-80/O1STM25S**	**1645147**	10
	80	Straight	1x M32	**HC-B 32-TFQ-80/O1STM32G**	**1645383**	10
	80	Lateral	1x M32	**HC-B 32-TFQ-80/O1STM32S**	**1645150**	10
	80	Straight	1x M40	**HC-B 32-TFQ-80/O1STM40G**	**1647307**	5
	80	Lateral	1x M40	**HC-B 32-TFQ-80/O1STM40S**	**1645451**	10
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K				**See from page 418**		
Screw connection, adapter				**See from page 520**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Supporting base elements with double locking latch, type B32

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with double locking latch	30		
Box mounting base, with double locking latch, with Pg screw connection	72		1x Pg29
	72		2x Pg29
Box mounting base, with double locking latch, for metric screw connections, with supports	72		1x M32
	72		2x M32
	72		2x M40
Coupling housing, with double locking latch, with Pg screw connection	82		1x Pg21
	82		1x Pg29
Coupling housing, with double locking latch, for metric screw connections, with supports	82		1x M25
	82		1x M32
Coupling housing, with double locking latch, for metric screw connections, without supports	82		1x M32
	82		1x M40
Contact inserts HC-B16/BB32/D40/DD72/HS6/M/K			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

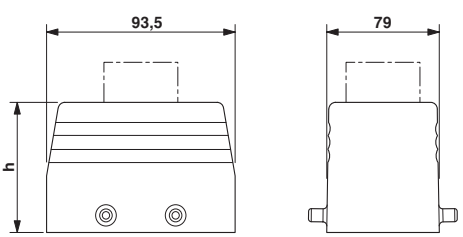
For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Type B32 housings are intended for double row arrangement of contact inserts.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-B 32-AMQ

Panel mounting base
(incl. flat seal)

HC-B 32-SMQ...

Box mounting base

HC-B 32-KMQ...

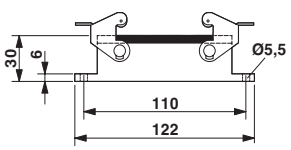
Coupling housing

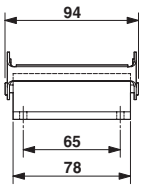
Type	Order No.	Pcs. / Pkt.
HC-B 32-AMQ	**1775693**	10
See from page 418		
See from page 550		

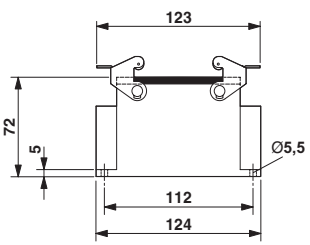
Type	Order No.	Pcs. / Pkt.
HC-B 32-SMQ-72/M1PG29	**1775703**	10
HC-B 32-SMQ-72/M2PG29	**1775716**	10
HC-B 32-SMQ-72/O1M32	**1604867**	10
HC-B 32-SMQ-72/O2M32	**1604868**	10
HC-B 32-SMQ-72/O2M40	**1604869**	10
See from page 418		
See from page 520		
See from page 550		

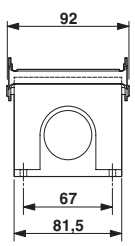
Type	Order No.	Pcs. / Pkt.
HC-B 32-KMQ-82/M1PG21	**1775729**	10
HC-B 32-KMQ-82/M1PG29	**1775732**	10
HC-B 32-KMQ-82/O1M25	**1604863**	10
HC-B 32-KMQ-82/O1M32	**1604864**	10
HC-B 32-KMQ-82/O1STM32	**1647284**	10
HC-B 32-KMQ-82/O1STM40	**1647297**	10
See from page 418		
See from page 520		
See from page 550		

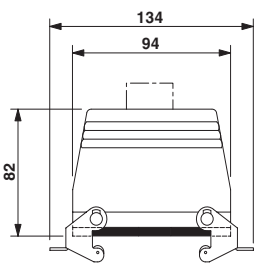
84 mm x 70 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	NBR	NBR
Steel, galvanized	Steel, galvanized	High-grade steel, handle: PA-GF
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C

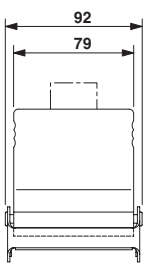












Sleeve housing for single locking latch, type B48

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-B 48-TFL...

Sleeve housing

Supporting base elements with single locking latch, type B48

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	96	Straight	1x Pg29	**HC-B 48-TFL-96/M1PG29G**	**1772159**	1
	96	Lateral	1x Pg29	**HC-B 48-TFL-96/M1PG29S**	**1772133**	1
	96	Straight	1x Pg36	**HC-B 48-TFL-96/M1PG36G**	**1772162**	1
	96	Lateral	1x Pg36	**HC-B 48-TFL-96/M1PG36S**	**1772146**	1
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	96	Straight	1x M40	**HC-B 48-TFL-96/O1M40G**	**1604879**	1
	96	Lateral	1x M40	**HC-B 48-TFL-96/O1M40S**	**1604880**	1
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	96	Straight	1x M32	**HC-B 48-TFL-96/O1STM32G**	**1647349**	1
	96	Lateral	1x M32	**HC-B 48-TFL-96/O1STM32S**	**1647336**	1
	96	Straight	1x M40	**HC-B 48-TFL-96/O1STM40G**	**1647310**	1
	96	Lateral	1x M40	**HC-B 48-TFL-96/O1STM40S**	**1647323**	1
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8				**See from page 418**		
Screw connection, adapter				**See from page 520**		
Replacement bolt				**See page**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	41		
Protective cover: PA	41	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
	100		1x Pg29
	100		2x Pg29
Protective cover: PA	100	Yes	1x Pg29
Protective cover: PA	100	Yes	2x Pg29
Box mounting base, with single locking latch, for metric screw connections, with supports			
	100		1x M32
	100		2x M40
Protective cover: PA	100	Yes	1x M32
Protective cover: PA	100	Yes	2x M40
Contact inserts HC-B24/BB46/D64/DD108/M/K4-8			
Screw connection, adapter			
Flat seal			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

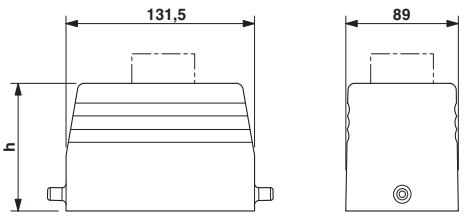
For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Type B48 housings are intended for double row arrangement of contact inserts.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-B 48-AML...

Panel mounting base
(incl. flat seal)

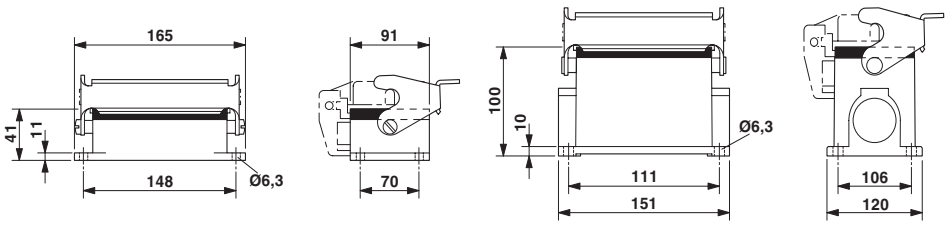
HC-B 48-SML...

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-B 48-AML	**1772175**	1
HC-B 48-AMLD	**1772188**	1
See from page 541		

Type	Order No.	Pcs. / Pkt.
HC-B 48-SML-100/M1PG29	**1772191**	1
HC-B 48-SML-100/M2PG29	**1772201**	1
HC-B 48-SMLD-100/M1PG29	**1772214**	1
HC-B 48-SMLD-100/M2PG29	**1772227**	1
HC-B 48-SML-100/O1M32	**1604875**	1
HC-B 48-SML-100/O2M40	**1604876**	1
HC-B 48-SMLD-100/O1M32	**1604877**	1
HC-B 48-SMLD-100/O2M40	**1604878**	1
See from page 418		
See from page 520		

82 mm x 120 mm	-
IP65	IP65
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray
NBR	NBR
Steel, galvanized	Steel, galvanized
-40°C ... 125°C	-40°C ... 125°C



Sleeve housing for single locking latch, type D7

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

HC-D 7-TFL...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
Zinc housing	57	Straight	1x Pg11	**HC-D 7-TFL-57/M1PG11G**	**1773048**	10
PA-housing	57	Straight	1x Pg11	**HC-D 7-TFL-57/M1PG11G/PA**	**1772269**	10
Zinc housing	48	Lateral	1x Pg11	**HC-D 7-TFL-48/M1PG11S**	**1773271**	10
PA-housing	48	Lateral	1x Pg11	**HC-D 7-TFL-49/M1PG11S/PA**	**1772256**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
Zinc housing	57	Straight	1x M20	**HC-D 7-TFL-57/O1M20G**	**1604888**	10
PA-housing	57	Straight	1x M20	**HC-D 7-TFL-57/O1M20G/PA**	**1604889**	10
Zinc housing	48	Lateral	1x M20	**HC-D 7-TFL-48/O1M20S**	**1604891**	10
PA-housing	48	Lateral	1x M20	**HC-D 7-TFL-48/O1M20S/PA**	**1604890**	10
Sealing screw, IP65				**HC-D 7-DS-IP65**	**1686229**	100
Contact inserts HC-D7/D8/A3/A4				**See from page 438**		
Screw connections / adapters				**See from page 520**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP54 / IP65 with sealing screw
Material data	
Housing material	See above
Housing surface material	Powder-coated, gray
Cable gland material	Nickel-plated brass
Material, screw connection seal	NBR
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Supporting base elements with single locking latch, type D7

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
Straight version: ALU	24	Yes	
Straight version: ALU	24		
Straight version: PA	24		
Angled version: ALU	26		
Angled version: PA	26		
Straight version: ALU	24	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
ALU housing	25.5		1x Pg11
PA-housing	25.5		1x Pg11
Box mounting base, with single locking latch, for metric screw connections, with supports			
ALU housing	25.5		1x M20
PA-housing	25.5		1x M20
Box mounting base, with single locking latch, for metric screw connection, without supports			
ALU housing	25.5		1x M20
PA-housing	25.5		1x M20
Coupling housing, with single locking latch, with a Pg screw connection			
Zinc housing	61		1x Pg11
PA-housing	61		1x Pg11
Coupling housing, with single locking latch, for metric screw connections, with supports			
Zinc housing	61		1x M20
PA-housing	61		1x M20
Sealing screw, IP65			
Contact inserts HC-D7/D8/A3/A4			
Screw connections / adapters			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For more accessories, see from page 520.

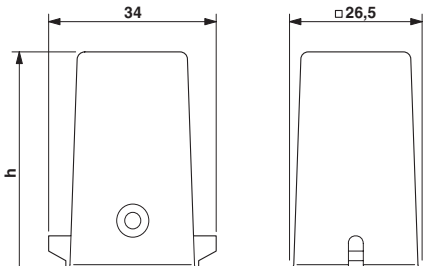
Conductor diameter details for housings with screw connections, see page 473.

HC-D7-AMLD-24/GR/ALU-OD **for the use of male inserts** contains aluminum protective covers

HC-D7-AMLD-24/GR/ALU **for the use of female inserts** contains aluminum protective covers

Box mounting base with open bottom

The IP65 sealing screw is supplied with contact inserts HC-A4... / HC-D7... / HC-D8... .



HC-D 7-AML...

Panel mounting base
(incl. flat seal)

HC-D 7-SML...

Box mounting base (incl. flat seal)

HC-D 7-KML...

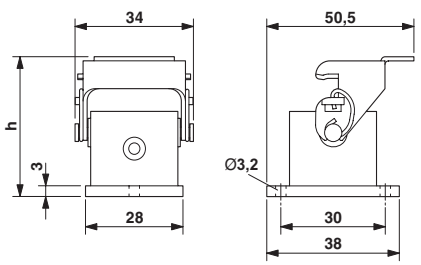
Coupling housing

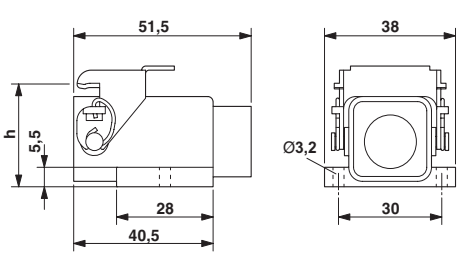
Type	Order No.	Pcs. / Pkt.
HC-D 7-AMLD-24/GR/ALU-OD	1684994	10
HC-D 7-AML-24/GR/ALU	1773035	10
HC-D 7-AML-24/GR/PA	1772272	10
HC-D 7-AML-26/GW	1773022	10
HC-D 7-AML-26/GW/PA	1772285	10
HC-D 7-AMLD-24/GR/ALU	1676970	10
HC-D 7-DS-IP65	1686229	100
See from page 438		

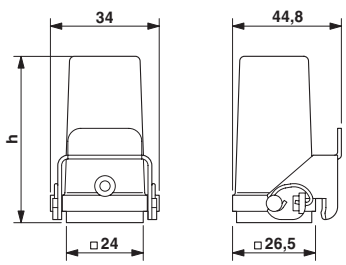
Type	Order No.	Pcs. / Pkt.
HC-D 7-SML-26/M1PG11	1773284	10
HC-D 7-SML-57/M1PG11/PA	1772298	10
HC-D 7-SML-26/O1M20	1604885	10
HC-D 7-SML-57/O1M20/PA	1604886	10
HC-D 7-SML-26/O1STM20	1674899	10
HC-D 7-SML-26/O1STM20/PA	1674886	10
HC-D 7-DS-IP65	1686229	100
See from page 438		
See from page 520		

Type	Order No.	Pcs. / Pkt.
HC-D 7-KML-61/M1PG11	1773297	10
HC-D 7-KML-61/M1PG11/PA	1772308	10
HC-D 7-KML-61/O1M20	1604883	10
HC-D 7-KML-61/O1M20/PA	1604884	10
HC-D 7-DS-IP65	1686229	100
See from page 438		
See from page 520		

21.5 mm x 21.5 mm IP54 / IP65 with sealing screw	- IP54 / IP65 with sealing screw	- IP54 / IP65 with sealing screw
See above Powder-coated, gray (metal housing) NBR Steel, tin-plated (PA for HC-D 7...PA)	Zinc die-cast Powder-coated, gray NBR Steel, galvanized	See above Powder-coated, gray - Steel, galvanized
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C







Sleeve housing for single locking latch, type D15

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-D 15-TFL...

Sleeve housing

Supporting base elements with single locking latch, type D15

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	66	Straight	1x Pg16	**HC-D 15-TFL-66/M1PG16G**	**1772353**	10
	66	Lateral	1x Pg16	**HC-D 15-TFL-66/M1PG16S**	**1772337**	10
	66	Straight	1x Pg21	**HC-D 15-TFL-66/M1PG21G**	**1772366**	10
	66	Lateral	1x Pg21	**HC-D 15-TFL-66/M1PG21S**	**1772340**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	53	Lateral	1x M20	**HC-D 15-TFL-53/O1M20S**	**1604896**	10
	66	Straight	1x M20	**HC-D 15-TFL-66/O1M20G**	**1604898**	10
	66	Straight	1x M25	**HC-D 15-TFL-66/O1M25G**	**1604899**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	66	Straight	1x M20	**HC-D 15-TFL-66/O1STM20G**	**1645163**	10
	66	Lateral	1x M20	**HC-D 15-TFL-66/O1STM20S**	**1636046**	10
	66	Straight	1x M25	**HC-D 15-TFL-66/O1STM25G**	**1645176**	10
	66	Lateral	1x M25	**HC-D 15-TFL-66/O1STM25S**	**1636059**	10
Contact inserts HC-D15/A10				**See from page 422**		
Screw connection, adapter				**See from page 520**		
Adapter plates				**See from page 544**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Material for housing grommet	NBR
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch	26		
Protective cover: PA	26	Yes	
Box mounting base, with single locking latch, with a Pg screw connection	52		1x Pg16
	52		2x Pg16
Box mounting base, with single locking latch, for metric screw connections, with supports	52		1x M25
	52		2x M20
	52		2x M25
Coupling housing, with single locking latch, with a Pg screw connection	48		1x Pg16
Coupling housing, with single locking latch, for metric screw connections, with supports	48		1x M20
Contact inserts HC-D15/A10			
Screw connection, adapter			
Protective covers			

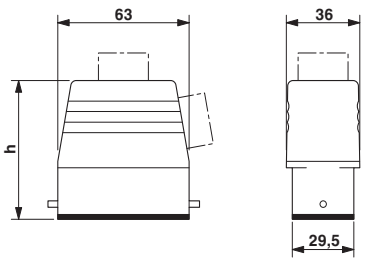
Technical data
Mechanical data
Panel cutout
Type of protection (when plugged in)
Material data
Housing material
Housing surface material
Material for housing grommet
Locking latch material
Temperature data
Ambient temperature (operation)

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-D 15-AML...

Panel mounting base
(incl. flat seal)

HC-D 15-SML...

Box mounting base

HC-D 15-KML...

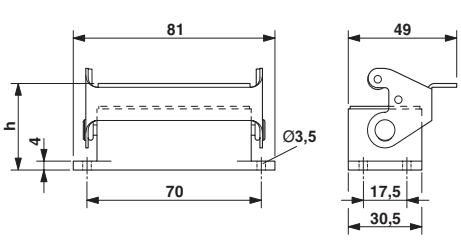
Coupling housing

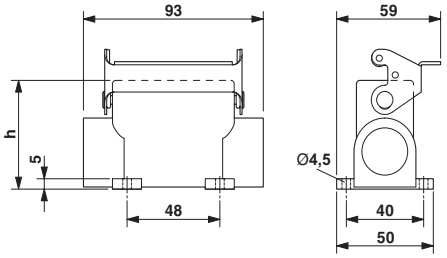
Type	Order No.	Pcs. / Pkt.
HC-D 15-AML	**1772379**	10
HC-D 15-AMLD	**1678363**	10
See from page 422		
See from page 550		

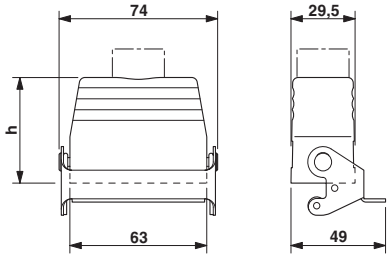
Type	Order No.	Pcs. / Pkt.
HC-D 15-SML-52/M1PG16	**1772382**	10
HC-D 15-SML-52/M2PG16	**1772395**	10
HC-D 15-SML-52/O1M25	**1604893**	10
HC-D 15-SML-52/O2M20	**1604894**	10
HC-D 15-SML-52/O2M25	**1604895**	10
See from page 422		
See from page 520		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-D 15-KML-48/M1PG16	**1674639**	10
HC-D 15-KML-48/O1M20	**1604892**	10
See from page 422		
See from page 520		
See from page 550		

58 mm x 24 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	-	-
Steel, galvanized	Steel, galvanized	Steel, galvanized
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C







Sleeve housing for single locking latch, type D25

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-D 25-TFL...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for single locking latch, with Pg screw connection						
	72	Straight	1x Pg16	**HC-D 25-TFL-72/M1PG16G**	**1772447**	10
	72	Lateral	1x Pg16	**HC-D 25-TFL-72/M1PG16S**	**1772421**	10
	72	Straight	1x Pg21	**HC-D 25-TFL-72/M1PG21G**	**1772450**	10
	72	Lateral	1x Pg21	**HC-D 25-TFL-72/M1PG21S**	**1772434**	10
Sleeve housing, for single locking latch, for metric screw connections, with supports						
	72	Straight	1x M25	**HC-D 25-TFL-72/O1M25G**	**1604904**	10
	72	Lateral	1x M25	**HC-D 25-TFL-72/O1M25S**	**1604969**	10
Sleeve housing, for single locking latch, for metric screw connections, without supports						
	72	Straight	1x M20	**HC-D 25-TFL-72/O1STM20G**	**1636075**	10
	72	Lateral	1x M20	**HC-D 25-TFL-72/O1STM20S**	**1636062**	10
	72	Straight	1x M25	**HC-D 25-TFL-72/O1STM25G**	**1645189**	10
	72	Lateral	1x M25	**HC-D 25-TFL-72/O1STM25S**	**1645273**	10
Contact inserts HC-D25/A16				**See from page 422**		
Screw connection, adapter				**See from page 520**		
Adapter plates				**See from page 544**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Material for housing grommet	NBR
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Supporting base elements with single locking latch, type D25

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with single locking latch			
	26		
Protective cover: PA	26	Yes	
Box mounting base, with single locking latch, with a Pg screw connection			
	57		1x Pg16
	57		1x Pg21
	57		2x Pg16
	57		2x Pg21
Box mounting base, with single locking latch, for metric screw connections, with supports			
	57		1x M25
	57		2x M20
	57		2x M25
Coupling housing, with single locking latch, with a Pg screw connection			
	53		1x Pg16
Coupling housing, with single locking latch, for metric screw connections, with supports			
	53		1x M20
Contact inserts HC-D25/A16			
Screw connection, adapter			
Protective covers			

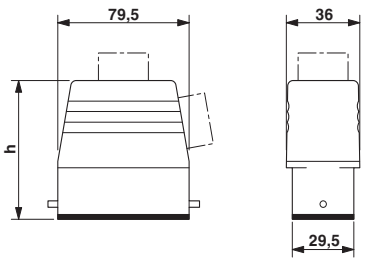
Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-D 25-AML...

Panel mounting base
(incl. flat seal)

HC-D 25-SML...

Box mounting base

HC-D 25-KML...

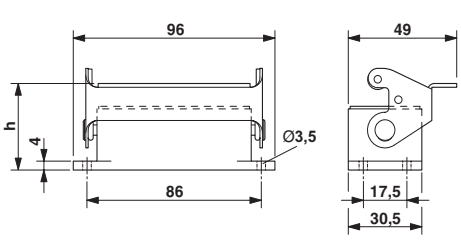
Coupling housing

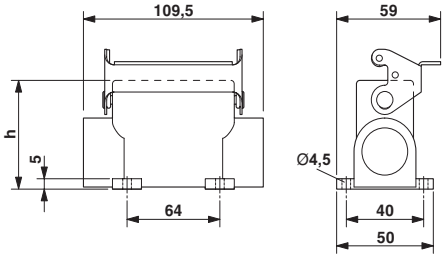
Type	Order No.	Pcs. / Pkt.
HC-D 25-AML	**1772463**	10
HC-D 25-AMLD	**1672754**	10
See from page 422		
See from page 550		

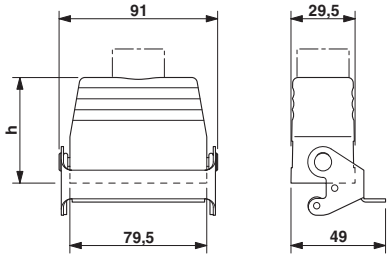
Type	Order No.	Pcs. / Pkt.
HC-D 25-SML-57/M1PG16	**1772476**	10
HC-D 25-SML-57/M1PG21	**1677571**	10
HC-D 25-SML-57/M2PG16	**1772489**	10
HC-D 25-SML-57/M2PG21	**1677584**	10
HC-D 25-SML-57/O1M25	**1604901**	10
HC-D 25-SML-57/O2M20	**1604902**	10
HC-D 25-SML-57/O2M25	**1604903**	10
See from page 422		
See from page 520		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-D 25-KML-53/M1PG16G	**1674642**	10
HC-D 25-KML-53/O1M20	**1604900**	10
See from page 422		
See from page 520		
See from page 550		

74 mm x 24 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	-	-
Steel, galvanized	Steel, galvanized	Steel, galvanized
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C







Sleeve housing for double locking latch, type D50

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting bases, box mounting bases and coupling housings.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-D 50-TFQ...

Sleeve housing

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, for double locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-D 50-TFQ-76/M1PG21G**	**1775800**	10
	76	Lateral	1x Pg21	**HC-D 50-TFQ-76/M1PG21S**	**1775787**	10
	76	Straight	1x Pg29	**HC-D 50-TFQ-76/M1PG29G**	**1775813**	10
	76	Lateral	1x Pg29	**HC-D 50-TFQ-76/M1PG29S**	**1775790**	10
Sleeve housing, for double locking latch, for metric screw connections, with supports						
	76	Straight	1x M25	**HC-D 50-TFQ-76/O1M25G**	**1604912**	10
	76	Lateral	1x M25	**HC-D 50-TFQ-76/O1M25S**	**1604913**	10
	76	Straight	1x M32	**HC-D 50-TFQ-76/O1M32G**	**1604914**	10
	76	Lateral	1x M32	**HC-D 50-TFQ-76/O1M32S**	**1604972**	10
Sleeve housing, for double locking latch, for metric screw connections, without supports						
	76	Straight	1x M25	**HC-D 50-TFQ-76/O1STM25G**	**1645192**	10
	76	Lateral	1x M25	**HC-D 50-TFQ-76/O1STM25S**	**1645202**	10
	76	Straight	1x M32	**HC-D 50-TFQ-76/O1STM32G**	**1645215**	10
	76	Lateral	1x M32	**HC-D 50-TFQ-76/O1STM32S**	**1645286**	10
Contact inserts HC-D25/A16/A32				**See from page 422**		
Screw connection, adapter				**See from page 520**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Supporting base elements with double locking latch, type D50

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting, box mounting base, coupling housing) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, with double locking latch	28		
Box mounting base, with double locking latch, with Pg screw connection			
	81		1x Pg21
	81		1x Pg29
	81		2x Pg21
Box mounting base, with double locking latch, for metric screw connections, with supports			
	81		1x M25
	81		1x M32
	81		2x M32
Coupling housing, with double locking latch, with Pg screw connection	76		1x Pg21
Coupling housing, with double locking latch, for metric screw connections, with supports			
	76		1x M25
	76		1x M32
Contact inserts HC-D25/A16/A32			
Screw connection, adapter			
Protective covers			

Technical data	
Mechanical data	
Panel cutout	
Type of protection (when plugged in)	
Material data	
Housing material	
Housing surface material	
Material for housing grommet	
Locking latch material	
Temperature data	
Ambient temperature (operation)	

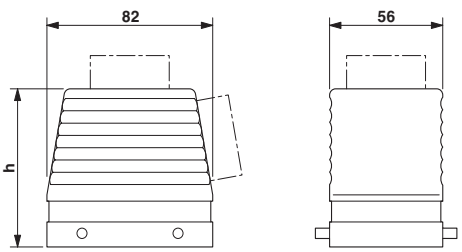
For more accessories, see from page 520.

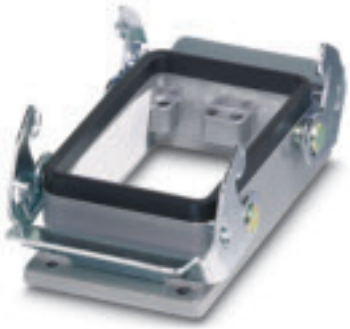
Conductor diameter details for housings with screw connections, see page 473.

Type D50 housings are intended for double-row arrangements of the contact inserts.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR





HC-D 50-AMQ

Panel mounting base
(incl. flat seal)

HC-D 50-SMQ...

Box mounting base

HC-D 50-KMQ...

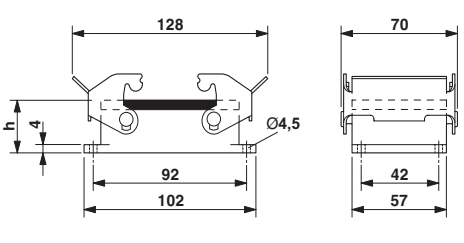
Coupling housing

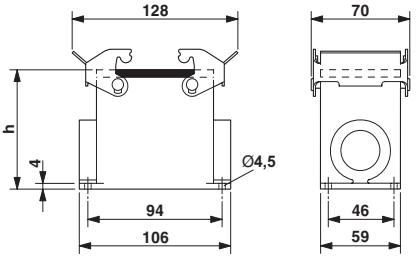
Type	Order No.	Pcs. / Pkt.
HC-D 50-AMQ	**1775868**	10
See from page 422		
See from page 550		

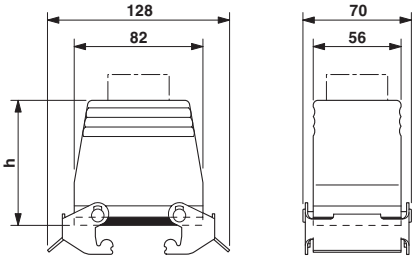
Type	Order No.	Pcs. / Pkt.
HC-D 50-SMQ-81/M1PG21	**1775884**	10
HC-D 50-SMQ-81/M1PG29	**1775907**	10
HC-D 50-SMQ-81/M2PG21	**1775897**	10
HC-D 50-SMQ-81/O1M25	**1604908**	10
HC-D 50-SMQ-81/O1M32	**1604909**	10
HC-D 50-SMQ-81/O2M32	**1604910**	10
See from page 422		
See from page 520		
See from page 550		

Type	Order No.	Pcs. / Pkt.
HC-D 50-KMQ-76/M1PG21	**1672945**	10
HC-D 50-KMQ-76/O1M25	**1604970**	10
HC-D 50-KMQ-76/O1M32	**1604971**	10
See from page 422		
See from page 520		
See from page 550		

76 mm x 48 mm	-	-
IP65	IP65	IP65
Aluminum, die-cast	Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Powder-coated, gray	Powder-coated, gray
NBR	NBR	NBR
Steel, galvanized	Steel, galvanized	Steel, galvanized
-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C







Sleeve housing with double locking latch, type D50

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON sleeve housings are locked together with the panel mounting and box mounting base.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

HC-D 50-TMQ...

Sleeve housing

Supporting base elements for double locking latch, type D50

To determine the matching contact inserts, refer to the cross-reference list on page 414.

HEAVYCON supporting base elements (panel mounting and box mounting base) are locked together with the sleeve housing.

Advantages:
– Laser identification with Order No.
– Extremely resistant powder coating

Description	Height h [mm]	Conductor exit	Screw connection	Type	Order No.	Pcs. / Pkt.
Sleeve housing, with double locking latch, with Pg screw connection						
	76	Straight	1x Pg21	**HC-D 50-TMQ-76/M1PG21G**	**1775842**	10
	76	Lateral	1x Pg21	**HC-D 50-TMQ-76/M1PG21S**	**1775826**	10
	76	Straight	1x Pg29	**HC-D 50-TMQ-76/M1PG29G**	**1775855**	10
	76	Lateral	1x Pg29	**HC-D 50-TMQ-76/M1PG29S**	**1775839**	10
Sleeve housing, with double locking latch, for metric screw connections, with supports						
	76	Straight	1x M25	**HC-D 50-TMQ-76/O1M25G**	**1604917**	10
	76	Lateral	1x M25	**HC-D 50-TMQ-76/O1M25S**	**1604918**	10
	76	Straight	1x M32	**HC-D 50-TMQ-76/O1M32G**	**1604919**	10
	76	Lateral	1x M32	**HC-D 50-TMQ-76/O1M32S**	**1604920**	10
Contact inserts HC-D25/A16/A32				**See from page 422**		
Screw connection, adapter				**See from page 520**		

Technical data	
Mechanical data	
Type of protection (when plugged in)	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	Powder-coated, gray
Locking latch material	Steel, galvanized
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C

Description	Height h [mm]	Protective covers	Screw connection
Panel mounting base, for double locking latch			
	28	Yes	
Box mounting base, with double locking latch, with Pg screw connection			
	81	Yes	1x Pg21
	81	Yes	2x Pg21
Box mounting base, for double locking latch, for metric screw connections, with supports			
	81	Yes	1x M25
Contact inserts HC-D25/A16/A32			
Screw connection, adapter			

Technical data
Mechanical data
Panel cutout
Type of protection (when plugged in)
Material data
Housing material
Housing surface material
Material for housing grommet
Material, protective cover
Temperature data
Ambient temperature (operation)

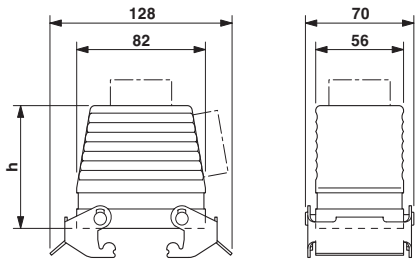
For more accessories, see from page 520.

Conductor diameter details for housings with screw connections, see page 473.

Type D50 housings are intended for double-row arrangements of the contact inserts.

Material, screw connection: nickel-plated

Material, screw connection seal made of NBR



HC-D 50-AFQD

Panel mounting base
(incl. flat seal)

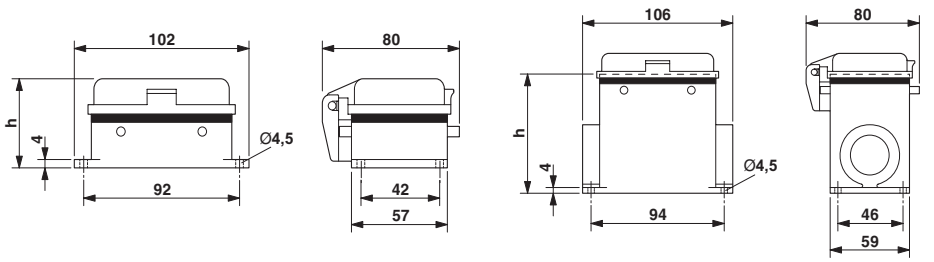
HC-D 50-SFQ...

Box mounting base

Type	Order No.	Pcs. / Pkt.
HC-D 50-AFQD	**1775871**	10
See from page 422		

Type	Order No.	Pcs. / Pkt.
HC-D 50-SFQD-97/M1PG21	**1775910**	10
HC-D 50-SFQD-97/M2PG21	**1775923**	10
HC-D 50-SFQD-97/O1M25	**1604907**	10
See from page 422		
See from page 520		

76 mm x 48 mm	-
IP65	IP65
Aluminum, die-cast	Aluminum, die-cast
Powder-coated, gray	Die-cast aluminum, powder-coated
NBR	NBR
PA	PA
-40°C ... 125°C	-40°C ... 125°C



EMC housings

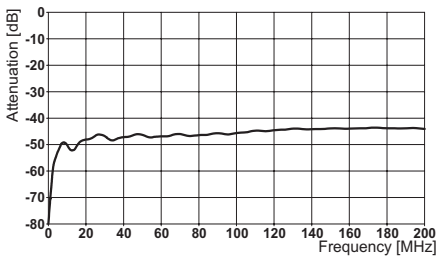
EMC housings ensure that the electromagnetic fields in the environment do not affect the signals transmitted to the plug connector. Sensitive components in the plug connector environment must not be damaged by the power and signal circuits transmitted within the plug connector. This is ensured by means of various constructional measures.

For a good shielding effect, a low contact resistance from the cable shield to the device housing is needed.

An electrically conductive connection is established between sleeve housings and panel mounting bases with a conductive metal tape.

The conductive connection to the cable shield is made with a special EMC screw connection (HEAVYCON accessory). A conductive flat seal provides for the low ohmic connection of panel mounting base and device housings.

For dimensional drawings, refer to page 564.
For more accessories, see from page 520.



Shield attenuation

HC-B 6-...-EMV

EMC sleeve housing / panel mounting base, type B6

Description	Screw thread	Cable exit	Type	Order No.	Pcs. Pkt.
Sleeve housing, for double locking latch, height 70 mm, EMC version without support					
	M25	Straight	**HC-B 6-TFL-70/O1STM25G-EMV**	**1642289**	10
	M25	Lateral	**HC-B 6-TFL-70/O1STM25S-EMV**	**1642292**	10
	M32	Straight	**HC-B 6-TFL-70/O1STM32G-EMV**	**1636237**	10
	M32	Lateral	**HC-B 6-TFL-70/O1STM32S-EMV**	**1642315**	10
Sleeve housing, for double locking latch, height 70 mm, EMC version without support					
	M25	Straight			
	M25	Lateral			
	M32	Straight			
	M32	Lateral			
Sleeve housing, for double locking latch, height 76 mm, EMC version without support					
	M20	Straight			
	M25	Straight			
	M25	Lateral			
	M32	Straight			
	M32	Lateral			
	M40	Straight			
Sleeve housing, for double locking latch, height 76 mm, EMC version without support					
	M25	Straight			
	M25	Lateral			
	M32	Straight			
	M32	Lateral			
	M40	Straight			
	M40	Lateral			
Panel mounting base, with single locking latch, EMC version with flat seal			**HC-B 6-AML-EMV**	**1642344**	10
Panel mounting base, with double locking latch, EMC version with flat seal					
Contact inserts HC-B/BB/D/DD/M/K/HS			**See from page 418**		

Technical data	
Mechanical data	
Panel cutout	48 mm x 35 mm
Degree of protection	IP65
Material data	
Housing material	Aluminum, die-cast
Housing surface material	EMC coating, silver
Locking latch material	Steel, galvanized
Seal material (panel mounting base)	NBR, conductive
Temperature data	
Ambient temperature (operation)	-40°C ... 100°C

HC-B 10-...-EMV

EMC sleeve housing / panel mounting base, type B10

HC-B 16-...-EMV

EMC sleeve housing / panel mounting base, type B16

HC-B 24-...-EMV

EMC sleeve housing / panel mounting base, type B24

Type	Order No.	Pcs. Pkt.
HC-B 10-TFQ-70/O1STM25G-EMV	**1642360**	10
HC-B 10-TFQ-70/O1STM25S-EMV	**1642373**	10
HC-B 10-TFQ-70/O1STM32G-EMV	**1642386**	10
HC-B 10-TFQ-70/O1STM32S-EMV	**1642399**	10
HC-B 10-AMQ-EMV	**1642522**	10
See from page 418		

Type	Order No.	Pcs. Pkt.
HC-B 16-TFQ-76/O1STM20G-EMV	**1587360**	5
HC-B 16-TFQ-76/O1STM25G-EMV	**1642564**	5
HC-B 16-TFQ-76/O1STM25S-EMV	**1642577**	5
HC-B 16-TFQ-76/O1STM32G-EMV	**1642580**	5
HC-B 16-TFQ-76/O1STM32S-EMV	**1642593**	5
HC-B 16-TFQ-76/O1STM40G-EMV	**1642603**	5
HC-B 16-AMQ-EMV	**1642742**	10
See from page 418		

Type	Order No.	Pcs. Pkt.
HC-B 24-TFQ-76/O1STM25G-EMV	**1642784**	5
HC-B 24-TFQ-76/O1STM25S-EMV	**1642797**	5
HC-B 24-TFQ-76/O1STM32G-EMV	**1642807**	5
HC-B 24-TFQ-76/O1STM32S-EMV	**1642810**	5
HC-B 24-TFQ-76/O1STM40G-EMV	**1642823**	5
HC-B 24-TFQ-76/O1STM40S-EMV	**1642836**	5
HC-B 24-AMQ-EMV	**1642962**	5
See from page 418		

60 mm x 35 mm IP65	82 mm x 35 mm IP65	108 mm x 35 mm IP65
Aluminum, die-cast EMC coating, silver Steel, galvanized NBR, conductive	Aluminum, die-cast EMC coating, silver Steel, galvanized NBR, conductive	Aluminum, die-cast EMC coating, silver - NBR, conductive
-40°C ... 100°C	-40°C ... 100°C	-40°C ... 100°C

Accessories
Cable glands

Plastic cable glands are easy to install and cover a wide range of conductor diameters, thanks to the clamping cage principle combined with excellent strain relief. They are suitable for universal application in mechanical and plant engineering, in measuring and control technology, in automation and electrical engineering and in robot construction.

Brass screw connections can be used when particularly high levels of stability and safety are required.

EMC screw connections offer a simple connection for shielded conductors and are especially easy to assemble thanks to the highly flexible contact springs.

AS-i screw connections are available for routing AS-i conductors.

Notes:

For installation instructions for EMC screw connection, see page 575.

HC-K-KV-M...

Plastic gland

Description	Thread type	Type	Order No.	Pcs. / Pkt.
Plastic gland, for conductor diameter [mm]:				
5 mm ... 10 mm	M16	**HC-K-KV-M16(5-10)**	**1690613**	25
8 mm ... 13 mm	M20	**HC-K-KV-M20(8-13)**	**1690626**	25
11 mm ... 17 mm	M25	**HC-K-KV-M25(11-17)**	**1690639**	25
15 mm ... 21 mm	M32	**HC-K-KV-M32(15-21)**	**1690642**	10
19 mm ... 28 mm	M40	**HC-K-KV-M40(19-28)**	**1690655**	10
Metal screw connection, for conductor diameter [mm]:				
5 mm ... 9 mm	M16			
9 mm ... 13 mm	M20			
11 mm ... 16 mm	M20			
11 mm ... 16 mm	M25			
14 mm ... 21 mm	M25			
14 mm ... 21 mm	M32			
19 mm ... 27 mm	M32			
19 mm ... 27 mm	M40			
27 mm ... 34 mm	M40			
EMC screw connection, for conductor diameter [mm]:				
4.5 mm ... 9 mm	M16			
7 mm ... 12.5 mm	M20			
9 mm ... 16.5 mm	M25			
11 mm ... 21 mm	M32			
19 mm ... 28 mm	M40			
Metal screw connection for an AS-Interface flat-ribbon conductor				
Thread type: M20	M20			
Thread type: M25	M25			
Special cable gland M25, brass With 10 mm and 11 mm hole				

Technical data	
Material data	
Cable gland material	Polyamide, RAL 7035
Material, insert	-
Seal material	Neoprene
Material, O-ring	-
Inflammability class acc. to UL 94	V2
Mechanical data	
Degree of protection	IP68, to 5 bar
Temperature data	
Ambient temperature (operation)	-20°C ... 100°C

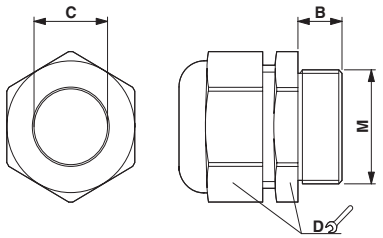
HC-M-KV-M...

Metal gland

HC-EMV-KV-M...

EMC gland

Type	Dimensions [mm] B	C	Thread M	D
HC-K-KV-M16...	8	10.5	16	20
HC-K-KV-M20...	8	13.5	20	24
HC-K-KV-M25...	8	17.5	25	29
HC-K-KV-M32...	10	21.5	32	36
HC-K-KV-M40...	10	28.5	40	46



Dimensional drawing: HC-K-KV-M...

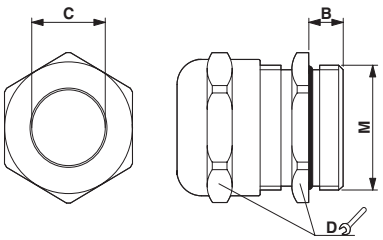
Type	Order No.	Pcs. / Pkt.
HC-M-KV-M16(5-9)	1690558	25
HC-M-KV-M20(9-13)	1690561	25
HC-M-KV-M20(11-16)	1645998	25
HC-M-KV-M25(11-16)	1690574	25
HC-M-KV-M25(14-21)	1646007	25
HC-M-KV-M32(14-21)	1690587	10
HC-M-KV-M32(19-27)	1646010	10
HC-M-KV-M40(19-27)	1690590	10
HC-M-KV-M40(27-34)	1607729	10
HC-M-KV-M20(1ASI)	1584017	10
HC-M-KV-M25(1ASI)	1584020	10
HC-M-KV-M25(1X10/1X11)	1580228	10

HC-M-KV-M...(x-y)	HC-M-KV-M...(1ASI)
Nickel-plated brass	Nickel-plated brass
PA	PA
Neoprene	TPE
NBR	NBR
-	-
IP68, to 5 bar	IP65
-20°C ... 100°C	-20°C ... 100°C

Type	Order No.	Pcs. / Pkt.
HC-EMV-KV-M16(4,5-9)	1690493	25
HC-EMV-KV-M20(7-12,5)	1690503	25
HC-EMV-KV-M25(9-16,5)	1690516	25
HC-EMV-KV-M32(11-21)	1690529	25
HC-EMV-KV-M40(19-28)	1690545	10

Nickel-plated brass
PA
Neoprene
NBR
-
IP68, to 5 bar
-20°C ... 100°C

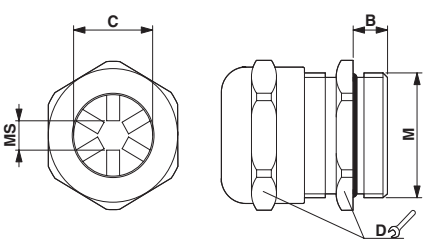
Type	Dimensions [mm] B	C	Thread M	D
HC-M-KV-M16...	5	9.1	16	17
HC-M-KV-M20(9-13)	6	13.3	20	22
HC-M-KV-M20(11-16	6	16.2	20	27
HC-M-KV-M25(11-16)	7	17.3	25	27
HC-M-KV-M25(14-21)	7	21.2	25	34
HC-M-KV-M32(14-21)	8	21.3	32	34
HC-M-KV-M32(19-27)	8	27.5	32	43
HC-M-KV-M40(19-27)	8	28.3	40	43
HC-M-KV-M40(27-34)	8	34.5	40	50
HC-M-KV-M20(1ASI)	6	-	20	22
HC-M-KV-M25(1ASI)	7	-	25	27
HC-M-KV-M25(1X10X11)	7	-	25	34



Dimensional drawing: HC-M-KV-M...

Type	Dimensions [mm] B	C	M	MS[1]	D
HC-EMV-KV-M16...	7	9.0	16	4	20
HC-EMV-KV-M20...	8	12.5	20	5	24
HC-EMV-KV-M25...	8	16.5	25	7.5	29
HC-EMV-KV-M32...	9	21.0	32	9	36
HC-EMV-KV-M40...	9	28.0	40	15	45

[1] Minimum shield diameter



Dimensional drawing: HC-EMV-KV-M...

Accessories
Cable glands for several lines

The screw connection supports allow multiple grommets to be used.

VC-K-KV-PG16...

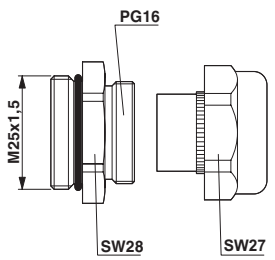
Screw connection with plastic pressure screw

VC-M-KV-PG16...

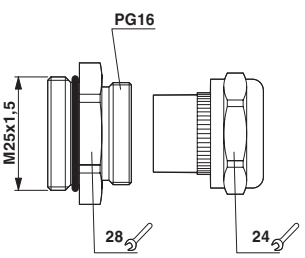
Screw connection with brass pressure screw

Description	Cable diameter [mm]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M25							
		VC-M-KV-PG16/M25 ST	**1644407**	10	**VC-M-KV-PG16/M25 ST**	**1644407**	10
Half screw connection Pg16, consisting of rubber seal with several holes and a pressure screw, for type VC1 housing and HEAVYCON, further types upon request							
	1 x 3 / 1 x 8	**VC-K-KV-PG16 1X3/1X8**	**1885376**	5	**VC-M-KV-PG16 1X3/1X8**	**1885457**	5
	1 x 3 / 1 x 9	**VC-K-KV-PG16 1X3/1X9**	**1885389**	5	**VC-M-KV-PG16 1X3/1X9**	**1885460**	5
	1 x 6 / 1 x 8	**VC-K-KV-PG16 1X6/1X8**	**1885392**	5	**VC-M-KV-PG16 1X6/1X8**	**1885473**	5
	1 x 5 / 1 x 9	**VC-K-KV-PG16 1X5/1X9**	**1885402**	5	**VC-M-KV-PG16 1X5/1X9**	**1885486**	5
	1 x 3 / 2 x 8	**VC-K-KV-PG16 1X3/2X8**	**1885415**	5	**VC-M-KV-PG16 1X3/2X8**	**1885499**	5
	1 x 5 / 2 x 6	**VC-K-KV-PG16 1X5/2X6**	**1885428**	5	**VC-M-KV-PG16 1X5/2X6**	**1885509**	5
	2 x 6 / 1 x 7	**VC-K-KV-PG16 2X6/1X7**	**1885431**	5	**VC-M-KV-PG16 2X6/1X7**	**1885512**	5
	3 x 7	**VC-K-KV-PG16 3X7**	**1885444**	5	**VC-M-KV-PG16 3X7**	**1885525**	5
Closing cap, for closing unused bore holes in multiple seals and cable glands							
	Ø 3 mm	**SEALING PLUG 3X12 RD**	**1400238**	10	**SEALING PLUG 3X12 RD**	**1400238**	10
	Ø 5 mm	**SEALING PLUG 5X12 RD**	**1400253**	10	**SEALING PLUG 5X12 RD**	**1400253**	10
	Ø 6 mm	**SEALING PLUG 6X16 RD**	**1400254**	10	**SEALING PLUG 6X16 RD**	**1400254**	10
	Ø 7 mm	**SEALING PLUG 7X16 RD**	**1400255**	10	**SEALING PLUG 7X16 RD**	**1400255**	10
	Ø 8 mm	**SEALING PLUG 8X16 RD**	**1400257**	10	**SEALING PLUG 8X16 RD**	**1400257**	10
	Ø 12 mm	**SEALING PLUG 12X22 RD**	**1400260**	10	**SEALING PLUG 12X22 RD**	**1400260**	10
	Ø 13 mm	**SEALING PLUG 13X22 RD**	**1400265**	10	**SEALING PLUG 13X22 RD**	**1400265**	10

Technical data	**VC-K-KV.../...**	**VC-M-KV...ST**	**VC-M-KV.../...**	**VC-M-KV...ST**
Material data				
Material	PA	Brass, nickel-plated	Brass, nickel-plated	Brass, nickel-plated
Sealing material	TPE	-	TPE	-
Material, O-ring	-	NBR	-	NBR
Degree of protection	IP65	-	IP65	-
Temperature data				
Ambient temperature (operation)	-40°C ... 80°C	-	-40°C ... 125°C	-



VC-M-KV-PG16/M25 ST / VC-K-KV-PG16...



VC-M-KV-PG16/M25 ST / VC-M-KV-PG16...

Accessories

Cable screw connections for several lines

The screw connection supports allow multiple grommets to be used.

VC-K-KV-PG21 ...

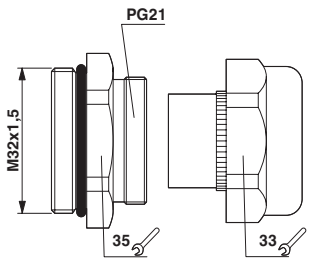
Screw connection with plastic pressure screw

VC-M-KV-PG21 ...

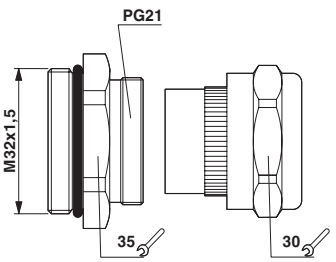
Screw connection with brass pressure screw

Description	Cable diameter [mm]	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Cable screw connection supports, for adapting the Pg half screw connections in metric cable entry, M32							
		VC-M-KV-PG21/M32 ST	**1644397**	10	**VC-M-KV-PG21/M32 ST**	**1644397**	10
Half screw connection Pg21, consisting of rubber seal, several holes and a pressure screw, for Type VC2 ... VC4 and HEAVYCON housing, additional types available on request							
	1 x 6 / 2 x 9	**VC-K-KV-PG21 1X6/2X9**	**1885538**	5	**VC-M-KV-PG21 1X6/2X9**	**1885619**	5
	1 x 8,5 / 1 x 12	**VC-K-KV-PG21-1X8,5/1X12**	**1885279**	5	**VC-M-KV-PG21- 1X8,5/1X12**	**1854970**	5
	2 x 4,5 / 1 x 13	**VC-K-KV-PG21-2X4,5/1X13**	**1885282**	5			
	2 x 6 / 2 x 8	**VC-K-KV-PG21 2X6/2X8**	**1885554**	5	**VC-M-KV-PG21 2X6/2X8**	**1885635**	5
	2 x 7,2 / 1 x 10,5	**VC-K-KV-PG21 2X7,2/1X10,5**	**1885567**	5	**VC-M-KV-PG21 2X7,2/1X10,5**	**1885648**	5
	3 x 7	**VC-K-KV-PG21 3X7**	**1885570**	5	**VC-M-KV-PG21 3X7**	**1885651**	5
	3 x 9	**VC-K-KV-PG21 3X9**	**1885583**	5	**VC-M-KV-PG21 3X9**	**1885664**	5
	4 x 6,5	**VC-K-KV-PG21 4X6,5**	**1885596**	5	**VC-M-KV-PG21 4X6,5**	**1885677**	5
	4 x 8	**VC-K-KV-PG21 4X8**	**1885606**	5	**VC-M-KV-PG21 4X8**	**1885680**	5
Closing cap, for closing unused bore holes in multiple seals and cable glands							
	Ø 3 mm	**SEALING PLUG 3X12 RD**	**1400238**	10	**SEALING PLUG 3X12 RD**	**1400238**	10
	Ø 5 mm	**SEALING PLUG 5X12 RD**	**1400253**	10	**SEALING PLUG 5X12 RD**	**1400253**	10
	Ø 6 mm	**SEALING PLUG 6X16 RD**	**1400254**	10	**SEALING PLUG 6X16 RD**	**1400254**	10
	Ø 7 mm	**SEALING PLUG 7X16 RD**	**1400255**	10	**SEALING PLUG 7X16 RD**	**1400255**	10
	Ø 8 mm	**SEALING PLUG 8X16 RD**	**1400257**	10	**SEALING PLUG 8X16 RD**	**1400257**	10
	Ø 12 mm	**SEALING PLUG 12X22 RD**	**1400260**	10	**SEALING PLUG 12X22 RD**	**1400260**	10
	Ø 13 mm	**SEALING PLUG 13X22 RD**	**1400265**	10	**SEALING PLUG 13X22 RD**	**1400265**	10

Technical data	**VC-K-KV.../...**	**VC-M-KV...ST**	**VC-M-KV.../...**	**VC-M-KV...ST**
Material data				
Material	PA	Brass, nickel-plated	Brass, nickel-plated	Brass, nickel-plated
Sealing material	TPE	-	TPE	-
Material, O-ring	-	NBR	-	NBR
Degree of protection	IP65	-	IP65	-
Temperature data				
Ambient temperature (operation)	-40°C ... 80°C	-	-40°C ... 125°C	-



VC-M-KV-PG21/M32 ST / VC-K-KV-PG21...



VC-M-KV-PG21/M32 ST / VC-M-KV-PG21...

Accessories, cable glands with bend protection, strain relief clamps

For applications with extreme requirements for bend protection and strain relief, screw connections with flared cable guard and strain relief clamps are available.

HC-M-KV-T-M...

Metal screw connection
with conductor bend protection and strain relief

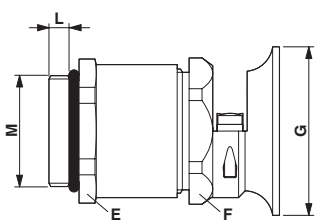
HC-M-KV-Z-M...

Metal screw connection
with strain relief clamp

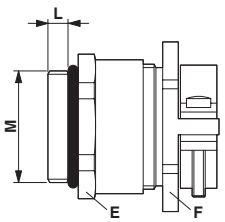
Description	Thread type	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Metal screw connection with conductor bend protection and strain relief, conductor sealing range/thread length							
7,5 ... 15 mm / 10 ... 16 mm	M20	**HC-M-KV-T-M20**	**1646188**	10			
10 ... 19 mm / 14 ... 21 mm	M25	**HC-M-KV-T-M25**	**1646191**	10			
18 ... 27 mm / 18 ... 30 mm	M32	**HC-M-KV-T-M32**	**1646201**	10			
Metal screw connection with strain relief clamp, conductor sealing range/thread length:							
7,5 ... 15 mm / 11 ... 17 mm	M20				**HC-M-KV-Z-M20**	**1646146**	10
10 ... 19 mm / 12 ... 22 mm	M25				**HC-M-KV-Z-M25**	**1646159**	10
18 ... 27 mm / 18 ... 30 mm	M32				**HC-M-KV-Z-M32**	**1646162**	10
24 ... 33 mm / 24 ... 36 mm	M40				**HC-M-KV-Z-M40**	**1646175**	10
Technical data							
Material data							
Cable gland material		Nickel-plated brass			Nickel-plated brass		
Material, O-ring		NBR			NBR		
Cable seal material		Perbunan			Perbunan		
Degree of protection		IP65			IP65		
Temperature data							
Ambient temperature (operation)		-20°C ... 80°C			-20°C ... 80°C		

Type	L [mm]	E [WAF]	F [WAF]	G [mm]	M
HC-M-KV-T-M20	6	24	24	32	M20
HC-M-KV-T-M25	7	30	30	38	M25
HC-M-KV-T-M32	8	40	41	50	M32

Type	L [mm]	E [WAF]	F [WAF]	M
HC-M-KV-Z-M20	6	24	27	M20
HC-M-KV-Z-M25	7	30	34	M25
HC-M-KV-Z-M32	8	40	42	M32
HC-M-KV-Z-M40	8	50	52	M40



HC-M-KV-T-M...



HC-M-KV-Z-M...

Accessories
Pressure screws, seals

For applications for higher requirements with regard to bend protection and strain relief, pressure screws with trumpet shaped conductor bend protection and strain relief clamps are available.

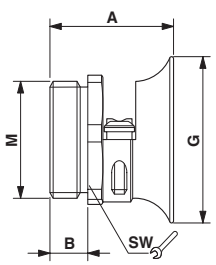
HC-DS-PG...
Pressure screw

HC-...
Pressure screw set / seal

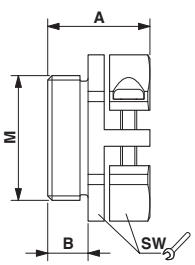
Description	Thread type	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Pressure screws, with flared cable bend protection, for housing with Pg supports, clamping range:							
8 mm ...11 mm	Pg11	**HC-DS-PG11-T**	**1686779**	10			
8 mm ... 13.5 mm	Pg13.5	**HC-DS-PG13-T**	**1772683**	10			
9 mm ... 15 mm	Pg16	**HC-DS-PG16-T**	**1772696**	10			
13 mm ... 20 mm	Pg21	**HC-DS-PG21-T**	**1772706**	10			
20 mm ... 27 mm	Pg29	**HC-DS-PG29-T**	**1772719**	10			
Pressure screws, with strain relief clamp, for housing with Pg supports, clamping range:							
10 mm ... 14 mm	Pg13.5	**HC-DS-PG13-Z**	**1772625**	10			
11 mm ... 15 mm	Pg16	**HC-DS-PG16-Z**	**1772638**	10			
12 mm ... 20 mm	Pg21	**HC-DS-PG21-Z**	**1772641**	10			
19 mm ... 27 mm	Pg29	**HC-DS-PG29-Z**	**1772654**	10			
25.5 mm ... 34 mm	Pg36	**HC-DS-PG36-Z**	**1772667**	10			
Pressure screw set, consisting of notched seal, two washers and pressure screw, for housings with PG supports, sealing range:							
7.5 mm ... 12.5 mm	Pg11				**HC-DS-PG11-E**	**1675476**	10
7.5 mm ... 12.5 mm	Pg13.5				**HC-DS-PG13-E**	**1676873**	10
7.5 mm ... 15 mm	Pg16				**HC-DS-PG16-E**	**1676899**	10
10 mm ... 19 mm	Pg21				**HC-DS-PG21-E**	**1676886**	10
18 mm ... 27 mm	Pg29				**HC-DS-PG29-E**	**1676909**	10
24 mm ... 33 mm	Pg36				**HC-DS-PG36-E**	**1676912**	10
Pressure screw set, consisting of notched seal, two washers and pressure screw, for housings with metric supports, sealing range:							
4 mm ... 13 mm	M20				**HC-M-DE-M20**	**1647967**	10
8.5 mm ... 18 mm	M25				**HC-M-DE-M25**	**1647970**	10
16 mm ... 25 mm	M32				**HC-M-DE-M32**	**1647983**	10
23 mm ... 32 mm	M40				**HC-M-DE-M40**	**1647996**	10
Notched seals, for Pg pressure screws, sealing range:							
7.5 mm ... 12.5 mm	Pg11				**HC-DR-PG11**	**1686795**	10
7.5 mm ... 12.5 mm	Pg13.5				**HC-DR-PG13**	**1686575**	10
7.5 mm ... 15 mm	Pg16				**HC-DR-PG16**	**1686588**	10
10 mm ... 19 mm	Pg21				**HC-DR-PG21**	**1686591**	10
18 mm ... 27 mm	Pg29				**HC-DR-PG29**	**1686601**	10
24 mm ... 33 mm	Pg36				**HC-DR-PG36**	**1686614**	10

Technical data		
Material data		
Material, pressure screw	Nickel-plated brass	Nickel-plated brass
Cable seal material	-	Perbunan
Degree of protection	-	IP54
Temperature data		
Ambient temperature (operation)	-	-20°C ... 80°C

Type	A	B	M	SW
HC-DS-PG11-T	22.5	6	Pg11	20
HC-DS-PG13-T	23.5	7.5	Pg13.5	22
HC-DS-PG16-T	23.5	7.5	Pg16	24
HC-DS-PG21-T	26.5	8	Pg21	30
HC-DS-PG29-T	30.5	8	Pg29	41
HC-DS-PG13-Z	18	6.5	Pg13.5	24
HC-DS-PG16-Z	19	7.5	Pg16	27
HC-DS-PG21-Z	21	8	Pg21	34
HC-DS-PG29-Z	22	8	Pg29	42
HC-DS-PG36-Z	25.5	9.5	Pg36	52



HC-DS-PG...T



HC-DS-PG...Z

Accessories
Extension, reducing, NPT adapters and filler plugs

The area of application of existing housings can be extended with expansion, reducing, and NPT adapters.

A housing with an M32 screw thread can, for example, be equipped with an M25 screw connection by using the REDUC-M-KV-M 32/M 25 reducing adapter.

NPT adapters make it possible to use US cable glands with the conical National Pipe Thread (NPT thread).

The filler plugs are used to close off unused screw openings housings.

ENLAR-M-KV-M...

Extension adapter

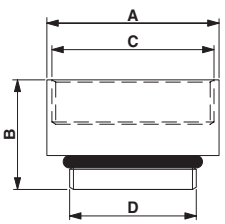
Description	Type	Order No.	Pcs. / Pkt.
Extension adapter, including O-ring			
M16 to M20	**ENLAR-M-KV-M16/M20**	**1647653**	10
M20 to M25	**ENLAR-M-KV-M20/M25**	**1647666**	10
M25 to M32	**ENLAR-M-KV-M25/M32**	**1647679**	10
M32 to M40	**ENLAR-M-KV-M32/M40**	**1647682**	10
Reducing adapter, including O-ring			
M20 to M16			
M25 to M20			
M32 to M25			
M40 to M32			
NPT adapter, including O-ring seal			
1/2" on M20			
3/4" on M25			
1" on M32			
1 1/4" on M40			
Filler plug, for metric screw connection openings, including O-ring			
M16			
M20			
M25			
M32			
M40			
Filler plug, for Pg screw connection openings, including O-ring			
Pg11			
Pg13.5			
Pg16			
Pg21			
Pg29			
Pg36			

Technical data	
Material data	
Material	Nickel-plated brass
Material, O-ring	NBR
Degree of protection	-
Temperature data	
Ambient temperature (operation)	-20°C ... 80°C

Type	Cable diameter [mm]	A [mm]	B [mm]	C [mm]	D [mm]
ENLAR-M-KV-M16/M20	≤ 12	22	17.5	M20	M16
ENLAR-M-KV-M20/M25	≤ 15	27	19	M25	M20
ENLAR-M-KV-M25/M32	≤ 20	34	21	M32	M25
ENLAR-M-KV-M32/M40	≤ 26	42	23	M40	M32

Type	Dimensions [mm]				Dimension ["]	Thread
	A	B	C	D	E	M
HC-NPT-1/2-M20	25.0	6.5	24	15	1/2	20
HC-NPT-3/4-M25	28.0	7.0	30	18	3/4	25
HC-NPT-1-M32	33.0	8.0	38	27	1	32
HC-NPT-1 1/4-M40	34.0	8.0	46	34	1 1/4	40

Type	A [mm]	B [mm]	C [mm]	D [mm]
REDUC-M-KV-M20/M16	24	9	M16	M20
REDUC-M-KV-M25/M20	30	10	M20	M25
REDUC-M-KV-M32/M25	37	11.5	M25	M32
REDUC-M-KV-M40/M32	43	11.5	M32	M40



ENLAR-M-KV-M...

REDUC-M-KV-M...

Reducing adapter

HC-NPT-...

NPT adapter

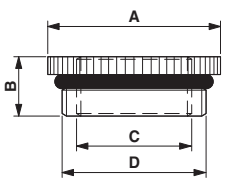
HC-...-BS-...

Filler plug

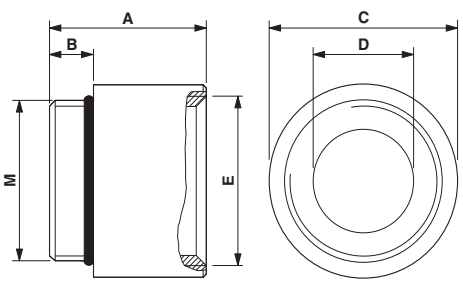
Type	Order No.	Pcs. / Pkt.
REDUC-M-KV-M20/M16	**1647611**	10
REDUC-M-KV-M25/M20	**1647624**	10
REDUC-M-KV-M32/M25	**1647637**	10
REDUC-M-KV-M40/M32	**1647640**	10
Nickel-plated brass		
NBR		
-		
-20°C ... 80°C		

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
Nickel-plated brass		
NBR		
-		
-20°C ... 80°C		

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
Nickel-plated brass		
NBR		
IP65		
-20°C ... 80°C		



REDUC-M-KV-M...



HC-NPT-...

Accessories, crimp contacts

Crimping machines for turned contacts on request.

For rolled contacts, Phoenix Contact recommends crimping machines from:
– Kurt Betz GmbH
D-74211 Leingarten / Germany

Notes:

For voltages less than 5 V and currents less than 5 mA, gold-plated contacts are recommended.

CK1,6-ED-...

Turned crimp contacts, Ø 1.6 mm,
for HC-M-12-, HC-M-03/04-, HC-M-17-, HC-M-EMV-, HC-D, HC-DD- and VC-D contact carriers

CK2,5-ED-...

Turned crimp contacts, Ø 2.5 mm,
for HC-M-06-, HC-M-HV-, HC-M-08-, HC-M-20-, HC-A-, HC-BB-, HC-B-, HC-HV contact carriers

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Turned female contacts, silver-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.37 mm² / AWG 26 ... 22	**CK1,6-ED-0,37BU AG**	**1663394**	100			
0.50 mm² / AWG 20	**CK1,6-ED-0,50BU AG**	**1663404**	100	**CK2,5-ED-0,50BU AG**	**1663640**	100
0.75 mm² / AWG 18	**CK1,6-ED-0,75BU AG**	**1663417**	100	**CK2,5-ED-0,75BU AG**	**1663653**	100
0.75 mm² ... 1.00 mm² / AWG 18	**CK1,6-ED-1,00BU AG**	**1663420**	100	**CK2,5-ED-1,00BU AG**	**1663666**	100
1.50 mm² / AWG 16	**CK1,6-ED-1,50BU AG**	**1663433**	100	**CK2,5-ED-1,50BU AG**	**1663679**	100
2.50 mm² / AWG 14	**CK1,6-ED-2,50BU AG**	**1663446**	100	**CK2,5-ED-2,50BU AG**	**1663682**	100
4.00 mm² / AWG 12				**CK2,5-ED-4,00BU AG**	**1663705**	100
6.00 mm² / AWG 10						
Turned male contacts, silver-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.37 mm² / AWG 26 ... 22	**CK1,6-ED-0,37ST AG**	**1663336**	100			
0.50 mm² / AWG 20	**CK1,6-ED-0,50ST AG**	**1663349**	100	**CK2,5-ED-0,50ST AG**	**1663572**	100
0.75 mm² / AWG 18	**CK1,6-ED-0,75ST AG**	**1663352**	100	**CK2,5-ED-0,75ST AG**	**1663585**	100
0.75 mm² ... 1.00 mm² / AWG 18	**CK1,6-ED-1,00ST AG**	**1663365**	100	**CK2,5-ED-1,00ST AG**	**1663598**	100
1.50 mm² / AWG 16	**CK1,6-ED-1,50ST AG**	**1663378**	100	**CK2,5-ED-1,50ST AG**	**1663608**	100
2.50 mm² / AWG 14	**CK1,6-ED-2,50ST AG**	**1663381**	100	**CK2,5-ED-2,50ST AG**	**1663611**	100
4.00 mm² / AWG 12				**CK2,5-ED-4,00ST AG**	**1663637**	100
6.00 mm² / AWG 10						
Turned female contacts, gold-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.37 mm² / AWG 26 ... 22	**CK1,6-ED-0,37BU AU**	**1674969**	100			
0.50 mm² / AWG 20	**CK1,6-ED-0,50BU AU**	**1674480**	100	**CK2,5-ED-0,50BU AU**	**1674859**	100
0.75 mm² / AWG 18	**CK1,6-ED-0,75BU AU**	**1672440**	100			
0.75 mm² ... 1.00 mm² / AWG 18	**CK1,6-ED-1,00BU AU**	**1674943**	100	**CK2,5-ED-1,00BU AU**	**1674833**	100
1.50 mm² / AWG 16	**CK1,6-ED-1,50BU AU**	**1674930**	100	**CK2,5-ED-1,50BU AU**	**1674820**	100
2.50 mm² / AWG 14	**CK1,6-ED-2,50BU AU**	**1674985**	100	**CK2,5-ED-2,50BU AU**	**1674862**	100
4.00 mm² / AWG 12				**CK2,5-ED-4,00BU AU**	**1674846**	100
Turned male contacts, gold-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.37 mm² / AWG 26 ... 22	**CK1,6-ED-0,37ST AU**	**1674901**	100			
0.50 mm² / AWG 20	**CK1,6-ED-0,50ST AU**	**1672453**	100	**CK2,5-ED-0,50ST AU**	**1674804**	100
0.75 mm² / AWG 18	**CK1,6-ED-0,75ST AU**	**1674914**	100			
0.75 mm² ... 1.00 mm² / AWG 18	**CK1,6-ED-1,00ST AU**	**1674888**	100	**CK2,5-ED-1,00ST AU**	**1674781**	100
1.50 mm² / AWG 16	**CK1,6-ED-1,50ST AU**	**1674875**	100	**CK2,5-ED-1,50ST AU**	**1674778**	100
2.50 mm² / AWG 14	**CK1,6-ED-2,50ST AU**	**1674927**	100	**CK2,5-ED-2,50ST AU**	**1674817**	100
4.00 mm² / AWG 12				**CK2,5-ED-4,00ST AU**	**1674794**	100
Turned switch contacts (pin 2 mm lagging) for HC-HV contact carriers, silver-plated contact surface, for conductor cross-section:						
1.00 mm² / AWG 18				**CK2,5-ED-1,00ST-S AG**	**1663857**	100
1.50 mm² / AWG 16				**CK2,5-ED-1,50ST-S AG**	**1663860**	100
2.50 mm² / AWG 14				**CK2,5-ED-2,50ST-S AG**	**1663873**	100
Rolled male contacts, silver-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.50 mm² / AWG 26 ... 20						
0.50 mm² ... 1.50 mm² / AWG 20 ... 16						
Rolled female contacts, silver-plated contact surface, for conductor cross-section:						
0.14 mm² ... 0.50 mm² / AWG 26 ... 20						
0.50 mm² ... 1.50 mm² / AWG 20 ... 16						

Technical data	CK 1,6-ED ...AG	CK 1,6-ED ...AU	CK 2,5-ED ...AG	CK 2,5-ED ...AU
Material data				
Contact material	Copper alloy	Copper alloy	Copper alloy	Copper alloy
Contact surface material	Hard-silver plated	Hard gold-plated	Hard-silver plated	Hard gold-plated
Stripping length of the individual wire	8 mm (6 mm in case of 2.5 mm²)	8 mm (6 mm in case of 2.5 mm²)	7.5 mm (9.5 mm at HC-M-HV...)	7.5 mm (9.5 mm at HC-M-HV...)
Insertion/withdrawal cycles	≥ 500	≥ 500	≥ 500	≥ 500
Temperature data				
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C	-40°C ... 125°C

CK4,0-ED-...

Turned crimp contacts, Ø 4.0 mm,
for HC-M-03-, HC-M-03/04-, HC-M-04 module

Type	Order No.	Pcs. / Pkt.
CK4,0-ED-1,50BU AG	**1663271**	25
CK4,0-ED-2,50BU AG	**1663284**	25
CK4,0-ED-4,00BU AG	**1663297**	25
CK4,0-ED-6,00BU AG	**1663307**	25
CK4,0-ED-1,50ST AG	**1663239**	25
CK4,0-ED-2,50ST AG	**1663242**	25
CK4,0-ED-4,00ST AG	**1663255**	25
CK4,0-ED-6,00ST AG	**1663268**	25

Copper alloy	
Hard-silver plated	
9 mm	
(9.6 mm (4-6 mm²))	
≥ 500	
-40°C ... 125°C	

CK1,6-BR-...

Rolled crimp contacts, taped, Ø 1.6 mm,
for HC-D...R, and VC-D...R contact carriers, contact insertion left

Type	Order No.	Pcs. / Pkt.
CK1,6-BR-0,50ST AG	**1884157**	2000
CK1,6-BR-1,50ST AG	**1884144**	2000
CK1,6-BR-0,50BU AG	**1884186**	2000
CK1,6-BR-1,50BU AG	**1884173**	2000

	CK1,6-BR-0,5...	**CK1,6-BR-1,5...**
	Copper alloy	Copper alloy
	Hard-silver plated	Hard-silver plated
	3 mm +1	3.5 mm +1
	≥ 500	≥ 500
	-40°C ... 125°C	-40°C ... 125°C

CK1,6-ER-...

Rolled crimp contacts, single contacts, Ø 1.6 mm,
for HC-D...R, and VC-D...R contact carriers.

Type	Order No.	Pcs. / Pkt.
CK1,6-ER-0,50ST AG	**1884092**	100
CK1,6-ER-1,50ST AG	**1884089**	100
CK1,6-ER-0,50BU AG	**1884128**	100
CK1,6-ER-1,50BU AG	**1884115**	100

	CK1,6-ER-0,5...	**CK1,6-ER-1,5...**
	Copper alloy	Copper alloy
	Hard-silver plated	Hard-silver plated
	3 mm +0,5	3.5 mm +1
	≥ 500	≥ 500
	-40°C ... 125°C	-40°C ... 125°C

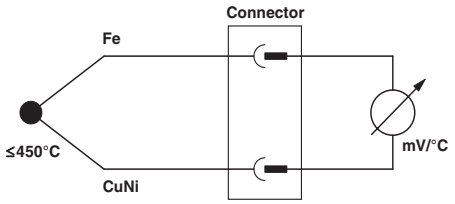
Iron and constantan crimp contacts

In hot-channel injection molding machines, temperatures are often measured using iron/constantan thermocouples. Iron/constantan elements are used for temperatures of up to approximately 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.



CK2,5-ED-0,5...

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

Description	Type	Order No.	Pcs. / Pkt.
Turned female contacts, 0.5 mm²			
iron (Fe), Au surface	**CK2,5-ED-0,5 BU FE**	**1585773**	25
Constants (CuNi), uncoated	**CK2,5-ED-0,5 BU CUNI**	**1585757**	25
Turned male contacts, 0.5 mm²			
iron (Fe), Au surface	**CK2,5-ED-0,5 ST FE**	**1585760**	25
Constants (CuNi), uncoated	**CK2,5-ED-0,5 ST CUNI**	**1585744**	25

Technical data	**CK2,5-ED...FE**	**CK2,5-ED...CUNI**
Material data		
Contact material	Iron	Copper-nickel (constants)
Contact surface material	Hard gold-plated	-
Stripping length of the individual wire	7.5 mm (9.5 mm at HC-M-HV...)	7.5 mm (9.5 mm at HC-M-HV...)
Insertion/withdrawal cycles	≥ 500	≥ 500
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C

Accessories
Fiber optic crimp contacts

Fiber optic 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.

CK1,6-ED-...-POF

Crimp contacts for fiber optic cables, polymer optic fibers (POF)

Description	Type	Order No.	Pcs. / Pkt.
Fiber optic contact POF, turned, for VC-D contact carriers			
Female	**CK1,6-ED-BU-POF**	**1885004**	50
Male	**CK1,6-ED-ST-POF**	**1884995**	50
Polisher, metal, for CK1,6-...POF contacts, POF conductor diameter: 2.2 mm	**POLISHER-POF**	**1686122**	1
Crimping pliers - For turned fiber optic contacts CK1,6-ED...POF	**CRIMPFOX-1,6-ED-POF-N**	**1584839**	1
Stripping tool for FO cables - **Stripping tool** for individual elements	**PSM-FO-STRIP**	**2744199**	1
Removal tool - For contacts CK1,6-ED.../CK1,6-ER.../CK1,6...POF	**VC-EW 1,6**	**1884869**	1
Polishing foil	**POLFOL 1 MIC-POF**	**1636800**	10
Polishing paper	**POLPAP 1500-POF**	**1636813**	10

Technical data	
Material data	
Contact material	Nickel silver
Insertion/withdrawal cycles	≥ 500

Accessories
Shield connection

The HEAVYCON D bus contact is used to connect shielded, 2-core bus conductors.

The connection occupies 4 adjacent positions in the contact carrier and is also suitable as a T-coupler (two positions for the conductor shield).

Notes:

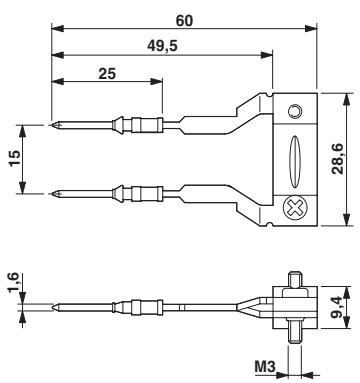
- For crimp contacts, see page 530.

HC-D 4-...BUS

For crimp contact carriers
of series HC-D40 / -D64 / HC-M12

Description	Type	Order No.	Pcs. / Pkt.
Shield connection, for two shielded cables, incl. two loose socket crimp contacts for Profibus cables.	**HC-D 4-BU-2BUS**	**1886139**	1
Shield connection, for a shielded line on male contact carriers, incl. two loose crimp contacts for Profibus line	**HC-D 4-ST-1BUS**	**1886142**	1
Shield connection, for shielded cables on female contact carriers, without loose crimp contacts			
For one bus line	**HC-D 4-1BU**	**1886143**	1
For two bus lines	**HC-D 4-2BU**	**1886140**	1
Shield connection, for shielded cables on male contact carriers, without loose crimp contacts			
For one bus line	**HC-D 4-1ST**	**1886144**	1
For two bus lines	**HC-D 4-2ST**	**1886141**	1
Crimping pliers			
- For turned contacts CK1,6-ED ... CK2,5-ED	**CRIMPFOX-1,6/2,5-ED-4,0**	**1687419**	1
Removal tool			
- For contacts CK1,6-ED.../CK1,6-ER.../CK1,6...POF	**VC-EW 1,6**	**1884869**	1
Assembly tool			
- For contacts CK1,6-ED.../CK2,5-ED.../CK1,6-ER...	**CK1,6/2,5-MWZ**	**1676734**	1

Technical data	
Electrical data	
Rated voltage	60 V
Rated current	10 A
Transmission speed	3 Mbps
Material data	
Contact material	Copper alloy
Contact surface material	Hard-silver plated
Mechanical data	
External cable diameter	6 mm ... 9 mm
Temperature data	
Ambient temperature (operation)	-20°C ... 60°C



HC-D 4-...BUS

Tools for a crimp connection

The crimp connection belongs to the group of non-detachable electric connections.

Owing to the crimping profiles that are perfectly adapted to the crimping sleeve and the conductor, a reliable electrical connection can be established between the core and the crimp contact by specifically deforming the crimping sleeve and the conductor (by closing the crimping pliers).

The crimping pliers are equipped with locators that simplify the exact positioning of the crimp contact and the core.

Available crimping tools

Matching pliers are available for different crimp contacts.

Crimping pliers are available for copper litz wires, coaxial contacts and fiber optics contacts.

Pliers must be closed carefully to obtain a reliable crimp connection. This is ensured using a pressure lock. This means that the pliers can only be opened again after the crimping process has been completed.

The main advantages of crimp connections are the efficient processing of the contact using a crimping machine and the uniform crimping quality.

Crimping tools for polymer conductors

Polymer conductors are increasingly being used outside the automobile sector as well. This requires a simple and reliable installation in the field. The connection between a POF conductor and the POF plug connection can be established easily and quickly using crimping pliers.

The cable losses (attenuation) of the connection point must be as low as possible here. High quality POF crimping pliers are a prerequisite for this.

The CRIMPFOX-1,6-ED-POF POF crimping pliers ensures:

– A precise press-in depth
– A exact positioning of POF contacts
– An exact length positioning of the POF conductor

Assembly/contact removal tools

Assembly tools must occasionally be used for small conductor cross-sections. They press the crimp contact safely into the contact insert.

An already snapped-in contact must be removed again in the case of assembly errors or changes in wiring. This is done using a contact removal tool.

A matching contact removal tool is available for every crimp contact.

Contacts of the CK 1,6... series are removed from the front side of contact inserts using the VC-EW 1,6 tool. In case of turned and rolled CK 1,6...ST... male contacts and turned CK 1,6 ED...BU... female contacts, the sleeve side of the VC-EW 1,6 tool is used.

In order to remove the rolled CK 1,6 ER-BU... female contacts, the pin side of the VC-EW 1,6 tool must be inserted into the female contact to open the socket lock. The corresponding contact can then be removed from the crimp chamber by pulling the core.

The requirements for crimp connections are described in EN 60352-2.

An important quality feature of the crimp connection is its tensile strength. It can be measured easily.

Tensile strength of the conductor from the crimp contact (as per EN 60352-2)

Conductor cross-section		Tensile strength
mm^2	AWG	N
0.05	30	6
0.08	28	11
0.12	26	15
0.14		18
0.22	24	28
0.25		32
0.32	22	40
0.50	20	60
0.75		85
0.82	18	90
1.00		108
1.30	16	135
1.50		150
2.10	14	200
2.50		230
3.30	12	275
4.00		310
5.30	10	355
6.00		360
8.40	8	370
10.00		380

Accessories
Crimping tool

CRIMPFOX... / PSM...

Crimping tools / stripping pliers

Crimp contacts must be connected to the conductors. This is done by means of crimping. There are crimping pliers for copper wires, coaxial contacts and FO contacts. The crimping pliers have locators that facilitate accurate positioning of the crimp contact and conductor. To ensure a reliable crimp connection, the pliers must be closed correctly. This is guaranteed by means of a pressure lock.

The requirements placed on crimp connections are described in EN 60352-2. A major feature of the quality of the crimp connection is the tensile strength of the connection. It is simple to measure.

Description	Type	Order No.	Pcs. / Pkt.
Crimping pliers			
- For turned contacts CK1,6-ED ... CK2,5-ED	**CRIMPFOX-1,6/2,5-ED-4,0**	**1687419**	1
- For rolled contacts CK1,6-ER...	**CRIMPFOX-1,6-ER-1,50-AT**	**1884843**	1
- For turned contacts VS...CD (D-SUB contacts)	**CRIMPFOX RC 2,5**	**1205448**	1
- For turned contacts CK4,0-ED... (1.5 mm^2 ... 2.5 mm^2)	**CRIMPFOX-4,0-ED-2,50**	**1205846**	1
- For turned contacts CK4,0-ED... (4 mm^2 ... 6 mm^2)	**CRIMPFOX-4,0-ED-6,00**	**1205859**	1
- For turned fiber optics contacts CK1,6-ED...POF	**CRIMPFOX-1,6-ED-POF-N**	**1584839**	1
- For turned coax contacts HC-M-04...KOAX...	**CRIMPFOX-HCM-KOAX**	**1206023**	1
Spare die			
- For CRIMPFOX 1,6/2,5-ED-4,0	**CRIMPFOX-1,6/2,5-ED-4,0 DIE**	**1886948**	1
Stripping tool for FO cables			
- **Stripping tool** for individual elements	**PSM-FO-STRIP**	**2744199**	1

Accessories
Assembly / removal tool

It is sometimes necessary to use assembly tools in cases of small conductor cross-sections. They are used to press the crimp contact firmly into the contact insert.

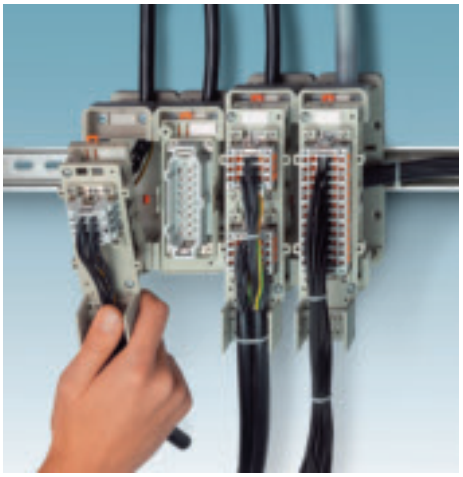
If incorrect components are installed or alterations are made to the wiring, it becomes necessary to remove a contact that is already engaged. This is done with the aid of a removal tool.

CK...

Assembly / removal tools

Description	Type	Order No.	Pcs. / Pkt.
Assembly tool			
- For contacts CK1,6-ED.../CK2,5-ED.../CK1,6-ER...	**CK1,6/2,5-MWZ**	**1676734**	1
Removal tool			
- For contacts CK1,6-ED.../CK1,6-ER.../CK1,6...POF	**VC-EW 1,6**	**1884869**	1
- For contacts CK2,5-ED...	**CK2,5-EWZ**	**1662722**	1
- For contacts CK4,0-ED...	**CK4,0-EWZ**	**1662735**	1
- For D-SUB contacts VS-...CD...	**EWR**	**1665075**	1
- For coax contacts HC-M-04...KOAX...	**HC-M4-KOAX-EWZ**	**1676747**	1
- For EMC connector HC-M-EMV...	**HC-M-EMV-KON-EWZ**	**1678635**	1
- For locking sleeve of the HC-M-HV-MOD... module	**HC-M-AH-EWZ**	**1584826**	1

Accessories
Connector assembly frame



In conjunction with the HC-SMR connector assembly frames, the standardized HEAVYCON contact inserts can also be used on the DIN rail.

The connector assembly frame consists of three parts:
– DIN rail carrier
– Swing frame
– Coupling frame

The swing frame can be swung out 80° to permit quick and easy mounting of the conductor.

Both ends of the plug connection should be labeled with SS-ZB Zack marker strip.

The DIN rail carrier can be snapped onto the DIN rail with just one motion and removed again using a screwdriver.

HC-SMR-...

Hinged connector assembly frame

Description	Type	Order No.	Pcs. / Pkt.
Connector assembly frame, can be swiveled, to snap onto ⊓ 35x15 mm, for contact inserts of series:			
B6/BB10/DD24/M	**HC-SMR-B 6**	**1687956**	1
B10/BB18/DD42/M/K...	**HC-SMR-B10**	**1687969**	1
B16/BB32//D40/DD72/M/K...	**HC-SMR-B16**	**1687972**	1
B24/BB46/D64/DD108/M	**HC-SMR-B24**	**1687985**	1
B6 (2x) /BB10 (2x) /DD24 (2x) /M	**HC-SMR-2B 6**	**1687998**	1
D15/A10	**HC-SMR-D15**	**1604010**	1
D25/A16	**HC-SMR-D25**	**1604023**	1
Connector assembly frame, cannot be swiveled, to snap onto ⊓ 35x15 mm, with panel mounting base: HC-B 6-AML, for contact inserts of the series: B6/BB10/DD24/M HC-B10-AMQ, for contact inserts of the series: B10/BB18/DD42/M/K... HC-B16-AMQ, for contact inserts of the series: B16/BB32/D40/DD72/M/K... HC-B24-AMQ, for contact inserts of the series: B24/BB46/D64/DD108/M			
Marker tags, 5-section, unprinted, labeling with X-PEN, M-PEN, plotter or BKMT 20 x 8 label			
Lettering field size: 20 x 8 mm	**SS-ZB WH**	**5031171**	50

Technical data	
Material data	
Material	PA
Inflammability class acc. to UL 94	HB
Temperature data	
Ambient temperature (operation)	-20°C ... 100°C

HC-SMP...

Connector assembly frame with panel mounting base

Type	Order No.	Pcs. / Pkt.
HC-SMP 125-B 6-AML	**1660957**	5
HC-SMP 125-B10-AMQ	**1660960**	5
HC-SMP 125-B16-AMQ	**1660973**	5
HC-SMP 150-B24-AMQ	**1660944**	5
SS-ZB WH	**5031171**	50

PA
HB

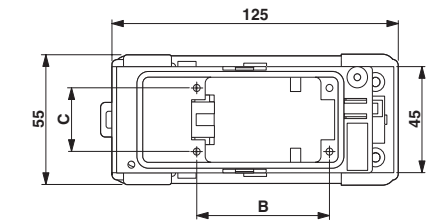
-20°C ... 100°C

Type	A [mm]	B [mm]	C [mm]
HC-SMR-B 6	125	44.0	27.0
HC-SMR-B10	125	57.0	27.0
HC-SMR-B16	125	77.5	27.0
HC-SMR-D15	150	49.5	16.0
HC-SMR-D25	150	66.0	16.0

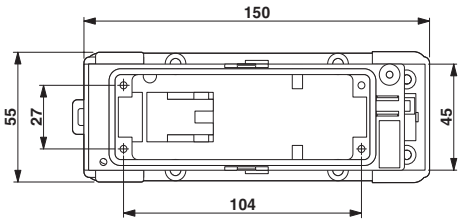
Dimension table: HC-SMR-...

Type	A [mm]
HC-SMP 125-B 6-AML	125
HC-SMP 125-B10-AMQ	125
HC-SMP 125-B16-AMQ	125
HC-SMP 150-B24-AMQ	150

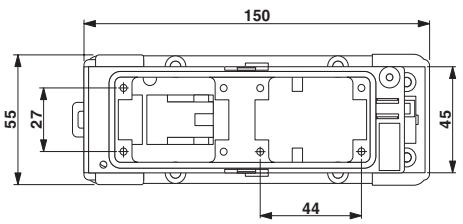
Dimension table: HC-SMP...-B...-A...



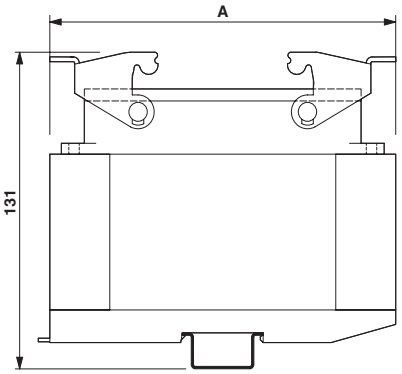
Dimensional drawing: HC-SMR…



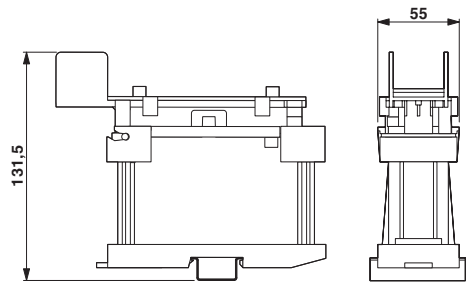
Dimensional drawing: HC-SMR-B 24

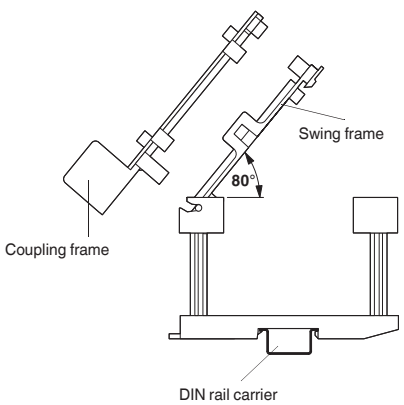


Dimensional drawing: HC-SMR-2B 6



Dimensional drawing: HC-SMP...-B...-A...





Accessories
Replacement latch, bolt, locking screw

HC-...-LB...

Replacement latch

HC-B...-ERS... / HC-B-TMS...

Replacement bolt / Locking screw

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Replacement single locking latch, plastic / high-grade steel, for standard housing (no EMC housing) type:						
B6	**HC-B 6-LB**	**1584211**	10			
B10, HV3	**HC-B 10-LB**	**1584651**	10			
B16, HV6	**HC-B 16-LB**	**1584664**	10			
B24, HV16	**HC-B 24-LB**	**1584677**	10			
Replacement single locking latch, plastic, for standard housing type:						
D7	**HC-D7-LB-KU**	**1584680**	10			
Replacement double locking latch, plastic / high-grade steel, for standard housing (no EMC housing) type:						
B10 ... B24	**HC-B 10-24-QB**	**1637265**	10			
Replacement bolt, steel, for HEAVYCON sleeve housing HC-B...-TFL... (no EMC housings), for type:						
B48				**HC-B 48-LB ERSBOLZ**	**1636114**	10
Replacement locking screw, high-grade steel, for HEAVYCON-ADVANCE housing type:						
B6 ... B24				**HC-B-TMS-ERSSCHR**	**1584198**	10

Accessories

Replacement flat seals and profile gaskets

– Seals not for EMC housing
– Profile seals must be stuck to the housing

HC-...-FL-DI

Replacement flat seal

HC-...-PR-DI

Replacement profile gasket

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Replacement flat seal, self-adhesive, for HEAVYCON panel mounting base type:						
B6	**HC-B 6-FL-DI**	**1663019**	10			
B10, HV3	**HC-B 10-FL-DI**	**1662146**	10			
B16, HV6	**HC-B 16-FL-DI**	**1661451**	10			
B24, HV16	**HC-B 24-FL-DI**	**1774665**	10			
B32	**HC-B 32-FL-DI**	**1687778**	10			
B48	**HC-B 48-FL-DI**	**1774678**	10			
D7	**HC-D 7-FL-DI**	**1645503**	10			
D15	**HC-D 15-FL-DI**	**1679582**	10			
D25	**HC-D 25-FL-DI**	**1679595**	10			
Replacement profile gasket, for supporting base elements of type:						
B6				**HC-B 6-PR-DI**	**1663022**	10
B10				**HC-B 10-PR-DI**	**1663035**	10
B16				**HC-B 16-PR-DI**	**1661079**	10
B24				**HC-B 24-PR-DI**	**1663048**	10
Technical data						
Material data						
Material	NBR			NBR		
Temperature data						
Ambient temperature (operation)	-40°C ... 125°C			-40°C ... 125°C		

Accessories
Cover plates and adapter plates

Partition plates with prefabricated plug connector cutouts are often used in modern control cabinet construction. Not all these cutouts are, however, always used. The unused cutouts can be closed using the HC-...AP cover plates.

The HC-ADP 24 adapter plates can be used to mount the panel mounting bases of types B6, B10 and B16 (or other types with an identical design) on a 35 mm x 113 mm B24 standard cutout.

Adapters are also available for HC-D7-AML... and M23 circular connectors for the wall opening according to the B24 type.

Note:

– Adapter plates HC-B..-ADP-B...GY can be used for housings with protective covers HC-B...-AMLD

HC-...-AP...

Cover plate

Description	Type	Order No.	Pcs. / Pkt.
Cover plate, height: 3.5 mm, for HEAVYCON panel cutouts of type:			
B6 (cutout: 35 mm x 52 mm)	**HC-B 6-AP-GY**	**1660368**	10
B10, HV3 (cutout: 35 mm x 65 mm)	**HC-B 10-AP-GY**	**1660371**	10
B16, HV6 (cutout: 35 mm x 86 mm)	**HC-B 16-AP-GY**	**1660384**	10
B24, HV10/16 (cutout: 35 mm x 113 mm)	**HC-B 24-AP-GY**	**1660397**	10
D15 (cutout: 24 mm x 58 mm)	**HC-D 15-AP-GY**	**1660342**	10
D25 (cutout: 24 mm x 74 mm)	**HC-D 25-AP-GY**	**1660355**	10
Cover plate, height: 7 mm, for individual processing, for HEAVYCON panel cutouts of type:			
B16 (cutout: 35 mm x 86 mm)	**HC-B 16-APV-GY**	**1661121**	10
B24 (cutout: 35 mm x 113 mm)	**HC-B 24-APV-GY**	**1661037**	10
Adapter plate, to reduce HEAVYCON panel cutouts B24 to:			
B16 (cutout: 35 mm x 86 mm)			
B10 (cutout: 35 mm x 65 mm)			
B6 (cutout: 35 mm x 52 mm)			
Adapter plate, to adapt HEAVYCON panel cutout B24 to 3x D7 (cutout: 21.5 mm x 21.5 mm)			
Adapter plate, to adapt HEAVYCON panel cutout B24 to 3 circular connector cutouts (Ø 21 mm)			

Technical data

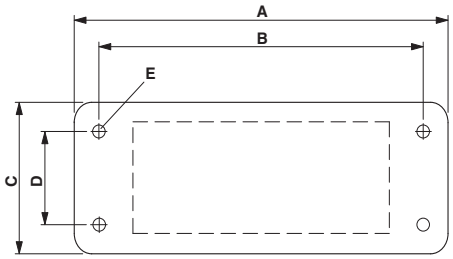
Material data	
Material	PA
Inflammability class acc. to UL 94	HB
Color	Light gray
Degree of protection	IP54
Temperature data	
Ambient temperature (operation)	-20°C ... 100°C

HC-B 24-ADP-...

Adapter plate

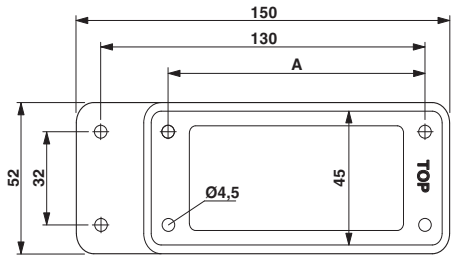
Type	Order No.	Pcs. / Pkt.
HC-B 24-ADP-B 16-GY	1660449	10
HC-B 24-ADP-B 10-GY	1660436	10
HC-B 24-ADP-B 6-GY	1660407	10
HC-B 24-ADP-3D 7-GY	1661448	10
HC-B 24-ADP-3RST-GY	1662175	10

PA	
HB	
Light gray	
IP54	
-20°C ... 100°C	



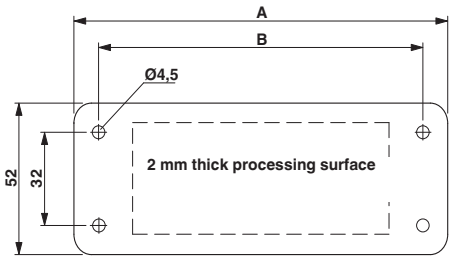
Type	A [mm]	B [mm]	C [mm]	D[mm]	E [mm]
HC-B 6-AP	86	70	52	32	4.5
HC-B 10-AP	103	83	52	32	4.5
HC-B 16-AP	123	103	52	32	4.5
HC-B 24-AP	150	130	52	32	4.5
HC-D 15-AP	87	70	40	17.5	3.5
HC-D 25-AP	103	86	45	17.5	3.5

Dimension table: HC-...-AP...



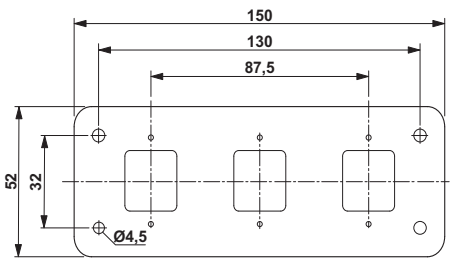
Type	A [mm]	B [mm]
HC-B 24-ADP-B 16...	103	117
HC-B 24-ADP-B 10...	83	97
HC-B 24-ADP-B 6...	70	84

Dimension table: HC-...-ADP...

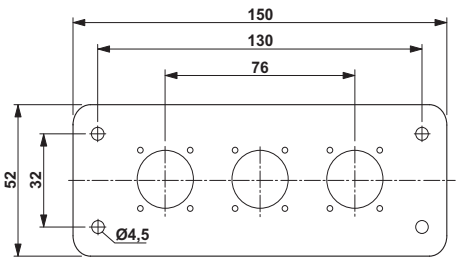


Type	A [mm]	B [mm]	Processing surface [mm]
HC B 16-APV	123	103	36 x 86
HC B 24-APV	150	130	36 x 113

Dimension table: HC-...-APV...



HC-B 24-ADP 3D 7 GY



HC-B 24-ADP 3RST GY

Accessories
D-SUB adapter plates

HC-B...ADP/1 DSUB...

Adapter plate for one D-SUB connector

With the HEAVYCON D-SUB adapter plates, D-SUB plug connectors according to IEC 60807-2 / DIN 41652 can be mounted in the sturdy HEAVYCON housings.

When locked, the HEAVYCON housings fulfill the requirements of IP65 protection (in the case of HC-ADVANCE IP69K). This ensures that interference such as moisture, dirt, and dust are kept away from the plug connectors.

Depending on the application, a single or double-row version is available with 9, 15, 25, 37 or 50 positions. The delivery includes mounting screws, but not the D-SUB plug connector.

Notes:

To see which D-SUB connectors with crimp or manual soldering connection can be used, refer to page 318.

D-SUB assembly in the adapter plate: front mounting

Description	Type	Order No.	Pcs. / Pkt.
D-SUB adapter plate, for equipping HEAVYCON housings with **one** D-SUB connector, For housing type / D-SUB type:			
B6 / D-SUB 09	**HC-B 6-ADP/1 DSUB 9**	**1775457**	2
B6 / D-SUB 15	**HC-B 6-ADP/1 DSUB 15**	**1775473**	2
B10 / D-SUB 25	**HC-B 10-ADP/1 DSUB 25**	**1775499**	2
B16 / D-SUB 37	**HC-B 16-ADP/1 DSUB 37**	**1775512**	2
B16 / D-SUB 50	**HC-B 16-ADP/1 DSUB 50**	**1775538**	2
D-SUB adapter plate, for equipping HEAVYCON housings with **two** D-SUB connectors, For housing type / D-SUB type:			
B6 / D-SUB 09			
B6 / D-SUB 15			
B10 / D-SUB 25			
B16 / D-SUB 37			
B16 / D-SUB 50			
D-SUB adapter plate, for equipping HC-D15... housings with **one** D-SUB connector, D-SUB type:			
D-SUB 09			
D-SUB 15			
D-SUB 25			

Technical data	
Material data	
Material	PA
Inflammability class acc. to UL 94	HB
Color	Gray
Temperature data	
Ambient temperature (operation)	-20°C ... 100°C

HC-B...-ADP/2 DSUB...

Adapter plate for two D-SUB plug connectors

HC-D 15-ADP/1 DSUB...

Adapter plate for one D-SUB connector

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

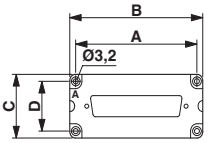
PA	
HB	
Gray	
-20°C ... 100°C	

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

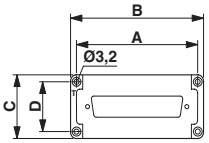
PA	
HB	
Gray	
-20°C ... 100°C	

HC	D-SUB	A [mm]	B [mm]	C [mm]	D[mm]
B6	9	44	51.5	34.5	27
B6	15	44	51.5	34.5	27
B10	25	57	64.5	34.5	27
B16	37	77.5	85	34.5	27
B16	50	77.5	85	34.5	27
D15	15	49.5	57	23	16
D15	25	49.5	57	23	16

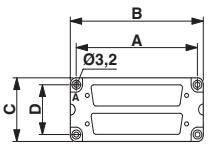
Dimension table: D-SUB adapter plates



Mounting position for panel mounting bases, box mounting bases, and coupling housings (Identification letter A is visible)



Mounting position of sleeve housing (Identification letter T is visible)



Mounting position for panel mounting bases, box mounting bases, and coupling housings (Identification letter A is visible)

Accessories
Docking frames

Docking frames have been designed for use in the rear panel of control cabinet inserts, for example. The docking frames ensure that the female insert and male insert make contact correctly.

The docking frames enable different insert depths to be compensated for:
– x-axis ± 1.5 mm
– y-axis ± 1.5 mm

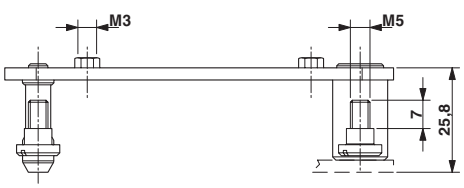
The mounting panel must be grounded due to the floating frame.

HC-B...-ANDOCK

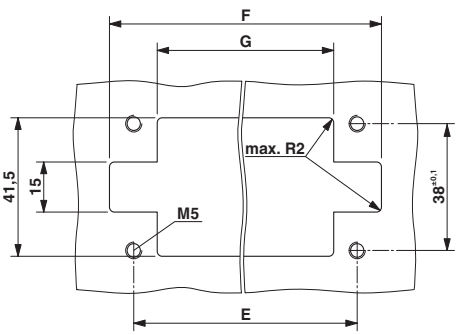
Description	Type	Order No.	Pcs. / Pkt.
Docking frames, with 4 flat headed screws with lug, for contact inserts of type:			
B6, DD24, BB10, K, M	**HC-B 6-ANDOCK**	**1586112**	1
B10, DD42, BB 18, K, M	**HC-B 10-ANDOCK**	**1586125**	1
B16, D40, DD72, BB32, K, M	**HC-B 16-ANDOCK**	**1586138**	1
B24, D64, DD108, BB46, K, M	**HC-B 24-ANDOCK**	**1586141**	1

Technical data	
Material data	
Material	High-grade steel
Insertion/withdrawal cycles	≥ 500
Temperature data	
Ambient temperature (operation)	-

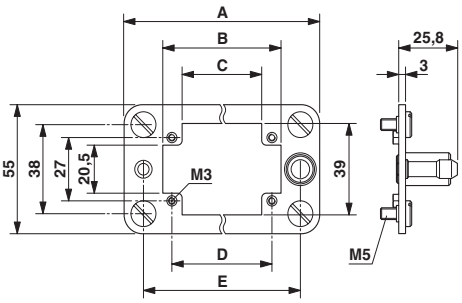
Type	A	B	C	D	E	F	G
HC-B 6-ANDOCK	86	52	35	44	69	84	54.5
HC-B 10-ANDOCK	99	65	48	57	82	97	67.5
HC-B 16-ANDOCK	119.5	85.5	68.5	77.5	102.5	117.5	88
HC-B 24-ANDOCK	146	112	95	104	129	144	114.5



Spacing



Panel cutout



Dimensional drawing

Accessories
Cable feed-throughs

The cable feed-throughs 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.

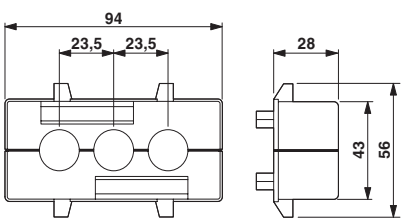
Unused feed-through positions are filled with filler plugs.

HC-KD/SG... / HC-KDT...

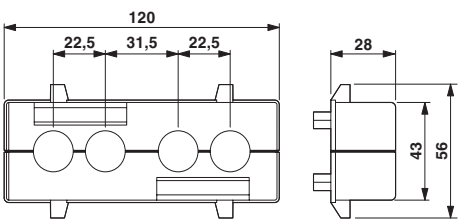
Cable feed-through / cable feed-through sleeves

Description	Type	Order No.	Pcs. / Pkt.
Cable feed-through, for connector housings:			
HC-B16-AMQ (Order no. 1771587)	**HC-KD/SG 16/ 3**	**1644012**	1
HC-B24-AMQ (Order no. 1771927)	**HC-KD/SG 24/ 4**	**1644025**	1
Cable feed-through sleeves, for insertion in the cable feed-through, for conductor diameters:			
3 mm - 4 mm	**HC-KDT 3-4**	**1644038**	10
4 mm - 5 mm	**HC-KDT 4-5**	**1644041**	10
5 mm - 6 mm	**HC-KDT 5-6**	**1644054**	10
6 mm - 7 mm	**HC-KDT 6-7**	**1644067**	10
7 mm - 8 mm	**HC-KDT 7-8**	**1644070**	10
8 mm - 9 mm	**HC-KDT 8-9**	**1644083**	10
9 mm - 10 mm	**HC-KDT 9-10**	**1644093**	10
Cable feed-through sleeves, for insertion in the cable feed-through, in addition to the strain relief, a cable binder can be used, for conductor diameters:			
10 mm - 11 mm	**HC-KDT 10-11**	**1644106**	10
11 mm - 12 mm	**HC-KDT 11-12**	**1644119**	10
12 mm - 13 mm	**HC-KDT 12-13**	**1644122**	10
13 mm - 14 mm	**HC-KDT 13-14**	**1644135**	10
14 mm - 15 mm	**HC-KDT 14-15**	**1644148**	10
15 mm - 16 mm	**HC-KDT 15-16**	**1644151**	10
Filler plug, to close the unused openings of the HC-KD/SG-... conduit	**HC-KDG-B**	**1644164**	10
Marker tags, 5-section, unprinted, labeling with X-PEN, M-PEN, plotter or BKMT 20 x 8 label			
Lettering field size: 20 x 8 mm	**SS-ZB WH**	**5031171**	50

Technical data	**HC-KD/SG-...**	**HC-KDT... / HC-KDG-B**
Material data		
Material	PC; gray similar to RAL 7044	Thermoplastic rubber
Inflammability class acc. to UL 94	V0	HB
Degree of protection	IP54	IP54
Temperature data		
Ambient temperature (operation)	-40°C ... 125°C	-40°C ... 125°C



HC-KD/SG 16/ 3



HC-KD/SG 24/ 4

Accessories, cable screw connections for data plug connectors

In plant and mechanical engineering, it is often necessary to route conductors with ready assembled data connectors through a control cabinet panel. The HEAVYCON cable feed-throughs HC-KD/... use the standard panel cutout of the heavy-duty connectors. An alternative to this is the use of the classical screw connection principle. With the cable screw connection KV-M-M50-GD..., data connectors with diameters of up to 42 mm (inside diameter of screw connection) can be routed through the control cabinet panel.

Assembly is fast and simple:

– Screw M50 screw supports into the control cabinet panel
– Thread the connector with the conductor through the support and union nut (Ø plug connector ≤ inside diameter),
– Fit the two halves of the seal around the conductor
– Screw the union nut tight
– That's it!

Screw connections for other conductor diameters are available on request.

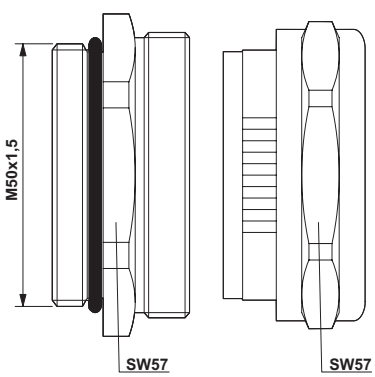
The seal is divided along the axis of the hole.

KV-M-M50-GD...

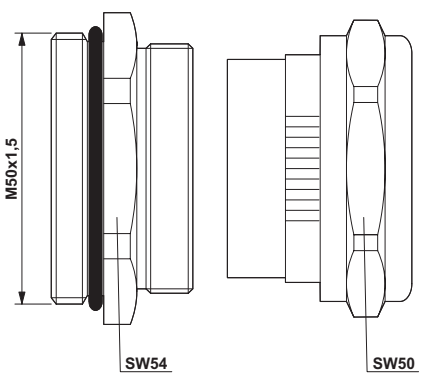
Cable gland with divided seal

Description	Type	Order No.	Pcs. / Pkt.
Cable gland, panel feed-through for data connectors, thread M50, with separable seal, for 1 conductor, hole diameter 8 mm each, inside diameter: 37 mm	KV-M-M50-GD-(8)	1636509	5
Cable gland, panel feed-through for data connectors, thread M50, with separable seal, for 1 conductor, hole diameter 10 mm each, inside diameter: 37 mm	KV-M-M50-GD-(10)	1636512	5
Cable gland, panel feed-through for data connectors, thread M50, with separable seal, for 2 conductors, hole diameter 6 mm each, inside diameter: 37 mm	KV-M-M50-GD-(2X6)	1636525	5
Cable gland, panel feed-through for data connectors, thread M50, with separable seal, for 2 conductors, hole diameter 6 mm each, inside diameter: 42 mm	KV-M-M50-GD-(2X9)	1636538	5

Technical data	
Material data	
Cable gland material	Nickel-plated brass
Seal material	TPE
Material, O-ring	NBR
Material, pressure screw	Nickel-plated brass
Degree of protection	IP65
Temperature data	
Ambient temperature (operation)	-40°C ... 125°C



KV-M-M50-GD-(2x9)



KV-M-M50-GD-(8); ...-GD-(10); ...-GD-(2x6)

Accessories
Protective covers

- HC-D7 protective cover with a seal for female contact inserts.
- HC-D7 protective cover without a seal for male contact inserts.
- Not for HC-B...EMC housings
- In the case of protective covers of aluminum and when keying sockets, pins and bolts are used, the guide pins of the protective cover must be removed.
- Plastic protective cover: For short-term protection

HC-...-SD-.../FS

Plastic protective cover

HC-B...-SD-.../FS-AL

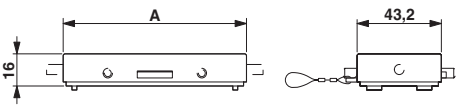
Metal protective cover

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Protective cover, for panel mounting bases, box mounting bases, and coupling housings **with single locking latch**, with retaining cord, **without** seal, for housing type:						
B6	**HC-B 6-SD-FL/FS**	**1660180**	10	**HC-B 6-SD-FLU/FS-AL**	**1644559**	10
B10, HV3	**HC-B 10-SD-FL/FS**	**1660177**	10	**HC-B 10-SD-FLU/FS-AL**	**1644562**	10
B16, HV6	**HC-B 16-SD-FL/FS**	**1660151**	10	**HC-B 16-SD-FLU/FS-AL**	**1644588**	10
B24, HV16	**HC-B 24-SD-FL/FS**	**1660148**	10	**HC-B 24-SD-FLU/FS-AL**	**1644601**	10
D7	**HC-D 7-SD-FL/FS**	**1772573**	10			
Protective cover, for panel mounting bases, box mounting bases, and coupling housings **with single locking latch**, with retaining cord, **with** seal, for housing type:						
D7	**HC-D 7-SD-FL/FS-MD**	**1644300**	10			
D15	**HC-D 15-SD-FL/FS**	**1660164**	10			
D25	**HC-D 25-SD-FL/FS**	**1660135**	10			
Protective cover, for panel mounting bases, box mounting bases, and coupling housings **with double locking latch**, with retaining cord, **without** seal, for housing type:						
B10, HV3	**HC-B 10-SD-FQ/FS**	**1772586**	10	**HC-B 10-SD-FQU/FS-AL**	**1644575**	10
B16, HV6	**HC-B 16-SD-FQ/FS**	**1772599**	10	**HC-B 16-SD-FQU/FS-AL**	**1644591**	10
B24, HV16	**HC-B 24-SD-FQ/FS**	**1772609**	10	**HC-B 24-SD-FQU/FS-AL**	**1644614**	10
B32	**HC-B 32-SD-FQU/FS**	**1646120**	10			
D50	**HC-D 50-SD-FQ/FS**	**1660193**	10			
Protective cover, for sleeve housing **without single locking latch**, with retaining cord, **with** seal, for housing type:						
B6	**HC-B 6-SD-ML/FS**	**1678282**	10	**HC-B 6-SD-MLT/FS-AL**	**1644546**	10
B10, HV3	**HC-B 10-SD-ML/FS**	**1678295**	10	**HC-B 10-SD-MLT/FS-AL**	**1584512**	10
B16, HV6	**HC-B 16-SD-ML/FS**	**1678318**	10	**HC-B 16-SD-MLT/FS-AL**	**1584525**	10
B24, HV16	**HC-B 24-SD-ML/FS**	**1678334**	10	**HC-B 24-SD-MLT/FS-AL**	**1584538**	10
Protective cover, for sleeve housing **without double locking latch**, with retaining cord, **with** seal, for housing type:						
B10, HV3	**HC-B 10-SD-MQ/FS**	**1678305**	10	**HC-B 10-SD-MQT/FS-AL**	**1584541**	10
B16, HV6	**HC-B 16-SD-MQ/FS**	**1678321**	10	**HC-B 16-SD-MQT/FS-AL**	**1584554**	10
B24, HV16	**HC-B 24-SD-MQ/FS**	**1678347**	10	**HC-B 24-SD-MQT/FS-AL**	**1584567**	10
Protective cover, for sleeve housing **with double locking latch**, with retaining cord, **with** seal, for housing type:						
B10, HV3	**HC-B 10-SD-FQT/FS**	**1687260**	10	**HC-B 10-SD-FQT/FS-AL**	**1647750**	10
B16, HV6	**HC-B 16-SD-FQT/FS**	**1687273**	10	**HC-B 16-SD-FQT/FS-AL**	**1647763**	10
B24, HV16	**HC-B 24-SD-FQT/FS**	**1687286**	10	**HC-B 24-SD-FQT/FS-AL**	**1647776**	10

Technical data	Without latch	With latch	Without latch	With latch
Material, protective cover	PA	PA	Al	Al
Locking latch material	-	High-grade steel, handle: PA-GF	-	High-grade steel, handle: PA-GF
Inflammability class acc. to UL 94	HB	HB	-	-
Diameter of retaining cord eyelet	30 mm	30 mm	30 mm	30 mm
Degree of protection	IP54	IP54	IP65	IP65
Ambient temperature (operation)	-20°C ... 100°C	-20°C ... 100°C	-40°C ... 125°C	-40°C ... 125°C

Type	A [mm]
HC-B 6-SD-.../FS-AL	60.2
HC-B 10-SD-.../FS-AL	73.4
HC-B 16-SD-.../FS-AL	94.0
HC-B 24-SD-.../FS-AL	120.0

Dimension table: Protective cover made of metal



HC-B...-SD-.../FS-AL

Accessories
Protective covers for HEAVYCON-ADVANCE

HC-B...-TMS-SD-IP...

Protective cover with screw locking

HC-B...-TMB-SD-IP...

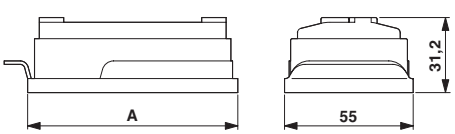
Protective cover with bayonet locking

Description	Type	Order No.	Pcs. / Pkt.	Type	Order No.	Pcs. / Pkt.
Protective cover IP65, for panel mounting side, with retaining cord, for housing type:						
B6	**HC-B 6-TMS-SD-IP65**	**1690778**	10	**HC-B 6-TMB-SD-IP65**	**1690930**	10
B10	**HC-B 10-TMS-SD-IP65**	**1690781**	10	**HC-B 10-TMB-SD-IP65**	**1690943**	10
B16	**HC-B 16-TMS-SD-IP65**	**1690794**	10	**HC-B 16-TMB-SD-IP65**	**1690956**	10
B24	**HC-B 24-TMS-SD-IP65**	**1690804**	10	**HC-B 24-TMB-SD-IP65**	**1690969**	10
Protective cover IP50, for panel mounting and sleeve side, with retaining cord, for housing type:						
B6	**HC-B 6-TMS-SD-IP50**	**1690736**	10			
B10	**HC-B 10-TMS-SD-IP50**	**1690749**	10			
B16	**HC-B 16-TMS-SD-IP50**	**1690752**	10			
B24	**HC-B 24-TMS-SD-IP50**	**1690765**	10			

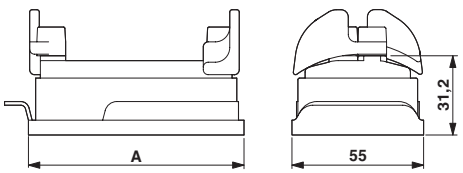
Technical data	HC-B...TMS-SD-IP65	HC-B...TMS-SD-IP50	HC-B...TMB-SD-IP65
Material data			
Seal material	NBR	-	NBR
Material, protective cover	PA	PA	PA
Locking latch material	High-grade steel	-	High-grade steel, handle: PA-GF
Inflammability class acc. to UL 94	V0	V0	V0
Diameter of retaining cord eyelet	3.5 mm	3.5 mm	3.5 mm
Color	Gray	Gray	Gray
Degree of protection	IP65	IP50	IP65
Temperature data			
Ambient temperature (operation)	-20°C ... 100°C	-20°C ... 100°C	-20°C ... 100°C

Type	A [mm]
HC-B 6-TM...SD-IP...	92
HC-B 10-TM...SD-IP...	105
HC-B 16-TM...SD-IP...	126
HC-B 24-TM...SD-IP...	152

Dimension table: Protective cover



HC-B...-TMS-SD-IP...



HC-B...-TMB-SD-IP...

Accessories
PE screws, PE multiplier

If more than one PE conductor is to be routed via a contact insert, additional PE connections must be made. This is achieved with additional screws or with the PE multiplier.

Note:

If the PE multiplier is used, a housing height of ≥ 72 mm is required.

HC-B-3PE cannot be used for HC-B....ZZ terminal adapters.

HC-...-PE...

Description	Type	Order No.	Pcs. / Pkt.
PE screw, for contact inserts:			
HC-B / HC-BB / HC-DD / HC-D40 / HC-D64	**HC-B-PES**	**1604997**	10
HC-A... / HC-D15 / HC-D25	**HC-A-PES**	**1584868**	10
HC-HS 6...	**HC-HS-PES**	**1586219**	100
PE multiplier, for three PE connections, for HC-B (except for HC-B..E..ZZ) / HC-BB / HC-DD / HC-D40 / HC-D64 contact inserts	**HC-B-3PE**	**1644326**	1

Technical data	HC-...PES	HC-B-3PE
Material data		
Material	Steel, galvanized	Brass, nickel-plated
Conductor cross-section	-	0.5 mm² ... 2.5 mm²
Connection cross-section AWG	-	20 ... 14

Accessories
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.

HC-B-Z...

Description	Type	Order No.	Pcs. / Pkt.
Strain relief clamps, for contact inserts of series: B-, BB-, D40, D64, DD and HV,			
- Straight cable outlet	**HC-B-ZG**	**1685327**	10
- Lateral cable outlet	**HC-B-ZS**	**1685330**	10

Technical data	
Material data	
Material	Steel

Accessories
Keying pin, socket

Keying sockets / pins are used to prevent incorrect connections when connecting identical connectors.

The male and female coding prevents most cases of the connector being inserted or removed at an angle.

Keying pins and sockets are mandatory for contact inserts of the HC-D... and HC-DD... series.

Up to 16 plug-in connections can be protected against mismating with the keying pins and sockets.

For keying principle, see page 555.

HC-C...

Description	Type	Order No.	Pcs. / Pkt.
Keying sockets and pins, for keying to protect against mismating and as a guide to prevent accidentally jamming the connector in at an angle, cannot be used with HC-Modular and HC-D7 ...			
Keying pin	**HC-CST**	**1676857**	10
Keying socket	**HC-CBU**	**1676860**	10
Technical data			
Material data			
Material	Steel		

Accessories
Keying sockets / pins

For housings with modular contact inserts.

The keying pins / sockets are the following when using modules:
– HC-M-25-MOD...
– HC-M-04MOD...
– HC-M-DSUB09...

Prescribed.

Up to 16 plug-in connections can be protected against mismating with the keying pins / sockets.

For keying principle, see page 555.

HC-C...-MOD

Description	Type	Order No.	Pcs. / Pkt.
Keying sockets / pins, for keying to protect against mismating and as a guide to prevent accidentally jamming the connector in at an angle, for HC-Modular			
Keying pin	**HC-CST-MOD**	**1636127**	10
Keying socket	**HC-CBU-MOD**	**1636130**	10
Technical data			
Material data			
Material	Steel		

Accessories
Keying bolts, profile

HC-CB / CP-HC

Description	Type	Order No.	Pcs. / Pkt.
Keying bolts prevent incorrect plugging of up to six identical connectors	**HC-CB**	**1772722**	10
Keying profile, for HC-B... contact inserts with screw, crimp, QUICKON and PUSH-IN connection. For terminal adapters of series HC-B..A-UT.../ HC-B..A-DT...	**CP-HC**	**1686478**	40
Keying profile, for keying HC-HS 2-D7-E...S contact inserts	**HC-HS 2-CP**	**1586280**	50

Technical data	**HC-CB**	**CP-HC**
Material data		
Material	Steel	PA

Accessories
Dummy sockets

CK...-ED-BB

Description	Type	Order No.	Pcs. / Pkt.
Dummy sockets, for contact carriers with turned female contacts of type:			
CK-1,6-ED...	**CK1,6-ED-BB**	**1645888**	50
CK-2,5-ED...	**CK2,5-ED-BB**	**1584693**	100

Technical data	**CK1,6-ED-BB**	**CK2,5-ED-BB**
Material data		
Material	Copper alloy	PA

Dummy sockets prevent plugging of a plug-in connection if a pin is mounted at the keying position in the male insert. Identical connectors can thus be protected against being plugged in incorrectly.

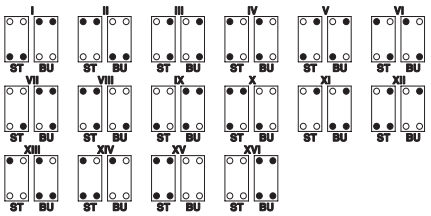


Figure 1: Keying with keying pins and sockets for housings with one contact insert

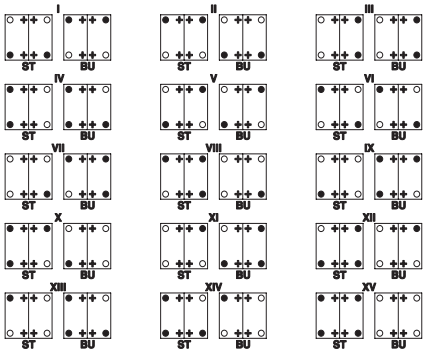


Figure 2: Keying with keying pins and sockets for housings with two contact inserts

O = keying socket
I = keying pin
● = keying bolt
\+ = mounting screw
ST = male insert
BU = female insert

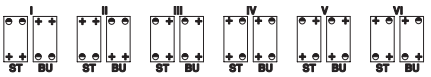


Figure 3: Keying with keying bolts for housings with one contact insert

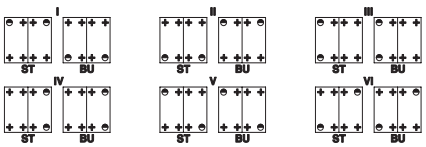


Figure 4: Keying with keying bolts for housings with two contact inserts

Figure 5: Use of keying pin and keying socket

Accessories
Corrugated tube screw connection

WR...
Corrugated tube

Using the corrugated tube screw connection, any number of wires or single cores can be led to one connector.

To disassemble the corrugated tube screw connection, the matching WR-OEF.. corrugated tube opener is necessary.

Assembly

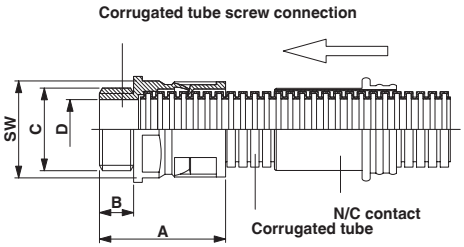
Cut the corrugated pipe in the groove to obtain a round shape for insertion.

The outer seal is placed over the corrugated pipe screw connection from outside. The corrugated pipe is then inserted as far as possible into the corrugated pipe screw connection and snaps into place.

The screw connection is opened by forcing the yellow corrugated pipe opener between the locking clip and the corrugated pipe, and the corrugated pipe is then pulled out.

Description	Type	Order No.	Pcs. / Pkt.
Corrugated tube, design:			
Pg16, bending radius: 35 mm	**WR/PG16-50M**	**1666841**	1
Pg21 / M25, bending radius: 40 mm	**WR/PG21-50M**	**1666867**	1
Pg29 / M32, bending radius: 55 mm	**WR/PG29-25M**	**1666854**	1
M40, bending radius: 60 mm	**WR/M40-25M**	**1644889**	1
Pg corrugated tube screw connection, for corrugated tubes to lead individual conductors and wires into the housings of the industrial connectors HEAVYCON, Design: Pg16 Pg21 Pg29			
Metric corrugated tube screw connection, for insertion of individual conductors and wires in the housings of the industrial connectors HEAVYCON, Design: M25 M32 M40			
Seal, outside, to increase protection type to IP66, Design: Pg16 Pg21 / M25 Pg29 / M32 M40			
Opener for corrugated tube, to disassemble corrugated tube screw connection, design: Pg16 Pg21 / M25 Pg29 / M32 M40			

Technical data	
Material	PA
Seal material	-
Inflammability class acc. to UL 94	HB
Degree of protection	-
Temperature data	
Ambient temperature (operation)	-40°C ... 110°C



	A [mm]	B [mm]	C	D [mm]	SW [mm]
HC-WRV-PG 16	36	10	Pg16	15.5	27
HC-WRV-PG 21	40	12	Pg21	23.0	36
HC-WRV-PG 29	43	12	Pg29	28.0	40
HC-WRV-M 25	43.5	14	M25	20.5	36
HC-WRV-M 32	46.5	14	M32	26.5	40
HC-WRV-M 40	53.5	15	M40	34.0	50

HC-WRV-...

Corrugated tube screw connection

WR-DA-...

Corrugated tube seals

WR-OEF-...

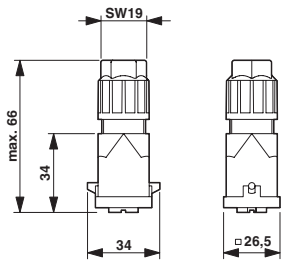
Opener for corrugated tube

Type	Order No.	Pcs. / Pkt.
HC-WRV-PG16	1666812	10
HC-WRV-PG21	1666825	10
HC-WRV-PG29	1666838	10
HC-WRV-M25	1644902	10
HC-WRV-M32	1644915	10
HC-WRV-M40	1644850	10
-		
-		
HB		
IP65		
-40°C ... 110°C		

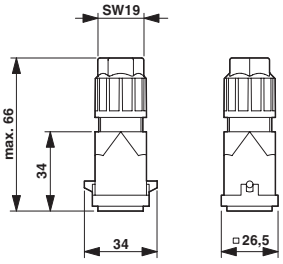
Type	Order No.	Pcs. / Pkt.
WR-DA-PG16	1686685	5
WR-DA-PG21	1686698	5
WR-DA-M32/PG29	1644847	5
WR-DA-M40	1644876	5
-		
PUR		
-		
-		
-		

Type	Order No.	Pcs. / Pkt.
WR-OEF-PG16	1853638	5
WR-OEF-PG21	1853612	5
WR-OEF-PG29	1853641	5
WR-OEF-M40	1644892	5
PA		
-		
-		
-		
-		

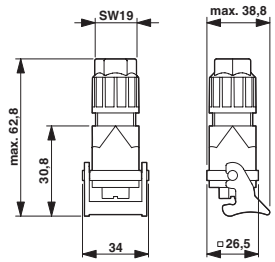
Dimensional drawings of the A series connectors with QUICKON connection



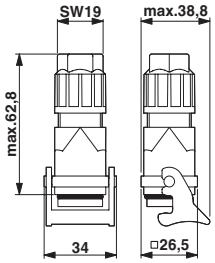
HC-A3-BUQ 1,5-TFL-G-PA



HC-A3-STQ 1,5-TFL-G-PA

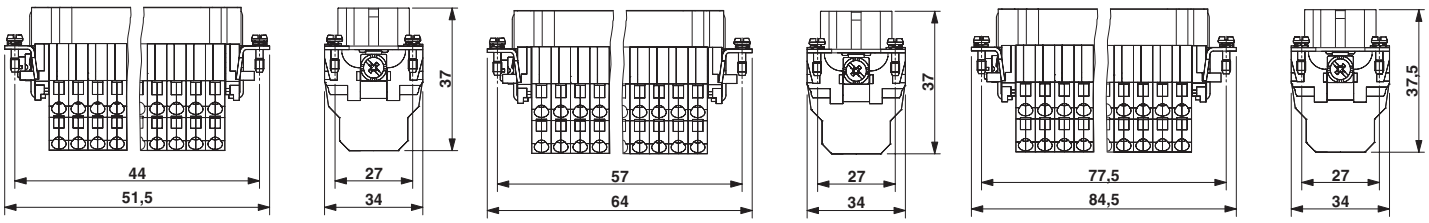


HC-A3-BUQ 1,5-KML-G-PA

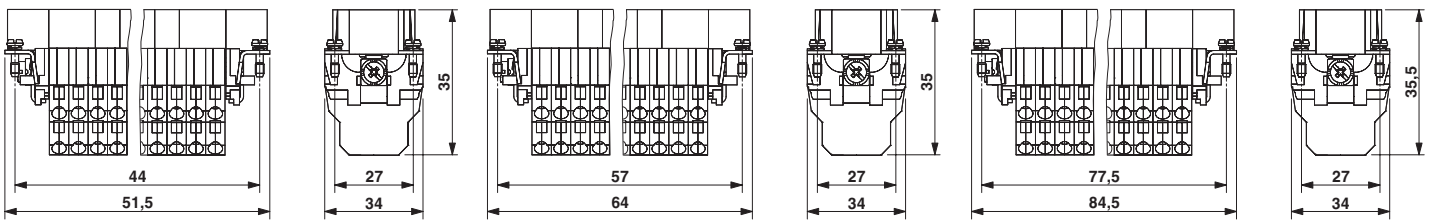


HC-A3-STQ 1,5-KML-G-PA

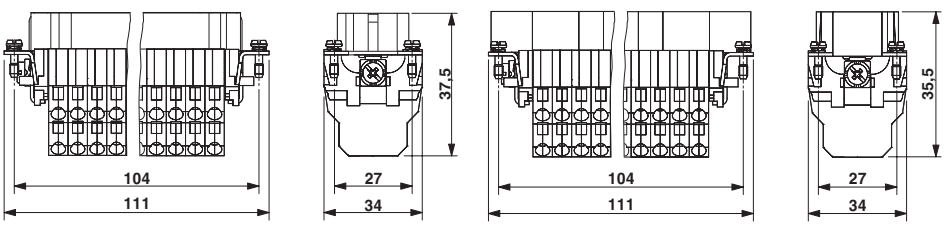
Dimensional drawings of the B series contact inserts, with spring-cage connection for 2 conductors



HC-B6-...ESTZZ HC-B10-...ESTZZ HC-B16-...ESTZZ

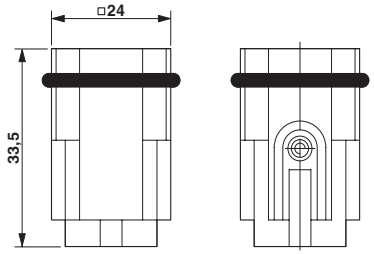


HC-B6-...EBUZZ HC-B10-...EBUZZ HC-B16-...EBUZZ

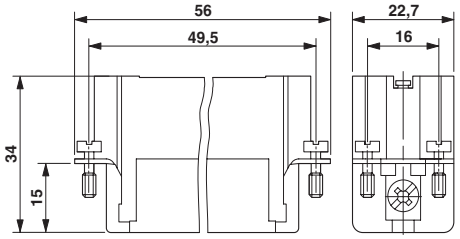


HC-B24-...ESTZZ HC-B24-...EBUZZ

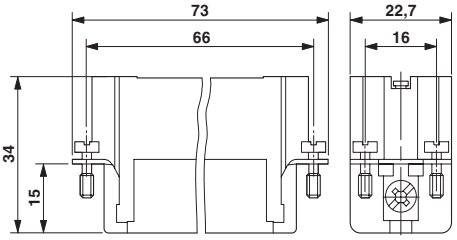
Dimensional drawings of the D series contact inserts for rolled contacts



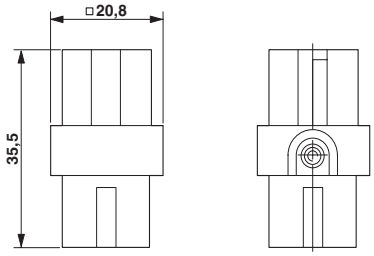
HC-D7-ESTC-R



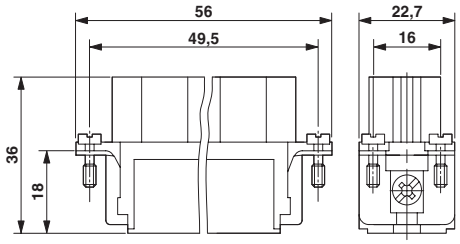
HC-D15-ESTC-R



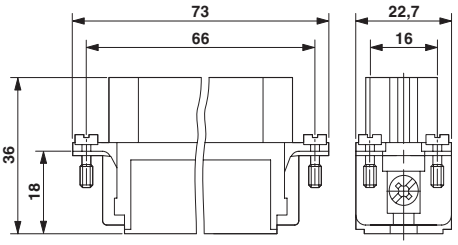
HC-D25-ESTC-R



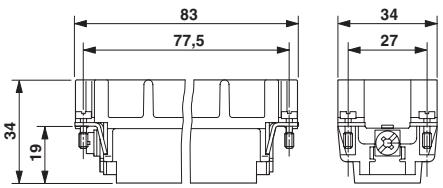
HC-D7-EBUC-R



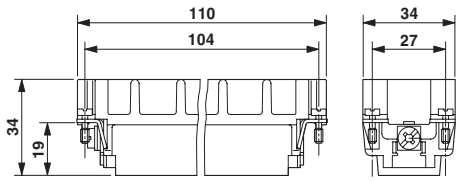
HC-D15-EBUC-R



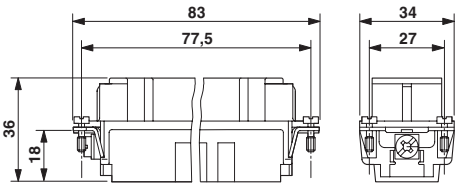
HC-D25-EBUC-R



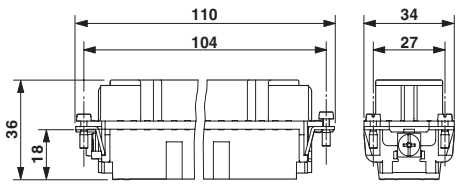
HC-D40-ESTC-R



HC-D64-ESTC-R



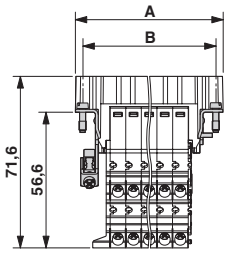
HC-D40-EBUC-R



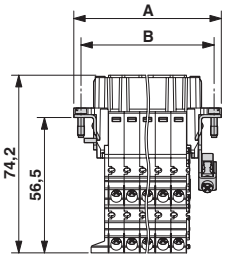
HC-D64-EBUC-R

Dimensional drawings of type B terminal adapters, with screw connection

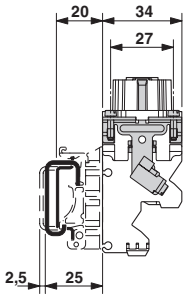
Housing Design	Dimensions A [mm]	B [mm]
B6	50.5	44.0
B10	64.0	57.0
B16	84.0	77.5
B24	111.0	104.0



HC-B...A-UT...PER-M



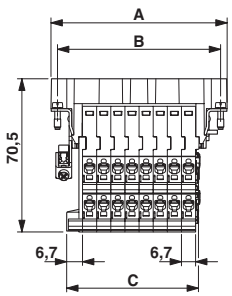
HC-B...A-...-UT...PEL-F



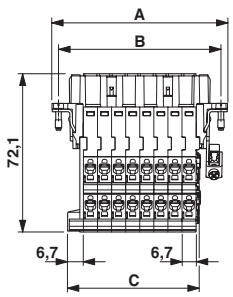
HC-B...A-UT-PER-F

Dimensional drawings of type B terminal adapters, with push-in connection

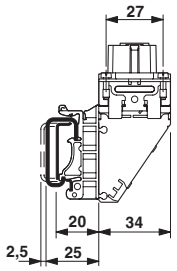
Housing Design	Dimensions A [mm]	B [mm]	C [mm]
B6	50,5	44,0	29,7
B10	64,0	57,0	43,1
B16	84,0	77,5	63,2
B24	111,0	104,0	90,0



HC-B...A-DT-PE...-M



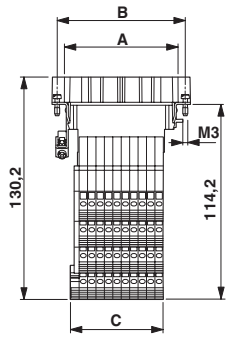
HC-B...A-DT-PE...-F



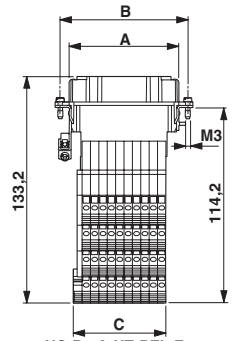
HC-B...A-DT-PE...-M

Dimensional drawings of type D terminal adapters, with screw connection

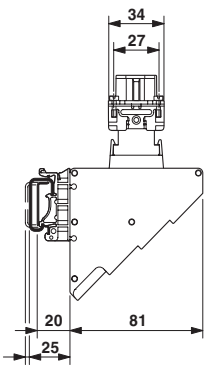
Housing Design	Dimensions A [mm]	B [mm]	C [mm]
D40	83.0	77.5	56.0
D64	110.0	104.0	86.3



HC-D-..A-UT-PER-M



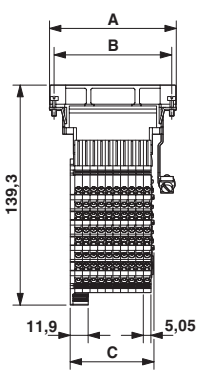
HC-D-..A-UT-PEL-F



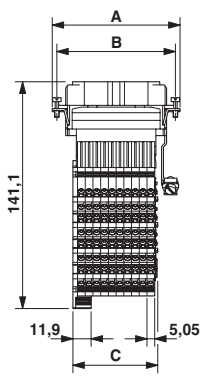
HC-D-...A-UT-PEL-F

Dimensional drawings of type D terminal adapters, with push-in connection

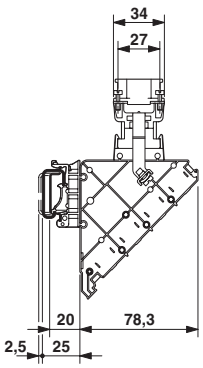
Housing Design	Dimensions A [mm]	B [mm]	C [mm]
D40	83.0	77.5	56.0
D64	110.0	104.0	86.3



HC-D ...-A-TWIN-PE...-M

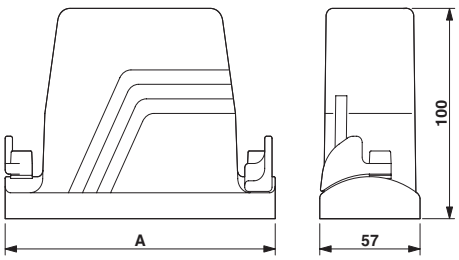


HC-D ...-A-TWIN-PE...-F

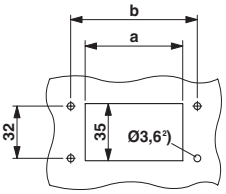


HC-D ...-A-TWIN-PER-F

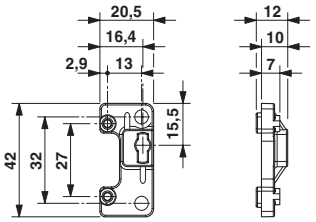
Dimensional drawings of ADVANCE housings with bayonet locking



Dimensional drawing: Sleeve housing
HC-B...-TMB-100/0...



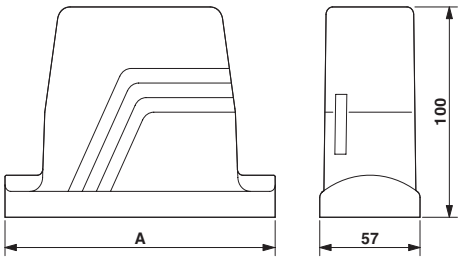
Panel cutout: HC-B...-TMB-100/0...
²) When self-tapping Torx screws are used (Torx20, M4)



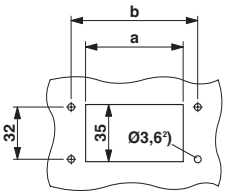
Dimensional drawing: HC-B-AF

Type	A [mm]	a [mm]	b [mm]
HC-B 6-TMB...	92	52	70
HC-B 10-TMB...	105	65	83
HC-B 16-TMB...	126	86	103
HC-B 24-TMB...	152	112	130

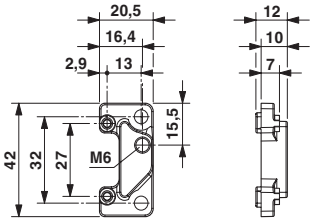
Dimensional drawings of ADVANCE housings with screw locking



Dimensional drawing: Sleeve housing
HC-B...-TMS-100/...



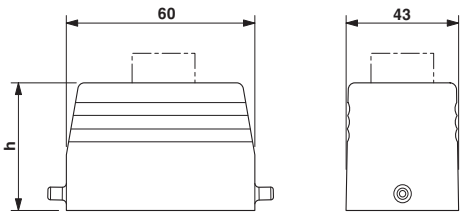
Panel cutout: HC-B...-TMS-100/...
²) When self-tapping Torx screws are used (Torx20, M4)



Dimensional drawing: HC-B-BF

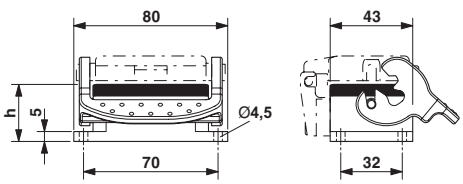
Type	A [mm]	a [mm]	b [mm]
HC-B 6-TMS...	92	52	70
HC-B 10-TMS...	105	65	83
HC-B 16-TMS...	126	86	103
HC-B 24-TMS...	152	112	130

Dimensional drawings of type B6 standard housings, with/for single locking latch

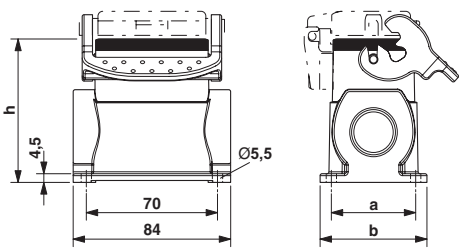


HC-B 6-TFL...

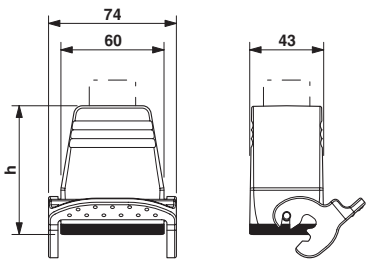
with h [mm]	a [mm]	b [mm]
52	40	52
74	45	57



HC-B 6-AML or HC-B 6-AMLD

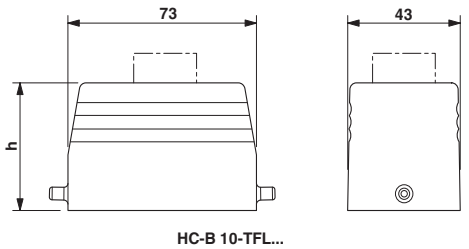


HC-B 6-SML... or HC-B 6-SMLD...



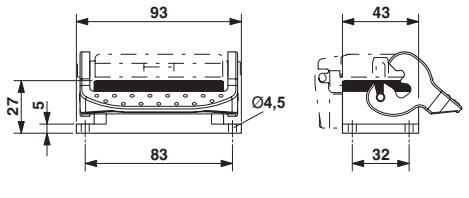
HC-B 6-KML...

Dimensional drawings of type B10 standard housings, with/for single locking latch

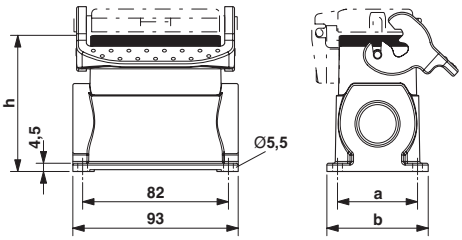


HC-B 10-TFL...

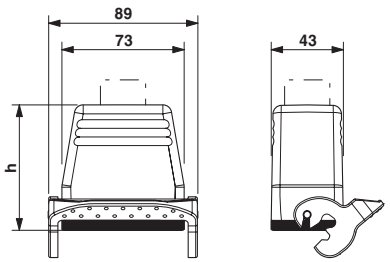
with h [mm]	a [mm]	b [mm]
52	40	52
74	45	57



HC-B 10-AML or HC-B 10-AMLD

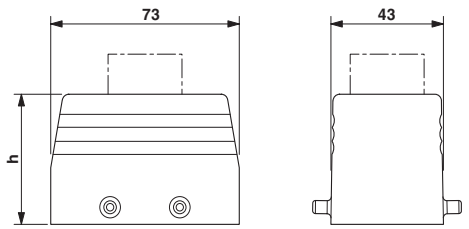


HC-B 10-SML... or HC-B 10-SMLD...



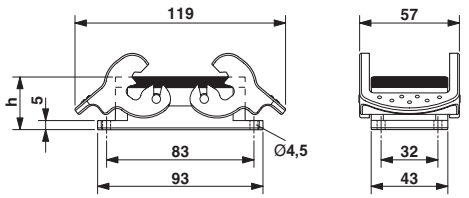
HC-B 10-KML...

Dimensional drawings of type B10 standard housings, with/for double locking latch

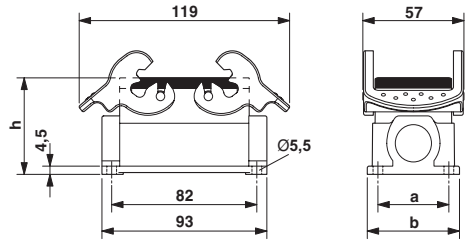


HC-B 10-TFQ...

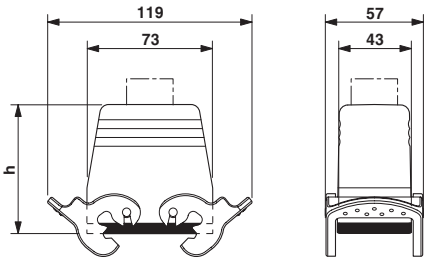
with h [mm]	a [mm]	b [mm]
52	40	52
74	45	57



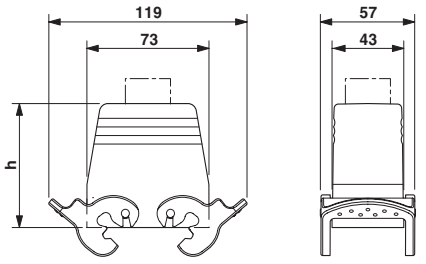
HC-B 10-AMQ



HC-B 10-SMQ...

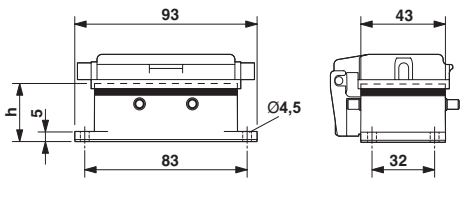


HC-B 10-KMQ...

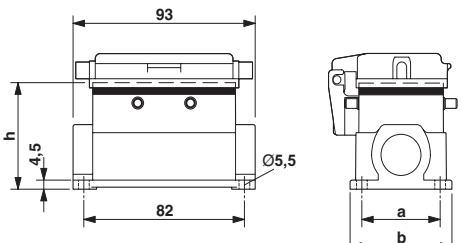


HC-B 10-TMQ...

with h [mm]	a [mm]	b [mm]
52	40	52
74	45	57

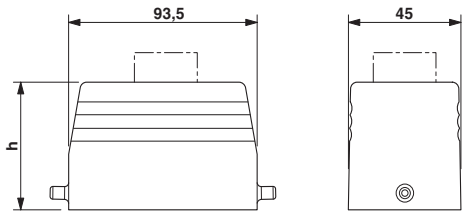


HC-B 10-AFQD

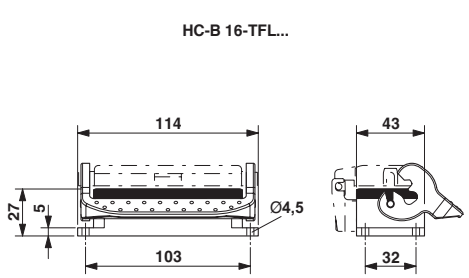


HC-B 10-SFQD...

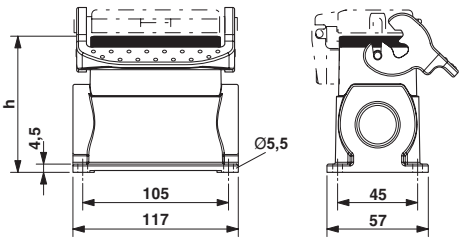
Dimensional drawings of type B16 standard housings, with/for single locking latch



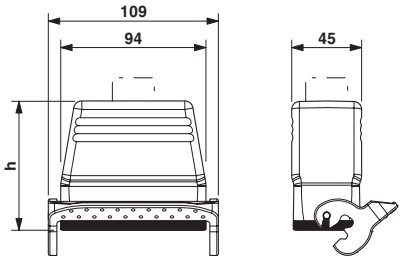
HC-B 16-TFL...



HC-B 16-AML or HC-B 16-AMLD

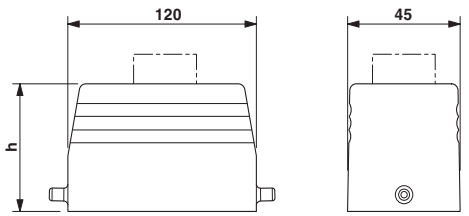


HC-B 16-SML... or HC-B 16-SMLD...

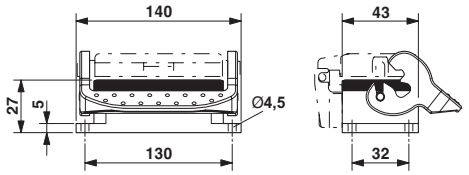


HC-B 16-KML...

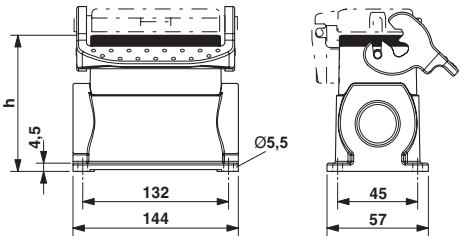
Dimensional drawings of type B24 standard housings, with/for single locking latch



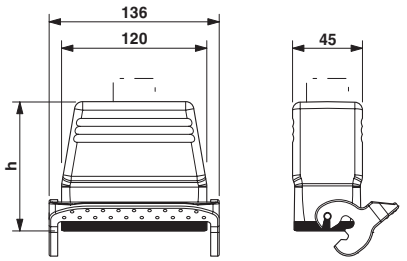
HC-B 24-TFL...



HC-B 24-AML or HC-B 24-AMLD

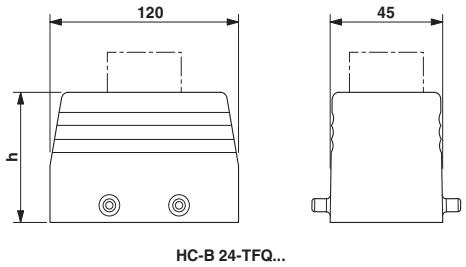


HC-B 24-SML... or HC-B 24-SMLD...

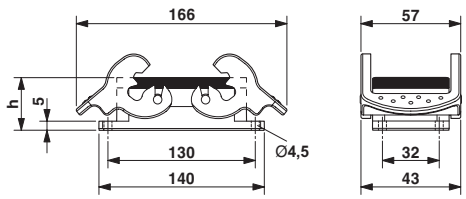


HC-B 24-KML...

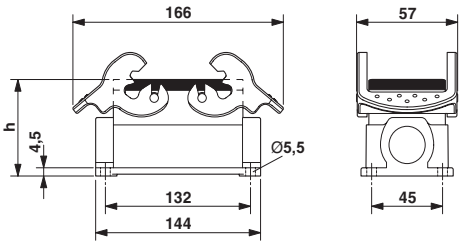
Dimensional drawings of type B24 standard housings, with/for double locking latch



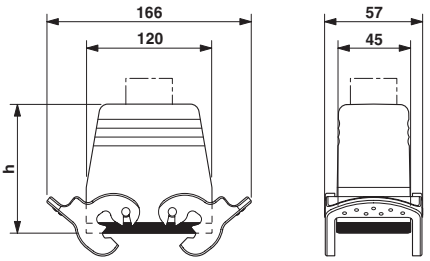
HC-B 24-TFQ...



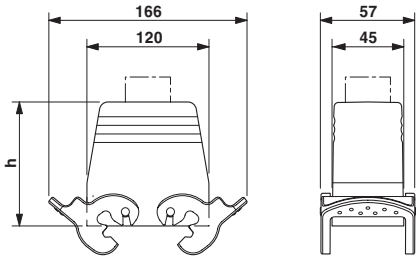
HC-B 24-AMQ



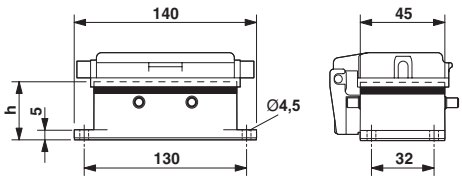
HC-B 24-SMQ...



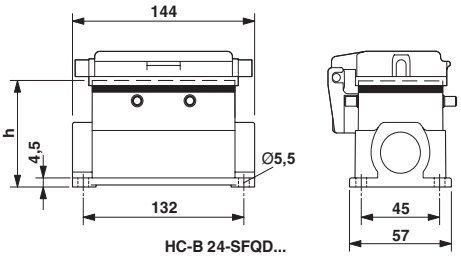
HC-B 24-KMQ...



HC-B 24-TMQ...

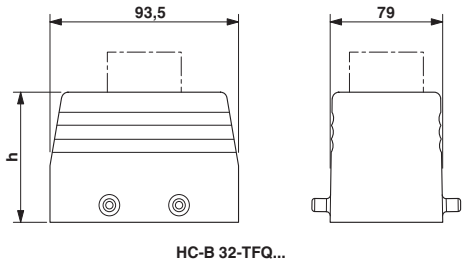


HC-B 24-AFQD

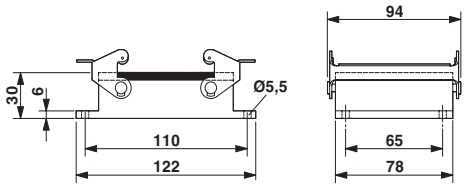


HC-B 24-SFQD...

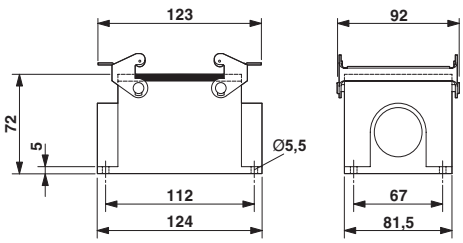
Dimensional drawings of type B32 standard housings, with/for double locking latch



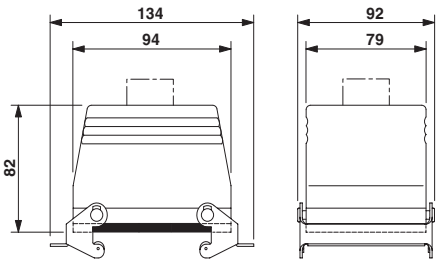
HC-B 32-TFQ...



HC-B 32-AMQ

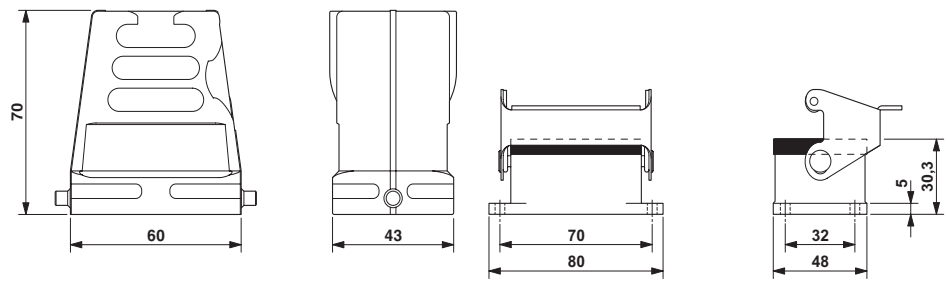


HC-B 32-SMQ...



HC-B 32-KMQ...

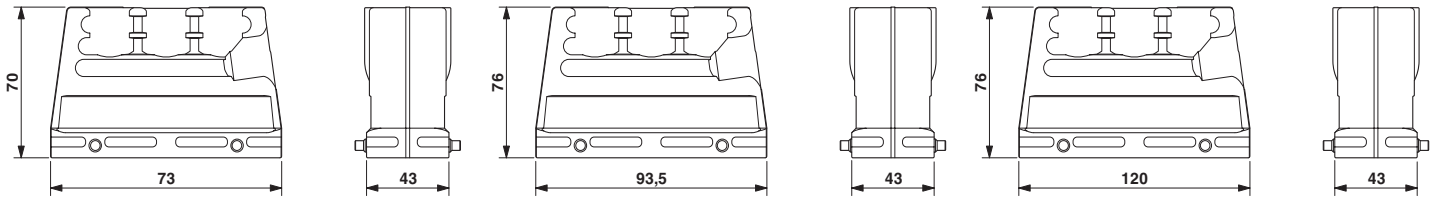
Dimensional drawings of B series EMC housings, with/for single locking latch



Dimensional drawing: HC-B 6-TFL-70/O1STM...-EMV

Dimensional drawing: HC-B 6-AML-EMV

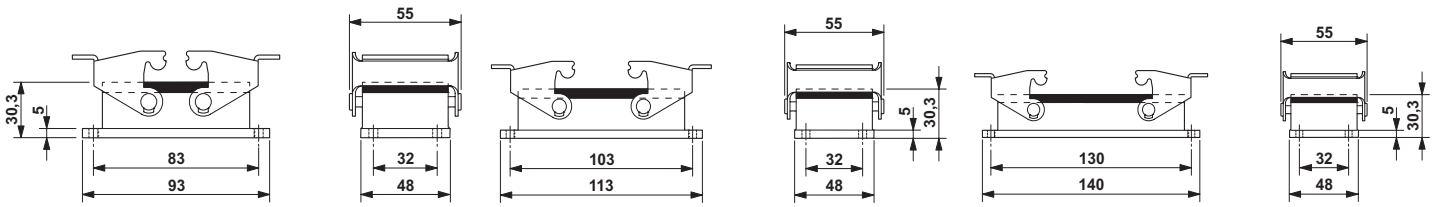
Dimensional drawings of B series EMC housings, with/for double locking latch



Dimensional drawing: HC-B 10-TFQ-70/O1STM...-EMV

Dimensional drawing: HC-B 16-TFQ-76/O1STM...-EMV

Dimensional drawing: HC-B 24-TFQ-76/O1STM...-EMV

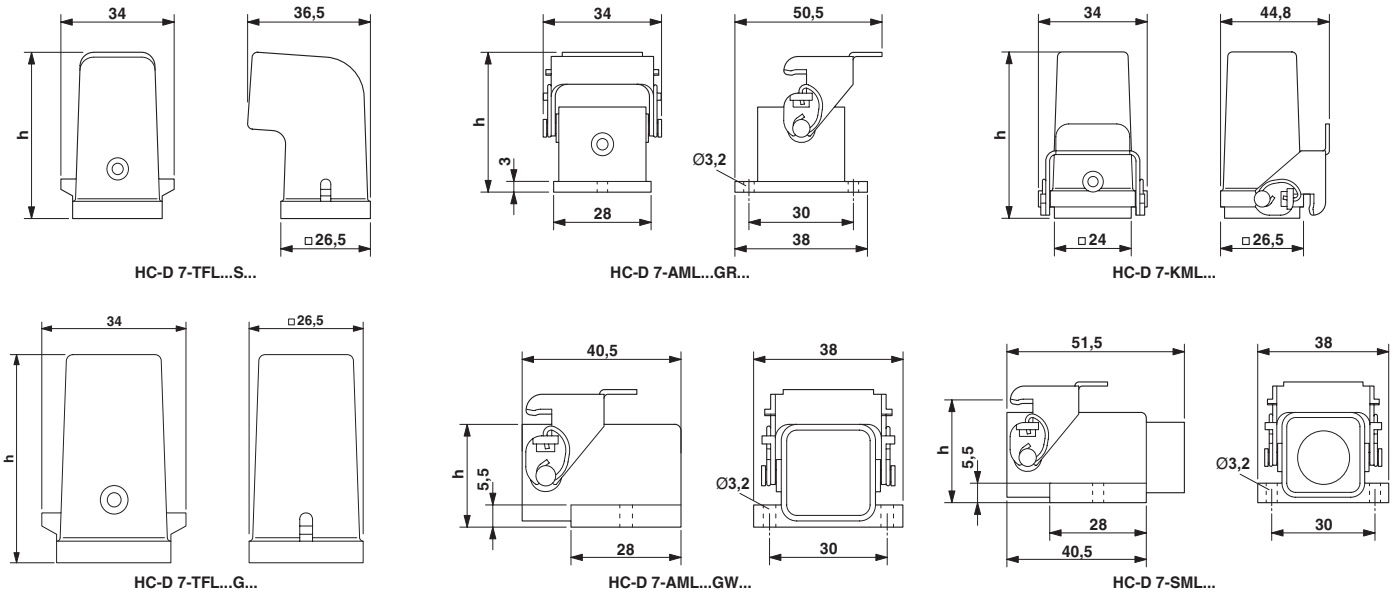


Dimensional drawing: HC-B 10-AMQ-EMV

Dimensional drawing: HC-B 16-AMQ-EMV

Dimensional drawing: HC-B 24-AMQ-EMV

Dimensional drawings of type D7 standard housings



HC-D 7-TFL...S...

HC-D 7-AML...GR...

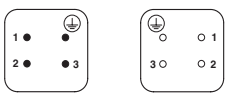
HC-D 7-KML...

HC-D 7-TFL...G...

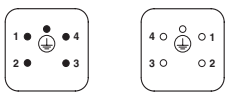
HC-D 7-AML...GW...

HC-D 7-SML...

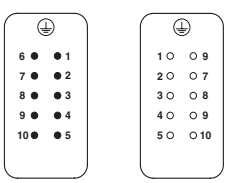
Connector pin assignments for A series contact inserts



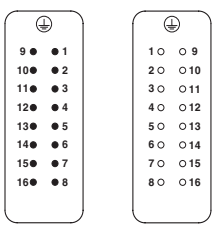
Connector pin assignments HC-A 3...
(View from the connection side)



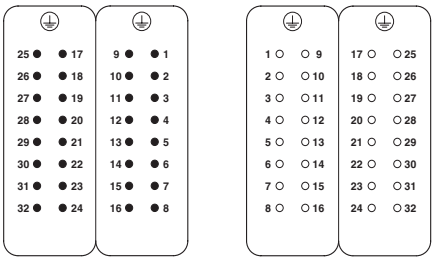
Connector pin assignments HC-A 4...
(View from the connection side)



Connector pin assignments HC-A 10...
(View from the connection side)

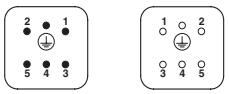


Connector pin assignments HC-A 16...
(View from the connection side)

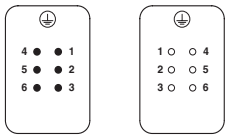


Connector pin assignments HC-A 16...32
(View from the connection side)

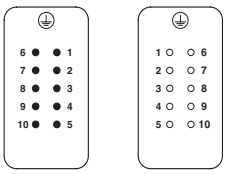
Connector pin assignments for B series contact inserts



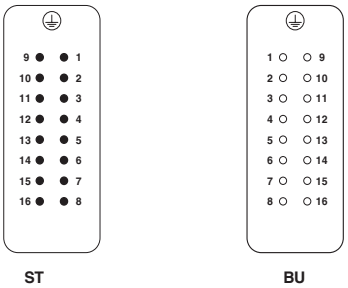
Connector pin assignment: HC-B 5 E…C
(View from the connection side)



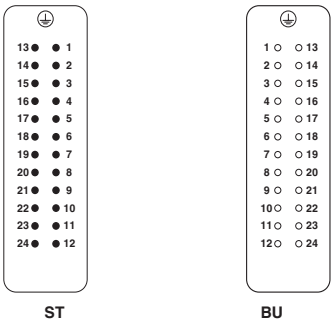
Connector pin assignments HC-B 6...
(View from the connection side)



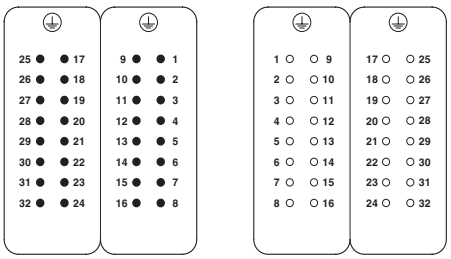
Connector pin assignments HC-B 10
(View from the connection side)



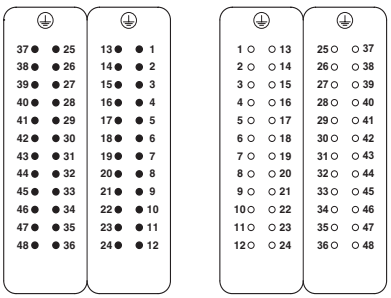
Connector pin assignments HC-B 16...
(View from the connection side)



Connector pin assignments HC-B 24...
(View from the connection side)

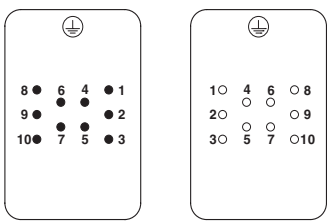


Connector pin assignments HC-B 16...32
(View from the connection side)

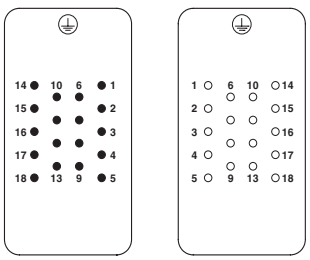


Connector pin assignments HC-B 24...48
(View from the connection side)

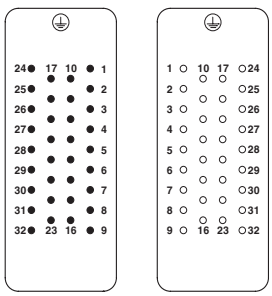
Connector pin assignments for BB series contact inserts



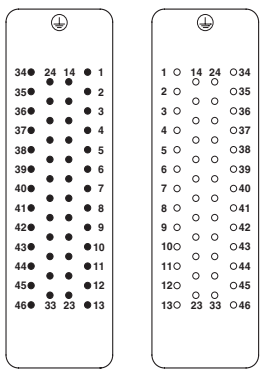
Connector pin assignment: HC-BB-10-E...C
(View from the connection side)



Connector pin assignment: HC-BB-18-E...C
(View from the connection side)

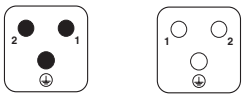


Connector pin assignment: HC-BB-32-E...C
(View from the connection side)



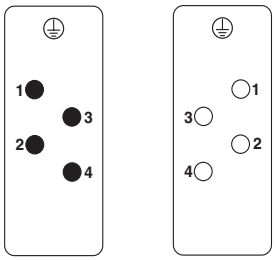
Connector pin assignment: HC-BB-46-E...C
(View from the connection side)

Connector pin assignments for HS series contact inserts



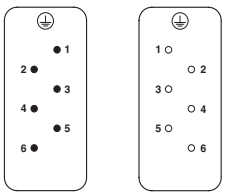
ST BU

Connector pin assignments HC-HS2-D7-E...S
(View from the connection side)



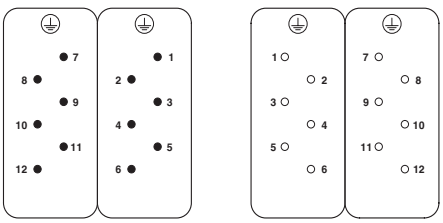
ST BU

Connector pin assignments KC-K 4/0-E...S
(View from the connection side)



ST BU

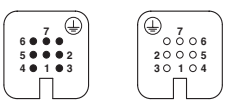
Connector pin assignments HC-HS 6...
(View from the connection side)



ST BU

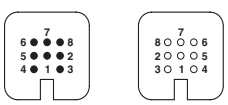
Connector pin assignments HC-HS 6...12
(View from the connection side)

Connector pin assignments for D series contact inserts



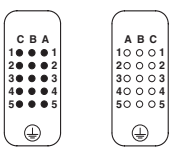
ST BU

Connector pin assignments HC-D 7...
(View from the connection side)



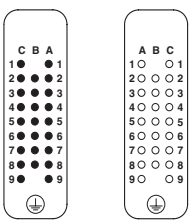
ST BU

Connector pin assignments HC-D 8...
(View from the connection side)



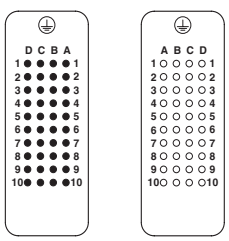
ST BU

Connector pin assignments HC-D 15...
(View from the connection side)



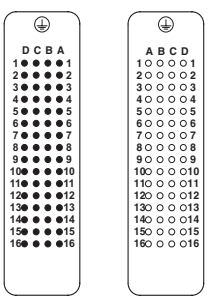
ST BU

Connector pin assignments HC-D 25...
(View from the connection side)



ST BU

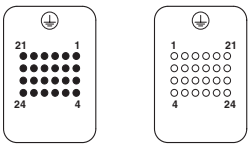
Connector pin assignments HC-D 40...
(View from the connection side)



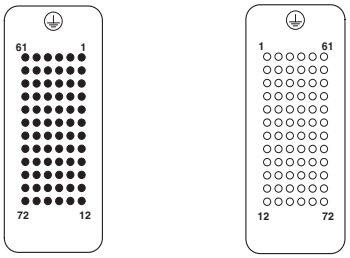
ST BU

Connector pin assignments HC-D 64...
(View from the connection side)

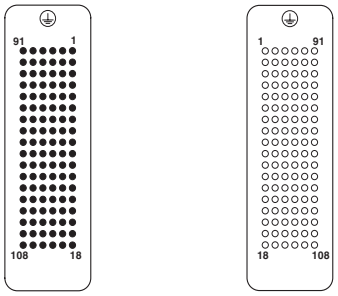
Connector pin assignments for DD series contact inserts



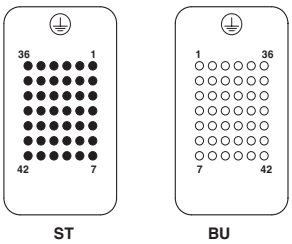
Connector pin assignments HC-DD 24...
(View from the connection side)



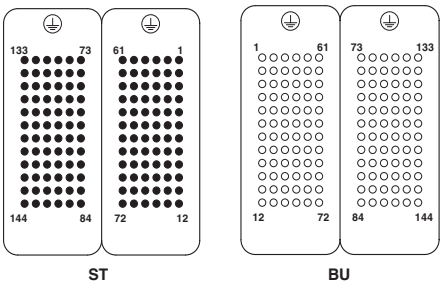
Connector pin assignments HC-DD 72...
(View from the connection side)



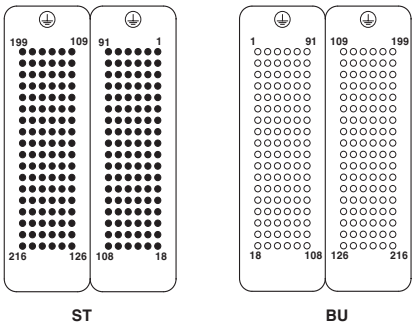
Connector pin assignments HC-DD 108...
(View from the connection side)



Connector pin assignments HC-DD 42...
(View from the connection side)

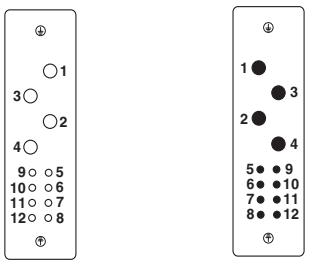


Connector pin assignments HC-DD 72...144
(View from the connection side)

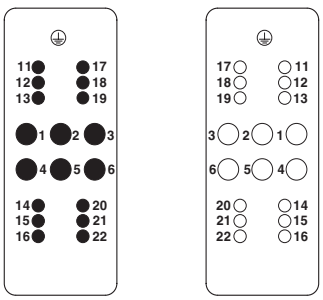


Connector pin assignments HC-DD 108...216
(View from the connection side)

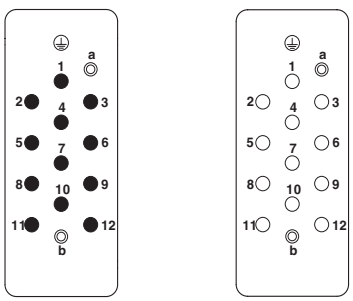
Connector pin assignments for K series combination inserts



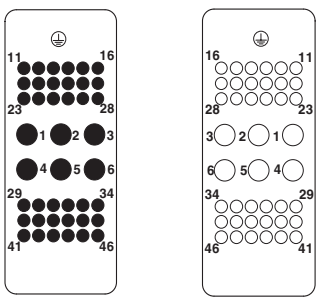
Connector pin assignment: HC-K4/8-E...S
(View: connection side)



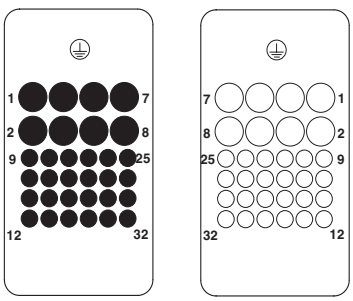
Connector pin assignment: HC-K6/12-E...S
(View: connection side)



Connector pin assignment: HC-K12/2-E...C
(View: connection side)

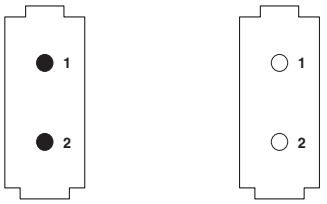


Connector pin assignment: HC-K6/36-E...C
(View: connection side)



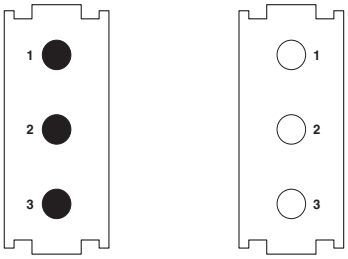
Connector pin assignment: HC-K8/24-E..C
(View: connection side)

Connector pin assignments for modular contact inserts



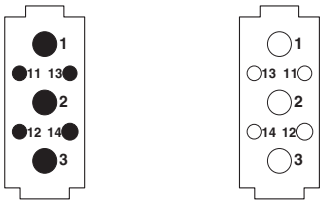
Pin Socket

Connector pin assignment: HC-M02-HS-70...



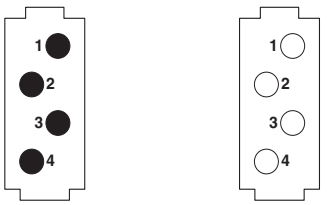
Pin Socket

Connector pin assignment: HC-M-03...



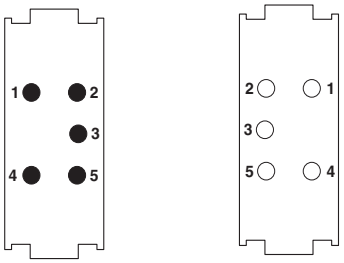
Pin Socket

Connector pin assignment: HC-M-03/04-MOD...



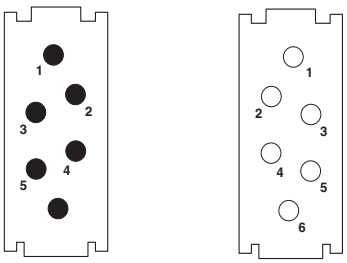
Pin Socket

Connector pin assignment: HC-M-04-MOD...



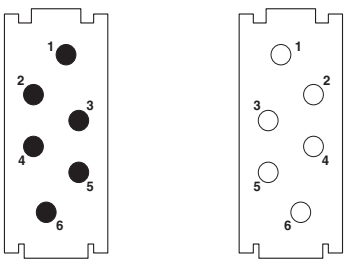
Pin Socket

Connector pin assignment: HC-M-05...



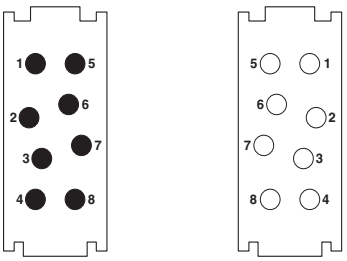
Pin Socket

Connector pin assignment: HC-M-06...



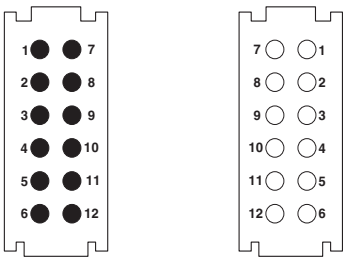
Pin Socket

Connector pin assignment: HC-M-06P...



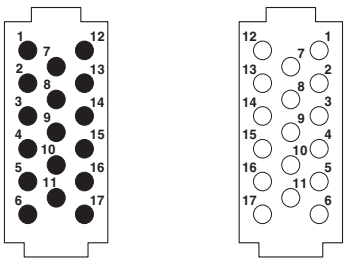
Pin Socket

Connector pin assignment: HC-M-08...



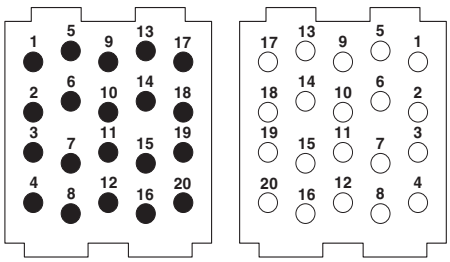
Pin Socket

Connector pin assignment: HC-M-12...



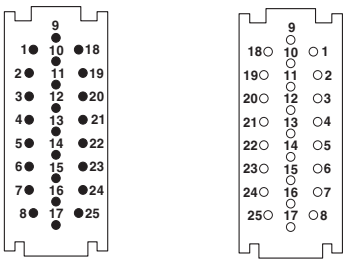
Pin Socket

Connector pin assignment: HC-M-17...



Pin Socket

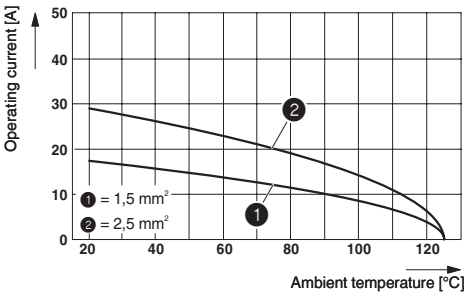
Connector pin assignment: HC-M-20...



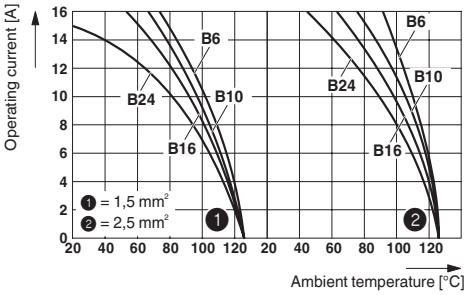
Pin Socket

Connector pin assignment: HC-M-25...

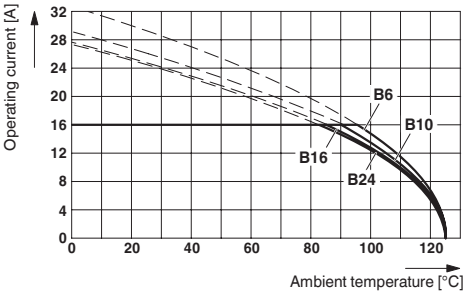
Derating diagrams of standard contact inserts



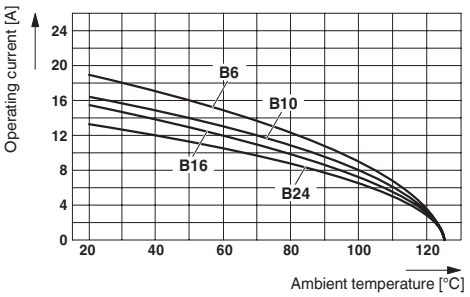
B5 series, crimp connection



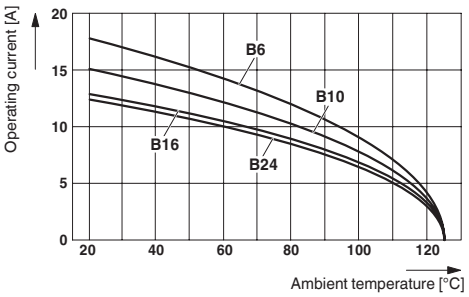
B series, screw and crimp connection



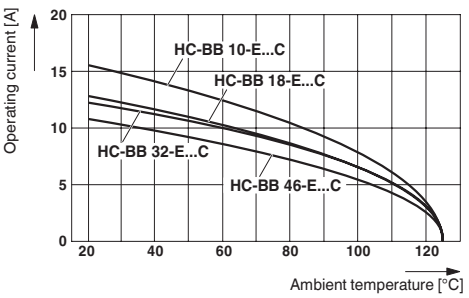
B series, push-in connection



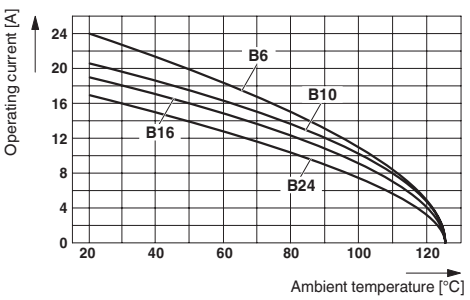
B series, spring-cage connection
Single, conductor cross-section: 1.5 mm²



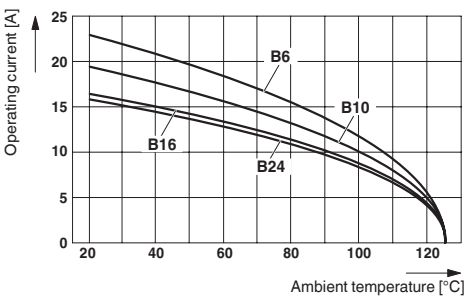
B series, spring-cage connection
Double, conductor cross-section: 1.5 mm²



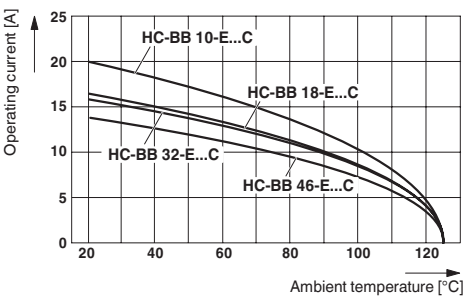
BB series, crimp connection
Conductor cross-section: 1.5 mm²



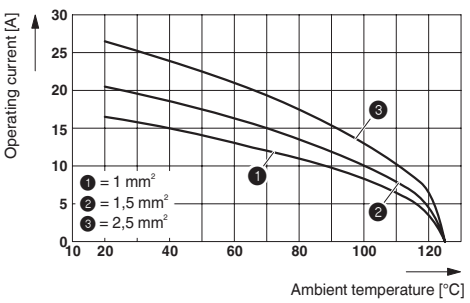
B series, spring-cage connection
Single, conductor cross-section: 2.5 mm²



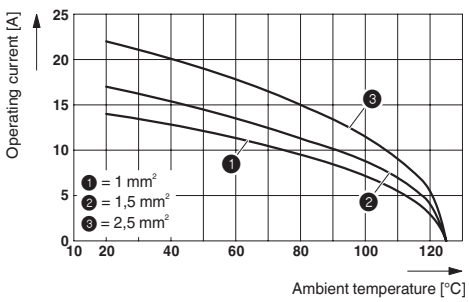
B series, spring-cage connection
Double, conductor cross-section: 2.5 mm²



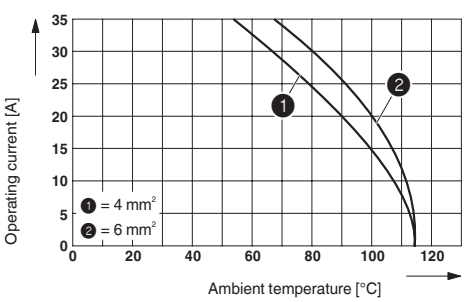
BB series, crimp connection
Conductor cross-section: 2.5 mm²



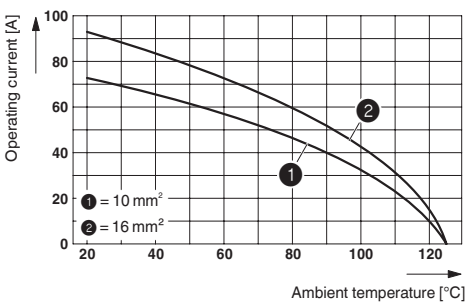
HC-A 10-E...S



HC-A 16-E...S

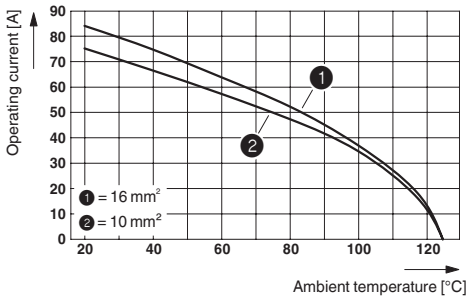


HC-HS 6-E...-S

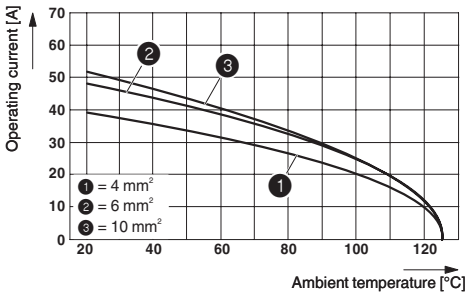


HC-K 4/0-E...S

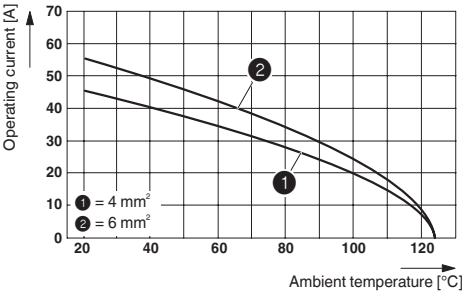
Derating diagrams of combination inserts (power contacts)



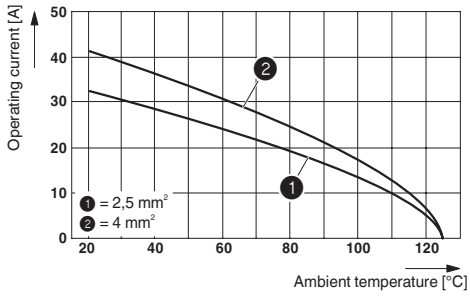
HC.K 4/8-E...S



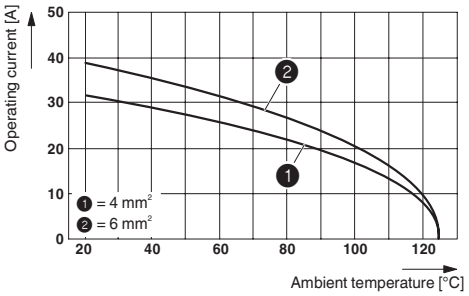
HC.K6/12-E...S



HC.K6/36-E...C

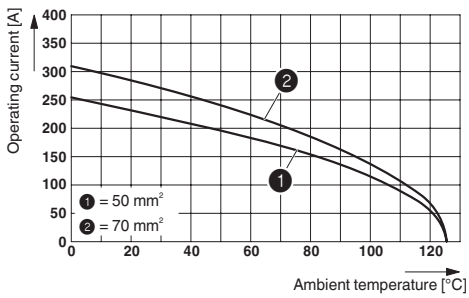


HC.K8/24-E...C

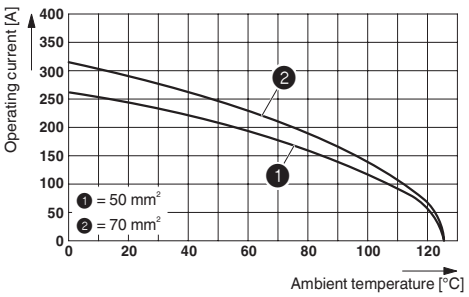


HC.K12/2-E...C

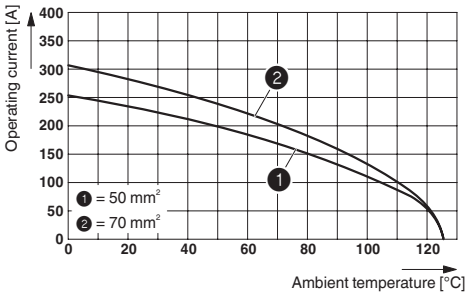
Derating diagrams of modular contact inserts



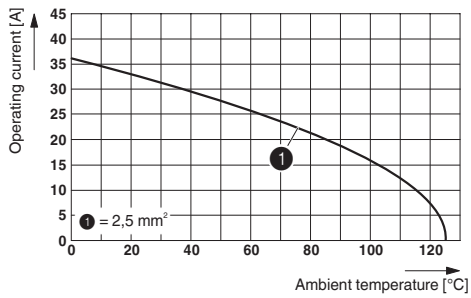
Derating diagram: HC-M-HS200/...
2 modules in the B16 housing



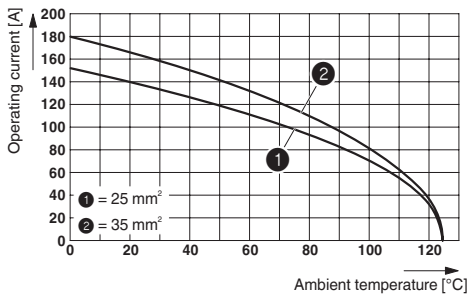
Derating diagram: HC-M-HS200/...
2 modules in the B24 housing



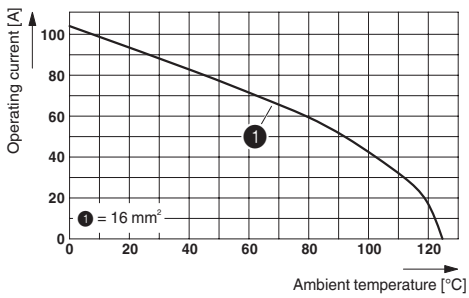
Derating diagram: HC-M-HS200/...
3 modules in the B24 housing



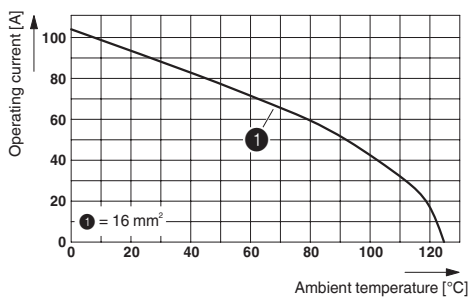
Derating diagram: HC-M-HV-MOD...
(1 module in the HC-B16 housing)



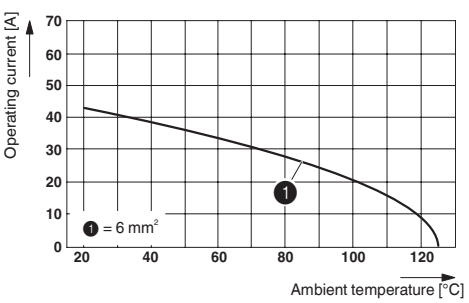
Derating diagram: HC-M-HS-MOD...
(3 modules in the HC-B24 housing)



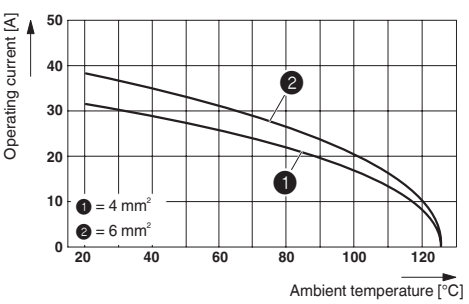
Derating diagram: HC-M-02-HS-70/22-MOD...



Derating diagram: HC-M-02-HS-70/16-MOD...

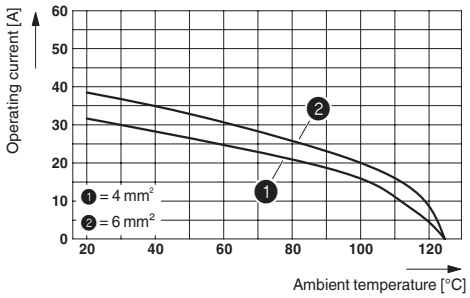


Derating diagram: HC-M-02-MOD...
(6 modules in the HC-B24 housing)

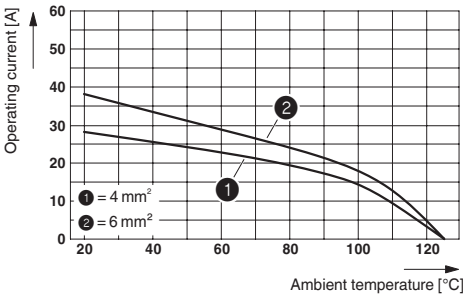


Derating diagram: HC-M-03-MOD...
(6 modules in the HC-B24 housing)

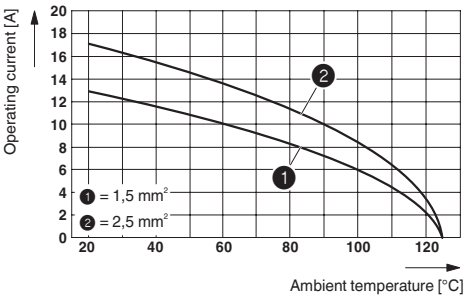
Derating diagrams of modular contact inserts



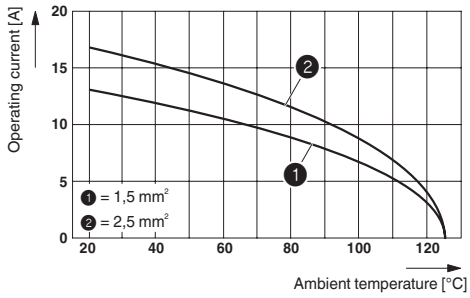
Derating diagram: HC-M-03/04-MOD...



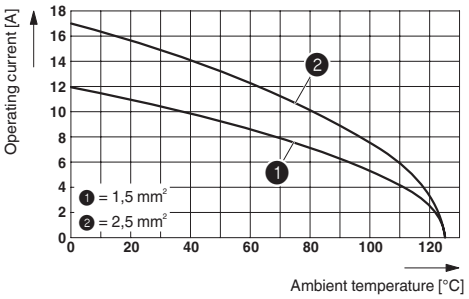
Derating diagram: HC-M-04-MOD...



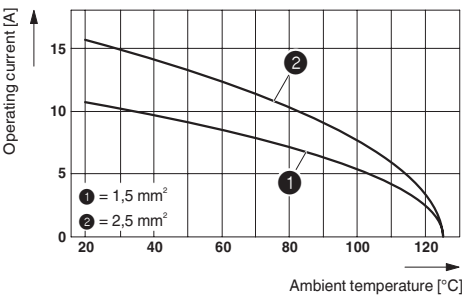
Derating diagram: HC-M-05-MOD...
(6 modules in the HC-B24 housing)



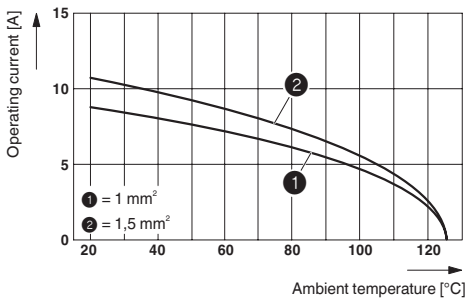
Derating diagram: HC-M-06-MOD...
(6 modules in the HC-B24 housing)



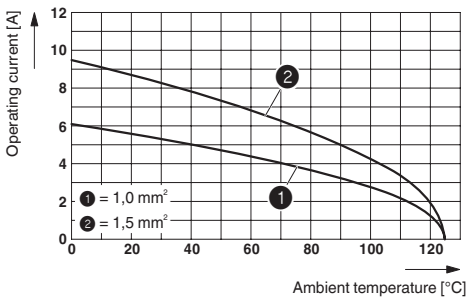
Derating diagram: HC-M-6P-MOD...



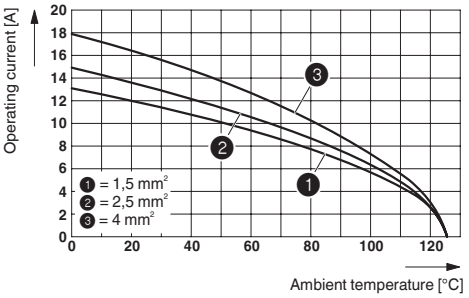
Derating diagram: HC-M-08-MOD...
(6 modules in the HC-B24 housing)



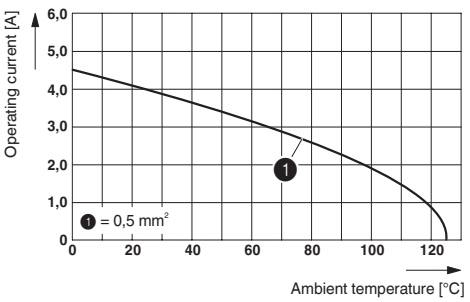
Derating diagram: HC-M-12-MOD...
(6 modules in the HC-B24 housing)



Derating diagram: HC-M-17-MOD...

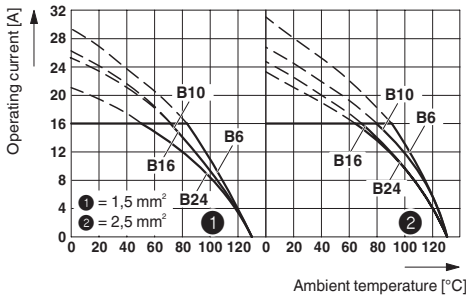


Derating diagram: HC-M-20-MOD...

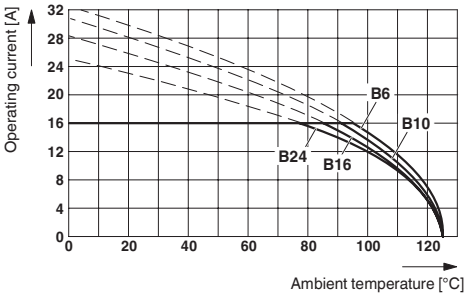


Derating diagram: HC-M-25-MOD...
(6 modules in the HC-B24 housing)

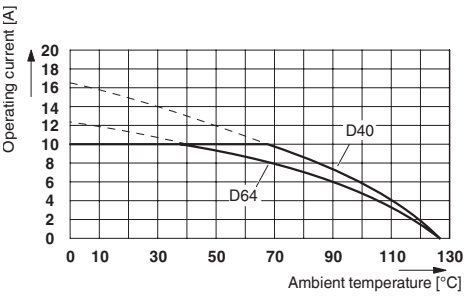
Derating diagrams of terminal adapters



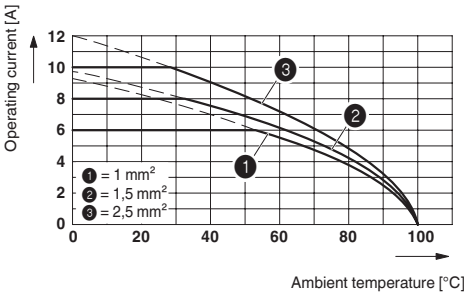
B series, screw connection



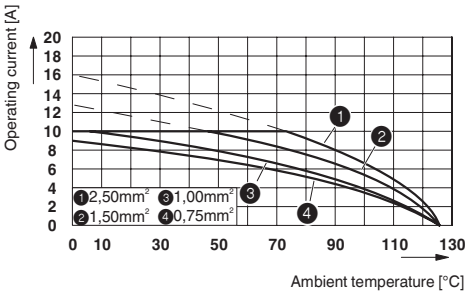
B series, push-in connection



D series, screw connection



D series, push-in connection
40-pos.

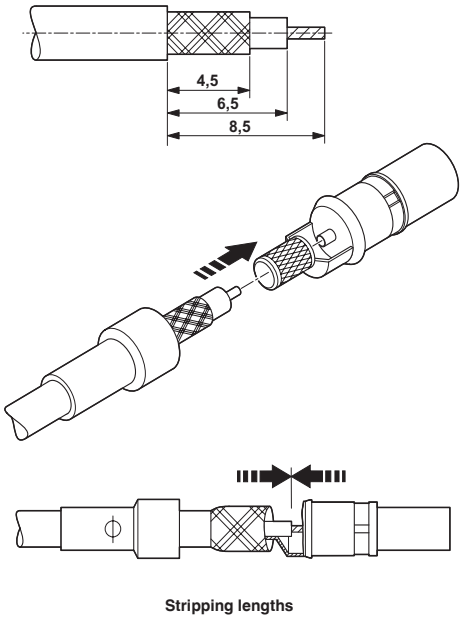


D series, push-in connection
64-pos.

Assembly instructions for modular contact inserts

HC-M-04-MOD....

– Strip the cable (see drawing)
– Slide the sleeve over the cable
– Solder the cores to the coaxial contact
– Lay the braided shield over the ridges of the contact
– Slide the sleeve over the braided shield and crimp the cable along the narrow contact collar



Stripping lengths

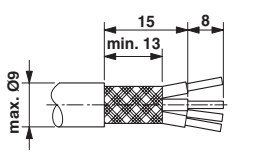
Conductor designation	Wave impedance	Sheath Ø [mm]	Inner conductor Ø [mm]	Attenuation [dB/100 m] at		
				100 MHz	200 MHz	800 MHz
RG 174 / U	50 Ω	2.5	0.48	29	–	84
RG 188 A / U	50 Ω	2.6	0.54	–	40	–
RG 316 / U	50 Ω	2.5	0.54	–	40	–
RG 179 B / U	75 Ω	2.55	0.3	–	41	–
RG 187 A / U	75 Ω	2.7	0.3	–	41	–

Usable conductors for coaxial contacts

Assembly instructions for modular contact inserts

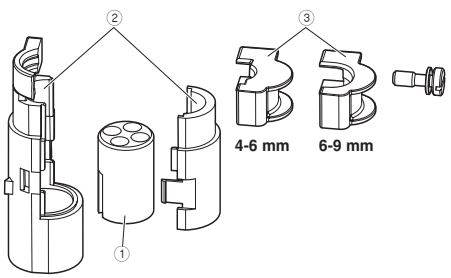
HC-M-EMV-MOD....

– Strip the cable as per the instructions, place the braided shield on the cable sheath and fix it using the shrink sleeve
– Install the contact carrier ① into the EMC connector
– Place the metallic half-shells ②
– Crimp the cores with crimp contacts and snap the contacts into the contact carrier ①, pay attention to the correct position assignment
– Install clamp ③
– Snap the EMC connector into the EMC module
– Insert the module into the hinged retaining frame

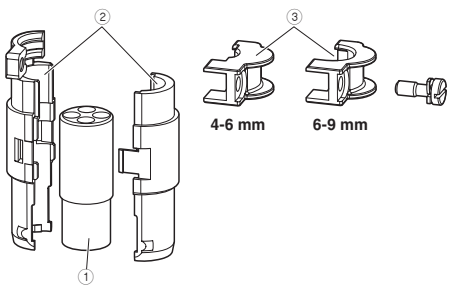


Stripping length of litz wires at 2.5 mm²: 6 mm

Stripping lengths for HC-M-EMV-....



HC-M-EMV-ST/3-9,5



HC-M-EMV-BU/3-9,5

Assembly instructions for modular contact inserts

HC-M-HV-MOD....

– Insert the core through the locking sleeve
– Strip core 9.5 mm
– Crimp the cores with CK 2,5…ED crimp contact
– Snap the locking sleeve and crimp contact together with the insulation body of the module

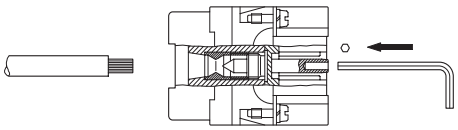
Instructions for using axial screw technology

The axial connection method can be used for stranded cores.

The conductor cross-sections specified in the catalog refer to the geometric cross-section of the used conductor. The use of conductors whose geometric cross-section strongly deviates from the nominal cross-section of the conductor should be checked before use. The connection space for axial screw technology has been designed for fine strand conductors as per VDE 0295 class 5. Deviating conductor superstructures (e.g. class 6 conductors) must be checked before use.

Assembly instructions:

It must be ensured before installation that the ball screw is completely turned back (chamber is open). Twisting the conductors is not allowed. The cores must be pushed into the contact chamber as far as they will go (until the insulation lies against the contact). Keep the core in this position and tighten it using an Allen key. The used core end must be cut before it is reconnected. Tightening the connection screw is allowed only once, in order to prevent the litz wire from breaking.



Instructions for EMC screw connection

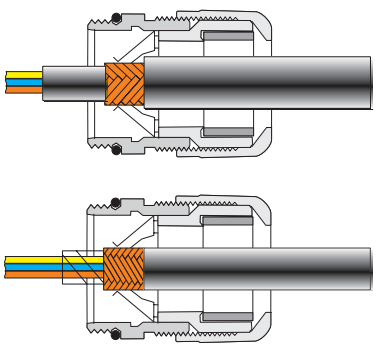
HC-EMV-KV-M…

Method 1

– Cut the outer sheath after approximately 15 mm, but do not pull it
– Guide the conductor through the screw connection
– Pull the outer sheath
– Pull the conductor back until a connection is established between the cable shield and the contact spring

Method 2

– Trim the outer sheath
– Push the braided shield back approx. 15 - 20 mm over the outer sheath
– Insert the conductors into the screw connection until a connection is established between the conductor shield and the contact spring



Quality in Quantity

Integrated management system

The objective of the Phoenix Contact integrated management system is to coordinate all the requirements regarding products, processes and organization.

The legal and regulatory requirements, as well as those of international standards and our customers are fulfilled and even in some cases exceeded in all phases of the product lifecycle.

The integration of quality, environmental protection and workplace safety in the Phoenix Contact management system is monitored each year for conformity by independent bodies with worldwide recognition. The certifications in accordance with the international standards ISO 9001, ISO 14001 and BS OHSAS 18001 are the result of our corporate philosophy of meeting the needs of our customers, staff, and the environment as best as possible. They serve as the basis for innovative products with the familiar high Phoenix quality standard, environmental protection consciousness in active practice and responsibility in the field of work safety. Of course, we integrate all further requirements of standards, international approvals or special customer demands into the company processes as well.

The result of this system is a building block for the success of the Phoenix Contact Group and our products and services.

CE Marking

The CE marking was introduced as an important instrument for the free movement of goods and services within the European domestic market. By attaching the marking to a product, the manufacturer confirms that it complies with all applicable European Union (EU) directives that apply to this product. The EC directives describe the product properties with respect to device safety and avoidance of dangers. These are legally binding regulations of the European Union (EU). In other words, compliance with the requirements is a **statutory condition for marketing the article within the EU**.

Where applicable, the products that our company currently manufactures fall within the scope of the following directives:

– 2006/95/EC Electrical equipment for application within specific voltage limits (low-voltage directive),
– 2004/108/ECElectromagnetic compatibility (EMC directive),
– 98/37/EC or 2006/42/ECSafety of machinery (Machinery directive),
– 94/9/EC Devices and protective systems for use in potentially explosive areas (ATEX 100a directive),
– 1999/5/ECRadio systems and telecommunications termination equipment (R&TTE)

The standards upon which the specified directives are based, have long been a constituent part of our standards for development. This guarantees conformance with European directives. Our products are inspected in conformance with the standards at a test laboratory accredited in accordance with DIN EN ISO/IEC 17025. The inspection reports are recognized Europe-wide as part of an accreditation procedure.

The EMC directive occupies a special place among the named European directives. It defines electromagnetic compatibility for the first time as a fundamental property of devices based on legally binding guidelines. European jurisprudence therefore acknowledges the significance of the electromagnetic compatibility of devices and systems as an important condition for trouble-free operation of machinery and systems. As one of the leading international companies in the area of surge protection, Phoenix Contact has broad expertise in EMC matters. This expertise and experience, gained over years of developing and applying industrial interface and communications technology, have led to our products having an extremely high quality standard with respect to their electromagnetic compatibility. In order to provide other companies with this expertise as well, the associate company Phoenix Testlab was founded. Phoenix Testlab GmbH is an independent, accredited service company offering EMC testing in conformity with the European standards. At Phoenix Testlab, devices are also tested for their electrical safety, mechanical influences and their behavior with environmental influences. Furthermore, Phoenix Testlab is a "Notified Body" in accordance with the EMC directive 2004/108/EC and the R&TTE directive 1999/5/EC for radio systems and telecommunications termination equipment. As a "Telecom Certification Body" (TCB), Phoenix Testlab is allowed to release these products for the markets in the USA, Canada and Japan as well.

Standards and regulations

All relevant standards and regulations are used as a basis for the development and improvement of our products.

International standards are subject to continuous changes as a result of harmonization and new developments. To do justice to this process, the current state of all standards relevant to our products is documented on the Internet at **www.phoenixcontact.com**.

Online product information service in the World Wide Web

The product range of Phoenix Contact is continuously being expanded.

Due to our commitment to product monitoring, all products are subject to improvements.

The Internet is an ideal platform to quickly communicate innovations and product improvements to the market.

At www.phoenixcontact.net you will find quick access to the various country websites of Phoenix Contact. There, you can always get an current overview of the products, solutions and services from Phoenix Contact. This includes technical documents such as data sheets and manuals, current drivers and demo software as well as direct contact with the relevant contact person.

Note:

Subject to modifications in the interest of technical progress.

Connection cross-section

The rated cross-section of modular terminal blocks must be specified by the manufacturer in acc. with IEC 60947-7-1. This concerns the conductor cross-section that can be connected in solid or multi or fine strand versions and which is subject to thermal, mechanical and electrical requirements.

The manufacturer must also specify the **rated connection capacity**, i.e. the area of the conductor that can be connected, as well as the number of conductors that can be connected simultaneously and the necessary preparation of the conductor ends. The conductors can be **solid (single or multi-strand)** or stranded **(fine strand)**.

These values can be found in the product-specific technical data.

The rated connection capacity of the Phoenix Contact modular terminal blocks usually exceeds the standard requirements, which specify that only one conductor with one of the two next smaller cross-sections (apart from the rated cross-section) must be connectable (standardized for the range of cross-sections from 0.2 to 35 mm²).

In addition, conductors in the rated cross-section can mostly be wired with ferrules with plastic sleeves.

Phoenix Contact modular terminal blocks are designed to allow copper wires to be always connected to them without any special treatment. "Special treatment" or the use of ferrules – both are permissible in accordance with IEC 60947-7-1 – are not necessary. Should ferrules be used in order to protect stranded conductors from coming unspliced, the connection capacity of the stranded conductors will generally be reduced by one step.

Structure and dimensions of connecting cables

Cross section	Solid 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 (rec. value)	Gauge no.		solid wires			stranded wires	
[mm²]							AWG	[∅ mm]	[circ. miles]	[mm²]	[∅ mm]	[circ. miles]	[mm²]
0.2	0.5	1	-	-	-	-	24	0.51	404	0.21	-	-	-
0.5	0.9	1	1.1	7	1.1	16	20	0.81	1022	0.52	0.97	1111	0.56
0.75	1.0	1	1.2	7	1.3	24	18	1.02	1620	0.82	1.16	1600	0.82
1	1.2	1	1.4	7	1.5	32	(17)	1.15	2050	1.04			
-	-	-	-	-	-	-	16	1.29	2580	1.31	1.50	2580	1.32
1.5	1.5	1	1.7	7	1.8	30	(15)	1.45	3260	1.65			
-	-	-	-	-	-	-	14	1.63	4110	2.08	1.85	4100	2.09
2.5	1.9	1	2.2	7	2.3	50	(13)	1.83	5180	2.63			
-	-	-	-	-	-	-	12	2.05	6530	3.31	2.41	6500	3.32
4	2.4	1	2.7	7	2.9	56	(11)	2.30	8230	4.17			
-	-	-	-	-	-	-	10	2.59	10380	5.26	2.95	10530	5.37
6	2.9	1	3.3	7	3.9	84	(9)	2.91	13100	6.63			
-	-	-	-	-	-	-	8	3.26	16510	8.37	3.73	16625	8.48
10	3.7	1	4.2	7	5.1	80	(7)	3.67	20800	10.56	4.15	20820	10.55
-	-	-	-	-	-	-	6	4.12	26240	13.30	4.67	26250	13.39
16	4.6	1	5.3	7	6.3	126	(5)	4.62	33100	16.77	5.24	33100	16.77
-	-	-	-	-	-	-	4	5.19	41740	21.15	5.90	41650	21.24
25	-	-	6.6	7	7.8	196	3	5.83	52600	26.67	6.61	52630	26.67
35	-	-	7.9	7	9.2	276	2	6.54	66360	33.62	7.42	66150	33.74
-	-	-	-	-	-	-	1	7.35	83690	42.41	8.33	83706	42.69
50	-	-	9.1	19	11	396	0	8.25	105600	53.51	9.35	104640	53.36
70	-	-	11	19	13.1	360	00	9.27	133100	67.44	10.52	132300	67.47

Tightening torque of terminal block screws

IEC 60947-1/EN 60947-1, modified, table 4 specifies tightening torques for screw connections based on the type and size of the screw for electrical and mechanical type tests. This torque allows a safe conductor connection of Phoenix Contact terminal blocks. Apart from this value, the technical product data in the catalog lists a practical range for the torque that yields gas-tight contacts with long-term stability.

Extract from IEC 60947-1/EN 60947, table 4

The torque in accordance with IEC/EN and the recommended tightening torque for Phoenix Contact terminal blocks are specified.

Head screw with slot

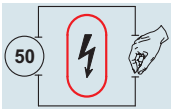
Thread	Torque	Recommended tightening torque	
		CuZn or CuSn screw	Steel screw
	[Nm]	[Nm]	[Nm]
M 2.5 (M 2.6)	0.4	0.6	0.8
M3	0.5	0.8	1.0
M3.5	0.8	1.2	–
M4	1.2	1.8	2.0
M5	2.0	3	4.5
M6	2.5	4	8

Degrees of protection in accordance with DIN EN 60529

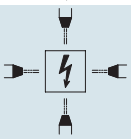
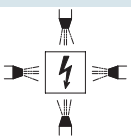
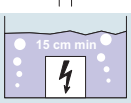
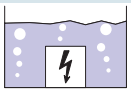
Definition:

The representation of IP (Ingress Protection) degrees of protection in accordance with DIN EN 60529 is defined using two characteristic numerals (e.g. IP54), whose meaning is explained in the following tables.

Degree of protection against access to hazardous parts and against solid foreign objects

First charact. numeral	Short description	Example	Definition
0	Not protected		
1	Protected against solid foreign objects		Protected against access to hazardous parts with the back of the hand. Protected against the penetration of solid foreign objects with a Ø > 50 mm.
2	Protected against solid foreign bodies of Ø 12.5 mm and larger		Protected against access to hazardous parts with the finger. Protected against the penetration of solid foreign objects with a Ø > 12.5 mm.
3	Protected against solid foreign bodies of Ø 2.5 mm and larger		Protected against access to hazardous parts with a tool. Protected against the penetration of solid foreign objects with a Ø > 2.5 mm.
4	Protected against solid foreign bodies of Ø 1 mm and larger		Protected against access to hazardous parts with a wire. Protected against the penetration of solid foreign objects with a Ø > 1 mm.
5	Protected against dust		Protected against access to hazardous parts with a wire. The penetration of dust is not completely prevented, but dust may not enter in such an amount that the satisfactory operation of the device or the safety is impaired.
6	Dust-proof		Protected against access to hazardous parts with a wire. No penetration of dust.

Degree of protection against water

second charact. numeral	Short description	Example	Definition
0	Not protected		
1	Protected against dripping water		Vertically falling drops must not cause damage.
2	Protected against dripping water if the housing is bent at an angle of up to 15°.		Vertically falling drops must not cause damage if the housing is bent at an angle of up to 15° either side of the vertical.
3	Protected against spray water		Water that is sprayed at an angle of up to 60° on either side of the vertical must not cause damage.
4	Protected against splash water		Water that is sprayed against the housing from any direction must not cause damage.
5	Protected against jet water		Water that is directed as a jet against the housing from any direction must not cause damage.
6	Protected against strong jet water		Water that is directed as a strong jet against the housing from every direction must not cause damage.
7	Protected against the effects of temporary submersion in water		Water must not penetrate in a quantity that causes damage if the housing is temporarily submerged in water under standard pressure and time conditions.
8	Protected against the effects of permanent submersion in water		Water must not penetrate in a quantity that causes damage if the housing is submerged under 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 with greatly increased pressure from any direction must not have any detrimental effect. (Example: IP69K in accordance with DIN 40050 Part 9)

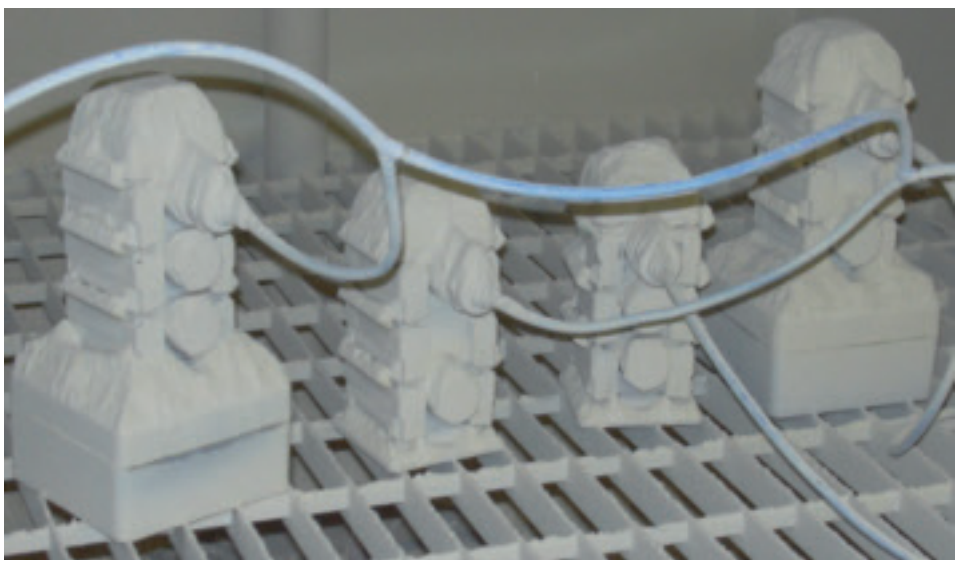
Electrical equipment must be protected against external influences for reasons of safety. This is the job of the housing, which protects electrical equipment from contact, the penetration of solid objects, dust and moisture.

Possible combinations of degrees of protection in accordance with DIN EN 60529 that can be used for housings in practice are given in the following table.

Shock protection	Foreign body protection	Protection against water	No protection	Protection against vertically falling dripping water	Protected against dripping water if the housing is bent at an angle of up to 15°.	Protected against spray water from all directions including inclinations up to 60°	Protected against spray water from all directions	Protected against jet water from all directions	Protected against strong jet water from all directions	Protected 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)
			IPx0	**IPx1**	**IPx2**	**IPx3**	**IPx4**	**IPx5**	**IPx6**	**IPx7**	**IPx8**	**IPX9K**
No touch protection	Not protected against solid foreign objects	**IP0x**	IP00									
Back of hand safe	Protected against solid foreign objects > 50 mm Ø	**IP1x**	IP10	IP11	IP12							
Touch proof	Protected against solid foreign objects > 12.5 mm Ø	**IP2x**	IP20	IP21	IP22	IP23						
Protection against coming in contact with tools, wires or similar > 2.5 mm Ø	Protected against solid foreign objects > 2.5 mm Ø	**IP3x**	IP30	IP31	IP32	IP33						
Protection against coming in contact with tools, wires or similar > 1 mm Ø	Protected against solid foreign objects > 1.5 mm Ø	**IP4x**	IP40	IP41	IP42	IP43	IP44					
Protection against coming in contact with tools, wires or similar > 1 mm Ø	Protection against interfering dust accumulation inside the components	**IP5x**	IP50				IP54	IP55				
Protection against coming in contact with tools, wires or similar > 1 mm Ø	No penetration of dust	**IP6x**	IP60					IP65	IP66	IP67	IP68	IP69K

Example: DUPLICON Power Distribution, IP67 degree of protection in accordance with DIN EN 60529

Dust-proof
(IP6x)



Protected against temporary submersion
(IPx7)

The photo shows a DUPLICON test specimen during the IP6x dust test

Our insulation housings are made of different 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 by Phoenix Contact are listed with UL (Underwriters Laboratories Inc.) in the USA.

Behavior of plastics under the influence of temperature (operating temperatures)

All plastics undergo a process referred to as thermal aging, which causes changes to mechanical and electrical properties, when they are subjected to the influence of heat over long periods. External influences, e.g. radiation, additional mechanical, chemical or electrical strains, reinforce this effect. All characteristic values included in the table have been determined using test pieces and thus facilitate a good comparison of materials. However, applying these characteristic values to an evaluation of molded plastic parts is only possible to a restricted extent, and can only give the designer a rough guidance when it comes to selecting a plastic material. The RTI-elec. as per UL746B has been specified in this catalog as an evaluation criterion for temperature resistance.

Insulation materials

Polyamide: PA and PA-GF

Polyamide also has excellent electrical, mechanical and chemical properties even at high operating temperatures. Brief peak temperatures up to approximately 200°C are permissible as a result of heat aging stabilization. The plastic material becomes elastic and unbreakable even at low temperatures due to absorption of water.

Fiber reinforced polyamides are characterized by great rigidity and hardness as well as operating temperatures even higher than those of the non-reinforced material.

Polyamide for high-temperature applications: PA HT and PA-GF HT

Special high-temperature resistant types of polyamide have been used in non-reinforced or glass fiber reinforced variants for reflow applications. These high-temperature polyamides are a combination of 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 creeping resistance for products used in reflow soldering processes. LCP has exceptional mechanical properties over a wide temperature range and a very low thermal expansion.

Polyester: PBT and PBT-GF

We use thermoplastic polyester in non-reinforced and glass-fiber-reinforced variants for special applications which require increased dimensional and form stability.

In addition to high operating temperature, the material is characterized by good mechanical stability, hardness and excellent notched impact strength. PBT does not absorb humidity from the surroundings. PBT is therefore especially suitable for strips that are soldered onto printed circuit boards.

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 electronics component housing.

In its transparent form, polycarbonate is particularly suited for use as cover profiles or marking materials.

Acrylnitrile 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 a special surface quality and hardness.

ABS is well-suited for coating metallic surfaces, e.g. nickel.

Polyvinyl chloride: PVC

Whilst other thermoplastic materials are mainly processed with injection molding using ready-to-use molding and extrusion materials, PVC is processed as a powder in the extruder. This is the reason why it is used in our profile products. PVC is self-extinguishing even without flame protection, has high mechanical stability, but is however notch-sensitive.

Polyoxymethylene: POM

Polyoxymethylene is a technical material that combines high rigidity with mechanical stability, excellent elastic properties, high tenacity, dimensional stability and exceptional sliding friction behavior.

Polyethylene: PE

Polyethylene is characterized by excellent chemical resistance and electrical insulation properties. PE is thermoplastic, and hence can 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, however, not as tough at low temperatures.

Thermoplastic polyurethane: TPU and TPU-GF

TPU is characterized by good electrical properties, an excellent feel, high flexibility over a wide temperature range and high wear resistance. Thermoplastic polyurethanes are also extremely elastic and have good cold impact strength.

The glass fiber-reinforced TPUs have higher rigidity and hardness than non-reinforced materials.

Cross-linked ethylene-propylene-diene-polymer/polypropylene: EPDM-PP

EPDM-PP is a blend, i.e. a mixture of PP and cross-linked EPDM. EPDM-PP is a rubber-like material that can be processed in a thermoplastic manner. EPDM-PP has a high temperature resistance, a low compression set, good wear resistance and chemical resistance.

Acrylnitrile butadiene styrene rubber: NBR

NBR is a rubber having excellent resistance to aging. It also has good wear resistance and low plastic creep. Its elasticity is less than that of other rubbers.

Fluoridated rubber: FPM

FPM rubbers are characterized by extremely high temperature resistances, but have a more unfavorable cold behavior than other rubbers.

Chlorine-butadiene rubber: CR

Amongst all the rubbers, CR rubbers are characterized by excellent weathering and ozone resistance.

Properties	Standard	Unit	PA	PA GF	PA HT	PA GF HT	PBT	PBT GF	LCP GF	PC	ABS	PVC	POM	PP	PE
RTI elec	UL 746B	°C	≥ 105	≥ 105	≥ 105	≥ 105	≥ 105	≥ 105	≥ 130	≥ 105	≥ 80	≥ 50	≥ 105	65	50
Minimum temperature (without mech. 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		
Creep resistance CTI...	IEC 60112/ DIN VDE 0303-1		600	400	≥ 250	225	600	225	175	175	600	600	600		
Creep resistance 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					

Properties	Standard	Unit	TPU	TPU GF	EPDM/ PP
RTI elec	UL 746B	°C	50	50	100
Minimum temperature (without mech. load)		°C	- 40	- 40	- 40
Dielectric strength	IEC 60243-1/DIN VDE 0303-21	kV/cm	35	35	
Creep resistance CTI...	IEC 60112/ DIN VDE 0303-1		600	600	600
Creep resistance CTI...M	IEC 60112/ DIN VDE 0303-1		600		
Inflammability class	UL 94	HB – V0	V2	HB	HB
Chemical resistance	See the chemical resistance table				

Properties	Standard	Unit	NBR	FPM	CR
Operating temperature		°C	≤ 100	≤ 200	≤ 100
Minimum temperature (without mech. load)		°C	- 40	- 25	- 40
Dielectric strength	IEC 60243-1/DIN VDE 0303-21	kV/cm	Not relevant, owing to sealing materials		
Creep resistance CTI...	IEC 60112/ DIN VDE 0303-1				
Creep resistance CTI...M	IEC 60112/ DIN VDE 0303-1				
Inflammability class	UL 94	HB – V0			

Chemicals	Concentration in %	Temperature°C	Plastics: 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)
Acetalaldehyde			0	0	0	-	0	-	-	0		+	+	+	0	0	-	0
Acetone		20	+				+	-	+	+	0	0	0	-	+	-	-	0
Acetate			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Acetophenone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Aldehydes			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	-	+	+	+	-	-	-	+	-
Benzene		50	+	+	+	+	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			+				+	+	+	-	+	+	+	-	+	-	+	-
Diethyl amine			+	+	+	-	0	-	-	0	+	+	+	+	-	-	-	-
Dimethyl amine			+	+	+	-	0	-	-	0	+	+	+	+	0		-	-
Glacial acetic acid		50		-	-	-	-	-	0	+	-	-	-	-	+	-	-	-
Acetic acid	20		-	-	0	0	+	-	+	+	+	0	0	0	+	-	-	0
Esters			+	+	+	0	-	-	-	0	+			-	+	-	-	-
Ethanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	+	+
Ethers			+	+	+	-	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	-	+	-
Ketone			+	+	+	0	0	-	+	0	0	+	+	-	-	-	-	-
Aliphatic hydrocarbons			+	+	+	+	+	+	0	0	+	+	+	-	+	+	+	-
Aromatic hydrocarbons			+	+	+	-	0	-	0	0	0	+	+	-	-	-	+	-
Chlorinated hydrocarbons			0	0	0	-	+	-	-	-	0	-	-	-	-	-	+	-
Unsaturated, chlorinated hydrocarbons			0	0	0	-	+	-	-	-	0	0	0	-	-	-	+	-
Fuels			+	+	+	0	+	0	0	-	+	+	+	-	-	-	+	-
Weak alkalis			+	+	+	-	+	0	+	+	+	+	+	+	+	0	+	0
Strong alkalis			0	-	-	-	+	-	+		+	-	-	+	0	0	-	-
Solutions of inorganic salts			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	
Machine oils			+				+				+	+	+	0	+	-	+	-
Metal chloride			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Metal sulfate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Metal nitrate			+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+
Methanol			0	0	0	0	+	0	+	+	+	+	+	-	+	+	-	+
Methyl amine			+	+	+	-	0	-	-	0	+	+	+	+	+	0	0	-
Lactic acid	10	20	+				+	+	+	+	+	+	+	-	+	+	+	+
Mineral oil			+	+	+		+	+	+	-	+	+	+	-	+	-	+	-
Engine 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 (distilled)		20												+				
Cold water			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Hot water			-	-	-	-	+	+	+	+	-	+	+	+	+	0	+	0
Citric acid	10		+				+	+	+	+	+			+	+	+	+	+

- No resistance
0 Moderate resistance
\+ Good resistance

*The irradiated PUR type tends to be more resistant than the non-irradiated one. This cannot be quantified and must be checked from case to case.

Specifications given in the table have been compiled from the recommendations given by our plastic suppliers.

Since individual operating conditions also affect the usability of every product, these specifications should be used only a reference.

In cases where information regarding usage is not available, we recommend conducting a prior test at the user's site in order to avoid risks.

Insulation coordination for electrical equipment in low voltage systems

Dimensioning of air and creepage distances in accordance with DIN EN 60664-1/VDE 0110-1.

This part of the standard, based on IEC 60664, contains specifications for the insulation coordination of items in low voltage systems. This part is applicable for items to be used at a height of 2000 m above sea level. This basic safety standard is primarily aimed at technical committees, and if suitable product directives are not available for an item, it can be used at one's own responsibility. International and European product standards cited in this catalog contain specifications for the insulation coordination in conformity with DIN EN 60664/VDE 0110-1.

Insulation coordination

Insulation coordination includes the selection of electrical insulation properties for items as regards intended applications and ambient conditions. Separate requirements must be applied for air and creepage distances and for rigid insulation. Surge voltages to be expected, characteristic values of surge protection devices and pollution on the intended site must be considered when measuring the clearances. Clearances are measured according to the external or internal surge voltages to be expected. Different surge voltages, grouped in categories, i.e. a value that determines an impulse, withstand voltage, ascertain the required clearance directly. These surge voltage categories (I to IV) are mainly based on a statistical study, and are used for the items that are directly fed from low voltage networks. Definitions of individual categories are included in the following table 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-homogenous field, case B – homogenous field).

Clearances in accordance with case A are capable of resisting the allocated surge voltage under all conditions. Items that are dimensioned according to case A can therefore be applied without any further testing. Values of clearances as per case B are based on ideal conditions. Values which fall between case A and case B require proof from a surge voltage test.

The voltages present, properties of insulation materials, pollution to be expected and safety measures against pollution are considered when calculating the creepage distances.

The effect due to pollution is considered when determining the air 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 allocated to the rated voltages according to the pollution degree in table 4.

If the respective product description does 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

– Items of **surge voltage category IV** can be used at the terminal point of the installation. **Note:** Examples of such items are electricity meters and primary excess-current protective devices.
– Items of **surge voltage category III** can be used in fixed installations and are intended for such cases where requirements for the reliability and availability of the items are special. **Note:** Examples of such items are switches in fixed installations and items for industrial use with permanent connection to the fixed installation.
– Items of **surge voltage category II** are power consuming items that are fed from the fixed installation. **Note:** Examples of such items are household appliances, portable tools, other domestic appliances and similar devices.
– Items of **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 ascertained for the micro-environment in order to determine the air and creepage distances:

– Pollution degree 1

No contamination or only dry, non-conductive contamination is present. The contamination has no influence.

– Pollution degree 2

Only non-conductive contamination is present. Occasionally, temporary conductivity due to condensation must be reckoned with, however.

– Pollution degree 3

Conductive contamination or dry, nonconductive contamination is present which becomes conductive, since condensation is expected.

– Pollution degree 4

Electrically conductive dust, rain or moisture results in permanent electrical conductivity.

Insulation material

DIN EN 60664/VDE 0110-1 classifies insulation materials in four groups depending on their CTI values that were obtained using solution A as per IEC 60112. These are:

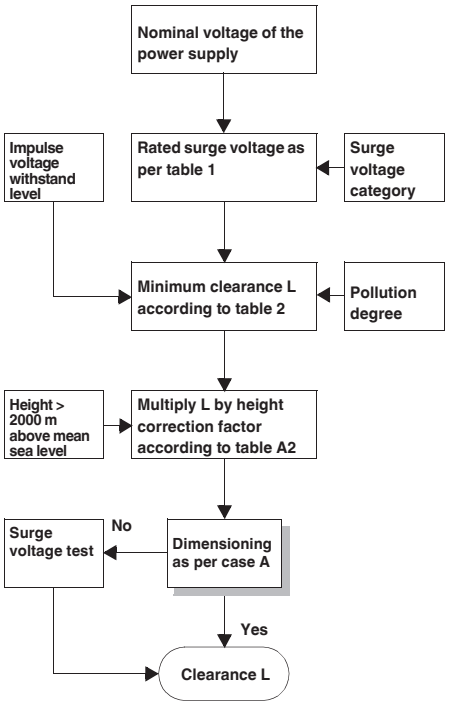
Insulation material group I: $600 \leq CTI$
Insulation material group II: $400 \leq CTI < 600$
Insulation material group IIa: $175 \leq CTI < 400$
Insulation material group IIIb: $100 \leq CTI < 175$

The comparative tracking index of the creepage distance must be defined according to suitable test pieces using test solution A as specified in DIN IEC 60112.

The proof tracking index of creepage distance (PTI) is used as a proof of the properties of creepage current of insulation materials.

Dimensioning of clearances

Schema for determining the clearances



Height correction factors (extract from table A.2)

Heightin m	Normal air pressurein kPa	Multiplication factorfor 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

Impulse voltage withstand levels for items that are directly fed from the low voltage network (extract from table 1)

Nominal voltage of the power supply system [1] (mains) as per IEC 60038 [3] [V]		Conductor to neutral conductor voltage derived from nominal AC or DC voltage up to and including	Rated surge voltage [2] [V] Surge voltage category [4]			
Three-phase	Single-phase	[V]	I	II	III	IV
	120 to 240	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]) Items with this rated surge voltage may be used in systems in conformity with IEC 60364-4-443.

[3]) The slash, i.e. /, indicates a three phase 4-conductor system. A lower value indicates the conductor-neutral conductor voltage, whereas a higher value indicates the conductor-conductor voltage. When only one value is specified, it refers to a three-phase 3-conductor system, and indicates the conductor-conductor voltage.

[4]) Refer to 2.2.2.1.1 for the explanation of surge voltage categories.

Minimum clearances for surge voltages (extract from table 2)

Required impulse withstand voltage [1] [5]	Condition A - non-homogeneous field (refer to 1.3.15) Pollution degree [6]			Condition B - homogeneous field (refer to 1.3.14) 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 transient surge voltages from the low voltage network: the rated surge voltage of the item
– For other basic insulation: the highest surge voltage possible in the circuit

[2]) Preferred values

[3]) For PCBs, the values of pollution degree 1 are applicable, except that no deviation below the value of 0.04 mm is permitted, as determined 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 items that are subjected to surge voltages.

[6]) The distances for pollution degree 4 are equal to those for pollution degree 3, except that the minimum clearance is 1.6 mm.

Current carrying capacity

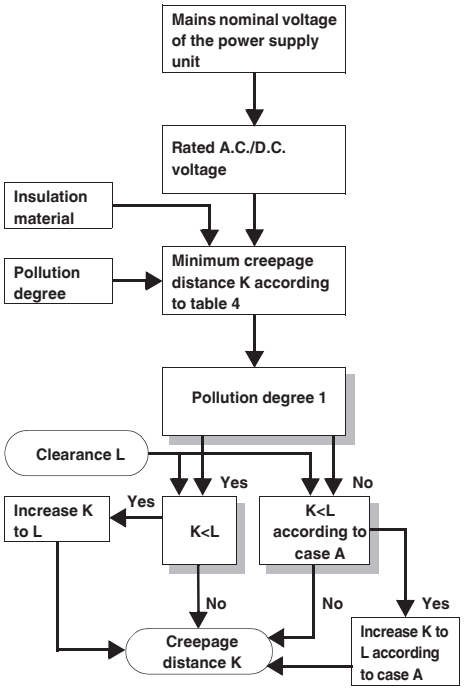
The standard IEC 60947-7-1/ EN-60947-7-1/DIN-VDE-0611-1 determines the test currents for the individual conductor cross-sections listed in the adjacent table. The corresponding currents are listed in the connection data of the individual terminal blocks. They form the basis for the type test of modular terminal blocks.

Test currents in acc. with IEC 60947-7-1/EN 60947-7-1, table 5

Rated cross-section	[mm²]	0.2	0.5	0.75	1.0	1.5	2.5	4	6	10	16
Test current	[A]	4	6	9	13.5	17.5	24	32	41	57	76
Rated cross-section	[mm²]	25	35	50	70	95	120	150	185	240	300
Test current	[A]	101	125	150	192	232	269	309	353	415	520

Dimensioning of the creepage distances

Schema for determining the creepage distances



Single-phase 3 or 2-conductor AC or DC voltage systems (extract from table 3a)

Nominal voltage of the power supply system (mains) *) [V]	Voltages for table 4	
	For conductor-conductor[1]) insulation All systems [V]	For conductor-ground[1]) insulation 3-conductor systems, center point grounded [V]
12.5	12,5	–
24 25	25	–
30	32	–
42 48 50 **)	50	–
60	63	–
30-60	63	32
100 **)	100	–
110 120	125	–
150 **)	160	–
220	250	–
110-220 220-240	250	125
300 **)	320	–
220-440	500	250
600 **)	630	–
480-960	1000	500
1000 **)	1000	–

[1]) Conductor-Ground insulation levels for non-grounded systems or systems grounded through impedance correspond to conductor-conductor insulation levels because 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 PE is determined by the insulation resistance and the capacitive reactance of each conductor to PE. A low (but permissible) insulation resistance of a conductor can thus practically ground it and raise the other two to conductor-conductor voltage to PE.
*) Refer to 2.2.1 for correlation with the rated voltage.
**) These values correspond to the values in table 1.

Three-phase 4 or 3-conductor AC voltage systems (extract from table 3b)

Nominal voltage of the power supply system (mains) *) [V]	Voltages for table 4		
	For conductor-conductor insulation All systems [V]	Insulation for conductor-ground Three-phase 4-conductor systems with grounded neutral conductor [2]) [V]	Three-phase 3-conductor systems non-grounded[1]) or conductor grounded [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-earth insulation level for non-earthed systems or systems earthed through impedance correspond to conductor-conductor insulation levels because the operating voltage of every conductor to earth can, in practice, reach the conductor-conductor voltage. This is due to the fact that the actual voltage to PE is determined by the insulation resistance and the capacitive reactance of each conductor to PE. A low (but permissible) insulation resistance of a conductor can thus practically ground it and raise the other two to conductor-conductor voltage to PE.
[2]) For electrical items designed for use in three-phase 4-conductor and three-phase 3-conductor systems, grounded as well as non-grounded, only the values for 3-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]) True r.m.s. value	Minimum creepage distances								
	Printed circuits Pollution degree		Pollution degree						
	1	2	1	2			3		
	All insulation material groups	All insulation material groups except IIIb	All insulation material groups	Insulation material group			Insulation material group		
				I	II	III	I	II	III [2])
[V]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[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**	0.110	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**	0.140	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	**0.100**	**0.16**	0.25	0.71	1.00	1.4	**1.8**	**2.0**	**2.2**
125	**0.160**	**0.25**	0.28	0.75	1.05	1.5	**1.9**	**2.1**	**2.4**
160	**0.250**	**0.40**	0.32	0.80	1.1	1.6	**2.0**	**2.2**	**2.5**
200	**0.400**	**0.63**	0.42	1.00	1.4	2.0	**2.5**	**2.8**	**3.2**
250	**0.560**	**1.00**	0.56	1.25	1.8	2.5	**3.2**	**3.6**	**4.0**
320	**0.750**	**1.60**	0.75	1.60	2.2	3.2	**4.0**	**4.5**	**5.0**
400	**1.000**	**2.00**	1.00	2.00	2.8	4.0	**5.0**	**5.6**	**6.3**
500	**1.300**	**2.50**	1.30	2.50	3.6	5.0	**6.3**	**7.1**	**8.0**
630	**1.800**	**3.20**	1.8	3.2	4.5	6.3	**8.0**	**9**	**10.0**
800	**2.400**	**4.00**	2.4	4.0	5.6	8.0	**10.0**	**11**	**12.5**
1000	**3.200**	**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 operating voltage
b) For basic insulation and additional insulation of a circuit fed directly by the low voltage network: either the voltage selected from table 3a or 3b on the basis of the rated voltage of the items or the rated insulation voltage;
c) For basic and additional insulation of systems, items and internal circuits which are not fed directly by the mains: the highest true r.m.s. value of the voltage that, within the bounds of the rated data, can occur in the system, the items or the internal circuit, when supplied with rated voltage and in the case of an unfavorable combination of operating conditions.

[2]) In case of pollution degree 3, insulation material group IIIb is not recommended for use if voltages are greater than 630 V.

Overview of approvals boards and safety marks

National approvals boards and certification procedures		Country code
CB scheme	IECEE-CB scheme (In combination with a certifier)	International
CCA	CENELEC Certification Agreement (CCA-inspection report) (In combination with a certifier)	EU
	Canadian Standards Association (CSA)	CA
	Underwriters Laboratories Inc. (UL)	US
	Underwriters Laboratories Inc. (UL) - UL Approval for Canada -	CA
	Underwriters Laboratories Inc. (UL) Combination logo - UL Approval for USA and Canada -	US CA
	Elektromontaz	PL
	INSIEME PER LA QUALITA'E LA SICUREZZA	IT
	Gosudarstvenne Komitet Standartov (GOST)	RU
KEMA KEUR	KEMA Nederland B.V.	NL
ÖVE	Österreichischer Verband für Elektrotechnik	AT
SABS	South African Bureau of Standards	ZA
SEV	Eidgenössisches Starkstrominspektorat (ESTI) electrosuisse, SEV Verband für Elektro-, Energie- und Informationstechnik	CH
VDE	Verband Deutscher Elektrotechniker e.V. (VDE) – Approval of drawings – Reports with production monitoring	DE
LGA Konformitäts-Zertifikat	Landesgewerbeanstalt Bayern	DE
GS	Berufsgenossenschaft (BG) GS tested safety	DE
TÜV	TÜV Rheinland/Berlin-Brandenburg	DE
TÜV NORD	TÜV Nord	DE

Approvals boards for explosion protection		Country code
FM APPROVED	FM approvals	US
KEMA	KEMA Quality B.V.	NL
PTB	Physikalisch-Technische Bundesanstalt (PTB – National Metrology Institute)	DE
	Société Nationale de Certification et d'Homologation	LU
VTT	VTT Technical Research Centre of Finland	FI
	Nemko AS (Head Office) - Norway	NO
	União Certificadora	BR
	Underwriters Laboratories Inc. (UL)	US
	FTZU - Fyzikalne technicky zkusebni ustav (CZ)	CZ

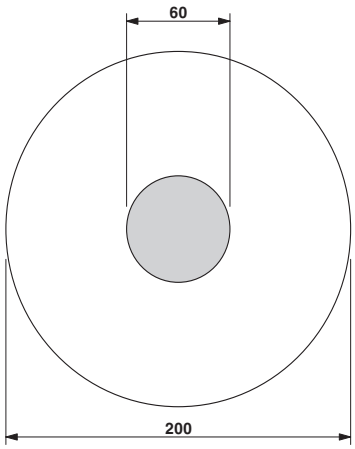
Ship classification bodies		Country code
	Bureau Veritas	FR
	Germanischer Lloyd AG	DE
Lloyd's Register	Lloyd's Register of Shipping	GB
ClassNK	Nippon Kaiji Kyokai	JP
	Det Norske Veritas	NO
	Polski Rejestr Statków	PL
	Russian Maritime Register of Shipping	RU
KR	Korean Register of Shipping	KR
ABS	American Bureau of Shipping	US

Color designations

Color	Letter 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
Violet	VT
Pink	PK
Gold	GD
Silver	SR

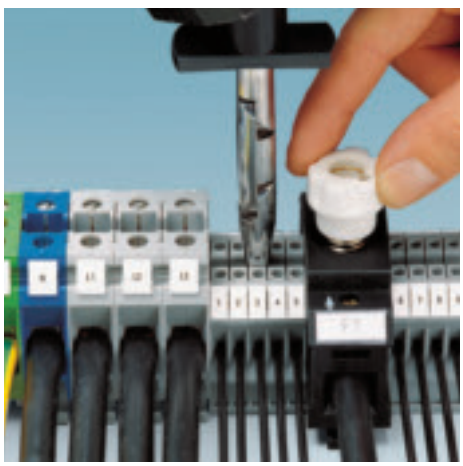
Shock protection

Touch proof



Back of hand safe

Example: Pressure actuation



The accident prevention regulations BGV A 2 issued by the German employer's liability insurance association for precision mechanics and electrical engineering applies to electrical plant owners and is aimed at the prevention of electrical accidents by means of special safety requirements.

These regulations set safety distances for working, operating and occasional manipulation in the proximity of live components, so-called "active components" in low voltage plants up to 1000 V ~ or 1500 V –.

Work with active i.e. live components is only permissible once the unit has been de-energized. Operation near active components is only permitted when these components are de-energized or are protected against direct contact (§ 6). The following safety measures are applicable when working in close proximity to active components:

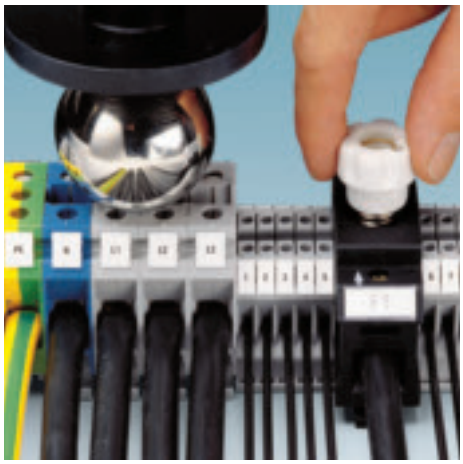
– Provision of a de-energized condition for the duration of the work or
– Protection against accidental contact using covers or barriers during the work, or
– The guarantee that permitted proximities are not undershot (§7)

The term "occasional manipulation" has been introduced for the operation of elements such as push-buttons, rocker arms or rotary buttons in the proximity of live parts.

In VDE 0105-1, this is called "operation with partial protection against direct contact".

Detailed specifications for "occasional manipulation" can be found in DIN EN 50274. This specifies to what degree active components 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 of 30 mm radius must surround the active components. This area must be **touch proof**, i.e. the live parts of the electrical unit must not be within reach of the VDE test finger in accordance with 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 components of the operating element. No special measures for contact safety are provided outside this area.

Note: Plants and equipment that are operated with low voltages up to 25 V ~ or 60 V – are regarded as "shock proof".

As per BGV A 2, testing the condition of the system prior to the first startup can be dispensed with if the company has the confirmation of the manufacturer or installer that the electrical systems and items correspond to BGV A 2 regulations. The confirmation required refers to the installed systems and items which are ready for operation and this can only be issued by the installer or installation company. The manufacturer of the electrical equipment can only issue his confirmation for products which correspond to the current electrotechnical regulations stipulated in BGV A 2. The installer is obliged to select the items to be used according to these stipulations.

In the field of connection technology, Phoenix Contact offers a wide range of products that are touch proof or that can be protected against contact using covers. Depending on the conditions, the individual types of terminal blocks and accessories must be selected according to these criteria.

Type	Order No.	Page
A		
AI 1,5 -10 BK	3200195	250
AI 2,5 -10 BU	3202533	250
ASI CC ADR	2741338	287
ASI CC ADR CAB CINCH	2741341	288
ASI CC BP FL 4	2741134	286
ASI CC DIST FCAB 5M12	2741477	286
ASI CC FIX FCAB	2741354	284
ASI SACB KABEL-ENDDICHTUNG	1692336	284
B		
BMKL 11,5 (108X16) WH	0821797	289
BMKL 64X16 WH	0821807	288
C		
CK1,6-BR-0,50BU AG	1884186	529
CK1,6-BR-0,50ST AG	1884157	529
CK1,6-BR-1,50BU AG	1884173	529
CK1,6-BR-1,50ST AG	1884144	529
CK1,6-ED-0,37BU AG	1663394	528
CK1,6-ED-0,37BU AU	1674969	528
CK1,6-ED-0,37ST AG	1663336	528
CK1,6-ED-0,37ST AU	1674901	528
CK1,6-ED-0,50BU AG	1663404	528
CK1,6-ED-0,50BU AU	1674480	528
CK1,6-ED-0,50ST AG	1663349	528
CK1,6-ED-0,50ST AU	1672453	528
CK1,6-ED-0,75BU AG	1663417	528
CK1,6-ED-0,75BU AU	1672440	528
CK1,6-ED-0,75ST AG	1663352	528
CK1,6-ED-0,75ST AU	1674914	528
CK1,6-ED-1,00BU AG	1663420	528
CK1,6-ED-1,00BU AU	1674943	528
CK1,6-ED-1,00ST AG	1663365	528
CK1,6-ED-1,00ST AU	1674888	528
CK1,6-ED-1,50BU AG	1663433	528
CK1,6-ED-1,50BU AU	1674930	528
CK1,6-ED-1,50ST AG	1663378	528
CK1,6-ED-1,50ST AU	1674875	528
CK1,6-ED-2,50BU AG	1663446	528
CK1,6-ED-2,50BU AU	1674985	528
CK1,6-ED-2,50ST AG	1663381	528
CK1,6-ED-2,50ST AU	1674927	528
CK1,6-ED-BB	1645888	554
CK1,6-ED-BU-POF	1885004	531
CK1,6-ED-ST-POF	1884995	531
CK1,6-ER-0,50BU AG	1884128	529
CK1,6-ER-0,50ST AG	1884092	529
CK1,6-ER-1,50BU AG	1884115	529
CK1,6-ER-1,50ST AG	1884089	529
CK1,6/2,5-MWZ	1676734	532
CK2,5-ED-0,5 BU CUNI	1585757	530
CK2,5-ED-0,5 BU FE	1585773	530
CK2,5-ED-0,5 ST CUNI	1585744	530
CK2,5-ED-0,5 ST FE	1585760	530
CK2,5-ED-0,50BU AG	1663640	528
CK2,5-ED-0,50BU AU	1674859	528
CK2,5-ED-0,50ST AG	1663572	528
CK2,5-ED-0,50ST AU	1674804	528
CK2,5-ED-0,75BU AG	1663653	528
CK2,5-ED-0,75ST AG	1663585	528
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HC-B 10-TMB-100/O1STM25G-STA	1604298	475
HC-B 10-TMB-100/O1STM25S-EMV	1604308	479
HC-B 10-TMB-100/O1STM25S-EUA	1604311	477
HC-B 10-TMB-100/O1STM25S-STA	1604324	475
HC-B 10-TMB-100/O1STM32G-EMV	1604337	479
HC-B 10-TMB-100/O1STM32G-EUA	1604340	477
HC-B 10-TMB-100/O1STM32G-STA	1604353	475
HC-B 10-TMB-100/O1STM32S-EMV	1604366	479
HC-B 10-TMB-100/O1STM32S-EUA	1604379	477
HC-B 10-TMB-100/O1STM32S-STA	1604382	475
HC-B 10-TMB-SD-IP65	1690943	551
HC-B 10-TMQ-45/M1M20G	1586387	486
HC-B 10-TMQ-45/M1PG16G	1771286	486
HC-B 10-TMQ-45/O1M20G	1587386	486
HC-B 10-TMQ-52/M1M20S	1586390	486
HC-B 10-TMQ-52/M1PG16S	1771273	486
HC-B 10-TMQ-52/O1M20S	1604780	486
HC-B 10-TMQ-52/O1M25S	1604781	486
HC-B 10-TMQ-72/M1M25G	1587056	486
HC-B 10-TMQ-72/M1M25S	1587069	486
HC-B 10-TMQ-72/O1STM20S	1647116	486
HC-B 10-TMQ-72/O1STM25G	1647132	486
HC-B 10-TMQ-72/O1STM25S	1647103	486
HC-B 10-TMQ-72/O1STM32G	1647158	486
HC-B 10-TMQ-72/O1STM32S	1647129	486
HC-B 10-TMS-100/O1STM25G-EMV	1690024	479
HC-B 10-TMS-100/O1STM25G-EUA	1690037	477
HC-B 10-TMS-100/O1STM25G-STA	1690040	475
HC-B 10-TMS-100/O1STM25S-EMV	1690066	479
HC-B 10-TMS-100/O1STM25S-EUA	1690079	477
HC-B 10-TMS-100/O1STM25S-STA	1690082	475
HC-B 10-TMS-100/O1STM32G-EMV	1690105	479
HC-B 10-TMS-100/O1STM32G-EUA	1690118	477
HC-B 10-TMS-100/O1STM32G-STA	1690121	475
HC-B 10-TMS-100/O1STM32S-EMV	1690147	479
HC-B 10-TMS-100/O1STM32S-EUA	1690150	477
HC-B 10-TMS-100/O1STM32S-STA	1690163	475
HC-B 10-TMS-SD-IP50	1690749	551
HC-B 10-TMS-SD-IP65	1690781	551
HC-B 16-A-DT-PEL-F	1648432	469
HC-B 16-A-DT-PEL-M	1648445	469
HC-B 16-A-DT-PER-F	1648458	469
HC-B 16-A-DT-PER-M	1648461	469
HC-B 16-A-UT-PEL-F	1648042	467
HC-B 16-A-UT-PEL-M	1648048	467
HC-B 16-A-UT-PER-F	1648090	467
HC-B 16-A-UT-PER-M	1648096	467
HC-B 16-ADP-VC-1	1885758	375
HC-B 16-ADP-VC-2	1885761	375
HC-B 16-ADP-VC-3	1885774	375
HC-B 16-ADP-VC-C1	1885787	375
HC-B 16-ADP-VC-C2	1885790	375
HC-B 16-ADP-VC-C3	1885800	375
HC-B 16-ADP/1 DSUB 37	1775512	544
HC-B 16-ADP/1 DSUB 50	1775538	544
HC-B 16-ADP/2 DSUB 37	1775525	545
HC-B 16-ADP/2 DSUB 50	1775541	545
HC-B 16-AFQD	1771600	493
HC-B 16-AFZ	1584622	495
HC-B 16-AML	1771590	489
HC-B 16-AMLD	1771613	489
HC-B 16-AMLD-AL	1645480	489
HC-B 16-AMQ	1771587	491
HC-B 16-AMQ-EMV	1642742	519
HC-B 16-ANDOCK	1586138	546
HC-B 16-AP-GY	1660384	542
HC-B 16-APV-GY	1661121	542
HC-B 16-EBUQ-2,5	1605572	431
HC-B 16-EBUQ-2,5-32	1605598	431
HC-B 16-EBUZ	1687901	433
HC-B 16-EBUZ-32	1647446	433
HC-B 16-EBUZZ	1647404	433
HC-B 16-ESTQ-2,5	1605637	431
HC-B 16-ESTQ-2,5-32	1605653	431
HC-B 16-ESTZ	1687891	433
HC-B 16-ESTZ-32	1647433	433
HC-B 16-ESTZZ	1605310	433
HC-B 16-FL-DI	1661451	541
HC-B 16-I-CT-F	1648283	429
HC-B 16-I-CT-F-32	1584923	429
HC-B 16-I-CT-M	1648270	429
HC-B 16-I-DT-M-32	1584910	429
HC-B 16-I-DT-F	1648267	435
HC-B 16-I-DT-F-32	1584907	435
HC-B 16-I-DT-M	1648254	435
HC-B 16-I-UT-F	1648241	427
HC-B 16-I-UT-F-32	1584884	427
HC-B 16-I-UT-M	1648238	427
HC-B 16-I-UT-M-32	1584871	427
HC-B 16-KML-80/M1M32	1586675	489
HC-B 16-KML-80/M1PG21	1687710	489
HC-B 16-KML-80/O1M32	1687626	489
HC-B 16-KML-80/O1STM25	1646890	489
HC-B 16-KML-80/O1STM40	1644792	489
HC-B 16-KMQ-80/M1M32	1586688	491
HC-B 16-KMQ-80/M1PG21	1687749	491
HC-B 16-KMQ-80/O1M32	1604968	491
HC-B 16-KMQ-80/O1STM25	1646887	491
HC-B 16-KMQ-80/O1STM40	1644779	491
HC-B 16-LB	1584664	540
HC-B 16-PR-DI	1661079	541
HC-B 16-SD-FL/FS	1660151	550
HC-B 16-SD-FLU/FS-AL	1644588	550
HC-B 16-SD-FQ/FS	1772599	550
HC-B 16-SD-FQT/FS	1687273	550
HC-B 16-SD-FQT/FS-AL	1647763	550
HC-B 16-SD-FQU/FS-AL	1644591	550
HC-B 16-SD-ML/FS	1678318	550
HC-B 16-SD-MLT/FS-AL	1584525	550
HC-B 16-SD-MQ/FS	1678321	550
HC-B 16-SD-MQT/FS-AL	1584554	550
HC-B 16-SFQD-67/M1M25	1586918	493
HC-B 16-SFQD-67/M1PG21	1771668	493
HC-B 16-SFQD-67/M2M25	1586921	493
HC-B 16-SFQD-67/M2PG21	1771671	493
HC-B 16-SFQD-67/O2M25	1604783	493
HC-B 16-SFQD-68/O1M25	1646366	493
HC-B 16-SFQD-84/O1M32	1645655	493
HC-B 16-SFQD-84/O2M32	1645668	493
HC-B 16-SFZ-84/O1M32	1584619	495
HC-B 16-SML-67/M1M25	1586853	489
HC-B 16-SML-67/M1PG21	1771642	489
HC-B 16-SML-67/M2M25	1586866	489
HC-B 16-SML-67/M2PG21	1771655	489
HC-B 16-SML-67/O1M25	1604784	489
HC-B 16-SML-67/O2M25	1604785	489
HC-B 16-SML-84/O1M32	1646299	489
HC-B 16-SML-84/O2M32	1646308	489
HC-B 16-SML-84/O2M40	1646324	489
HC-B 16-SMLD-67/M1M25	1586879	489
HC-B 16-SMLD-67/M1PG21	1771684	489
HC-B 16-SMLD-67/M2M25	1586882	489
HC-B 16-SMLD-67/M2PG21	1771697	489
HC-B 16-SMLD-67/O1M25	1604786	489
HC-B 16-SMLD-67/O2M25	1604787	489
HC-B 16-SMLD-84/O1M32	1645671	489
HC-B 16-SMLD-84/O1M40	1645697	489
HC-B 16-SMLD-84/O2M32	1645684	489
HC-B 16-SMLD-84/O2M40	1645707	489
HC-B 16-SMQ-67/M1M25	1586895	491
HC-B 16-SMQ-67/M1PG21	1771626	491
HC-B 16-SMQ-67/M2M25	1586905	491
HC-B 16-SMQ-67/M2PG21	1771639	491
HC-B 16-SMQ-67/O1M25	1604788	491
HC-B 16-SMQ-67/O2M25	1604790	491
HC-B 16-SMQ-84/O1M25	1604792	491
HC-B 16-SMQ-84/O1M32	1604793	491
HC-B 16-SMQ-84/O2M32	1604794	491
HC-B 16-TFL-45/O1M25G	1604795	488
HC-B 16-TFL-60/O1M25S	1604796	488
HC-B 16-TFL-76/M1M25G	1586400	488
HC-B 16-TFL-76/M1M25S	1586413	488
HC-B 16-TFL-76/M1M32G	1586426	488
HC-B 16-TFL-76/M1M32S	1586439	488
HC-B 16-TFL-76/M1PG21G	1771574	488
HC-B 16-TFL-76/M1PG21S	1771561	488
HC-B 16-TFL-76/M1PG29G	1775606	488
HC-B 16-TFL-76/M1PG29S	1775596	488
HC-B 16-TFL-76/O1M25G	1604798	488
HC-B 16-TFL-76/O1M25S	1604799	488

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HC-B 16-TFL-76/O1M32S	1604801	488
HC-B 16-TFL-76/O1STM25G	1645024	488
HC-B 16-TFL-76/O1STM25S	1645037	488
HC-B 16-TFL-76/O1STM32G	1645040	488
HC-B 16-TFL-76/O1STM32S	1645053	488
HC-B 16-TFL-76/O1STM40G	1644656	488
HC-B 16-TFL-76/O1STM40S	1644672	488
HC-B 16-TFQ-45/O1M25G	1604806	490
HC-B 16-TFQ-60/O1M25S	1604807	490
HC-B 16-TFQ-76/M1M25G	1586442	490
HC-B 16-TFQ-76/M1M25S	1586455	490
HC-B 16-TFQ-76/M1M32G	1586468	490
HC-B 16-TFQ-76/M1M32S	1586471	490
HC-B 16-TFQ-76/M1PG21G	1771516	490
HC-B 16-TFQ-76/M1PG21S	1771503	490
HC-B 16-TFQ-76/M1PG29G	1775567	490
HC-B 16-TFQ-76/M1PG29S	1775554	490
HC-B 16-TFQ-76/O1M25S	1604809	490
HC-B 16-TFQ-76/O1M32G	1604810	490
HC-B 16-TFQ-76/O1M32S	1604811	490
HC-B 16-TFQ-76/O1STM20G-EMV	1587360	519
HC-B 16-TFQ-76/O1STM25G	1645338	490
HC-B 16-TFQ-76/O1STM25G-EMV	1642564	519
HC-B 16-TFQ-76/O1STM25S	1645066	490
HC-B 16-TFQ-76/O1STM25S-EMV	1642577	519
HC-B 16-TFQ-76/O1STM32G	1645079	490
HC-B 16-TFQ-76/O1STM32G-EMV	1642580	519
HC-B 16-TFQ-76/O1STM32S	1645341	490
HC-B 16-TFQ-76/O1STM32S-EMV	1642593	519
HC-B 16-TFQ-76/O1STM40G	1644698	490
HC-B 16-TFQ-76/O1STM40G-EMV	1642603	519
HC-B 16-TFQ-76/O1STM40S	1644711	490
HC-B 16-TMB-100/O1STM32G-EMV	1604395	479
HC-B 16-TMB-100/O1STM32G-EUA	1604405	477
HC-B 16-TMB-100/O1STM32G-STA	1604418	475
HC-B 16-TMB-100/O1STM32S-EMV	1604421	479
HC-B 16-TMB-100/O1STM32S-EUA	1604434	477
HC-B 16-TMB-100/O1STM32S-STA	1604447	475
HC-B 16-TMB-100/O1STM40G-EMV	1604450	479
HC-B 16-TMB-100/O1STM40G-EUA	1604463	477
HC-B 16-TMB-100/O1STM40G-STA	1604476	475
HC-B 16-TMB-100/O1STM40S-EMV	1604489	479
HC-B 16-TMB-100/O1STM40S-EUA	1604492	477
HC-B 16-TMB-100/O1STM40S-STA	1604502	475
HC-B 16-TMB-SD-IP65	1690956	551
HC-B 16-TMQ-65/O1M25G	1604815	492
HC-B 16-TMQ-65/O1M25S	1604816	492
HC-B 16-TMQ-76/M1M25G	1586484	492
HC-B 16-TMQ-76/M1M25S	1586497	492
HC-B 16-TMQ-76/M1M32G	1586507	492
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HC-B 16-TMQ-76/M1PG21G	1771545	492
HC-B 16-TMQ-76/M1PG21S	1771532	492
HC-B 16-TMQ-76/M1PG29G	1775583	492
HC-B 16-TMQ-76/M1PG29S	1775570	492
HC-B 16-TMQ-76/O1M25S	1604818	492
HC-B 16-TMQ-76/O1M32G	1604819	492
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HC-B 16-TMQ-76/O1STM25G	1647187	492
HC-B 16-TMQ-76/O1STM25S	1647161	492
HC-B 16-TMQ-76/O1STM32G	1647190	492
HC-B 16-TMQ-76/O1STM32S	1647174	492
HC-B 16-TMQ-76/O1STM40G	1644737	492
HC-B 16-TMQ-76/O1STM40S	1644753	492
HC-B 16-TMS-100/O1STM25G-STA	1644630	475
HC-B 16-TMS-100/O1STM25S-STA	1644643	475
HC-B 16-TMS-100/O1STM32G-EMV	1690189	479
HC-B 16-TMS-100/O1STM32G-EUA	1690192	477
HC-B 16-TMS-100/O1STM32G-STA	1690202	475
HC-B 16-TMS-100/O1STM32S-EMV	1690228	479
HC-B 16-TMS-100/O1STM32S-EUA	1690231	477
HC-B 16-TMS-100/O1STM32S-STA	1690244	475
HC-B 16-TMS-100/O1STM40G-EMV	1690260	479
HC-B 16-TMS-100/O1STM40G-EUA	1690273	477
HC-B 16-TMS-100/O1STM40G-STA	1690286	475
HC-B 16-TMS-100/O1STM40S-EMV	1690309	479
HC-B 16-TMS-100/O1STM40S-EUA	1690312	477
HC-B 16-TMS-100/O1STM40S-STA	1690325	475
HC-B 16-TMS-SD-IP50	1690752	551
HC-B 16-TMS-SD-IP65	1690794	551
HC-B 16-TMZ-76/O1STM32G	1584635	494
HC-B 16-TMZ-76/O1STM32S	1584648	494
HC-B 24-A-DT-PEL-F	1648474	469
HC-B 24-A-DT-PEL-M	1648487	469
HC-B 24-A-DT-PER-F	1648490	469
HC-B 24-A-DT-PER-M	1648500	469
HC-B 24-A-UT-PEL-F	1648054	467
HC-B 24-A-UT-PEL-M	1648060	467
HC-B 24-A-UT-PER-F	1648102	467
HC-B 24-A-UT-PER-M	1648108	467
HC-B 24-ADP-3D 7-GY	1661448	543
HC-B 24-ADP-3RST-GY	1662175	543
HC-B 24-ADP-B 6-GY	1660407	543
HC-B 24-ADP-B 10-GY	1660436	543
HC-B 24-ADP-B 16-GY	1660449	543
HC-B 24-ADP-VC-1	1885813	375
HC-B 24-ADP-VC-2	1885826	375
HC-B 24-ADP-VC-3	1885839	375
HC-B 24-ADP-VC-4	1885842	375
HC-B 24-ADP-VC-C1	1885855	375
HC-B 24-ADP-VC-C2	1885868	375
HC-B 24-ADP-VC-C3	1885871	375
HC-B 24-ADP-VC-C4	1885884	375
HC-B 24-AFQD	1771956	501
HC-B 24-AFZ	1584583	503
HC-B 24-AML	1771930	497
HC-B 24-AMLD	1771943	497
HC-B 24-AMLD-AL	1645493	497
HC-B 24-AMQ	1771927	499
HC-B 24-AMQ-EMV	1642962	519
HC-B 24-ANDOCK	1586141	546
HC-B 24-AP-GY	1660397	542
HC-B 24-APV-GY	1661037	542
HC-B 24-EBUQ-2,5	1605585	431
HC-B 24-EBUQ-2,5-48	1605608	431
HC-B 24-EBUZ	1687927	433
HC-B 24-EBUZ-48	1647488	433
HC-B 24-EBUZZ	1647420	433
HC-B 24-ESTQ-2,5	1605640	431
HC-B 24-ESTQ-2,5-48	1605666	431
HC-B 24-ESTZ	1687914	433
HC-B 24-ESTZ-48	1647475	433
HC-B 24-ESTZZ	1605255	433
HC-B 24-FL-DI	1774665	541
HC-B 24-I-CT-F	1648348	429
HC-B 24-I-CT-F-48	1584981	429
HC-B 24-I-CT-M	1648335	429
HC-B 24-I-DT-M-48	1584978	429
HC-B 24-I-DT-F	1648322	435
HC-B 24-I-DT-F-48	1584965	435
HC-B 24-I-DT-M	1648319	435
HC-B 24-I-DT-M-48	1584952	435
HC-B 24-I-UT-F	1648306	427
HC-B 24-I-UT-F-48	1584949	427
HC-B 24-I-UT-M	1648296	427
HC-B 24-I-UT-M-48	1584936	427
HC-B 24-KML-79/M1PG21	1772078	497
HC-B 24-KML-79/M1PG29	1772081	497
HC-B 24-KML-80/M1M32	1586691	497
HC-B 24-KML-80/M1M40	1586701	497
HC-B 24-KML-80/O1M25	1604823	497
HC-B 24-KML-80/O1M32	1604824	497
HC-B 24-KML-80/O1STM25	1647255	497
HC-B 24-KML-80/O1STM32	1647268	497
HC-B 24-KML-80/O1STM40	1644805	497
HC-B 24-KMQ-79/M1PG21	1772052	499
HC-B 24-KMQ-79/M1PG29	1772065	499
HC-B 24-KMQ-80/M1M32	1586714	499
HC-B 24-KMQ-80/M1M40	1586727	499
HC-B 24-KMQ-80/O1M25	1604827	499
HC-B 24-KMQ-80/O1STM25	1647242	499
HC-B 24-KMQ-80/O1STM32	1646874	499
HC-B 24-KMQ-80/O1STM40	1644782	499
HC-B 24-LB	1584677	540
HC-B 24-PR-DI	1663048	541
HC-B 24-SD-FL/FS	1660148	550
HC-B 24-SD-FLU/FS-AL	1644601	550
HC-B 24-SD-FQ/FS	1772609	550
HC-B 24-SD-FQT/FS	1687286	550
HC-B 24-SD-FQT/FS-AL	1647776	550
HC-B 24-SD-FQU/FS-AL	1644614	550
HC-B 24-SD-ML/FS	1678334	550
HC-B 24-SD-MLT/FS-AL	1584538	550
HC-B 24-SD-MQ/FS	1678347	550
HC-B 24-SD-MQT/FS-AL	1584567	550
HC-B 24-SFQD-67/M1M25	1586992	501
HC-B 24-SFQD-67/M1PG21	1772010	501
HC-B 24-SFQD-67/M2M25	1587001	501
HC-B 24-SFQD-67/M2PG21	1772023	501
HC-B 24-SFQD-67/O1M25	1604830	501
HC-B 24-SFQD-67/O2M25	1604831	501
HC-B 24-SFQD-84/O1M32	1645736	501
HC-B 24-SFQD-84/O2M32	1645749	501
HC-B 24-SFZ-84/O1M32	1584570	503
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HC-B 24-SML-67/M2M25	1586947	497
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HC-B 24-SML-68/O2M25	1646340	497
HC-B 24-SML-84/O1M32	1645752	497
HC-B 24-SML-84/O1M40	1645765	497
HC-B 24-SML-84/O2M32	1604832	497
HC-B 24-SML-84/O2M40	1645778	497
HC-B 24-SMLD-67/M1M25	1586950	497
HC-B 24-SMLD-67/M1PG21	1772036	497
HC-B 24-SMLD-67/M2M25	1586963	497
HC-B 24-SMLD-67/M2PG21	1772049	497
HC-B 24-SMLD-67/O1M25	1604833	497
HC-B 24-SMLD-67/O2M25	1604834	497
HC-B 24-SMLD-84/O1M32	1645781	497
HC-B 24-SMLD-84/O2M32	1645794	497
HC-B 24-SMLD-84/O2M40	1645817	497
HC-B 24-SMQ-67/M1M25	1586976	499
HC-B 24-SMQ-67/M1PG21	1771969	499
HC-B 24-SMQ-67/M2M25	1586989	499
HC-B 24-SMQ-67/M2PG21	1771972	499
HC-B 24-SMQ-67/O1M25	1604835	499
HC-B 24-SMQ-68/O2M25	1646353	499
HC-B 24-SMQ-84/O1M32	1604836	499
HC-B 24-SMQ-84/O1M40	1645419	499
HC-B 24-SMQ-84/O2M32	1604837	499
HC-B 24-SMQ-84/O2M40	1645723	499
HC-B 24-TFL-56/O1M25G	1604839	496
HC-B 24-TFL-60/O1M25S	1604840	496
HC-B 24-TFL-60/O1M32S	1604841	496
HC-B 24-TFL-76/M1M25G	1586523	496
HC-B 24-TFL-76/M1M25S	1586536	496
HC-B 24-TFL-76/M1M32G	1586549	496
HC-B 24-TFL-76/M1M32S	1586552	496
HC-B 24-TFL-76/M1PG21G	1771901	496
HC-B 24-TFL-76/M1PG21S	1771888	496
HC-B 24-TFL-76/M1PG29G	1771914	496
HC-B 24-TFL-76/M1PG29S	1771891	496
HC-B 24-TFL-76/O1M25G	1604842	496
HC-B 24-TFL-76/O1M32G	1604843	496
HC-B 24-TFL-76/O1M32S	1604844	496
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HC-B 24-TFQ-76/O1STM40G-EMV	1642823	519
HC-B 24-TFQ-76/O1STM40S	1644724	498
HC-B 24-TFQ-76/O1STM40S-EMV	1642836	519
HC-B 24-TFQ-76/O2STM40G	1645448	498
HC-B 24-TMB-100/O1STM32G-EMV	1604515	479
HC-B 24-TMB-100/O1STM32G-EUA	1604528	477
HC-B 24-TMB-100/O1STM32G-STA	1604531	475
HC-B 24-TMB-100/O1STM32S-EMV	1604544	479
HC-B 24-TMB-100/O1STM32S-EUA	1604557	477
HC-B 24-TMB-100/O1STM32S-STA	1604560	475
HC-B 24-TMB-100/O1STM40G-EMV	1604573	479
HC-B 24-TMB-100/O1STM40G-EUA	1604586	477
HC-B 24-TMB-100/O1STM40G-STA	1604599	475
HC-B 24-TMB-100/O1STM40S-EMV	1604609	479
HC-B 24-TMB-100/O1STM40S-EUA	1604612	477
HC-B 24-TMB-100/O1STM40S-STA	1604625	475
HC-B 24-TMB-SD-IP65	1690969	551
HC-B 24-TMQ-76/M1M25G	1586604	500
HC-B 24-TMQ-76/M1M25S	1586617	500
HC-B 24-TMQ-76/M1M32G	1586620	500
HC-B 24-TMQ-76/M1M32S	1586633	500
HC-B 24-TMQ-76/M1PG21G	1771846	500
HC-B 24-TMQ-76/M1PG21S	1771820	500
HC-B 24-TMQ-76/M1PG29G	1771859	500
HC-B 24-TMQ-76/M1PG29S	1771833	500
HC-B 24-TMQ-76/O1M25G	1604858	500
HC-B 24-TMQ-76/O1M25S	1604859	500
HC-B 24-TMQ-76/O1M32G	1604860	500
HC-B 24-TMQ-76/O1STM25G	1647226	500
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HC-B 24-TMQ-76/O1STM40G	1644740	500
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HC-B 24-TMS-100/O1STM32G-EMV	1690341	479
HC-B 24-TMS-100/O1STM32G-EUA	1690354	477
HC-B 24-TMS-100/O1STM32G-STA	1690367	475
HC-B 24-TMS-100/O1STM32S-EMV	1690383	479
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SAC-3P-M12MS-M 8FR/.../...	1696866	76
SAC-3P-M12MS-M 8FS	1519752	105
SAC-3P-M12MS-M 8FS/.../...	1696840	76
SAC-3P-M12MS-M 8SIFR-2L/.../	1515675	72
SAC-3P-M12MS-M 8SIFR/.../...	1696882	72
SAC-3P-M12MS-M 8SIFS	1519781	105
SAC-3P-M12MS-M 8SIFS/.../...	1696853	72
SAC-3P-M12MS-M12FR B/.../...	1696785	76
SAC-3P-M12MS-M12FR SH/.../...	1536052	79
SAC-3P-M12MS-M12FR-2L/.../...	1696798	76
SAC-3P-M12MS-M12FR-2LB/.../...	1696808	76
SAC-3P-M12MS-M12FR/.../...	1696772	76
SAC-3P-M12MS-M12FS B/.../...	1696769	76
SAC-3P-M12MS-M12FS SH/.../...	1536049	79
SAC-3P-M12MS-M12FS-2L/.../...	1511802	76
SAC-3P-M12MS-M12FS/.../...	1696756	76
SAC-3P-M12MS/ 0,3-PUR/M12FR	1681541	76
SAC-3P-M12MS/ 0,3-PUR/M12FR B	1668399	76
SAC-3P-M12MS/ 0,3-PUR/M12FR SH	1500923	79
SAC-3P-M12MS/ 0,3-PUR/M12FR-2L	1694554	76
SAC-3P-M12MS/ 0,3-PUR/M12FS SH	1500800	79
SAC-3P-M12MS/ 0,6-PUR/M12FR	1681554	76
SAC-3P-M12MS/ 0,6-PUR/M12FR B	1668409	76
SAC-3P-M12MS/ 0,6-PUR/M12FR SH	1500936	79
SAC-3P-M12MS/ 0,6-PUR/M12FR-2L	1694567	76
SAC-3P-M12MS/ 0,6-PUR/M12FS SH	1500813	79
SAC-3P-M12MS/ 1,5-PUR/M12FR	1681567	76
SAC-3P-M12MS/ 1,5-PUR/M12FR B	1668412	76
SAC-3P-M12MS/ 1,5-PUR/M12FR SH	1500949	79
SAC-3P-M12MS/ 1,5-PUR/M12FR-2L	1694570	76
SAC-3P-M12MS/ 1,5-PUR/M12FS SH	1500826	79
SAC-3P-M12MS/ 3,0-PUR/M12FR	1681570	76
SAC-3P-M12MS/ 3,0-PUR/M12FR B	1668425	76
SAC-3P-M12MS/ 3,0-PUR/M12FR SH	1500952	79
SAC-3P-M12MS/ 3,0-PUR/M12FR-2L	1694583	76
SAC-3P-M12MS/ 3,0-PUR/M12FS SH	1500839	79
SAC-3P-M12MS/.../...	1696662	76
SAC-3P-M12MS/0,3-PUR/M 8FR	1668836	76
SAC-3P-M12MS/0,3-PUR/M 8FR-2L	1694884	76
SAC-3P-M12MS/0,3-PUR/M 8FS	1668797	76
SAC-3P-M12MS/0,3-PUR/M12FR-2LB	1668438	76
SAC-3P-M12MS/0,3-PUR/M12FS	1681509	76
SAC-3P-M12MS/0,3-PUR/M12FS B	1668315	76
SAC-3P-M12MS/0,6-PUR/M 8FR	1668849	76
SAC-3P-M12MS/0,6-PUR/M 8FR-2L	1694897	76
SAC-3P-M12MS/0,6-PUR/M 8FS	1668807	76
SAC-3P-M12MS/0,6-PUR/M12FR-2LB	1668441	76
SAC-3P-M12MS/0,6-PUR/M12FS	1681512	76
SAC-3P-M12MS/0,6-PUR/M12FS B	1668328	76
SAC-3P-M12MS/1,5-PUR	1668014	76
SAC-3P-M12MS/1,5-PUR SH	1682650	79
SAC-3P-M12MS/1,5-PUR/M 8FR	1668852	76
SAC-3P-M12MS/1,5-PUR/M 8FR-2L	1694907	76
SAC-3P-M12MS/1,5-PUR/M 8FS	1668810	76
SAC-3P-M12MS/1,5-PUR/M12FR-2LB	1668454	76
SAC-3P-M12MS/1,5-PUR/M12FS	1681525	76
SAC-3P-M12MS/1,5-PUR/M12FS B	1668331	76
SAC-3P-M12MS/10,0-PUR	1682566	76
SAC-3P-M12MS/10,0-PUR SH	1500664	79
SAC-3P-M12MS/3,0-PUR	1668027	76
SAC-3P-M12MS/3,0-PUR SH	1682663	79
SAC-3P-M12MS/3,0-PUR/M 8FR	1668865	76
SAC-3P-M12MS/3,0-PUR/M 8FR-2L	1694910	76
SAC-3P-M12MS/3,0-PUR/M 8FS	1668823	76
SAC-3P-M12MS/3,0-PUR/M12FR-2LB	1668467	76
SAC-3P-M12MS/3,0-PUR/M12FS	1681538	76
SAC-3P-M12MS/3,0-PUR/M12FS B	1668344	76
SAC-3P-M12MS/5,0-PUR	1668030	76
SAC-3P-M12MS/5,0-PUR SH	1682676	79
SAC-3P-M12MS/A-1L-S	1505258	108
SAC-3P-M12MS/B-1L-S	1534106	109
SAC-3P-M12MS/Bl-1L-S	1534122	109
SAC-3P-M12T/2XM12 B PE	1519723	105
SAC-3P-M12Y-2X/.../...	1697357	100
SAC-3P-M12Y-2XM 8FR-2L/.../...	1697412	100
SAC-3P-M12Y-2XM 8FR/.../...	1697409	100
SAC-3P-M12Y-2XM 8FS/.../...	1697399	100
SAC-3P-M12Y-2XM12FR B/.../...	1697373	100
SAC-3P-M12Y-2XM12FR-2LB/.../..	1697386	100
SAC-3P-M12Y-2XM12FR/.../...	1506419	100
SAC-3P-M12Y-2XM12FS B/.../...	1697360	100
SAC-3P-M12Y-2XM12FS/.../...	1699766	100
SAC-3P-M12Y/2X0,3-PUR/M 8FR	1671373	100
SAC-3P-M12Y/2X0,3-PUR/M 8FR-2L	1671412	100
SAC-3P-M12Y/2X0,3-PUR/M 8FS	1671331	100
SAC-3P-M12Y/2X0,3-PUR/M12FR B	1668991	100
SAC-3P-M12Y/2X0,3-PUR/M12FR2LB	1669039	100
SAC-3P-M12Y/2X0,3-PUR/M12FS B	1668959	100
SAC-3P-M12Y/2X0,6-PUR/M 8FR	1671386	100
SAC-3P-M12Y/2X0,6-PUR/M 8FR-2L	1671425	100
SAC-3P-M12Y/2X0,6-PUR/M 8FS	1671344	100
SAC-3P-M12Y/2X0,6-PUR/M12FR B	1669000	100
SAC-3P-M12Y/2X0,6-PUR/M12FR2LB	1669042	100
SAC-3P-M12Y/2X0,6-PUR/M12FS B	1668962	100
SAC-3P-M12Y/2X1,5-PUR	1669686	100
SAC-3P-M12Y/2X1,5-PUR/M 8FR	1671399	100
SAC-3P-M12Y/2X1,5-PUR/M 8FR-2L	1671438	100
SAC-3P-M12Y/2X1,5-PUR/M 8FS	1671357	100
SAC-3P-M12Y/2X1,5-PUR/M12FR B	1669013	100
SAC-3P-M12Y/2X1,5-PUR/M12FR2LB	1669055	100
SAC-3P-M12Y/2X1,5-PUR/M12FS B	1668975	100
SAC-3P-M12Y/2X10,0-PUR	1694473	100
SAC-3P-M12Y/2X3,0-PUR	1669699	100
SAC-3P-M12Y/2X3,0-PUR/M 8FR	1671409	100
SAC-3P-M12Y/2X3,0-PUR/M 8FR-2L	1671441	100
SAC-3P-M12Y/2X3,0-PUR/M 8FS	1671360	100
SAC-3P-M12Y/2X3,0-PUR/M12FR B	1669026	100
SAC-3P-M12Y/2X3,0-PUR/M12FR2LB	1669068	100
SAC-3P-M12Y/2X3,0-PUR/M12FS B	1668988	100
SAC-3P-M12Y/2X5,0-PUR	1669754	100
SAC-3P-M12Y/2XM 8FS	1683471	104
SAC-3P-M12Y/2XM 8FS VP	1683549	104
SAC-3P-M12Y/2XM12FS B PE	1683413	104
SAC-3P-M12Y/2XM12FS PE	1683455	104
SAC-3P-M12Y/2XM12FS-3L	1501304	104
SAC-3P-M5MR/ 1,5-PUR	1530346	70
SAC-3P-M5MR/ 3,0-PUR	1530359	70
SAC-3P-M5MR/ 5,0-PUR	1530362	70
SAC-3P-M5MR/10,0-PUR	1530375	70
SAC-3P-M5MS/ 1,5-PUR	1530265	70
SAC-3P-M5MS/ 3,0-PUR	1530278	70
SAC-3P-M5MS/ 5,0-PUR	1530281	70
SAC-3P-M5MS/10,0-PUR	1530294	70
SAC-3P-MR SCO/.../...	1523531	74
SAC-3P-MR SH SCO/.../...	1523719	78
SAC-3P-MR-FR B SCO/.../...	1542143	74
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SAC-3P-MR-FR-2L B SCO/.../...	1542156	74
SAC-3P-MR-FS B SCO/.../...	1542130	74
SAC-3P-MR-FS SCO/.../...	1523557	74
SAC-3P-MR-FS SH SCO/.../...	1541801	78
SAC-3P-MR-FS-2L SCO/.../...	1542033	74
SAC-3P-MR-M8FR SCO/.../...	1541869	74
SAC-3P-MR-M8FR-2L SCO/.../...	1541872	74
SAC-3P-MR-M8FS SCO/.../...	1541856	74
SAC-3P-MR/ 0,3-PUR/A-1L-Z SCO	1434934	106
SAC-3P-MR/ 0,3-PUR/B-1L-Z SCO	1435331	106
SAC-3P-MR/ 0,3-PUR/Bl-1L-Z SCO	1435182	106
SAC-3P-MR/ 0,3-PUR/C-1L-Z SCO	1435483	106
SAC-3P-MR/ 0,3-PUR/Cl-1L-Z SCO	1435632	106
SAC-3P-MR/ 0,3-PUR/FS SCO	1518766	74
SAC-3P-MR/ 0,6-PUR/A-1L-Z SCO	1434947	106
SAC-3P-MR/ 0,6-PUR/B-1L-Z SCO	1435344	106
SAC-3P-MR/ 0,6-PUR/Bl-1L-Z SCO	1435195	106
SAC-3P-MR/ 0,6-PUR/C-1L-Z SCO	1435496	106
SAC-3P-MR/ 0,6-PUR/Cl-1L-Z SCO	1435645	106
SAC-3P-MR/ 0,6-PUR/FS SCO	1518779	74
SAC-3P-MR/ 1,5-PUR SCO	1518685	74
SAC-3P-MR/ 1,5-PUR/A-1L-Z SCO	1434950	106
SAC-3P-MR/ 1,5-PUR/B-1L-Z SCO	1435357	106
SAC-3P-MR/ 1,5-PUR/Bl-1L-Z SCO	1435205	106
SAC-3P-MR/ 1,5-PUR/C-1L-Z SCO	1435506	106
SAC-3P-MR/ 1,5-PUR/Cl-1L-Z SCO	1435658	106
SAC-3P-MR/ 1,5-PUR/FS SCO	1518782	74
SAC-3P-MR/ 3,0-PUR SCO	1518698	74
SAC-3P-MR/ 3,0-PUR/A-1L-Z SCO	1434963	106
SAC-3P-MR/ 3,0-PUR/B-1L-Z SCO	1435360	106
SAC-3P-MR/ 3,0-PUR/Bl-1L-Z SCO	1435218	106
SAC-3P-MR/ 3,0-PUR/C-1L-Z SCO	1435519	106
SAC-3P-MR/ 3,0-PUR/Cl-1L-Z SCO	1435661	106
SAC-3P-MR/ 3,0-PUR/FS SCO	1518795	74
SAC-3P-MR/ 5,0-PUR SCO	1518708	74
SAC-3P-MR/10,0-PUR SCO	1518711	74
SAC-3P-MS SCO/.../...	1523515	74
SAC-3P-MS SH SCO/.../...	1523706	78
SAC-3P-MS-FR B SCO/.../...	1542114	74
SAC-3P-MS-FR SCO/.../...	1542101	74
SAC-3P-MS-FR SH SCO/.../...	1523751	78
SAC-3P-MS-FR-2L B SCO/.../...	1542127	74
SAC-3P-MS-FR-2L SCO/.../...	1538225	74
SAC-3P-MS-FS B SCO/.../...	1542091	74
SAC-3P-MS-FS SCO/.../...	1523544	74
SAC-3P-MS-FS SH SCO/.../...	1523748	78
SAC-3P-MS-FS-2L SCO/.../...	1542017	74
SAC-3P-MS-M8FR SCO/.../...	1540763	74
SAC-3P-MS-M8FR-2L SCO/.../...	1535710	74
SAC-3P-MS-M8FS SCO/.../...	1535736	74
SAC-3P-MS/ 0,3-PUR/A-1L-Z SCO	1434882	106
SAC-3P-MS/ 0,3-PUR/B-1L-Z SCO	1435289	106
SAC-3P-MS/ 0,3-PUR/Bl-1L-Z SCO	1435137	106
SAC-3P-MS/ 0,3-PUR/C-1L-Z SCO	1435438	106
SAC-3P-MS/ 0,3-PUR/Cl-1L-Z SCO	1435580	106
SAC-3P-MS/ 0,3-PUR/FS SCO	1518724	74
SAC-3P-MS/ 0,6-PUR/A-1L-Z SCO	1434895	106
SAC-3P-MS/ 0,6-PUR/B-1L-Z SCO	1435292	106
SAC-3P-MS/ 0,6-PUR/Bl-1L-Z SCO	1435140	106
SAC-3P-MS/ 0,6-PUR/C-1L-Z SCO	1435441	106
SAC-3P-MS/ 0,6-PUR/Cl-1L-Z SCO	1435593	106
SAC-3P-MS/ 0,6-PUR/FS SCO	1518737	74
SAC-3P-MS/ 1,5-PUR SCO	1518643	74
SAC-3P-MS/ 1,5-PUR/A-1L-Z SCO	1434905	106
SAC-3P-MS/ 1,5-PUR/B-1L-Z SCO	1435302	106
SAC-3P-MS/ 1,5-PUR/Bl-1L-Z SCO	1435153	106
SAC-3P-MS/ 1,5-PUR/C-1L-Z SCO	1435454	106
SAC-3P-MS/ 1,5-PUR/Cl-1L-Z SCO	1435603	106
SAC-3P-MS/ 1,5-PUR/FS SCO	1518740	74
SAC-3P-MS/ 3,0-PUR SCO	1518656	74
SAC-3P-MS/ 3,0-PUR/A-1L-Z SCO	1434918	106
SAC-3P-MS/ 3,0-PUR/B-1L-Z SCO	1435315	106
SAC-3P-MS/ 3,0-PUR/Bl-1L-Z SCO	1435166	106
SAC-3P-MS/ 3,0-PUR/C-1L-Z SCO	1435467	106
SAC-3P-MS/ 3,0-PUR/Cl-1L-Z SCO	1435616	106
SAC-3P-MS/ 3,0-PUR/FS SCO	1518753	74
SAC-3P-MS/ 5,0-PUR SCO	1518669	74
SAC-3P-MS/10,0-PUR SCO	1518672	74
SAC-3P-Y-2XFR B SCO/.../...	1542172	100
SAC-3P-Y-2XFR SCO/.../...	1542004	100
SAC-3P-Y-2XFR-2L B SCO/.../...	1542185	100
SAC-3P-Y-2XFS SCO/.../...	1542198	100
SAC-3P-Y-2XM8FR SCO/.../...	1541898	100
SAC-3P-Y-2XM8FR-2L SCO/.../...	1541908	100
SAC-3P-Y-2XM8FS SCO/.../...	1541885	100
SAC-3P-Y-2XSCO/.../...	1524242	100
SAC-3P-Y/2X 1,5-PUR SCO	1524200	100
SAC-3P-Y/2X 3,0-PUR SCO	1524213	100
SAC-3P-Y/2X 5,0-PUR SCO	1524226	100
SAC-3P-Y/2X10,0-PUR SCO	1524239	100
SAC-3P-Y/2XFS B PE SCO	1523968	104
SAC-3P-Y/2XFS PE SCO	1523971	104
SAC-3P-Y/2XM 8FS SCO	1523984	104
SAC-4P- 1,5-511/M12FR FB	1552502	147
SAC-4P- 1,5-511/M12FR-3L FB	1552544	147
SAC-4P- 1,5-511/M12FS FB	1552421	147
SAC-4P- 1,5-PUR/FR SCO	1536405	80
SAC-4P- 1,5-PUR/FS SCO	1536285	80
SAC-4P- 1,5-PUR/M 8FR	1681871	80
SAC-4P- 1,5-PUR/M 8FR SH	1521960	85
SAC-4P- 1,5-PUR/M 8FS	1681842	80
SAC-4P- 1,5-PUR/M 8FS SH	1521915	85

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SAC-4P- 1,5-PUR/M12FR-3L	1668289	82
SAC-4P- 1,5-PUR/M12FS	1668108	82
SAC-4P- 1,5-PUR/M12FS-2L	1694800	82
SAC-4P- 1,5-PUR/M5FR	1530540	70
SAC-4P- 1,5-PUR/M5FS	1530469	70
SAC-4P- 2,0-186/FS SCO	1555648	286
SAC-4P- 2,0-960/M12FS VA	1431212	292
SAC-4P- 2,0-960/MINFR VA	1429266	292
SAC-4P- 2,0-960/MINFS VAL	1429712	292
SAC-4P- 2,0-961/MINFR VA	1433870	294
SAC-4P- 2,0-961/MINFS VAL	1433786	294
SAC-4P- 2,0-990/M12FS	1558360	290
SAC-4P- 3,0-511/M12FR FB	1552515	147
SAC-4P- 3,0-511/M12FR-3L FB	1552557	147
SAC-4P- 3,0-511/M12FS FB	1552434	147
SAC-4P- 3,0-PUR/FR SCO	1536418	80
SAC-4P- 3,0-PUR/FS SCO	1536298	80
SAC-4P- 3,0-PUR/M 8FR	1681884	80
SAC-4P- 3,0-PUR/M 8FR SH	1521973	85
SAC-4P- 3,0-PUR/M 8FS	1681855	80
SAC-4P- 3,0-PUR/M 8FS SH	1521928	85
SAC-4P- 3,0-PUR/M12FR	1668234	82
SAC-4P- 3,0-PUR/M12FR-3L	1668292	82
SAC-4P- 3,0-PUR/M12FS	1668111	82
SAC-4P- 3,0-PUR/M12FS-2L	1694813	82
SAC-4P- 3,0-PUR/M5FR	1530553	70
SAC-4P- 3,0-PUR/M5FS	1530472	70
SAC-4P- 5,0-186/FS SCO	1555651	286
SAC-4P- 5,0-511/M12FR FB	1552528	147
SAC-4P- 5,0-511/M12FR-3L FB	1552560	147
SAC-4P- 5,0-511/M12FS FB	1552447	147
SAC-4P- 5,0-960/M12FS VA	1431225	292
SAC-4P- 5,0-960/MINFR VA	1429279	292
SAC-4P- 5,0-960/MINFS VAL	1429185	292
SAC-4P- 5,0-961/MINFR VA	1433883	294
SAC-4P- 5,0-961/MINFS VAL	1433799	294
SAC-4P- 5,0-990/M12FS	1558373	290
SAC-4P- 5,0-PUR/FR SCO	1536421	80
SAC-4P- 5,0-PUR/FS SCO	1536308	80
SAC-4P- 5,0-PUR/M 8FR	1681897	80
SAC-4P- 5,0-PUR/M 8FR SH	1521986	85
SAC-4P- 5,0-PUR/M 8FS	1681868	80
SAC-4P- 5,0-PUR/M 8FS SH	1521931	85
SAC-4P- 5,0-PUR/M12FR	1668247	82
SAC-4P- 5,0-PUR/M12FR SH	1682922	85
SAC-4P- 5,0-PUR/M12FR-3L	1668302	82
SAC-4P- 5,0-PUR/M12FS	1668124	82
SAC-4P- 5,0-PUR/M12FS SH	1682867	85
SAC-4P- 5,0-PUR/M12FS-2L	1694826	82
SAC-4P- 5,0-PUR/M5FR	1530566	70
SAC-4P- 5,0-PUR/M5FS	1530485	70
SAC-4P-1,5-PUR/M12FR SH	1682906	85
SAC-4P-1,5-PUR/M12FS SH	1682841	85
SAC-4P-10,0-186/FS SCO	1555664	286
SAC-4P-10,0-511/M12FR FB	1552531	147
SAC-4P-10,0-511/M12FR-3L FB	1552573	147
SAC-4P-10,0-511/M12FS FB	1552450	147
SAC-4P-10,0-960/M12FS VA	1431238	292
SAC-4P-10,0-960/MINFR VA	1429282	292
SAC-4P-10,0-960/MINFS VAL	1429198	292
SAC-4P-10,0-961/MINFR VA	1433896	294
SAC-4P-10,0-961/MINFS VAL	1433809	294
SAC-4P-10,0-990/M12FS	1558386	290
SAC-4P-10,0-PUR/FR SCO	1536434	80
SAC-4P-10,0-PUR/FS SCO	1536311	80
SAC-4P-10,0-PUR/M 8FR	1694172	80
SAC-4P-10,0-PUR/M 8FR SH	1521999	85
SAC-4P-10,0-PUR/M 8FS	1683484	80
SAC-4P-10,0-PUR/M 8FS SH	1521944	85
SAC-4P-10,0-PUR/M12FR	1681389	82
SAC-4P-10,0-PUR/M12FR SH	1500729	85
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SAC-4P-MR-FR-3L SCO/.../...	1542334	80
SAC-4P-MR-FS SCO/.../...	1523599	80
SAC-4P-MR-FS SH SCO/.../...	1542208	84
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SAC-4P-MS/ 3,0-PUR/FS SCO	1518915	80
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SAC-6P-10,0-970/FS SCO	1428597	254
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1507094	SAC-5P-M12MSB/15,0-900	266
1507117	SAC-5P- 2,0-900/M12FSB	266
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1507175	SAC-5P-M12MSB/ 0,5-900/M12FSB	266
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1507191	SAC-5P-M12MSB/ 2,0-900/M12FSB	266
1507201	SAC-5P-M12MSB/ 5,0-900/M12FSB	266
1507214	SAC-5P-M12MSB/10,0-900/M12FSB	266
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1507272	SAC-2P-M12MSB/15,0-910	272
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1518850	SAC-4P-MR/ 3,0-PUR SCO	80
1518863	SAC-4P-MR/ 5,0-PUR SCO	80
1518876	SAC-4P-MR/10,0-PUR SCO	80
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1518892	SAC-4P-MS/ 0,6-PUR/FS SCO	80
1518902	SAC-4P-MS/ 1,5-PUR/FS SCO	80
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1884322	VC-MEMV-A1	370
1884335	VC-MEMV-A2	370
1884348	VC-MEMV-A3	370
1884351	VC-MEMV-A4	370
1884403	VC-MP-A1	370
1884416	VC-MP-A2	370
1884429	VC-MP-A3	370
1884432	VC-MP-A4	370
1884487	VC-MEMV-K1	371
1884490	VC-MEMV-K2	371
1884500	VC-MEMV-K3	371
1884513	VC-MEMV-K4	371
1884568	VC-MP-K1	371
1884571	VC-MP-K2	371
1884584	VC-MP-K3	371
1884597	VC-MP-K4	371
1884649	VC-MEMV-S1	371
1884652	VC-MEMV-S2	371
1884665	VC-MEMV-S3	371
1884678	VC-MEMV-S4	371
1884720	VC-MP-S1	371
1884733	VC-MP-S2	371
1884746	VC-MP-S3	371
1884759	VC-MP-S4	371
1884775	VC-D4-BU65-PE-R	363
1884788	VC-D3-BU50-PE-R	363
1884791	VC-D2-BU30-PE-R	363
1884801	VC-D1-BU15-PE-R	363
1884843	CRIMPFOX-1,6-ER-1,50-AT	536
1884869	VC-EW 1,6	460
1884872	VC-AMLV 6	355
1884885	VC-AMLV 8	355
1884898	VC-MP-T1-Z	369
1884908	VC-MP-T2-Z	369
1884911	VC-MP-T3-Z	369
1884924	VC-MP-T4-Z	369
1884979	VC-AMLV 2	355
1884982	VC-POLISHER/M FSMA	356
1884995	CK1,6-ED-ST-POF	531
1885004	CK1,6-ED-BU-POF	531
1885198	VC-K-KV-PG21(20X7)	373
1885211	VC-EMV3-S2266 NZ	350
1885212	VC-EMV3-S2266-M20/M25 NZ	350
1885240	VC-AFOS 2	357
1885279	VC-K-KV-PG21-1X8,5/1X12	373
1885282	VC-K-KV-PG21-2X4,5/1X13	373
1885305	VC-M-KV-PG21(20X 7)	373
1885363	VC-K-KV-PG21-O	373
1885376	VC-K-KV-PG16 1X3/1X8	372
1885389	VC-K-KV-PG16 1X3/1X9	372
1885392	VC-K-KV-PG16 1X6/1X8	372
1885402	VC-K-KV-PG16 1X5/1X9	372
1885415	VC-K-KV-PG16 1X3/2X8	372
1885428	VC-K-KV-PG16 1X5/2X6	372
1885431	VC-K-KV-PG16 2X6/1X7	372
1885444	VC-K-KV-PG16 3X7	372
1885457	VC-M-KV-PG16 1X3/1X8	372
1885460	VC-M-KV-PG16 1X3/1X9	372
1885473	VC-M-KV-PG16 1X6/1X8	372
1885486	VC-M-KV-PG16 1X5/1X9	372
1885499	VC-M-KV-PG16 1X3/2X8	372
1885509	VC-M-KV-PG16 1X5/2X6	372
1885512	VC-M-KV-PG16 2X6/1X7	372
1885525	VC-M-KV-PG16 3X7	372
1885538	VC-K-KV-PG21 1X6/2X9	373
1885554	VC-K-KV-PG21 2X6/2X8	373
1885567	VC-K-KV-PG21 2X7,2/1X10,5	373
1885570	VC-K-KV-PG21 3X7	373
1885583	VC-K-KV-PG21 3X9	373
1885596	VC-K-KV-PG21 4X6,5	373
1885606	VC-K-KV-PG21 4X8	373
1885619	VC-M-KV-PG21 1X6/2X9	373
1885635	VC-M-KV-PG21 2X6/2X8	373
1885648	VC-M-KV-PG21 2X7,2/1X10,5	373
1885651	VC-M-KV-PG21 3X7	373
1885664	VC-M-KV-PG21 3X9	373
1885677	VC-M-KV-PG21 4X6,5	373
1885680	VC-M-KV-PG21 4X8	373
1885758	HC-B 16-ADP-VC-1	375
1885761	HC-B 16-ADP-VC-2	375
1885774	HC-B 16-ADP-VC-3	375
1885787	HC-B 16-ADP-VC-C1	375
1885790	HC-B 16-ADP-VC-C2	375
1885800	HC-B 16-ADP-VC-C3	375
1885813	HC-B 24-ADP-VC-1	375
1885826	HC-B 24-ADP-VC-2	375
1885839	HC-B 24-ADP-VC-3	375
1885842	HC-B 24-ADP-VC-4	375
1885855	HC-B 24-ADP-VC-C1	375
1885868	HC-B 24-ADP-VC-C2	375
1885871	HC-B 24-ADP-VC-C3	375
1885884	HC-B 24-ADP-VC-C4	375
1886074	VC-M-T2/10() S822 NZ:TS	350
1886139	HC-D 4-BU-2BUS	532
1886140	HC-D 4-2BU	532
1886141	HC-D 4-2ST	532
1886142	HC-D 4-ST-1BUS	532
1886143	HC-D 4-1BU	532
1886144	HC-D 4-1ST	532
1886553	VC-MEMV-T1-Z-M20	367
1886566	VC-MEMV-T2-Z-M25	367
1886579	VC-MEMV-T3-Z-M25	367
1886582	VC-MEMV-T4-Z-M25	367
1886595	VC-MEMV-T1-R-M20	367
1886605	VC-MEMV-T2-R-M25	367
1886618	VC-MEMV-T3-R-M25	367
1886621	VC-MEMV-T4-R-M25	367
1886634	VC-MP-T1-R-M20	367
1886647	VC-MP-T2-R-M25	367
1886650	VC-MP-T3-R-M25	367
1886663	VC-MP-T4-R-M25	367
1886676	VC-MP-T1-Z-M20	367
1886689	VC-MP-T2-Z-M25	367
1886692	VC-MP-T3-Z-M25	367
1886702	VC-MP-T4-Z-M25	367
1886728	VC-SD-T1	378
1886731	VC-SD-T2	378
1886744	VC-SD-T3	378
1886757	VC-SD-T4	378
1886760	VC-SD-A1	379
1886773	VC-SD-A2	379
1886786	VC-SD-A3	379
1886799	VC-SD-A4	379
1886948	CRIMPFOX-1,6/2,5-ED-4,0 DIE	536
1887086	VS-09-SD	264
1887099	VS-15-SD	327
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2741338	ASI CC ADR	287
2741341	ASI CC ADR CAB CINCH	288
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2744322	PSM-LWL-RUGGED-980/1000	214
2765505	CT-WZ/A	193
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2773416	FLX ASI DIO 4/4 M8-1A	287
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3200195	AI 1,5 -10 BK	250
3202533	AI 2,5 -10 BU	250
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